Discussion "The Missing Internal Devaluation Puzzle: Nominal and Real Adjustments to the Great Recession in the US" Corsetti, Dedola, Trezzo

Discussant: Juan Passadore

June 17, 2017

Intro

- Interesting Paper! Timely, Euro Crisis.
- Question: RER adjusts to shocks under fixed exchange rate?
  - Theory: real exchange rate depreciates.
  - Empirics: challenging identification with aggregate data.
- This paper:
  - exogenous variation in a shock at the MSA level.
  - Main result: no adjustment in goods; negative for services.
  - No adjustment in nominal wages.
  - Puzzling: standard theory predicts, findings in other papers.
- Discussion: 1) Alternative findings. 2) Why no adjustment: Data? Specification? 3) Services, Wages. 4) Final thoughts. Not today: general points made to this approach [is this a supply shock, exposure to construction, etc]

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Main Result: Prices

No Adjustment in Goods, Adjustment surprising sign in Services

Table 2: Effect of house price change on Regional Price Parities (RPP).

	All		Goods		Services		Rents	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Log House Prices	0.04	-0.01	0.02	0.06	0.02	-0.11	0.07	0.08
	[0.02]**	[0.04]	[0.02]	[0.04]	[0.03]	[0.06]*	[0.04]	[0.09]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	308	308	308	308	308	308	308	308
R^2	0.07	-	0.03	-	0.05	-	0.40	-

Standard errors in brackets

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

No adjustment in the Price of goods, BEA Data 2008-2011.

Corroborated with the BLS data and long series. Negative for services!

So: whats going on? Do we have a puzzle?

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Stroebel and Vavra (2016)

- Question: do prices (and markups) respond to a demand shock?
- Identification: HP*Saiz + % home owners

$$\Delta p_l^{Retail} = \alpha + \beta \Delta \hat{hp}_l + \theta X_l + \epsilon_l$$

- Main Result: elasticity of retail prices 15-20%.
- Explanation: Markups or Marginal Costs? Markups.
- Why different results? Retail prices, price index, long differences, instrument [10 Y Treasury vs. Agg HP], zip code vs MSA.
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Data? BEA Price Parities

How Regional Price Parities Are Constructed? Bias? Enough variation?

- Aten (2006). Step 1: ELI $k = 1, .., K$ (example: white bread), region i (NY), characteristic n (Mkt), weighted LS:

$$\ln P_{in}^{k} = \sum_{i=1}^{M} \alpha_i^k \mathbb{I}_i + \sum_{i=1}^{M} \beta_n \mathbb{I}_i \mathbb{I}_n + \epsilon_{in}$$

- Step 2. Estimate: $\hat{\alpha}_i^k = \sum_{i=1}^{M} \lambda_i \mathbb{I}_i + \sum_{k=1}^{K} \delta_k \mathbb{I}_k + \epsilon_{ik}$
- What is the price parity? $PPP_i = \frac{e^{\lambda_i}}{\sum \omega_i e^{\lambda_i}}$
- Bias? Which are these weights? Imputation? Aten (2006): "...designed for..."
- Enough variation? Coibion Gorodnichenko Hee Hong (2014). Posted vs Effective Prices. Aten (2016), "5 year rolling window".

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Retail prices in SV (2016)

- Step 1. Item i weights. Category c at l level price index.

$$\omega_{i,l,c,y(t)} = \frac{TS_{i,l,c,y(t)}}{\sum_{i \in c} TS_{i,l,c,y(t)}} \longrightarrow \frac{P_{l,c,t+1}}{P_{l,c,t}} = \Pi_i \left(\frac{P_{i,l,c,t+1}}{P_{i,l,c,t}} \right)^{\omega_{i,l,c,y(t)}}$$

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- Which data should we be looking for this question?
- Bea Price Parities vs Retail Prices: High frequency change in bundles. Can account for substitution. Traded prices. But: only retail prices. Beraja et al (2016) global index.

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Testable Implication and Empirical Specification

- Relative NKPC at location l:

$$\hat{\mathcal{T}}_{l,t} = \nu \hat{\mathcal{T}}_{l,t-1} + \kappa \left[\bar{MC}_{l,t} + \bar{\mu}_{l,t} \right]$$
$$= \nu \hat{\mathcal{T}}_{l,t-1} + \kappa \left[\phi_{l,0} + \phi_{l,1} s_{t-1} + \phi_{l,2} \epsilon_{l,t} \right]$$

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$$\hat{\mathcal{T}}_{l,t} = \nu \hat{\mathcal{T}}_{l,t-1} + \phi_{l,0} + \kappa \phi_2 \delta_1 hp_{l,t} + \eta_t$$

- Specification for the main results:

$$\ln P_{l,t} = \alpha_l + \gamma_t + \beta \hat{hp}_{l,t} + \theta X_{l,t} + \epsilon_{l,t}$$

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- Price setting? Gilchrist et al (2015). Baller et al (2017).

$$\kappa(hp) = \frac{(1-\theta(hp))(1-\beta\theta(hp))}{\theta(hp)}$$

- Non-linearities? Interpretation: shock to PC

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Specification?

- Long Differences vs High Frequency? [SV 2016]
- Measurement error.
- Lagged response.
- Comparison w.t. literature.
- Saiz (2010) Instrument for the Bust?
- Geographical instrument. How hard is for a city to expand.
- But what about falling demand for houses?
- Boom and bust instrument...
- 10 Year rate $\times$ Housing Supply Elasticity?

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Elasticity of Services

Table 2: Effect of house price change on Regional Price Parities (RPP).

	All		Goods		Services		Rents	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Log House Prices	0.04	-0.01	0.02	0.06	0.02	-0.11	0.07	0.08
	[0.02]**	[0.04]	[0.02]	[0.04]	[0.03]	[0.06]*	[0.04]	[0.09]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	308	308	308	308	308	308	308	308
R^2	0.07	-	0.03	-	0.05	-	0.40	-

Standard errors in brackets

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Services become more expensive in places that are hit harder! Why this could be the case? 1) During bad times, some of these services are more demanded [bankruptcy lawyer]. 2) Increasing returns [tourism, Faber Gaubert 2016]. 3) Migration: low productivity guys staying [ex: hospitals].

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Local Wages

This Paper

Table 6: Effect of house price change on nominal wages (2-digit level).

	Goods		Services		Distribution		Construction	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
House Prices	-0.01	-0.17	0.04	-0.08	-0.06	-0.13	0.03	0.19
	[0.06]	[0.18]	[0.04]	[0.19]	[0.06]	[0.11]	[0.07]	[0.11]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	303	303	303	303	303	303	303	303
R^2	0.73	-	0.68	-	0.69	-	0.58	-

	Tradable		Non Tradable		Construction		Other	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
House Prices	-0.02	-0.19	-0.05	-0.08	0.03	0.19	0.05	-0.05
	[0.06]	[0.17]	[0.03]*	[0.09]	[0.07]	[0.11]	[0.04]	[0.16]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	303	303	303	303	303	303	303	303
R^2	0.73	-	0.66	-	0.58	-	0.66	-

Standard errors in brackets

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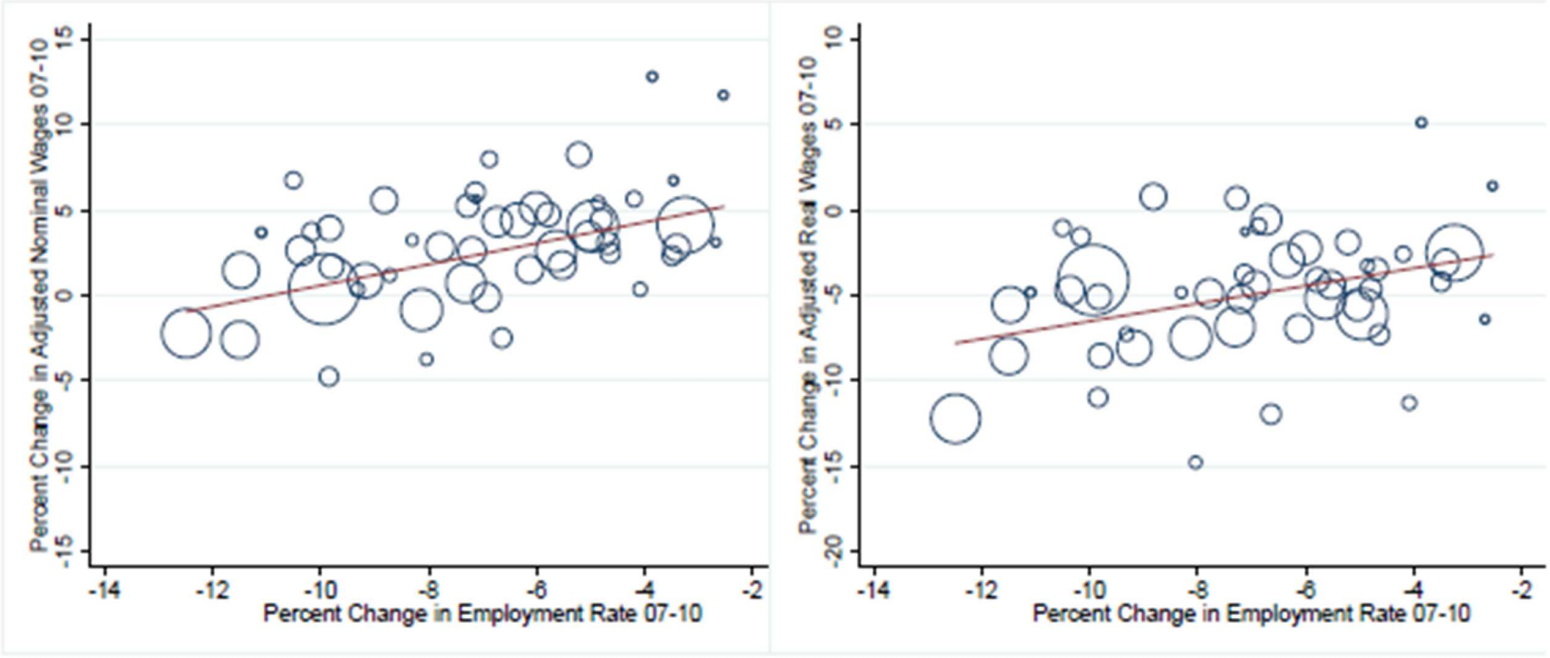
Note: robust standard errors clustered by Metropolitan Statistical Area (MSA) in brackets. "OLS" refers to Ordinary Least Squares. "IV" refers to Instrumental Variables. The above regressions refer to the time period 2008-2011. The dependent variable is the log of MSAs nominal payrolls (at 2-digit NAICS level of disaggregation). "House Prices" refers to the log of house price. All regressions include time and MSA fixed effects, and a set of demographics controls. The IV instrument is based on housing supply elasticities from Saiz (2010) interacted with the 10-year US interest rate. **Source:** payroll data are from the Census County Business Patterns (available at: https://www.census.gov/programs-surveys/cbp.html). House prices data come from CoreLogic (available at: http://www.corelogic.com).

Local Wages

Beraja et al (2016)

Figure 3: State Employment Growth vs. State Nominal and Real Wage Growth, 2007-2010



Note: Figure shows a simple scatter plot of the percent growth in the state employment rate between 2007 and 2010 against nominal wage growth (left panel) and real wage growth (right panel) during the same period. The state employment rate comes dividing state employment from the BLS by total state population from the BLS. Nominal wages are computed from the ACS and are adjusted for the changing labor market composition of workers within each state over time. We restrict wage measures to a sample of men between the ages of 21 and 55 with a strong attachment to the labor market. Our composition adjustment controls for age, education, race, nativity and usual hours worked. See text for details. To compute real wages, we adjust our nominal wage measures by our local price indices created using the retail scanner data. The size of the underlying state is represented by the size of the circle in the figure. The line represents a weighted regression line from the bi-variate regression.

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- and...evidence at the state level for Beraja et al (2016).
- Why different? 1) Construct wages at state level.

$$\ln w_{itk} = \gamma_t + \Gamma_t X_{it} + \eta_{itk}$$

$$w_{tk} = \text{Mean}\left(e^{\eta_{itk}+\gamma_t}\right)$$

- 2)..focus on state level (vs MSA); data American Community Survey (vs Payroll data from Census County Business Patterns).
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- Take out current version: puzzling results!
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