Heterogenous impacts of import competition in Brazil

Does credity scarcity limit trade gains?

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Revisiting the empirical framework

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Context

- China is accepted into WTO in December-2001
- Itau-Unibanco merger happens is announced in October-2008, and approved by Central Bank in February-2009.
- How to use these two dominant movements to study the interaction between external competition and credit availability?

Main data sets

- RAIS (public access): 1985 to 2018
  - Before 1993, reported economic sectors are not compatible with CNAE or other international classifications.
- ESTBAN (public access): 1988 to 2020

Previous strategy

$$\Delta L_{m,t} = \upsilon + \beta_1\ \Delta C_{m,t} + \beta_2\ \Delta Exp_{m,t} + \beta_3\ \Delta C_{m,t} \Delta Exp_{m,t} + \epsilon_{m,t} \quad (1)$$

$$\Delta C_{m,t} = \begin{cases} 1 \iff m \in Treated\ municipalities \\ 0 \iff m \in Untreated\ municipalities \end{cases} \quad (2)$$

$$\Delta Exp_{m,t} = \sum_{s \in S} \frac{L_{m,s,t}}{L_{s,t}}\ \frac{\Delta M_{s,t}^{Br-China}}{L_{m,t}} \quad (3)$$

Where $t = [2009; 2017]$, $Tretated$ represented municipalities affected by Itau-Unibanco merger, and $\Delta L = \frac{L_{m,t} - L_{m,t_0}}{L_{m,t_0}}$ – as in Grimaldi (2020)

Revisited Strategy

$$\Delta L_{m,t} = \upsilon + \beta_1\ \Delta C_{m,t} + \beta_2\ \Delta Exp_{m,t} + \beta_3\ \Delta C_{m,t} \Delta Exp_{m,t} + \epsilon_{m,t} \quad (4)$$

$$\Delta C_{m,t} = \frac{\Delta Loans_{m,t}}{L_{m,t_0}} \quad (5)$$

$$\Delta Exp_{m,t} = \sum_{s \in S} \frac{L_{m,s,t_0}}{L_{s,t_0}}\ \frac{\Delta M_{s,t}^{Br-China}}{L_{m,t_0}} \quad (6)$$

Where $t = [2001; 2016]$, $\Delta L = \frac{L_{m,t} - L_{m,t_0}}{L_{m,t_0}}$, and $Loans$ represents private credit volume.

Import Endogeneity

As in Grimaldi (2020) $\Delta Exp_{m,t}$ will be instrumented by:

$$\Delta Exp_{m,t}^{Mercosul^c} = \frac{\Delta M^{Mercosul^c - China_{s,t}}}{L_{m,t_{1995}}} \tag{7}$$

Credit Endogeneity

The Itau-Unibanco merger can be used as instrument for $\Delta C_{m,t}$.

- We expect that the credit expansion will be negatively affected by the merger (as in Joaquim and Doornik (2019));
- additionally, we expect this negative impact to be as severe as the market concentration directly induced by the merger.

Credit Endogeneity

Therefore, the following variables could be used as instruments:

$$Loans_m^{merger} = \frac{\sum_{b \in Itau-Unibanco} Loans_{b,m,2007}}{Loans_{m,2007}} \tag{8}$$

$$Branches_m^{merger} = \frac{\sum_{b \in Itau-Unibanco} Branches_{b,m,2007}}{Branches_{m,2007}} \tag{9}$$

$$\Delta HHI_m^{merger} = \frac{\hat{HHI}^{merger}_{m,2007} - HHI_{2007,m}}{HHI_{2007,m}} \tag{10}$$

Where b is a bank index; $Branches$ counts the number of branches associated with each bank; and HHI is a measure of normalized Herfindahl-Hirschman index. The three variables would be equal to 0 for municipalities unaffected by the merger.

Future challenge

How to insert more control variables in this first-difference setting?

- Build a stacked first difference would force us to find another instrument for credit volume (one that is valid prior to the merger);
- Can I add variables that are fixed in time in this first-difference setting? Would that mean controlling for differential trends (Acemoglu et al. 2015)?