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Referee comments by Fernando B. Sotelino on “Monetary policy and its real effects: loan-level evidence from Brazil on the bank lending channel” by Rodrigo Barbone Gonzalez September 10, 2018

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Gonzalez (2018) investigates the bank balance-sheet transmission channel of monetary policy in Brazil and its real effect for firms during the period 2004-2016.

The author builds a loan level panel with over 40 million observations, including formal employment data from RAIS (the formal registry of employment of the Brazilian Ministry of Labor) and proceeds to examine the effects of changes in the overnight funds rate in credit supply by banks and in investment and employment by firms. He then horseshoes bank observables against Taylor-based macroeconomic fundamentals and risk aversion indicators associated with the 2008 global financial crisis and the 2015 Brazilian recession, finding a significant bank capital channel for monetary transmission, with relevant effects on firms employment and investment outcomes. The author also finds that government banks increase their relative share of credit supply by approximately 2% per quarter on average between 2004 and 2016.

I find no fault with the methodology utilized or with Gonzalez’ robustness assessment of his statistical findings. However, I believe that some of the author’s findings could jump out statistically stronger - and possibly more useful for monetary guidance - if the framework of analysis could incorporate the following adjustments:

- (i) make the observation period 2000-2018 - to include the particularly delicate political transition period of 2002/03 and the aftermath of a presidential impeachment in 2016;
- (ii) examine the bank balance sheet transmission channel of monetary policy for the sub-periods of 2000-2007, which encompasses the 2002 political crisis and aftermath); 2007-2014, which captures the final build-up to the 2008 global financial crisis and its aftermath; and 2014-mid 2018, which captures the build-up to the 2015 recession political leading to a presidential impeachment in 2016 and its aftermath;
- (iii) investigate in greater depth the possible differences in banks’ loan supply response to monetary policy changes as a function of their structure of ownership (e.g. private vs. public sector; private domestic vs. foreign; government-owned vs. government controlled and listed).

My rationale for suggesting more in-depth investigation of bank balance sheet response to change in home country monetary policy as a function of banks’ ownership structure is derived from the following considerations:

- (i) the up and down of the share of total credit supplied by private and public sector banks since 2000 - BCB statistics indicate that the private sector banks' share of total bank credit went from 60% in 2002 to 66% in 2007, dropped from 66% in 2007 to 43% in 2014, and recovered from 43% in 2014 to 47% in mid-2018;
- (ii) my own observation as a banker in Brazil for 18 years of differing behavioral tendencies - particularly with regards to appetite for credit risk - among private domestic, foreign and public sector banks.

Going back to Gonzalez' paper, he describes the first four years following the inception of the floating exchange rate regime in Brazil in early 1999 as a period of severe market turmoil - then followed by a four-year bonanza.

This was certainly true. But I would like to highlight that no market turmoil since 1999 has come close to the one that took place during the presidential election year of 2002. In a period of 6 months (May and October) we saw a 6% hike of the overnight federal funds rate (from 19% to 25%) in the face of an 80% depreciation (BRLs 2.2 to 3.9 per US\$) over the same period of time.

Congressional approval in early 1999 of Brazil's fiscal responsibility law had brought about a sense of economic stability that helped the country navigate - under tight but relatively stable monetary policy - the 2000 high-tech bubble burst, the 2001 Argentine spectacular default, and the September 11, 2001 terrorist attack in New York. This was possible in spite of the until then relatively modest foreign exchange reserves held by the country.

As of April 2002, economic forecasts for December pointed to a stable exchange rate (around BRLs 2.3/USD) and a lower SELIC rate. However, escalating market concerns with the final result of the upcoming presidential election in October - and the possibility of significant departure from the macroeconomic policy in place since 1999 - caused a crisis of confidence, a substantial reversal of foreign capital flows (including the unprecedented suspension by important international banks of trade finance lines of credit for leading Brazilian banks), triggering the above mentioned 6% hike of the SELIC rate.

This phenomenon - a sharp SELIC hike in the face of capital flight - would repeat itself three more times between 2000 and 2016:

- in 2008, a 2.5% SELIC hike (11.25% to 13.75%) over 6 months (May-October) in the face of a 45% BRL devaluation (BRL 1.6 to BRL 2.3), due to the Global Financial Crisis;
- in 2013, a 3.25% SELIC hike (7.25% to 10.5%) over 8 months (April-December) in the face of a 20% BRL devaluation (BRL 2.0 to BRL 2.4), due to the so-called Fed tapering; and

- in 2015, a 2.5% SELIC hike (11.75% to 14.25%) over 7 months (January-July) in the face of an over 60% BRL devaluation (BRL 2.5 to BRL 4.1), due to Brazil's fiscal exhaustion and the escalating political uncertainties leading to the impeachment of President Rousseff in early 2016.

These moments may have marked substantially different loan-level responses to monetary tightening by private and public sector banks through their lending channels. They may have also marked materially different responses between foreign banks and private domestic banks (a phenomenon - and an extreme one - that I had the opportunity to personally witness from the inside of a major bank between May 2002 and early 2003).

Distinguishing between the responses to home country monetary policy of foreign and domestic private banks' may seem a matter of less importance for monetary policy guidance in Brazil at this point, in light of the acquisitions of HSBC-Brazil by Bradesco in 2015 and of Citibank-Brazil by Itau Unibanco in 2016). But findings from this exercise may be of relevance elsewhere in the region, particularly in Mexico where foreign banks have been dominant since the early 2000s, but have been gradually losing share post 2008 global financial crisis; or Chile, where the top 3 banks are one private domestic, one foreign, and one government-owned.

In closing, I would like to turn my attention to two seemingly unrelated but, I believe, complementary findings from Gonzalez' work that may deserve further examination, possibly in another research paper.

The first is that "the fiscal position of the country has relevant and strong effects for the transmission of monetary policy".

The other is that "firms connected to lower capitalized banks face a deeper credit, employment and investment decline after a tightening of the overnight federal funds rate". This finding for Brazil is consistent, for example, with those of Banerjee, Gambacorta and Sette (2017) for relationship lending in Italy. As a former banker for Citibank and Unibanco in Brazil for 18 years, I could see very clearly that firms - large and small - know this. They are keenly aware of the importance of their relationships with - if not their dependency on - strong banks.

Sustained economic growth requires the development of robust and efficient domestic credit markets (bank loans and corporate bonds) to bring about the availability of medium-term funding in domestic currency for creditworthy borrowers at fixed - and affordable to finance investment - interest rates.

Most pre-conditions for the development of a robust bank credit and corporate bonds market (Srinivasan 2005) seem to be satisfactorily in place in Brazil: large private sector in highly diversified economy, solid banks and broker-dealers, robust bankruptcy and securities legislation, savvy and well-established domestic

institutional investor base, favorable and well-established rules for cross-border capital flows, and state-of-the-art securities exchanges. But one is seriously missing: a favorable sovereign yield curve in domestic currency (Sotelino 2008).

The particularly high and volatile nature (if compared to Mexico, Chile, Colombia or Peru) of the real interest rate embedded in Brazil's sovereign yield curve in domestic currency has stubbornly remained a major obstacle for the consolidation of a robust domestic credit market in Brazil - one where borrowers/issuers can benefit from stiff competition - not only among banks but also between banks and investors-at-large - for the acceptable credit risks.

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Sundaresan, S., *Developing Multiple Layers of Financial Intermediation, the Complementary Roles of Corporate Bonds and Banks*, BIS Papers no. 26, Nov 2005

Sotelino, F., *Brazil failing to turn the corner*, ILAS Working Paper Series, Columbia University, Oct 2008

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