

Discussion of “Empirical Analysis of Macroprudential Policies in Peru: The effects of Dynamic Provisioning and Conditional Reserve Requirements”

Miguel Cabello, Jose Lupui, Elias Minaya
Central Reserve Bank of Peru

by

Ricardo Correa*
Federal Reserve Board

Closing Conference of the BIS CCA CGDFS Working Group

“The impact of macroprudential policies and their interaction with monetary policy: An empirical analysis using credit registry data”

Mexico City, Mexico

June 13-14, 2016

*These slides and associated remarks represent only my current opinions, not those of the Board of Governors or the Federal Reserve System.

Summary of the paper

- The paper analyzes the impact of two macroprudential policies on credit growth:
 - Dynamic provisioning
 - Reserve requirements (RR) conditional on the rate of foreign-currency credit growth (RRs were applied on the amount of deposits in foreign currency)
 - This program was adjusted in 2014. Reserve requirements were imposed depending on the level of outstanding credit in foreign currency as of end-2015, compared to September 2013 (February 2013 for auto loans and mortgages)
- To study the impact of these policies, the authors use information from the Peruvian credit registry managed by the Superintendency of Banking, Insurance, and Private Pension Funds (SBS).
- The data sample covers the period between 2004Q2 and 2014Q4 for commercial loans and between 2004Q2 and 2015Q3 for mortgages.

Main findings

- Dynamic provisioning appears to be negatively correlated with credit growth. This result is stronger for periods when the instrument was tightened compared with periods when the provisioning scheme was loosened.
- There is also a negative correlation between the implementation of the conditional reserve requirements and the share of mortgage credit denominated in dollars (dollarization rate).
 - There is no evidence showing that these reserve requirements led to lower nonperforming loan ratios.

General comments: Form

- I have comments of two types: on the form and on the substance.
- Describe in detail the instruments and rule changes studied in the paper. For example, how is the dynamic provisioning scheme implemented? The activation and deactivation rules are shown in Figure 3, but they are not discussed in the text. Choy and Chang (2014) is the reference cited, but it is in Spanish.
- Provide an overview of the credit register: What types of credits are included? Which loan characteristics are captured by the database? The number of observations seems low (841,144), is this the full sample?
- Add table(s) with summary statistics for the main variables used in the specifications.
- When describing the results from the main specifications, focus on describing the coefficients of interest (macroprudential instruments) rather than the variables included as controls.

General comments: Substance

- Goal of the exercise: Identify changes in the supply of credit as a result of the use of macroprudential instruments.
- The main concern in the empirical tests should be to control for the demand for credit. It is difficult, as these macroprudential instruments were used at the same time as external shocks were happening.
- Deviate from the general BIS template to pursue additional supporting tests.

Comments: Dynamic provisioning

- Dynamic provisions were introduced in 2003 but only became mandatory at the end of 2008 (December) and are triggered by a formula that depends on GDP growth.
- The SBS applied different provision rates according to the type of credit (and whether the credit was guaranteed). These rates are for unsecured loans classified as “normal”:
 - Medium-sized enterprises: 0.3 percent
 - Corporates and mortgages: 0.4 percent
 - Micro, small, and large-sized enterprises: 0.5 percent
 - Non-revolving consumer loans: 1 percent
 - Revolving consumer loans: 1.5 percent

Comments: Dynamic provisioning

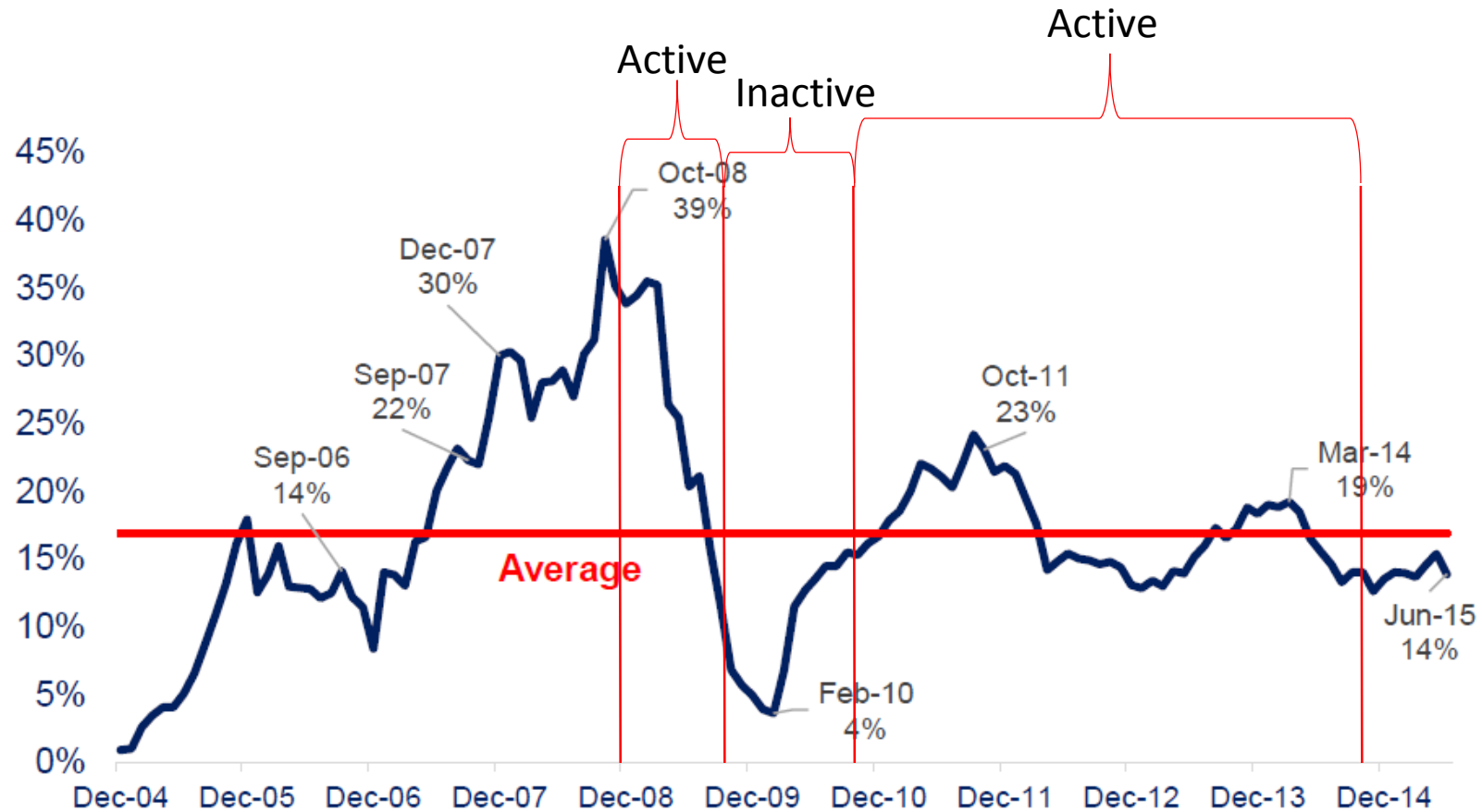
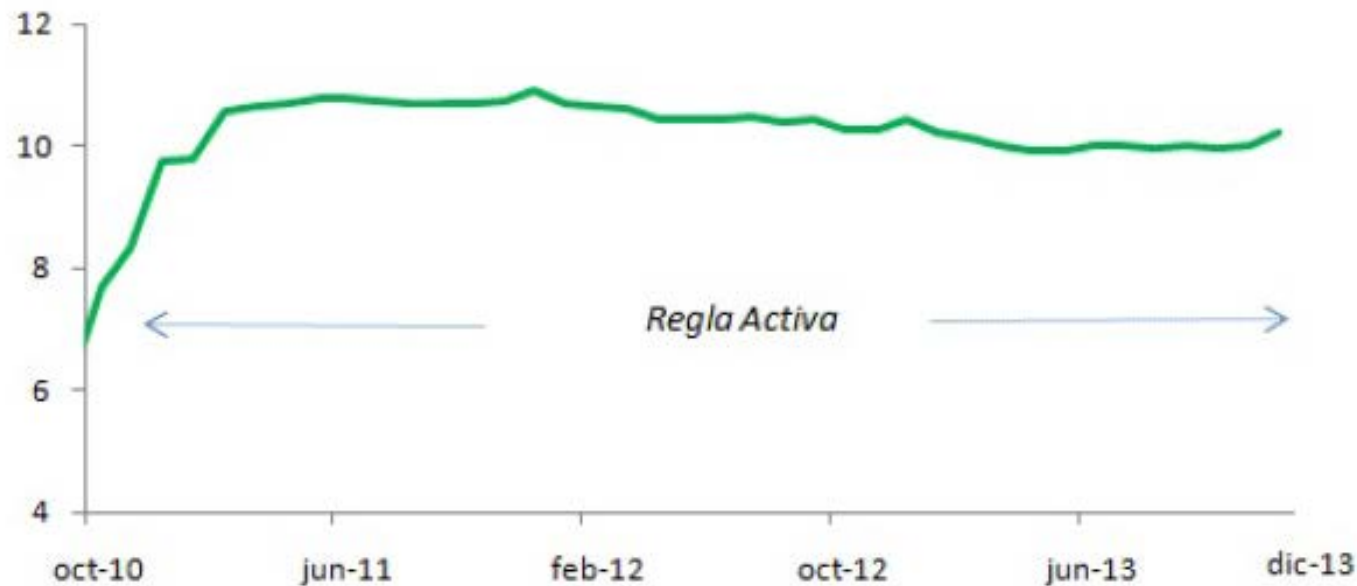


Figure 2: Credit Growth (year over year percent change).

Dynamic provisions relative to total provisions (in percent)



Applies to the second period with active dynamic provisioning.

Source: Choy and Chang (2014)

Comments: Dynamic provisioning

- The test conducted in the paper follow the methodology proposed by the BIS:

$$\Delta \log \text{credit}_{bft} = \delta_f + \sum_{j=0}^3 \beta_j \Delta \text{Macro Controls}_{t-j} + \sum_{j=0}^3 \theta_j \Delta \text{Bank Characteristics}_{t-j} \\ + \text{quarter}_t + \lambda \text{Macro Tool}_{t-1} + \varepsilon_{bft}$$

- Macro Tool enters as a 1 (active) or a -1 (inactive). Should it be just a 1 (active) and a 0 (inactive)?
- Are δ_f and the Macro Controls enough to controls for firms' demand for credit?
- They could use an identification strategy similar to Jimenez et al. (2016, JPE forthcoming), which rely on the impact of dynamic provisioning on a bank's loan portfolio (they can use the loan portfolio of a bank as the quarter before the policy is activated or when it becomes inactive)? That would allow for the use of *firm x time* fixed effects to control for credit demand.

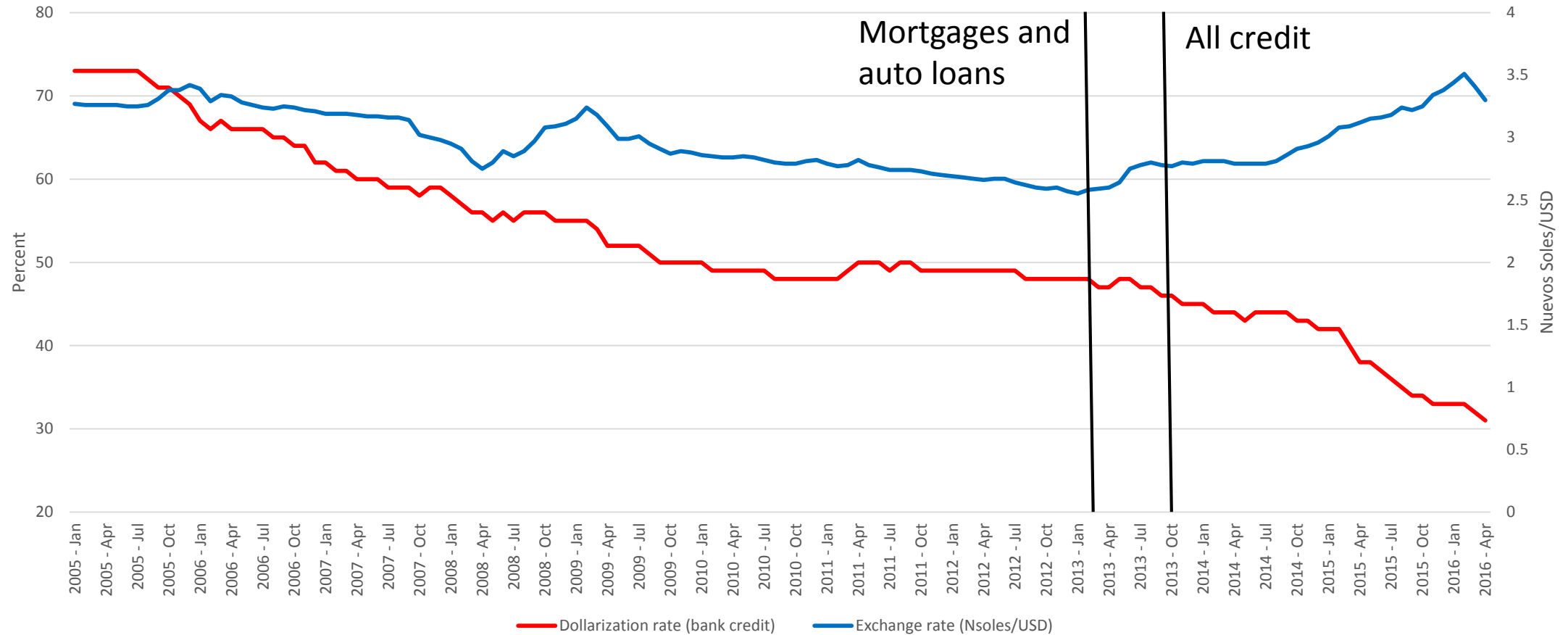
Comments: Dynamic provisioning

- The impact of the this instrument's use could also be analyzed breaking down credits by type. Note that different provision requirements are applied to different credits.
- Why is it necessary to use lags of the macro and bank controls? Do you obtain different results if these variables only enter the equation as of $t-1$?
- Report a joint test for the significance of coefficients, when including lags for the Macro Tool.

Comments: Conditional reserve requirements

- The central bank imposed additional reserve requirements on dollar-denominated credits (October 2013) and mortgages and auto loans (March 2013), as an attempt to “de-dollarize” the economy. These requirements crucially depend on the level of outstanding credit relative to a base date (Sept. 2013 for credit and Feb. 2013 for mortgages and auto loans).
- The focus in the paper is on mortgages? Why? As noted in Choy and Chang (2014), large firms are also reliant on dollar-denominated credit.
- Are the regressions conducted at the bank level (the number of observations is not shown in Tables 5 and 6)?
- How to control for changes in the dollarization rate due to exchange rate movements?

Bank credit dollarization and the exchange rate



Comments: Conditional reserve requirements

- Assess the differential impact of these instruments on dollar-denominated credit using the cross-section of banks.
- Banks that are closer to the lending constraint should have a stronger incentive to reduce their origination of dollar-denominated debt.
- Use information from the credit registry to test whether firms substitute dollar-denominated credit for local-currency credit if their bank(s) are constrained by the conditional reserve requirement.

Minor comments

- In page 10, there is a description of the use of marginal reserve requirements for non-resident deposits as an instrument to curtail capital flows and short-term financing by banks in dollars. The impact of these policy is then described in passing in page 16. Add more on this policy or exclude it.
- Fix typos.
- The literature review is somewhat long. Focus on those papers that are more closely related to this exercise.
- Some figures are not discussed in the text.
- Figure 1 should only refer to the macroprudential policies implemented in Peru.
- Add notes to the tables. Tables should be in the main text and not the appendix.

Final thoughts

- A very interesting paper.
- It documents a series of policy interventions that could shed some light on the calibration of macroprudential policies.