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Discussant comments on

Bank capital buffers, lending growth and economic cycle: empirical evidence for Brazil

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* These comments reflect the views of the author and not necessarily those of the BIS or of central banks participating in the meeting.

Comments by Gerald P. Dwyer on Bank Capital Buffers, Lending Growth and Economic Cycle

By Benjamin M. Tabak, Ana Clara, B.T.F. Noronha and Daniel O. Cajueiro

May 2011

Bank Capital

- Many calls for more bank capital
  - Greenspan (2010)
  - Flannery (2010) – contingent convertible bonds
- What are the effects likely to be?
- Is Basel II pro-cyclical and does it affect loan growth?

Bank Capital and Lending

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

Bank Capital and Lending

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

$$\beta_1 < 0, \beta_2 < 0, \beta_3 \,?\, 0, \beta_4 < 0$$

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

Bank Capital and Lending

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

$$\beta_1 < 0, \beta_2 < 0, \beta_3 \,?\, 0, \beta_4 < 0$$

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

$$\gamma_1 < 0, \gamma_2 \,?\, 0, \gamma_3 < 0, \gamma_4 \leq 0$$

Bank Capital and Lending

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

- Results (FGLS):

$$\beta_1 > 0,\ \beta_2 > 0,\ \beta_3 > 0,\ \beta_4 < 0$$

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

- Results (FGLS):

$$\gamma_1 < 0,\ \gamma_2 > 0,\ \gamma_3 > 0,\ \gamma_4 < 0$$

Addition to Model of Bank Capital

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

- Government, foreign and private banks
  - No statistically significant differences in levels
  - Government banks have $\beta_4<0$
  - Private banks have $\beta_4>0$
  - Foreign banks have $\beta_4=0$

Addition to Model of Bank Capital

- Bank capital

$$\Delta Buf_{i,t} = \alpha_C + \beta_1 ROE_{i,t-1} + \beta_2 Npl_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 Gap_{t-1} + \varepsilon_{i,t}$$

- ΔSelic – change in overnight interest rate
  - Higher ΔSelic associated with higher ΔBuf
  - No statistically significant differences between government banks, private banks and foreign banks

Addition to Model of Bank Lending

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

- Gap times ΔBuf
  - Positive coefficient
  - Have negative coefficients on Gap and ΔBuf

Combined Coefficients

- Illustration of issue

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \ldots + \gamma_4 \Delta Buf_{i,t-1} + \gamma_5 Gap_{t-1} \Delta Buf_{i,t-1} + \eta_{i,t}$$

$$\gamma_1 = -0.710, \gamma_4 = -0.285, \gamma_5 = 3.964$$

$$\frac{\partial Loans_{i,t}}{\partial Gap_{t-1}} = \gamma_1 + \gamma_5 \Delta Buf_{i,t-1} = -0.710 + 3.964 \Delta Buf_{i,t-1}$$

$$\frac{\partial Loans_{i,t}}{\partial \Delta Buf_{i,t-1}} = \gamma_4 + \gamma_5 Gap_{t-1} = -0.285 + 3.964 Gap_{t-1}$$

Addition to Model of Bank Lending

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

- ΔSelic times ΔBuf
  - Positive coefficient on ΔSelic times ΔBuf
    - Positive coefficient on ΔSelic
    - Negative coefficient on ΔBuf

Combined Coefficients

- Illustration of issue

$$\Delta Loans_{i,t} = \alpha_L + ... + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \gamma_5 \Delta Selic_{t-1} \Delta Buf_{i,t-1} + \eta_{i,t}$$

$$\gamma_3 = 0.004, \gamma_4 = -0.246, \gamma_5 = 1.805$$

$$\frac{\partial Loans_{i,t}}{\partial \Delta Selic_{t-1}} = \gamma_3 + \gamma_5 \Delta Buf_{i,t-1} = 0.004 + 1.805 \Delta Buf_{i,t-1}$$

$$\frac{\partial Loans_{i,t}}{\partial \Delta Buf_{i,t-1}} = \gamma_4 + \gamma_5 \Delta Selic_{t-1} = -0.246 + 1.805 \Delta Selic_{t-1}$$

Addition to Model of Bank Lending

- Lending

$$\Delta Loans_{i,t} = \alpha_L + \gamma_1 Gap_{t-1} + \gamma_2 Npl_{i,t-1} + \gamma_3 \Delta Selic_{t-1} + \gamma_4 \Delta Buf_{i,t-1} + \eta_{i,t}$$

- Government, foreign and private banks
  - No differences in level
  - Some evidence that private banks respond more to buffer values
    - i.e. γ_4 is more negative for private banks than for government banks

General Comments

- I would explore some aspects of results further
- Might be better to set up equations as reduced form equations