Discussion of
“The effects of bank capital buffers on bank lending and firm activity: what can we learn from five years of stress-test results?”

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Main questions in this paper

- Does the capital buffer required in Federal Reserve’s CCAR affect banks’ loan supply?
- If yes, does it affect non-financial firms’ total debt, investment, and employment?
- Can we use the estimation result for assessing the policy effects of CCyB?
The regulatory capital reform after the GFC has (probably) contributed to enhancing resilience of banking sector...

...but, the adverse effects of the reform on loans supply and economic activity is still an open question.

The CCAR capital buffer is the most binding capital standard for large US banks from 2012 to 2016.

- The paper focuses on the periods until 2016 to avoid the effects of Basel III capital buffers.
An analysis on the relationship between bank capital and loan supply always faces an identification issue. Imagine that we estimate $\beta$ by bank-level data:

$$\text{Loan growth} = \alpha + \beta \text{ST Capital buffer} + \varepsilon$$

Does statistically significant $\beta<0$ implies that higher ST capital buffer constrains loan supply? “No.”

Another interpretation: “Banks which need to have more capital buffers have borrowers whose loan demand is low.”
The paper uses bank-firm level data for C&I loan volume in the quarterly regulatory report (FR Y-14).

The bank-firm matched data between a specific bank and a specific firm can overcome the identification issue.

\[
\text{Loan growth (bank X to firm A)} = \alpha_A + \beta \ ST \ Capital \ buffer_X + \epsilon \\
\text{Loan growth (bank Y to firm A)} = \alpha_A + \beta \ ST \ Capital \ buffer_Y + \epsilon
\]

Since the fixed effect $\alpha_A$ absorbs the loan demand effects, $\beta$ is the effects of the ST capital buffer on loan supply.
The impact of capital buffers on firm outcome:

\[ \text{Firm outcome} = \alpha + \beta \text{Firm ST buffer exposure} + \varepsilon \]

“Firm ST buffer exposure” is the average ST capital buffers weighted by loan volume from each bank.

“Firm outcome” includes total debt, investment spending, and employment.

- The effects on employment is assessed by county level data due to the data limitation.
Main results

- Larger ST buffers reduce bank C&I lending...
  - 1 %pt increase in ST buffers decreases the growth rate of utilized loans by 2%pt and committed loans by 1.5 %pt

- ...but, they have no adverse effects on firms’ total debt growth, investment spending and employment.

- The tighter capital requirement does not negatively affect real economy thanks to substitution of funding sources.
Comment 1: Do the firm–level results depend on firm characteristics?

* The paper examine only the difference between private and public firms...

* ... but, the results may depend on other firm characteristics such as size, leverage ratios, profitability, etc.

* How about splitting the sample (e.g., small firms vs. large firms) to examine the difference in firm characteristics?

* E.g., Small firms may be more difficult to find another funding sources due to the limited access to capital markets
Comment 2: Is there non-linearity in the effects of ST buffers?

* The paper assumes the effects of ST buffers are linear and independent of capita ratios.
* But, banks with lower capita ratios are probably more concerned about ST buffers.
* If we ignore such possibility of non-linearity, we may have imprecise policy implications.
Comment 2: Is there non-linearity in the effects of ST buffers?

To capture the non-linearity, how about incorporating the interaction term with capita ratios? That is,

\[ \text{Loan growth} = \alpha + \beta \text{ ST Capital buffer} + \gamma \text{ Capital ratios} \cdot \text{ST Capital buffer} + \varepsilon \]

Now, the marginal effect of ST capital buffers on loan growth is \( \beta + \gamma \text{ Capital ratios} \)

It is expected to have \( \gamma < 0 \)
Comment 3: Why does the firm-level analysis focus on multibank firms?

- On Page 11, “We look only at multibank firms; that is, firms that borrow from at least 2 banks, with at least one bank in the low-capital decline group and the other on in the high-capital decline group.”

- Why is it necessary to look only at multibank firms in the firm-level analysis? Any identification issues here?
This is a great empirical paper on the cost of regulatory reforms in the US:

- Clear empirical strategy to overcome the identification issue
- Interesting policy implications

Maybe, the authors can do more analyses to deepen our understandings about the effects of ST capital buffers by firm characteristics and the non-linearity.