Discussion of "Banks Credit and Productivity Growth"

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- A version of the AABM (JME 2010) model
- Each firm makes a short- vs long-term capital allocation decision...

  ... in the face of a shock to liquidity that could limit the firm's ability to raise bank credit for long-term investment

- Under complete markets:
  - The liquidity shock doesn't matter
  - Higher current productivity: Bank credit obtained for long-term investment ↓ (*opportunity cost effect*)
  - Higher (expected) future productivity: Bank credit ↑

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  ... in the face of a shock to liquidity that could limit the firm's ability to raise bank credit for long-term investment

- Under incomplete markets:
  - If big enough, liquidity shock constrains the amount of credit the firm can obtain
  - Higher current productivity: If a *liquidity risk effect* dominates, then bank credit obtained for long-term investment ↑
  - Higher (expected) future productivity: Bank credit ↑ (but not as much as under the complete markets case)

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Empirical evidence:

- Using COMPNET data from Germany, France, Italy:
  - Firm level correlations between credit and productivity growth consistent with the complete markets benchmark in Germany and France
  - But... more consistent with the incomplete markets benchmark in Italy

Broad reactions

- Clearly an important question.

  (Actually a bit surprising that there isn't a bigger literature already on this specific topic.)

- Theoretical predictions are clean and intuitive.

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However: Have several comments urging more thinking on ...

- the best way to bring the theory to the data, in terms of the empirical specification; and

- establishing causality

1. Formulating a test of the theory

Theoretical predictions are described in terms of how bank credit would correlate against current and future productivity *levels*:

$$\left(\frac{z_t}{\theta - z_t}\right)^{1-\alpha} = \frac{1}{1+R_t}\frac{E_t[A_{t+1}]}{A_t} \tag{C}$$

$$\left(\frac{z_t}{\theta - z_t}\right)^{1-\alpha} = \underbrace{(1-\tau_t(A_t))}_{+}\frac{1}{1+R_t}\frac{E_t[A_{t+1}]}{A_t} \tag{NC}$$

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(i) Would help to be clearer with regard to what z_t maps to in the data.

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(ii) Current test: Regress bank credit growth (Δz_t) on current and future productivity *growth* (ΔA_t, $\Delta E_t[A_{t+1}]$)

Rationale? Running equations (C) and (NC) in first differences?

Implicitly: Requires a stronger assumption about how expected and actual productivity line up two periods ahead.

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(ii) A more direct test: Why not regress bank credit (z_t) against productivity growth $\left(\frac{E_t[A_{t+1}]}{A_t}\right)$ and the productivity level at time t (A_t)?

- Theory suggests that the coefficient on productivity growth $E_t[A_{t+1}]/A_t$ will be positive in both the (C) and (NC) cases.
- But controlling for $E_t[A_{t+1}]/A_t$, the coefficient on the level effect of A_t can be used to discriminate between the (C) and (NC) cases.

  Would be positive and significant only in the (NC) case.

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(iii) Currently, control variables on the right-hand side include: growth of availability of internal funds, leverage, year dummies, sector dummies.

Would be better to justify this list of controls with reference to the theory.

For eg: Theory indicates that $1-\tau_t$ is increasing in l_t, suggesting that controls for firm size (sales, employment) would be helpful.

2. Causality

Correlations are suggestive. But current empirical exercise is silent on the issue of identification.

- Important to resolve this, as it is easy to tell a reverse causality story (especially for the positive correlation between bank credit growth and observed future productivity growth)

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Suggestions:

1. Panel GMM methods: Arellano-Bond, Blundell-Bond.

2. Constructing a Bartik-style firm-level instrument for productivity growth, $E_t[A_{t+1}]/A_t$:

$$\omega^d_{is,t-1} \Delta IMP^d_{st}$$

   - $\omega^d_{is,t-1}$: (Lagged) Share of destination d in firm i's export portfolio
   - ΔIMP^d_{st}: Change in destination d's industry-s imports (less imports from firm i's country)

3. Some smaller remarks

- Definition of the liquidity shock distribution, S_t, was missing from the description of the model
- On p.11: (C) coincides with (NC) when $\tau = 0$, not when τ equals one.
- A more detailed description of COMPNET would help: How was the representativeness of the firm sample assured?
- Why focus on Germany, France, Italy? How about other countries in COMPNET?
- Is there any chance of getting firm survey data on future expectations of sales/growth?
- Empirical specification: How were the standard errors clustered?

Final remarks

- Great project with an important research question.
- Promising empirical strategy to discriminate between the complete and incomplete capital markets case.
- Look forward to seeing how the project develops, especially the empirical evidence.