Discussion of

"International Financial Flows and Misallocation"

by F. Cingano & F. Hassan

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*The views expressed in this paper are those of the author and do not necessarily represent the views of the Bank of England or its committees.

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[5] Estimate which firms benefited more from increase in credit supply.
- Same estimator as in [3], by D_i.

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- Banks that relied more on foreign funding before the shock increased their credit supply relatively more than the average bank.

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- But also: to low collateral firms, conditional on being high productivity.

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- Some issues for discussion:

  [#1] Persistence.

  [#2] Identification of the push shock.

  [#3] Sorting of banks and firms.

  [#4] Triple interactions.

[#1] Persistence

- Baseline specification:

$$\ln C_{ibt} = \alpha_{ib} + \alpha_{it} + \beta \left(Exp_b \times Post_t \right) + ... + \epsilon_{ibt}$$

- Log-level of outstanding credit ($\ln C_{ibt}$) surely is highly persistent. Problematic.

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- Safer to estimate:

$$\Delta \ln C_{ibt} = \alpha_{ib} + \alpha_{it} + \beta \left(Exp_b \times Post_t \right) + ... + \epsilon_{ibt}$$

FIRST DIFF.

[#2] Identification of a push shock to capital flows

- $Post_t$: time dummy equal to 1 from 2002, and 0 otherwise.
  - Sharp acceleration in Italian banks' foreign liabilities (KF_t^{IT}) from 2002:Q3.
  - Literature attributes much of this increase to push factors.
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- Can do better than that! Some issues:
  - A big fraction (but surely not all) of KF_t^{IT} was driven by global factors.
  - Need to take a stand on the timing of the shock.
  - Don't fully exploit time variation in your data set.

[#2] Identification of a push shock to capital flows

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- E.g.: Project log-changes of Italian banks' foreign liabilities on their world counterpart:

$$\Delta KF_t^{IT} = c + \lambda \Delta KF_t + \varepsilon_t^{IT}, \quad \text{with } KF_t = \sum KF_t^k \quad \forall k \neq IT$$

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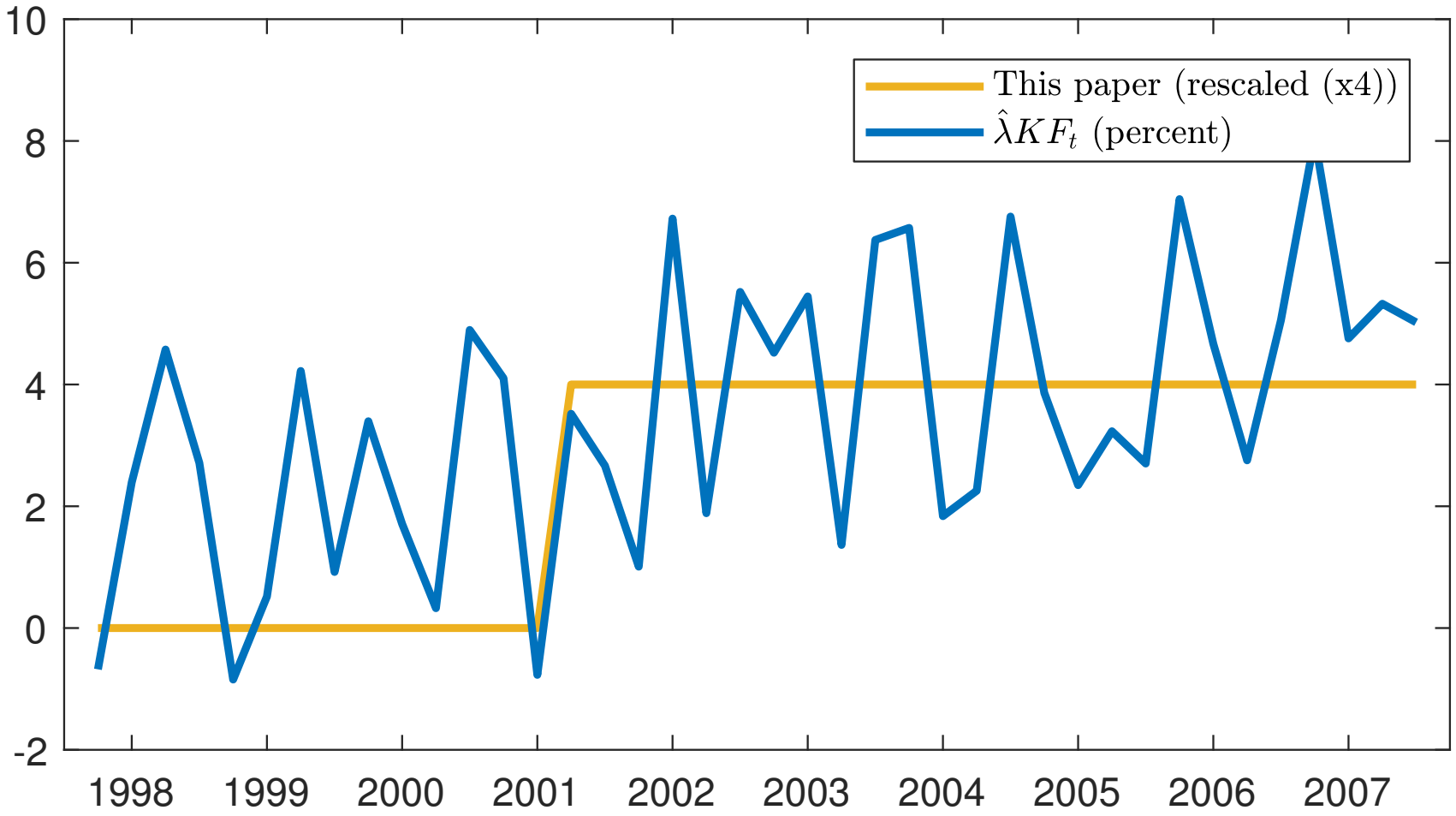
  - Assumption: country-specific pull shocks cannot affect the world factor in capital flows.

- Then, can estimate:

$$\Delta \ln C_{ibt} = \alpha_{ib} + \alpha_{it} + \beta \left(Exp_b \times \hat{\lambda}\Delta KF_t \right) + \ldots + \epsilon_{ibt}$$

FIRST DIFF. PUSH SHOCK

[#2] Identification of a push shock to capital flows



NOTE. Fitted values from a regression of the log-change in the stock of Italy foreign liabilities (ΔKF_t^{IT}) on a constant and the log-change in the global stock on foreign liabilities (ΔKF_t). The solid blue line plots $\hat{\lambda}\Delta KF_t$. The solid yellow line plot $Post_t$ rescaled by a factor of 4.

[#3.1] Sorting of banks by exposure to push shock

- Exp_b: Share of foreign liabilities over total liabilities for bank b over the 1998-2000 period.
- **Main idea** Banks with high Exp_b over 1998-2000 have a greater funding opportunity from push shock in 2002-2007.
- **Assumption** Difficult/costly for lenders to change their liability structure.

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- How reasonable is this ex-ante classification?

[#3.1] Sorting of banks by exposure to push shock

- Large degree of persistence in the share of foreign liabilities when comparing 1998-2000 vs 2002-2007 averages.

	(1) Share of total inflows (02-07)	(2) Growth of foreign liabilities (post vs. pre)	(3) Rank foreign liability ratio (02-07)
Foreign liability ratio (98-00)	0.54***	0.51***	
	(0.03)	(0.04)	
Rank foreign liability ratio (98-00)			0.75***
			(0.03)
Bank Controls	✓	✓	✓
Observations	494	494	494
$Adj.R^2$	0.80	0.63	0.71

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- Additional evidence welcome:
  - How does the 1998 *vs.* 2007 scatter look like?
  - How does the distribution of Exp_b look like over time?

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- **Alternative** Data is rich enough to compute Exp_b by year. Then, can estimate:

$$\Delta \ln C_{ibt} = \alpha_{ib} + \alpha_{it} + \beta \left(Exp_{b,t-1} \times \hat{\lambda} \Delta KF_t \right) + ... + \epsilon_{ibt}$$

FIRST DIFF.

PUSH SHOCK

BANK EXPOSURE IN t-1

[#3.2] Sorting of firms by productivity and financial constraints

- D_i: firm dummy equal to 1 if a firm characteristic over the 1998-2000 period is greater than its sectorial average, and 0 otherwise.
  - Firms sorted by productivity (MRPK/TFPR) and collateral constraints (Total Assets).

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- **Alternative** Data allows to compute D_i by year. Then, can estimate:

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FIRM DUMMY IN t-1

BANK EXPOSURE IN t-1

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[#4] Sharpening the inference: Triple interactions

- Bank-firm-time dimension not fully exploited $\Rightarrow$ Can add bank-time fixed effects.
  - Control for both observed and unobserved time-varying heterogeneity at firm and bank level. [Jimenez et al. (2014)]

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- Triple interaction regression:

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FIRST DIFF. — BANK-TIME FE — FIRM DUMMY IN t-1 — PUSH SHOCK — BANK EXPOSURE IN t-1

- β captures increase in credit supplied by a bank that is *relatively* more exposed to push shock to a firm that is *relatively* more productive.

Other points

Financial constraints

- Size (Total Assets) used as a proxy for firms' financial constraints.
- Many other dimensions to consider:
  - Leverage, age, liquid assets, etc.
  - Should add all of them in the triple interaction regression.

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Standard errors

- Standard errors clustered at the bank-sector (2 digits) level. Should be more conservative?
  - Two-way clustering by bank and year.

In sum: Great paper on an important question

- Big issue of whether (cross-border) credit gets allocated to high productivity firms.
  - E.g.: southern Europe productivity slowdown.

- **This paper** Exploits granular bank-firm-time data to provide evidence on capital flows and misallocation.

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  - Identification of the push shock in the time series.
  - Sharper inference in the cross-section.

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- Looking forward to future versions!