Incorporating Financial Stability in Policy Analysis
Garcia Cicco et al.

Discussion by
Michael B. Devereux

BIS-CCA Research Network Conference
Mexico City Jan 28/29, 2015
Discussion of project

• Document describes a basic OE NK model with FF and reports results of estimation and simulation of similar shocks for
  – Chile, Columbia, Mexico and Peru
  – Adapts NK-FF model to incorporate commodity effects

• Ambitious and highly productive project
  – Document reveals a huge coordinated effort that has already borne fruit
  – Substantial coherence in policy frameworks

• Reconciliation of models needs to be done
  – Promises to offer major insights into monetary and macro-prudential policy for LAM
Discussion

- Model and estimation too detailed to get into the nuts and bolts
- More general comments, quibbles, suggestions, observations
Plan of discussion

• Discuss the basic modeling template used
  – Compare with other FF models
• Implications for macro-prudential policy
• Comment on assumptions about financial market structure
• Comment on nature of capital flows
• Suggestion for extending the model to a richer theory of international financial intermediation
How does model compare with other FF models?
The current model (assuming only one intermediary)

Budget constraint of household

\[ C_t + (1 + \gamma_t)D_t + B_t = W_t H_t + \Lambda_t + R^D_t D_{t-1} + R_t B_t \]

\[ \gamma_t = \gamma \left( \frac{Q_t K_{t+1}}{N_t} \right)^\chi \] is external to household and \( \gamma'(\cdot) > 0 \).

\( N_t \) is intermediaries net worth.

Gives a spread on loan rate over the safe government rate

\[ R^D_t = (1 + \gamma_t)R_t \]

Intermediaries borrow and lend at same rate

\[ R_{K_{t+1}} = R^D_t \]
Models with explicit intermediation structure (e.g. Gertler Karadi)

Enforcement constraint $N_t \geq \kappa Q_t K_{t+1}$

Equilibrium spread is

$$R_{K_{t+1}} - R^D_t \geq \phi\left(\frac{Q_t K_{t+1}}{N_t}\right)$$

$$\phi'(\cdot) > 0$$

Intermediaries choose deposits and investment subject to enforcement constraint (spread is internalized).
Conclusion in simulation

- Has very similar aggregate IRFs
Calibrate so shock to spread is the same (here a TFP shock)
Both models have a financial accelerator which looks alike.
Conclusion in simulation

• Has very similar aggregate IRFs

• Does this mean it has same implications for macro-prudential policies?

• Perhaps not?
  – Contract structure in financial intermediation may be very important for response to prudential regulation
With externalities

Aggregate Return

Individual return

Investment
Example: with explicit balance sheet effects, decisions may lead to more risk-taking with no-loss guarantees

(may show up only at higher order approx. though)
Some more comments on the model

- Domestic Households have full access to domestic bank deposits, government securities and foreign bonds
- Is this reasonable for the countries involved?
- Maybe not
  - Measures of financial market access for these countries are far lower than for high-income countries
  - See following graph
Adults with Account at Financial Institution

*Global Findex Database, World Bank*
How much difference could this make?

• Perhaps a lot
  – Response to external interest rate shocks may differ (see below)
  – Ability to actively use sterilized intervention
  – May affect the dynamics of financial accelerator?

• Also, the extent of `financial inclusion’ may affect the conduct of monetary policy
  – See recent BIS wp by Mehrotra and Yetman 2015
Interest rate shocks for Chile and Colombia

- Expansionary, as in Mundell-Fleming model
Solutions?

• Incorporate working capital, as in Neumeyer-Perri (2004)?
• Can easily combine into a model with financial frictions
  – Mendoza 2010, etc.
• But more generally, financial linkages may be much more complicated?
Financial linkages

- Banks here all financed with domestic deposits
- Three implications
  - No direct exposure to currency risk due to maturity mismatch
  - No direct vulnerability to external funding shocks (global financial cycle)
  - With foreign funding of banks, gross capital flows may matter
Therefore, much of intraregional bank expansion, both in the Southern Cone as well as in Central American countries, has tended to reflect corporate banking activities. Against this background, trade was cited as an important driver in the Latin American region as well. However, with only about a quarter of trade flows being intraregional, compared to about half in Asia, the pace of accompanying financial integration among Latin American economies has been slower. The integration process has also been more concentrated, with Brazilian and Colombian banks being among the most regionally active institutions, given the rising regional presence of large corporates from both countries.

Among the other important drivers mentioned at both workshops was macroeconomic and institutional convergence, with a broad trend towards better institutions, more predictable policies and independent central banking facilitating banks' cross-border expansion. In Latin America, in particular, workshop participants highlighted that South-South macroeconomic integration continued to be on the rise, as illustrated by FDI flow patterns, and that this would tend to support financial integration. In addition, participants at both workshops mentioned the (temporary, in some cases) retrenchment of advanced economy banks from non-core EME locations and business lines as a key catalyst for the most recent round of intraregional bank expansion. Saturation of domestic markets and various "soft" factors (such as geographical and cultural proximity) were also highlighted as additional determinants of regional expansion.

Bank credit to Latin America and the Caribbean

Graph 1B

International claims on the region

1 Sum of all cross-border claims and locally extended claims in foreign currency.

2 Intraregional share is the sum of international claims on the emerging Latin America and Caribbean region of regional banks (Brazil, Chile and Mexico) and Caribbean offshore banks (Panama) divided by total international claims on the emerging Latin America and Caribbean region.

Source: BIS consolidated banking statistics (immediate borrower basis).

Constraints on further regionalisation. Private sector participants at both workshops stressed that achieving meaningful growth in foreign markets can be very challenging. One of the reasons why participants thought regional integration would likely be slower, and more selective on a country-by-country basis, than anticipated in the CGFS report was the risk of uneven regulatory implementation.
Chile: Gross Inflows/Outflows (IFS)
Model with explicit role for gross flows, foreign intermediaries

- Devereux and Lombardo, 2015
- Global banks – funding for emerging market banks
  - Balance sheet constraints at both levels
- US policy shocks affect BS of global banks, reduce lending to EME banks, shrinking in BS for both
  - Coordinated increase in spreads
- Similar to Bruno and Shin 2014
GDP response:

With financial frictions at both levels, policy tightening in US causes a global downturn

Without FF, does not
Contraction in Capital inflows and outflows

Fall in capital inflows to EM banks

Fall in capital outflows to US

US dollar denomination makes a difference
You also get a common increase in spreads, in both core and periphery.
Implications

• Portfolio positions and gross flows may be important in environment of financial frictions
Implications for policy?

• Optimal cooperative monetary policy can sharply reduce co-movement of financial shocks
Benchmark vs. Ramsey policy
Other issues

• Fiscal side is minimized
  – Interaction between commodity cycle and fiscal balances may be important for some countries
  – How pro-cyclical is fiscal policy?

• Need to incorporate commodity sector more explicitly into consumption and investment sectors?
  – There may be important distributional effects of commodity shocks
    • across sectors and regions
Big picture issues

• Allowing for risk, non-linearities, crises, sudden stops
  – May be very important for evaluation of macro-prudential policy
  – More easily done in small models
  – But some results with full multi-country DSGE models
    • Devereux and Yu, 2015
Conclusions

• All these suggestions are more for general background
• Current project has made major strides
• Look forward to seeing future developments