Towards a New Monetary Approach to Exchange Rate Determination
by Cesa-Bianchi, Kumhof, Sokol and Thwaites

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International Macro Workshop, BdF, 2017
The goal of the paper

- Study the role of the banking system in the global transmission of shocks
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The mechanisms at work

Regulatory framework creates wedges between assets
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**Regulatory framework creates wedges between assets**

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  - Wedge between different currency assets

- And the interaction of the two with balance sheet frictions and each other
"bank j faces a penalty proportional to the size of its balance sheet if net worth in the next period falls short of $\gamma$ times risk-weighted assets"
Capital Adequacy Ratio

"bank j faces a penalty proportional to the size of its balance sheet if net worth in the next period falls short of $\gamma$ times risk-weighted assets"

$$\left[ i_{lH,t} L_{H,t}(j) + E_{t+1} i_{lF,t} L_{F,t}(j) + i_{lH,t} L_{H,t}^b(j) + E_{t+1} i_{dF,t} D_{F,t}(j) \right] \omega_{t+1}$$
Capital Adequacy Ratio

"bank $j$ faces a penalty proportional to the size of its balance sheet if net worth in the next period falls short of $\gamma$ times risk-weighted assets"

\[
\left[ i_{H,t} L_{H,t}(j) + E_{t+1} i_{F,t} L_{F,t}(j) + i_{b_{H,t}} L_{H,t}^b(j) + E_{t+1} i_{d_{F,t}} D_{F,t}(j) \right] \omega_{t+1}^b
- i_{o_{H,t}} O_{H,t}(j) - E_{t+1} i_{o_{F,t}} O_{F,t}(j) - E_{t+1} i_{i_{F,t}} L_{F,t}^b(j)
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- i_{oH,t}O_{H,t}(j) - E_{t+1}i_{oF,t}O_{F,t}(j) - E_{t+1}i_{lF,t}L_{bF,t}(j) \\
- E_{t+1}s_{t}^b(j)O_{F,t}(j) - P_{t+1}G_{gfa,t}(j) + P_{t+1} \left( \Pi_{t+1}^R(j) - \Lambda_{t+1}^j \right)
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\[
\begin{align*}
\left[ i_{lH,t} L_{H,t}(j) + E_{t+1} i_{lF,t} L_{F,t}(j) + i_{lH,t} b^{b}_{LH,t}(j) + E_{t+1} i_{dF,t} b^{b}_{DF,t}(j) \right] \omega_{t+1}^{b} \\
- i_{oH,t} O_{H,t}(j) - E_{t+1} i_{oF,t} O_{F,t}(j) - E_{t+1} i_{lF,t} b^{b}_{LF,t}(j) \\
- E_{t+1} s_{t}^{b}(j) O_{F,t}(j) - P_{t+1} G_{gfa,t}(j) + P_{t+1} \left( \Pi_{t+1}^{R}(j) - N_{t+1}^{j} \right) \\
< \\
\gamma \left[ i_{lH,t} L_{H,t}(j) + E_{t+1} i_{lF,t} L_{F,t}(j) + \zeta \left( i_{lH,t} b^{b}_{LH,t}(j) + E_{t+1} i_{dF,t} b^{b}_{DF,t}(j) \right) \right] \omega_{t+1}^{b}
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\[
\left[R_{H,t+1}^A A_{H,t} + R_{F,t+1}^A A_{F,t}\right] \omega_{t+1} - R_{t+1}^L \hat{L}_t + \psi_{t+1} < \gamma \left[R_{H,t+1}^A A_{H,t} + \zeta R_{F,t+1}^A \right] \omega_{t+1}
\]
Simplifying notation a bit and ignoring $\Psi_{t+1}$:

\[
L_{t+1} \equiv R_t^L \tilde{L}_t \\
A_{t+1} \equiv R_{H,t+1}^A A_{H,t} + R_{F,t+1}^A A_{F,t+1} \\
RWA_{t+1} \equiv \gamma \left( R_{H,t+1}^A A_{H,t} + \zeta R_{F,t+1}^A A_{F,t+1} \right)
\]
We then have

\[ \omega_{t+1}[A_{t+1} - RWA_{t+1}] < L_{t+1} \]
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- However, since \( \gamma < 1 \) this not possible.
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If wholesale bank only lends to domestic retail banks

\[ A_{t+1} = R^A_{H,t+1} A_{H,t} \]
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If wholesale bank only lends to domestic retail banks

\[ A_{t+1} = R_{H,t+1} \times A_{H,t} \]

Which would imply

\[ RWA_{t+1} = \gamma A_t \]
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\[ F \left( \frac{L_{t+1}}{\gamma \zeta A_{t+1}} \right) < \Pr(\text{breach}) < F \left( \frac{L_{t+1}}{\gamma A_{t+1}} \right) \]
Capital Adequacy Regulation

Two margins of adjustment once breach probability is too high:

- Decrease balance sheet size
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- Shift portfolio towards more domestic trades
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  - Ideally, risk-weights would be tied to difference in portfolio risk
Capital Adequacy Regulation

Should we care?

• More than inducing less risky portfolio choices, CAR acts as a non-tariff barrier to international capital flows
• It still limits risk-taking via the effect on balance sheet size
• But is key for movements in spreads and portfolio shifts
• Induces correlation between leverage and capital flows
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Currency Mismatch Regulation

Currency Mismatch Regulation requires that foreign currency assets and liabilities from retail banks/non-banks to be matched by deposits in foreign currency.

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*Simplifying assumption but not really an issue*
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The CMR regulation interacts with the transaction cost $s_t^b \ddot{d}_{F,t}$.

where

$$s_t^b = \frac{S_t^{mb} \psi_b}{\vartheta_b} \left( \ddot{d}_{F,t} \right)^{-\vartheta}$$
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  - An interbank deposit demand shock $S_t^m b$
I find this confusing...
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The results
Concluding

Very promising paper

• Complex model, able to say much about a number of issues
• Due to complexity, certain assumptions require more clarity on their importance for the model mechanics
• And would definitely like to see IRFs to wholesale banking shocks

I look forward to the next iteration!
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