Discussion of “Credit and Macroprudential Policy in an Emerging Economy: a Structural Model Assessment” by Horacio A. Aguirre and Emilio F. Blanco

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The views expressed herein are those of the author. No responsibility for them should be attributed to the Bank of Canada.
What they do

- Develop and estimate macroeconomic models of the Argentinean economy with the following key ingredients:
  - Credit market
  - Sterilized intervention in the foreign exchange market
  - Capital requirements

- Evaluate the benefits of the interaction of monetary policy, foreign exchange intervention and capital requirements during the period 2003-2011.
Some key findings

- Shocks to lending rates weigh on macroeconomic variables, principally through effects on output growth.
- The specification of the capital adequacy ratio plays a very important role in estimating the sensitivity of output growth to spreads in the aggregate demand equation.
- Interest rates faced by households and firms depend negatively on output growth and positively on delinquency rates.
- Significant deviations from the standard UIP condition are needed to explain the data.
- Inflation is mainly determined by backward-looking behavior.
Outline

1. The model
2. The importance of different ingredients in the model
3. The evaluation of the interaction of different policies
4. Conclusion
The model: aggregate demand

- Try more disaggregation of aggregate demand block
  - Consumption: it can be linked with households spread
  - Investment: it can be related with firms spread
  - Government spending: simple rule
  - Exports: foreign demand and real exchange rate
  - Imports: domestic demand and real exchange rate

- This disaggregation would allow to:
  - Improve the identification of effects of risk-free interest rate, exchange rate and spreads.
  - Have a better characterization of credit to different agents.
  - Consider shocks to foreign demand in the analysis.
The model: modified UIP

- It can be written as:

\[ e_t = \frac{-i_t + i^*_t}{2\omega_1 - 1} + \frac{\omega_1 e_{t+1}}{2\omega_1 - 1} + \frac{(\omega_1 - 1)e_{t-1}}{2\omega_1 - 1} + \text{others} \]

- Estimates of \( \omega_1 \) are between 5.6 and 6.2 whereas standard UIP requires \( \omega_1 = 1 \).

- *Others* is a function of net international reserves. In contrast, in standard open economy models, it is a function of total NFA (including private sector NFA).

- To characterize realistically the evolution of NFA, we need to model exports and imports.
The model: other equations

- Allow interest rate faced by firms to appear in aggregate supply and see if the cost of working capital play a role to explain inflation.
- Try setting prior for $B_3 = 1$ in equations below

\[
\hat{\gamma}_{H,act}^t = B_1 \hat{Delinquency}_t^H - B_2 \hat{y}_{t-1} + B_3 \hat{i}_t + \varepsilon_{H,act}^t
\]

\[
\hat{\gamma}_{F,act}^t = B_1 \hat{Delinquency}_t^F - B_2 \hat{y}_{t-1} + B_3 \hat{i}_t + \varepsilon_{F,act}^t
\]
The importance of different ingredients

- Three key ingredients:
  - Credit markets and their influence on the economy
    \[ g_t^y = \beta_1 E_t g_{t+1}^y + \beta_2 g_{t-1}^y - \beta_3 \hat{r}_t + \beta_4 \Delta \hat{e}_{t}^{tri} - \beta_5 s f_t - \beta_6 (s p r e a d_{t-1}) + \epsilon_t^y \]
    - The size of \( \beta_6 \) is crucial.
  - Sterilized intervention in the foreign exchange market
    \[ \hat{i}_t = \hat{i}_t^* + \omega_1 E_t \hat{\delta}_{t+1} + (1 - \omega_1) \hat{\delta}_t + \omega_2 \hat{b}_t + \omega_3 \hat{r} e s_t + \lambda_t \]
    - The size of \( \omega_2 \) and \( \omega_3 \) are important.
The importance of different ingredients

- Last key ingredient:
  - Capital adequacy ratio (CAR): its role in the transmission of shocks depend on the value of $B_4$ in the equations below

  $$\hat{v}^{act,H}_t = B_1^H Delinq^H_t - B_2^H g^y_{t-1} + B_3^H i_t + B_4^H CAR_t + \varepsilon_t^{H act}$$

  $$\hat{v}^{act,F}_t = B_1^F Delinq^F_t - B_2^F g^y_{t-1} + B_3^F i_t + B_4^F CAR_t + \varepsilon_t^{F act}$$

  - CAR rule plays a very important role in estimating the sensitivity of output growth to spreads in the aggregate demand equation.

  - The size of $\beta_6$ without CAR rule is 0.12 whereas the one with a CAR rule that reacts to aggregate credit spread is 0.37.
The evaluation of the interaction of different policies

- Their method does not hold constant parameter values associated with private sector behavior when evaluating the policies. They think that the estimated coefficients reflect different behavior due to different policy.

- Different parameter values do not reflect different behavior. Instead, they reflect different estimates due to different estimation strategies.

- Alternative approach is needed to evaluate the benefits of the interaction of policies.
Conclusion

- Very interesting paper. Proposes different macroeconomic models to explain the transmission of different shocks in Argentina taking into account interaction of different policies.

- Assessment of the importance of each ingredient of the model would be useful.

- The aggregate demand and modified UIP can be improved.

- Evaluation of benefits of interaction of policies requires a different approach.