Discussion of
"The Credit Channel Through the Lens of a Semi-Structural Model" by Francisco Arroyo Marioli, J. Sebastian Becerra, and Matias Solorza

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Economic and Monetary Policy in Advanced and Emerging Market Economies in the times of COVID-19
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* The views expressed here are those of the author and do not necessarily reflect the views of the Federal Reserve Board or of the Federal Reserve System.

1. Overview

- Very nice, informative, well-written paper.
- Semi-structural macro-banking model.
- Banking block: equations for credit spread, loan interest rate, credit growth, and loan loss provisions.
- Model estimated with Chilean data; IRFs, variance, hist. decompositions.
- Findings:
  - Banking sector amplifies demand shocks to output gap through pro-cyclical credit supply.
  - During the COVID-19 pandemic, credit supply had a counter-cyclical role, reflecting unconventional monetary policy.

2. Amplification

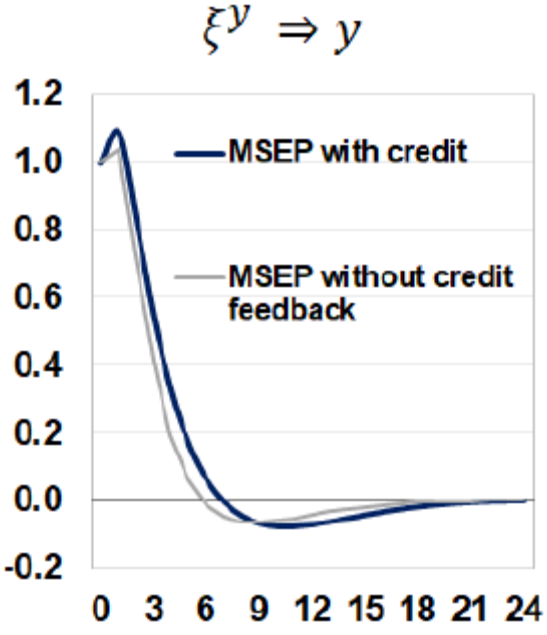
- Positive demand shock boosts output gap, credit growth.
- Credit growth provides an extra boost to output gap through the IS curve.
- Extra 0.13 ppt amplification effect for 1 ppt demand shock.

$$SPR_t = i_t^{Loan} - i_t$$

$$i_t^{Loan} = \eta_1(i_t - i_n) + \eta_2 LLP_t + \eta_3 CAR_t + \varepsilon_t^{i^{Loan}}$$

$$\hat{cr}_t = \theta_1 \hat{cr}_{t-1} + \theta_2 y - \theta_3 SPR_t + \varepsilon_t^{\hat{cr}}$$

$$LLP_t = \vartheta_1 LLP_{t-1} - \vartheta_2 \left(\frac{\sum_{i=1}^{4} y_{t+i}}{4} \right) + \vartheta_3 \hat{cr}_{t-1} + \varepsilon_t^{LLP}$$



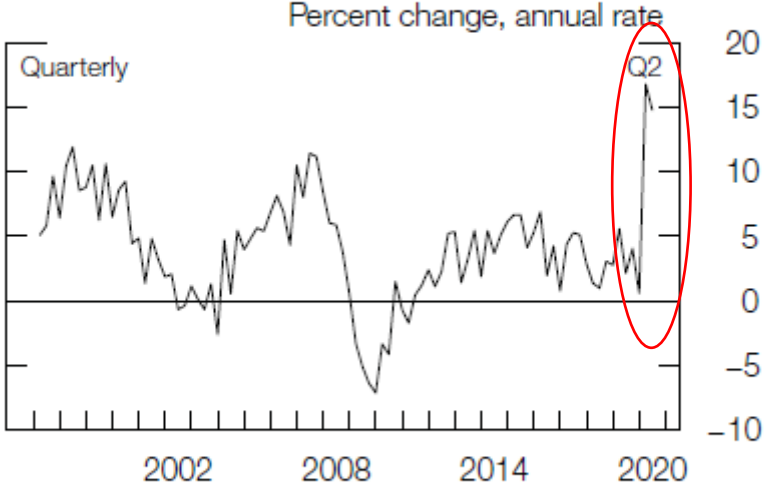
3. Comment: Drivers of credit growth during the pandemic

- Paper's findings:
  - Credit supply is generally pro-cyclical.
  - However, credit supply had counter-cyclical role during the COVID-19 pandemic, reflecting unconventional monetary policy.
- Question:
  - Real credit growth in 2020: how much was unconventional monetary policy (UMP) vs. credit line drawdowns (CLDDs)?
- Suggestions:
  - UMP targets credit supply; CLDDs reflect credit demand.
  - Use a measure of real credit growth that abstracts from CLDDs; credit commitments rather than utilization.

3. Comment: Drivers of credit growth during the pandemic

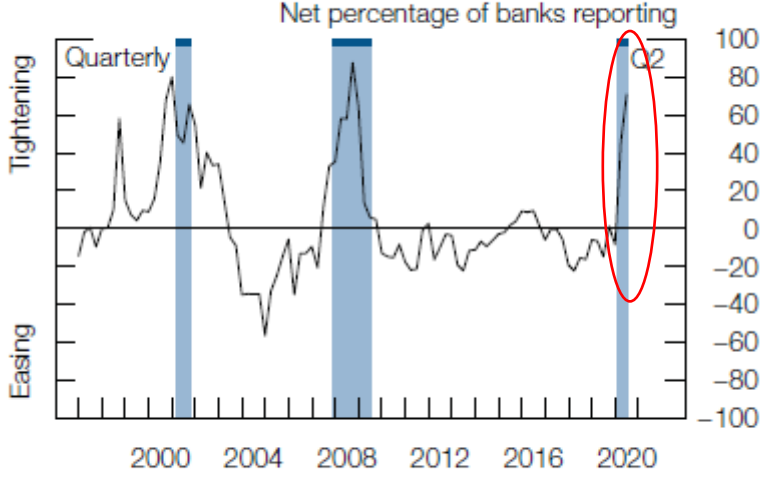
- In the United States:
  - During 2020:Q1, credit utilization surged due to CLDDs; banks tightened credit supply.
  - Effect of PPP, UMP occurred later.

2-3. Growth of Real Aggregate Debt of the Business Sector



Source: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

3-4. Change in Bank Lending Standards for Commercial and Industrial Loans



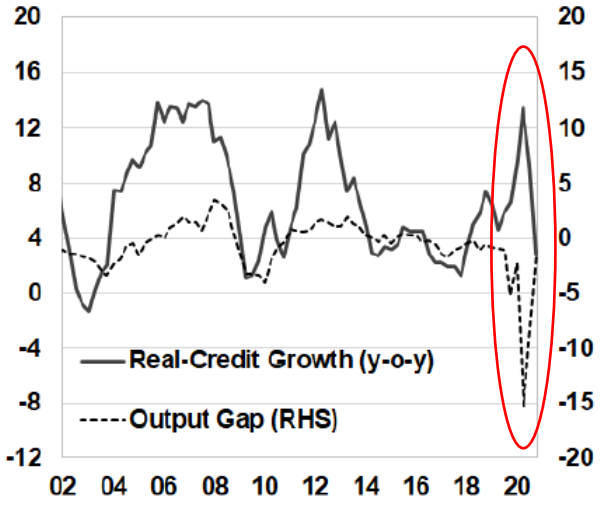
Source: Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices; Federal Reserve Board staff calculations.

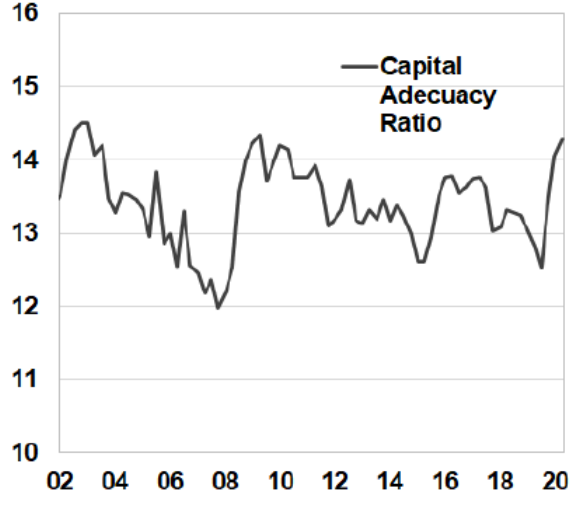
- Source: Federal Reserve, Financial Stability Report, November 2020

3. Comment: Observables

- Real credit growth in Chile:
  - Credit growth spiked in 2020, when the output gap contracted sharply.
  - Does it reflect UMP or CLDDs? Credit commitments or utilization?

- Capital adequacy index (CAR):
  - Data counterpart for capital requirements or risk in credit portfolio?
  - Is CAR correlated with LLP?





4. Comment: Historical decomposition

- Results:
  - Credit growth shocks (yellow) have large positive contributions to real credit growth and output gap in 2020.
  - They offset large negative contributions from other exogenous shocks (blue).
  - Paper: *The innovations in credit during the global recession and, in particular, during the current pandemic, can potentially reflect the role of non-conventional monetary policy.*
  - Do credit growth shocks reflect CLDDs or UMP?

Figure 8: Credit Growth. (annual var. (%), demeaned)

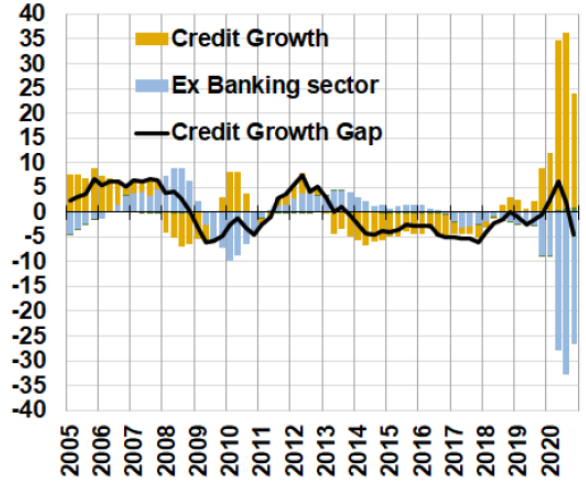
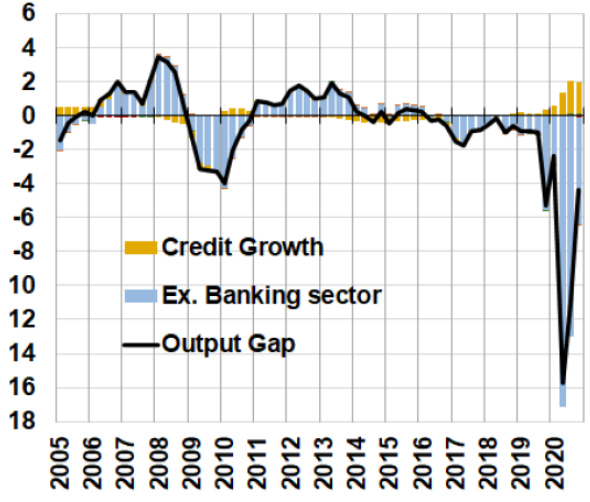


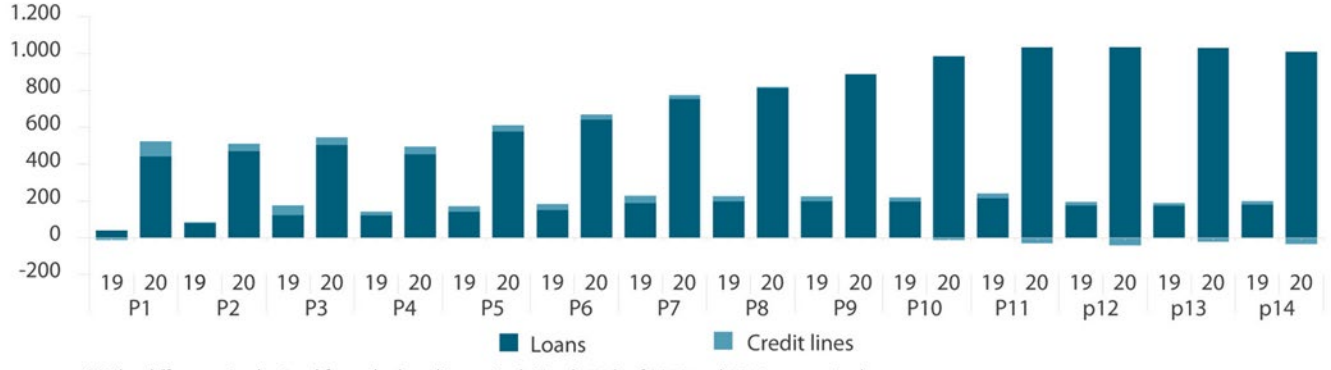
Figure 10: Output Gap. (%)



5. Comment: UMP in Chile during the COVID-19 pandemic

- Did UMP target term loans or credit lines? (April-July 2020)
  - *The Central Bank of Chile (CBC) established a new credit line facility for commercial banks, access to which is conditional on the growth of credit issuance. The main purpose of this facility, named FCIC, is to encourage banks to continue to finance households and firms, particularly small and medium-sized enterprises that do not have access to capital markets. (Source:* https://www.bcentral.cl/en/web/banco-central/exceptional-measures)

Graph 4: Stock changes of commercial loans
(millions of dollars)



(*) The difference is obtained from the baseline period, March 16th of 2019 and 2020, respectively.
(**) The data is subject to rectifications from the entities.
Source: Central Bank of Chile.