
BCBS-GCFS Research Conference: How effective were policy measures in supporting bank lending during the Covid-19 crisis? May 10-11, 2021

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The COVID-19 Shock and Firm Financing: Government or Market? Or Both?

- Paper studies the impact on bank-loan take-up following the implementation of two programs in Chile in 2020:
  - FCIC, a funding for lending type credit line to commercial banks
  - FOGAPE-COVID, an expansion of existing guarantees on business lending (higher eligibility threshold)
- RDD analysis shows that eligibility led to an increase in domestic borrowing relative to foreign borrowing
  - Exploiting great data with comprehensive information on banking relationships and composition of debt
- Model to study trade-off between foreign and domestic borrowing
  - Complementarity between FCIC (counteracting upward pressure on rates in light of higher demand) and FOGAPE-COVID (relieving collateral constraint)
Substitution between FX and CLP loans – model

- Key features of the model
  - Firms have common technology $y_i = A_2 k_i^{0.5}$
  - Firms borrow to finance $k_i$:
    - Foreign borrowing at rate $R^*$ up to a limit defined by international collateral $d_f^i \leq \frac{\lambda_f^i}{R^*}, \ lambda_f^i \sim \mathcal{U}[0, \bar{\lambda}]$
    - Domestic borrowing at rate $R_2$, collateralized with future production (and any international collateral remaining) so that $d_d^i \leq (\theta_d y^i(k^i) + \lambda_f^i - R^* d_f^i) \times \frac{1}{R_2}$, with $k^i = d_d^i + d_f^i$
    - $R_2$ is endogenous and adjusts to ensure demand for loan Is equal to domestic household endowments $e_1$

- Parameter assumptions:
  - $R^* < R_2$ so that $d_f^i = \frac{\lambda_f^i}{R^*}$
  - $\bar{\lambda} < (A_2 \alpha) \frac{1}{1-\alpha}$ so that all firms have some domestic loans and $R_2$ is the marginal cost of funding
  - Some firms, with $\lambda_f^i$ large enough, are unconstrained in the domestic market and borrow to equate the marginal benefit of borrowing to the marginal cost, $R_2$ (!)
  - Other firms borrow as much as feasible under the collateral constraint
Substitution between FX and CLP loans – comparative statics

• An increase in $\theta_d$ relaxes the domestic collateral constraint
  ➢ higher demand for loans from (formerly) constrained firms.
  ➢ Higher $R_2$, no change in total borrowing (but some redistribution from formerly unconstrained to constrained firms?)

• An increase in endowments $e_1$
  ➢ Lower $R_2$, should raise domestic borrowing by constrained and unconstrained firms

• An increase in the cost of foreign borrowing $R^*$
  ➢ In the model this tightens the foreign collateral constraint, $\lambda_f^i/R^*$ and induces less foreign borrowing
  ➢ In isolation, $R^*$ does not affect total domestic borrowing and the impact on initially unconstrained firms is indeterminate
  ➢ In an extended version of the model, $R^*$ also increases risk aversion among domestic banks

No impact on foreign borrowing provided $R_2 > R^*$

Lower foreign borrowing, but no general result on substitution

$R^*$ Does a lot of work!
What do the empirical results say? Loan composition

• RDD estimation of:

\[
\frac{D_i^{Domestic}}{D_i^{Domestic} + D_i^{Foreign}} = \beta_0 + \beta_1 \log(sales_i^{2019}) + \delta I(\text{eligible}_i) + \varepsilon_i
\]

- Increase in the share of domestic borrowing at the FOGAPE-COVID eligibility cut-off

• Potential further analysis
  - What is the composition of changes in the domestic debt ratio?
  - Was there a greater impact for firms with a tighter collateral constraint (e.g., in more opaque sectors, higher debt/sales in 2019)? Or greater dependency on FX debt?
  - Was the increase in lending larger for banks with lower pre-FCIC liquidity?
Empirical analysis – interest rates

Chilean firms pay lower rates on FX debt, except for firms that are eligible for FOGAPE-COVID in 2020

Potential further analysis
- Interest rates on FOGAPE-COVID were capped, what happens to rates on other CLP loans to eligible/non-eligible firms?
- Robustness: consider a Diff-in-Diff specification to control for any pre-existing differences between eligible/non-eligible firms

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