

Credit Unions in Chile: What is their Role?

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Overview

- In Chile, Savings and Credit Unions (CACs) have small participation in the financial system.
- In terms of assets, liabilities, and equity (around 2 percent).
- So, it is valid to ask ...
 - Why do they exist?
 - What function do CACs fulfill that other financial entities, specifically banks, do not provide?.
- Is there some evidence of a “financial inclusion role”?

What this paper does?

- It provides answers, using robust economic arguments based on statistics and econometric models, to the hypothesis about the CACs' role in “financial inclusion”.

Literature

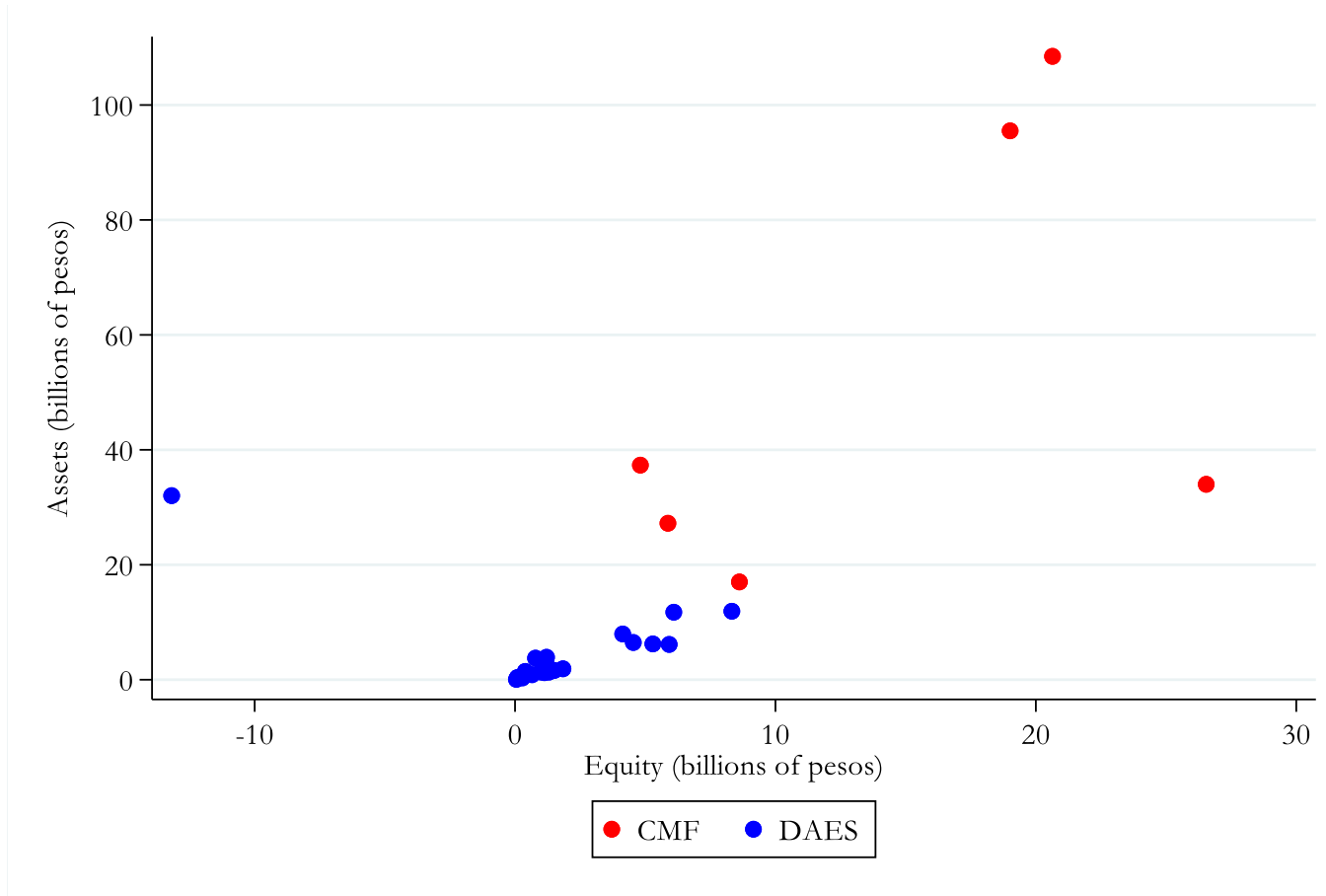
- The literature that has studied the CACs in Chile includes contributions by:
 - Téllez, 2007;
 - Hernández, 2008;
 - Matus et al., 2010;
 - Potin, 2012;
 - Minecon, 2014;
 - Central Bank of Chile, 2017
- Providing CACs historical background, describing its market, discussing their regulation, and questioning their “financial inclusion” role without providing robust evidence (statistical and/or econometric).

Key datasets

- By the end of 2018, 45 CACs exist in Chile, regulated by the Division of Association and Social Economy (DAES) of the Ministry of Economy or by the Financial Market Commission (CMF).
- Considering the limit of 400 thousand UF (a unit of account used in Chile that represents about USD 40) in equity established in the General Act of Cooperatives (2004), 38 CACs are regulated by the DAES and the remaining 7 by the CMF.
- In this paper, we focus on the CACs regulated by the CMF as they represent more than 85 percent of the total assets, liabilities, and assets of the sector.
- However more important, because of the information available in the CMF allows us having a detail at the CAC member level, not previously used.

Subject of study

Figure: Assets and equity

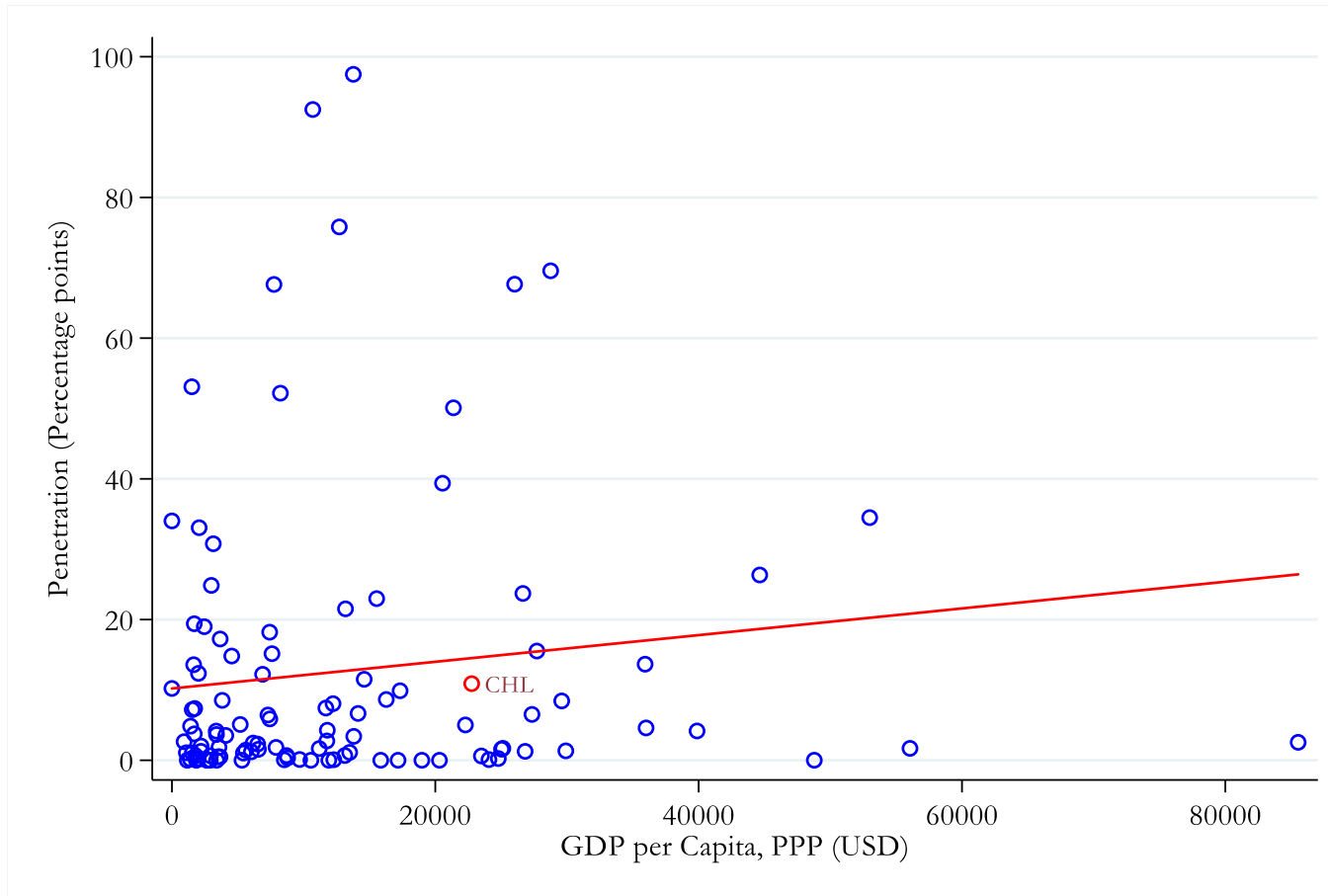


Source: CMF and DAES.

Note: Dots in red and blue indicate CMF or DAES supervision, respectively. The data corresponds to the last year available. Coopeuch, the most significant CAC in Chile is excluded for comparability purposes.

The CACs in Chile vis à vis those in the rest of the World?

Figure: Credit unions penetration and income level



Source: Authors calculations based on the World Bank and WOCCU.

Note: Each point represents a country. CHL: Chile. In the case of Chile, the statistics of penetration only consider the CACs supervised by the CMF.

Characterization of CACs members and banks debtors

Table: Number of CACs members and banks debtors

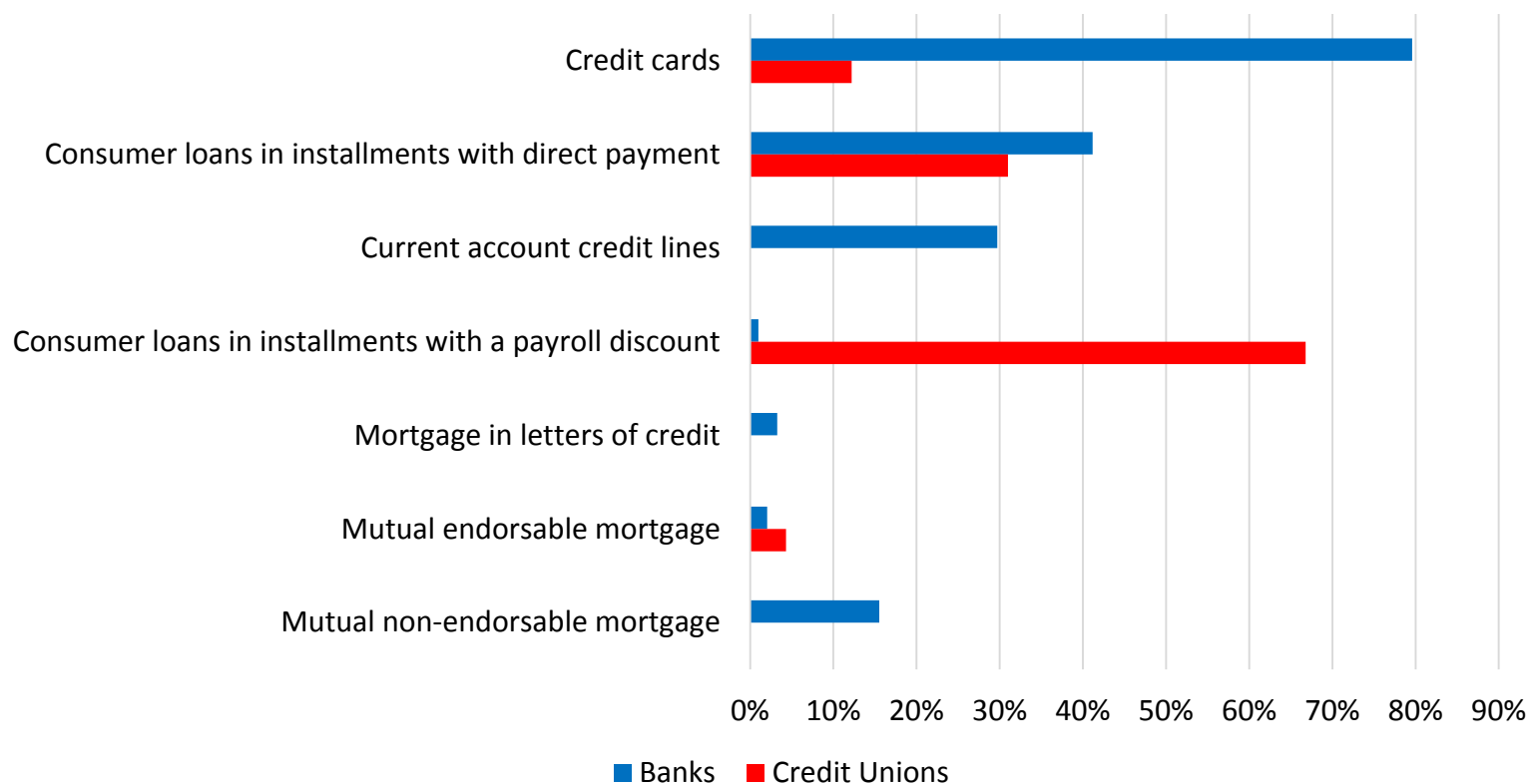
	Credit unions	Banks debtors	Ratio
2015Q4	1,165,497	4,646,364	25.1%
2016Q2	1,172,266	4,676,523	25.1%
2016Q4	1,188,192	4,723,361	25.2%
2017Q2	1,205,583	4,814,919	25.0%
2017Q4	1,224,307	4,927,535	24.9%
2018Q2	1,253,028	4,980,805	25.2%

Source: Authors' calculations based on CMF.

Note: If an individual is a member of more than one credit union, he is considered only once. The same logic applies to bank debtors. This table and all the charts and tables that follow do not include commercial loans.

CACs and banks debtors

Figure: Instruments used by credit unions and banks debtors



Source: Authors elaboration based on CMF.

Note: The bars correspond to the percentage of credit unions/banks debtors with debt in a specific instrument over the total number of debtors in credit unions/banks. Only the main instruments are presented.

Heterogeneity in types of debtors

CACs and banks debtors

Table: Number of debtors by type

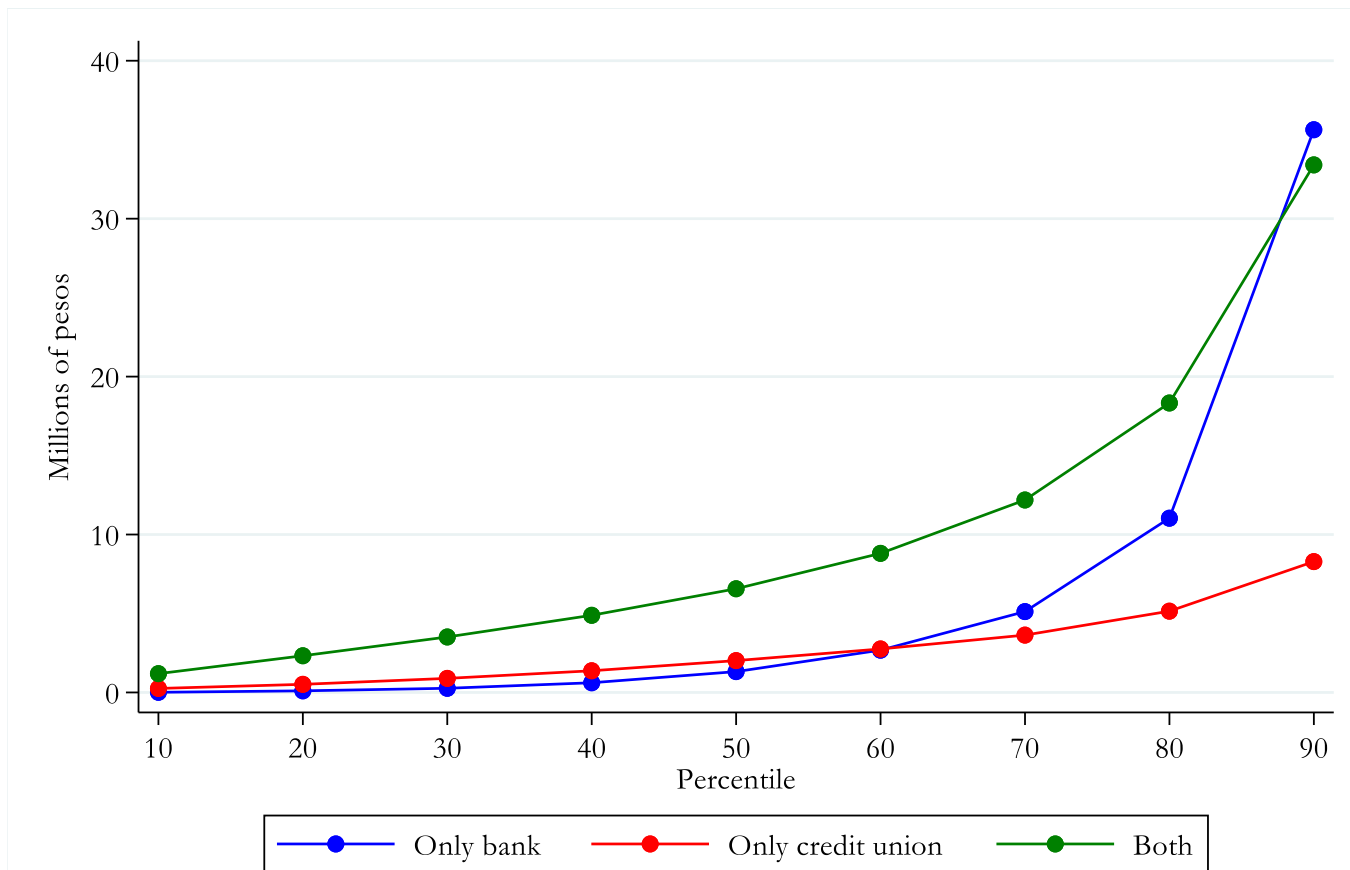
Institution	Only banks	Both	Only CACs	Total
Banks	4,721,913	205,622		4,927,535
CACs		205,622	142,198	347,820
Total				5,275,355

Source: Authors' calculations based on CMF.

Note: If an individual is a member of more than one credit union, he has been considered only once. The same logic applies to banks regarding their clients.

CACs and banks debtors

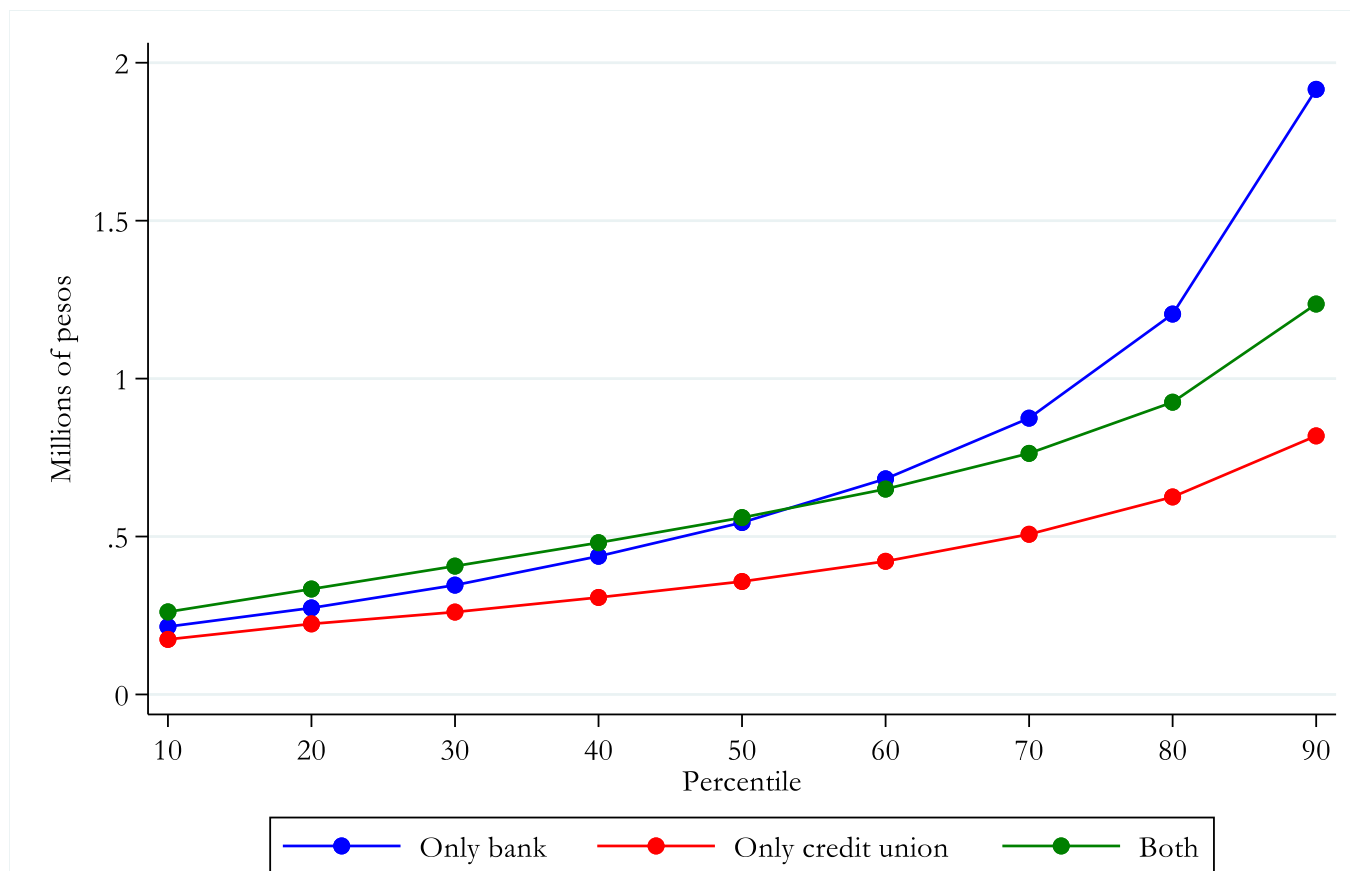
Figure: Debt percentiles



Source: Authors' calculations based on CMF.

CACs and banks debtors

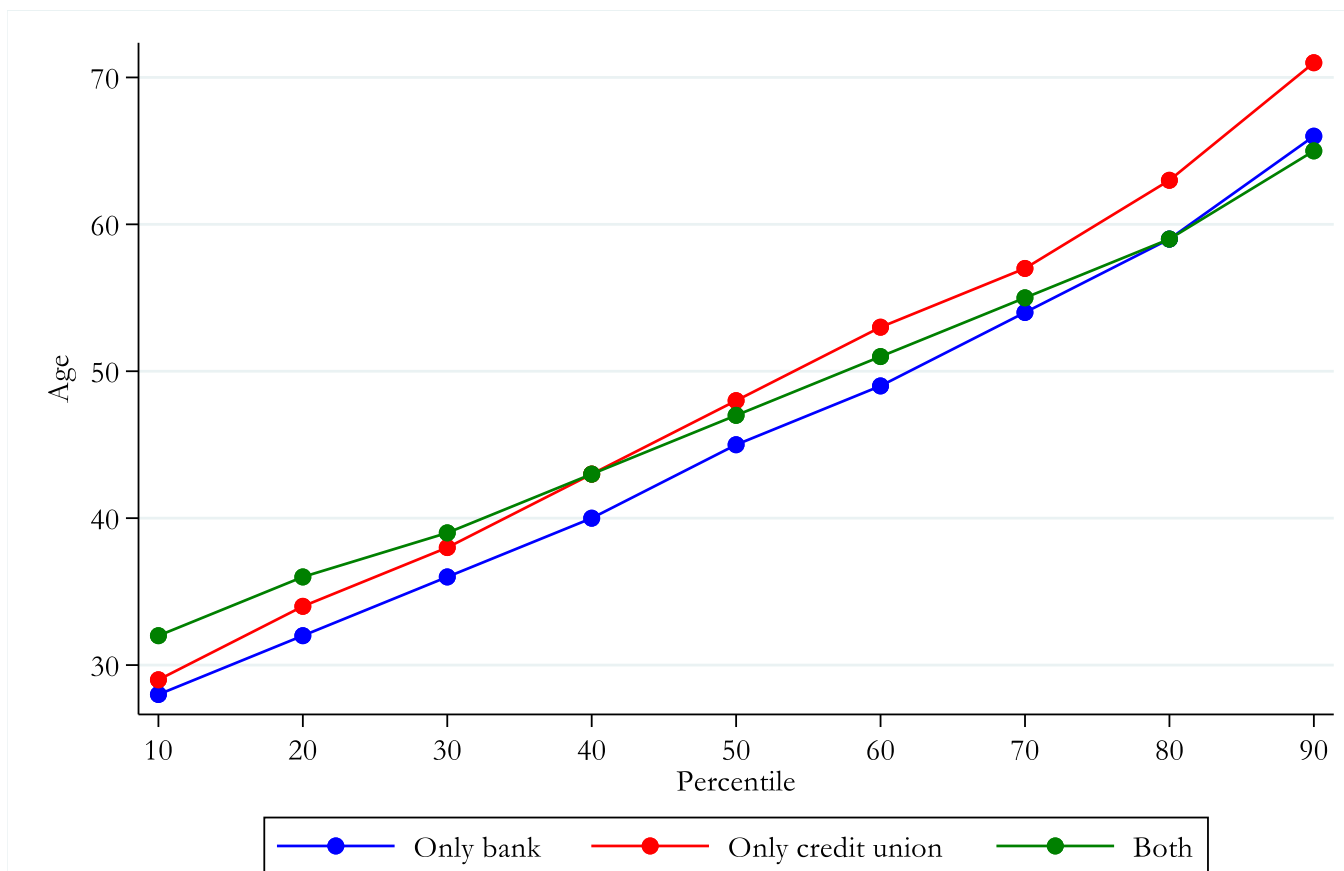
Figure: Income percentiles



Source: Authors' calculations based on CMF.

CACs and banks debtors

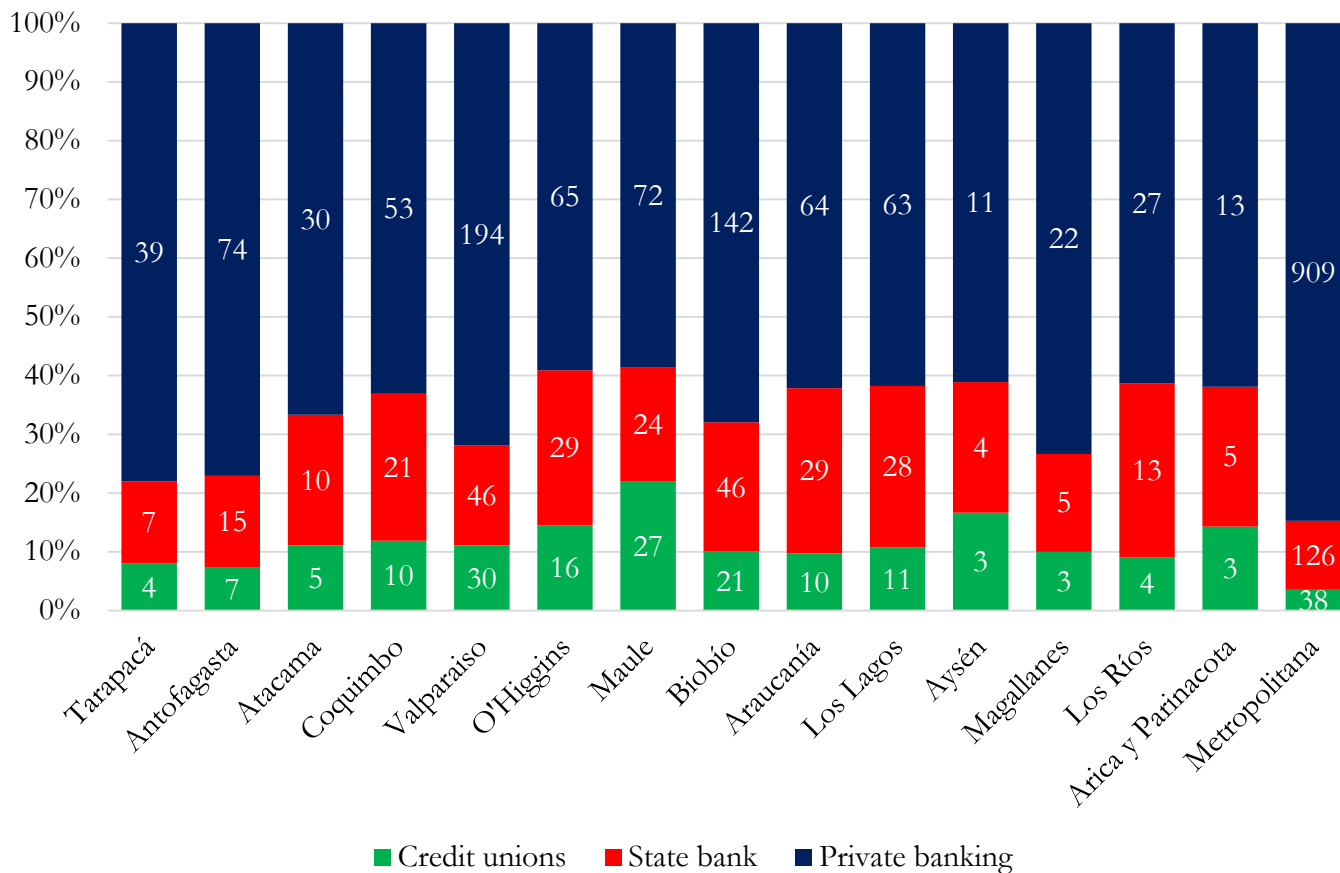
Figure: Age percentiles



Source: Authors' calculations based on CMF.

Offices supply

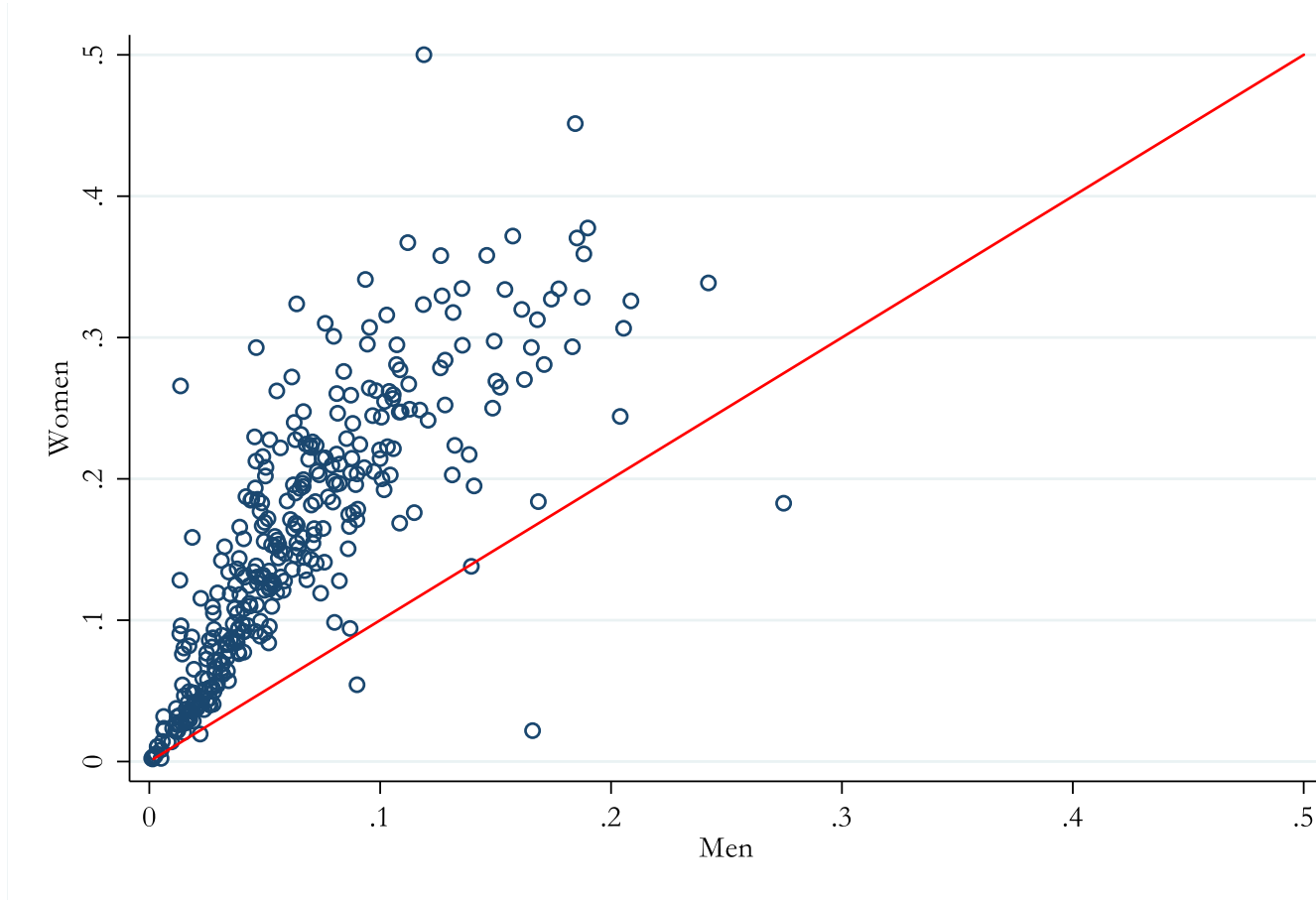
Figure: Number of commercial offices per region in Chile



Source: Authors' elaboration based on CMF.

Stock of debt by gender

Figure: Debt in credit unions to total debt by gender and county

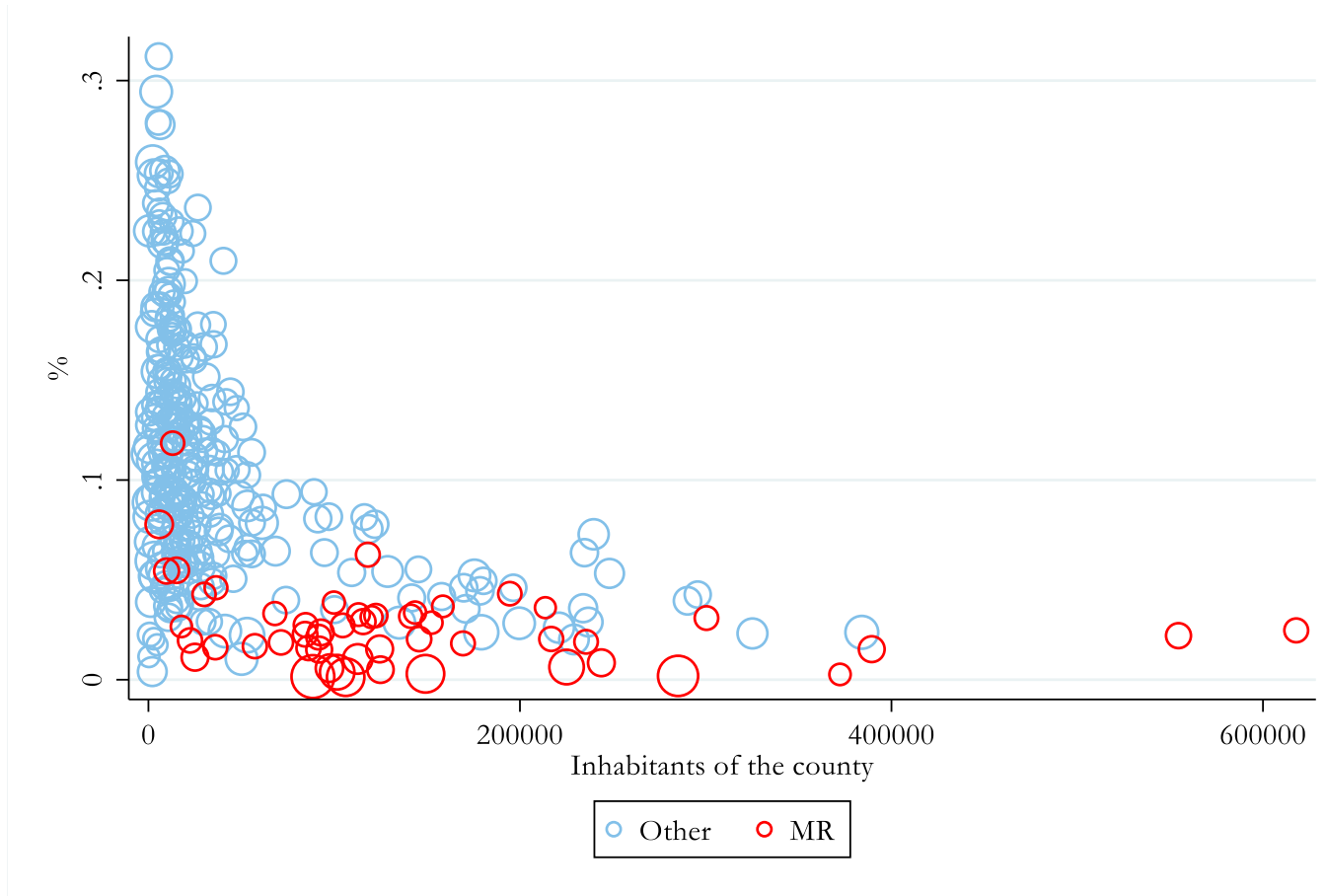


Source: Authors' calculations based on CMF.

Note: Each point represents a Chilean county. The axes represent how much of the total debt each gender has in credit unions.

The percent of debt in CACs is higher in those counties with less than 5,000 inhabitants, and in those regions other than the Metropolitan Region of Santiago

Figure: Debt in credit unions by county and inhabitants



Source. Authors' elaboration based on CMF.

Note: The size of the circle represents the average income of the county's inhabitants

What factors determine customers having debt only with CACs?

- To respond we use a binary response model.
- This type of models assume the existence of a latent variable that depends on observable variables and an error term:

$$y_i^* = x_i\beta + \varepsilon_i.$$

- The related utility is not observed, only what was chosen:

$$y_i = \begin{cases} 1, & \text{si } y_i^* > 0; \\ 0, & \text{si } y_i^* \leq 0 \end{cases}$$

What factors determine customers having debt only with CACs?

- Then, in this paper, the probability that an individual is a member in a credit union is

$$E[y_i|x_i] = Pr[y_i = 1|x_i] = Pr[x_i\beta + \varepsilon_i|x_i] = F(x_i\beta)$$

- Where $F(\cdot)$ is the cumulative probability function. The specification of the accumulated function is tested using Logit and Probit models. Hence, the models estimated have the following form:

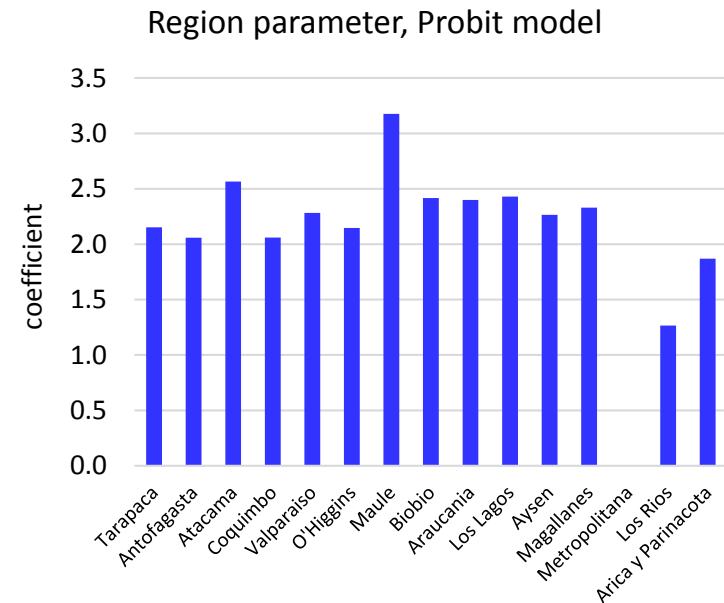
$$Pr(y = 1 | X) = \Phi(\beta_1 + \beta_2 \ln(\text{Income}) + \beta_3 \text{Age} + \beta_4 \text{Gender} + \beta_5 \text{Region})$$

- Our sample includes total debtors by December 2017.

What factors determine customers having debt only with CACs?

- Probability of having debt only in CAC and customer characteristics:

Variables	Probit	Logit
Ln(Income)	-0.0278*** (0.0006)	-0.0424*** (0.0012)
Age	0.0106*** (0.0000)	0.0234*** (0.0002)
Gender (Male=0, Female=1)	0.2240*** (0.0025)	0.4970*** (0.0052)
Region effect	Yes	Yes
Observations	4,706,372	4,706,372
R-squared	0.1568	0.1586



Overview

- CACs in Chile are a relevant source of credit for the population with lower income, older, women, and living in regions.
- CACs are especially relevant in small counties or regions other than the metropolitan region of Santiago.
- Therefore, evidence exists suggesting that CACs contribute to financial inclusion in Chile.
- Some of these results might apply to other emerging markets, especially in Latin-American, having characteristics similar to those in Chile.

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Discussion of “Credit Unions in Chile: What is their Role?”

Antonio Lemus and Cristian Rojas

CMF

20 January 2020

Summary of the Paper

Informative paper, I find the results plausible and liked reading it.

Drawing on a large, administrative data set the authors examine whether credit unions in Chile contribute to financial inclusion

Credit unions...

- are cooperatives that offer basic savings and (consumer) credit products to their members
- 45 credit unions in Chile, the 7 largest of which are supervised by CMF
- account for a relatively small share of total assets, but have significant outreach

Findings

The authors find that credit union members

- have on average lower income
- are on average older
- are more likely to be female
- are more likely to live outside the metropolitan region

than clients of banks or clients/members of both banks and credit unions

The authors conclude that credit unions indeed serve segments of the population that are less likely to have access to the regular banking system

Comments

The authors could provide a more detailed characterization of the data.

- Where do they come from?
- Do the datasets contain additional information at the individual level?
- Can they be matched with other data sources?
- Can the data be updated?
- Do you have individuals in the data that are neither member of a credit union nor a bank client?

Additional comments

Limitations of the identification strategy

- One-shot data does not allow for fixed effects
- Estimates may be biased due to unobserved confounders. Coefficients should therefore be interpreted as partial correlations consistent with the hypothesis put forward by the authors
- Author should exploit the large number of observations to saturate their model with fixed effects, e.g. at the county level
- To the extent that the sample consists of financially included individuals only, the interpretation needs to be adjusted accordingly