



Article

Women's Entrepreneurship and Government Policy: Facilitating Access to Credit through a National Program in Chile

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Abstract: In this paper, I evaluate the impact of a multidimensional national program implemented in Chile during the second term of President Bachelet to facilitate female entrepreneurs' access to credit, reduce gender gaps in financial inclusion, and change patriarchal stereotypes. I construct a difference-in-difference estimate of the program. My findings indicate that the program has successfully met its principal aim: the loans granted to women have increased, reducing the gender gap in this dimension. In addition, evidence of heterogeneity by the economic sector has emerged. This evidence aligns with prior research that has emphasised that public policies should not be designed and implemented under the logic of "one type of program fits all". The program analysed in this study is an example of a national public policy that has improved female entrepreneurs' access to funding, reduced gender gaps in a Latin American country, and potentially offered lessons to other Latin American and middle-income countries worldwide.

Keywords: women's entrepreneurship; entrepreneurship in Chile; small business; micro-finance



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1. Introduction

Entrepreneurship is considered a path out of poverty and discrimination and a determinant of innovation, job creation, and positive externalities (Parker 2005). Governments are called upon to intervene whenever market failures such as credit rationing prevail. In the words of Beck and Demirguc-Kunt (2006), alleviating the financial constraints of small entrepreneurs levels the playing field among firms, contributing to competition and economic development. Because of that, governments worldwide have been implementing different policies to facilitate access to finance by small firms. For instance, Craig et al. (2007) show the positive and significant impact of a government loan-guarantee program, designed to encourage lending to small businesses, on the local economic performance of the United States.

As these market failures most negatively affect female entrepreneurs and other vulnerable groups with few assets, promotion policies frequently target these groups. However, scholars have not advanced enough in answering which policies are effective in enhancing female entrepreneurship and facilitating their access to finance. Indeed, as Leitch et al. (2018) state, despite access to finance being a popular topic in women's entrepreneurship research, many key issues remain unsolved. One of the most important questions to address is whether institutions discriminate against women entrepreneurs or whether this is a mistaken perception. Another critical challenge is to provide policymakers with clear evidence and recommendations on improving female-entrepreneurship public policies. As Foss et al. (2018) emphasise, the policy recommendations from women's entrepreneurship research have been revolving around education and training as ways of 'fixing women' who lack the capabilities to perform successfully as entrepreneurs. As Terjesen and Lloyd (2014) explain, seminal studies written years ago focused on the individual characteristics of male and female entrepreneurs, e.g., age, education, attitudes, and perceptions such as risk aversion, growth ambitions, and self-efficacy, rather than considering the ecosystem environment's variables. Recent analyses and evidence suggest considering

several environmental institutions (e.g., childcare services, family leave, and educational training systems); for instance, after analysing five Organisation for Economic Co-operation and Development (OECD) countries' female-entrepreneurship-promotion policies and practices (Canada, Germany, Ireland, Norway, and the United States), [Coleman et al. \(2019\)](#) noted that a broad spectrum of the current policy rhetoric posits women's individual-level constraints as problematic. Thus, the main driver of those policies would be to 'fix' women. Instead, the authors propose an 'inclusive ecosystem model'. [Marlow and Swail \(2014\)](#) stated that women are positioned as disadvantaged agents and at the same time responsible because of their inadequacies. In other words, the authors stress that the current analytical confusion linked to this 'lacking' thesis reinforces the under-performing stereotype of women's entrepreneurship. Such a stereotype may have more substantial negative impacts in a country such as Chile as, in Latin America, gender roles are more traditional and patriarchal than in developed countries ([Escobar 2016](#)). Furthermore, gender roles have a long tradition of being conventional and patriarchal in the region. Indeed, as Escobar stresses, it is very likely that such universal values were prevalent and more potent during the 19th century ([Escobar 2015](#)).

In this paper, I contribute to women's entrepreneurship research by showing the effectiveness of a Chilean national program designed and implemented during the second term of President Michelle Bachelet that tackles both the supply-side and the demand-side weaknesses of the environment in which women develop their entrepreneurship. I also provide evidence on heterogeneity in the impact of the analysed program according to the economic sector, supporting researchers that have recently emphasised that female-entrepreneurship public policies should not be designed and implemented under the logic of 'one type of program fits all' ([Foss et al. 2018](#)).

I organised the rest of the article as follows: Section 2 contains a review of the materials and methods covered in this study; in Section 3, I explain my main results and discuss them in Section 4.

2. Materials and Methods

2.1. Literature Review

Bringing more women into the job market is not only a matter of reducing gender income gaps and promoting equal rights but is also a matter of economic growth. More women working means a larger Gross Domestic Product (GDP), while more of them developing their talents—without legal or cultural barriers—increases an economy's productivity ([Elborgh-Woytek et al. 2013](#); [OECD 2012, 2016](#); [World Bank 2011](#)). [Cuberes and Teignier \(2014\)](#) estimate that excluding Latin American women from entrepreneurship would drop productivity by 4%. The [OECD \(2012, 2015a, 2015b\)](#) stresses that reducing barriers to strengthen female entrepreneurship would reduce gender income gaps and foster economic growth. Promoting female entrepreneurship has gained recognition worldwide during the last few decades as many women participate in the job market as entrepreneurs, generating employment opportunities and innovation ([Rodríguez et al. 2013](#); [Foss et al. 2018](#)).

In Chile, experts see entrepreneurship as a way to increase one of the lowest female labour-force participation (FLFP) rates within both Latin American ([Economic Commission for Latin America and the Caribbean 2018](#)) and OECD countries ([OECD 2018](#)). Indeed, less than 50% of women report having a job or searching for a job, even though their educational attainment is higher than that of women in other countries in the region ([Carrillo et al. 2014](#)).

New and small entrepreneurs face obstacles when launching and developing their projects. A key issue is that they seem to be unable to obtain sufficient bank loans. This observation, which finds solid theoretical support in credit rationing theory, appears to be more relevant and more acute in the case of female entrepreneurs. Female entrepreneurs face economic opportunities which are different to those of men, which explains this evidence. Significant differences in participation rates and performance between female

and male entrepreneurs have been detected worldwide (Bardasi et al. 2011; Acs et al. 2011; Fossen 2012; Foss et al. 2018).

Poverty traps may be reinforced by a vicious cycle of low productivity and limited access to capital, reducing the rate of female entrepreneurs' likelihood of success (OECD 2016). However, it is not only that women face difficulties getting bank loans, but female entrepreneurs are also less likely to obtain the same levels of bank financing as men (Eddleston et al. 2014; Sabarwal and Terrell 2009). Indeed, from a supply-side perspective, it is observed that women are more likely to be constrained by laws and customs, prejudice, and misperceptions by bank executives, as well as by lack of collateral assets (Deere and Doss 2006; Deere and Leon 2003; Demircuc-Kunt et al. 2013). Malapit (2012) provides a piece of fascinating evidence for developing countries. She uses survey data from two urban communities of Manila in the Philippines to show that credit constraints for women emerge from banks and informal lenders. Women face more obstacles than men as informal lenders consider reputation and credit history to screen prospective borrowers. Because of this, the author asserts that there is room for improvement through the design and implementation of public female-targeted credit interventions that enable women to build and capitalise on positive credit histories. More recently, Drori et al. (2018) studied how language, as a cultural institution, influences a financial intermediary's capability to successfully reach out to women to support their entrepreneurship. Through an analysis based on data from 115 countries for the 1995–2015 period, the authors show that gender marking in grammar generates gender-based financial exclusion; this is relevant to Chile as Spanish nouns are either masculine or feminine. It reinforces the necessity for Chilean financial institutions to develop unbiased communication strategies and campaigns.

From a demand-side perspective, women get involved in crowded and non-lucrative areas (retail, food service, and interpersonal care), extending their private role to their entrepreneurship. This segregation is one of the causes of women's financial vulnerability (Thébaud 2015). On the other hand, studies show that considerations such as cost are more important to men than to women, while other service characteristics linked to experiential attributes, such as personal service, seem to be essential for women (Friedmann and Lowengart 2016; Verheul and Thurik 2001). Fossen (2012), using German data on female entrepreneurs, shows that women's higher estimated-risk aversion determines an essential proportion of their higher exit rate but only a less relevant part of their lower entry rate. Female motivations to start an enterprise also distinguish them from their male counterparts. For instance, as McGowan et al. (2012) stress, a high rate of them explore entrepreneurship to balance work and family responsibilities instead of pursuing the satisfaction of a desire for independence or profit, which are essential drivers in men. Adkins et al. (2013) integrate the entrepreneurship literature with the work-life-balance literature, providing evidence of a positive relationship between the firm owner's desire for work-life balance and the firm's culture on the matter, which would likely benefit employees. Related to this, Escobar (2016) emphasises that patriarchal schemes in Latin America relegate women to domestic chores and care for other household members.

Though this is not an exhaustive list of the supply- and demand-side determinants of the differences between male and female entrepreneurs, it constitutes clear evidence showing that gender matters in entrepreneurship.

2.2. CreceMujer Emprendedora Program

Given this outlook, the Chilean Government created a unique program through the state-owned bank *BancoEstado* to encourage and support micro and small female-owned firms¹. The Crece Mujer Emprendedora (CME) program was part of the National Innovation and Competitiveness Agenda launched in 2014 by President Michelle Bachelet. Evidence collected by the GEM 2019 Report supports such a decision as public policies and plans to promote gender equality in entrepreneurship have had an essential role in recent years. Indeed, between 2010 and 2019, the proportion of female entrepreneurs in the initial stages increased from 15% to 32% (Global Entrepreneurship Monitor 2019).

The main findings from the diagnosis carried out by BancoEstado Microempresas (BEM) before launching the program were: (1) there are gender gaps in the access to financial services: lower access and a lower average amount of credits in the case of women ([Superintendencia de Bancos e Instituciones Financieras 2014](#)); (2) female entrepreneurs are rejected by banks more frequently than men due to their lower income, shorter work schedule, and the unfavourable commercial records of their spouses;² (3) due to traditional and patriarchal stereotypes currently present in Chile, some women do not consider themselves entrepreneurs and consequently do not see themselves as potential financial customers;³ (4) women self-report themselves as housewives and not as entrepreneurs; (5) women's capability weaknesses are more important than men's, a problematic pattern to revert to as they have less time to participate in training activities due to household chores and family responsibilities ([Global Entrepreneurship Monitor 2013](#));⁴ (6) a high share of them start their business through necessity when they get divorced or their spouses lose their source of income; (7) the reason for starting entrepreneurship is the need to have a more flexible labour schedule; and (8) a lack of networking prevails whenever the mission is to initiate a business.

The CME program was designed to have an empathetic approach to businesswomen as a response. In practice, CME contributed to solving weaknesses and improving the environment in which Chilean women carry out their entrepreneurship. As a first step, the professional team in charge decided to train branch office executives to advise and guide women entrepreneurs and avoid gender biases, promoting cultural changes in the Chilean state-owned bank. First, executives learned how to comprehensively approach female entrepreneurs' needs, advising them on topics that exceeded financial products. Second, the whole portfolio of the financial products of the institution was promoted and available for members of CME. Indeed, checking accounts and savings accounts were explained to female entrepreneurs evaluating the possibility of becoming customers, contributing to boosting the financial inclusion that is crucial to facilitating more gender-equal access, as [Doss et al. \(2019\)](#) emphasise.

Furthermore, the bank enhanced its portfolio with a new micro-insurance covering women's daily income in the event of the hospitalisations of their children. Third, CME provides non-financial services: outdoor events and networking activities, regional training, and free online learning courses that aim to reduce financial-literacy gender gaps, which, as shown by [Lusardi and Mitchell \(2008, 2014\)](#), are present around the world. In alliance with municipalities and Non-governmental organizations (NGOs), the bank carried out these activities. Fourth, alliances with other public institutions foster female entrepreneurship. Whenever a woman goes to a branch, she receives a tailored report of the most appropriate public programs to support her entrepreneurship. This profile depends on the female entrepreneur's characteristics and the supply of public programs available in her neighbourhood. Fifth, through the free call centre and the website, female entrepreneurs receive advice and take online courses on various topics, such as tax administration, legal issues, business management, and financial education. Sixth, in the CME online community, women interact with one another and participate in forums and blogs. They read articles and watch videos that provide information and advice.

In summary, the analysed program promoted female entrepreneurship by enhancing its ecosystem ([Mazzarol 2014](#)) and managing to positively affect at least three of its components: funding and finance; mentors, advisers, and support systems; and education and training.

2.3. Research Design

I conducted an econometric analysis exploiting a source of plausibly exogenous variation given by the sequential deployment of the program to isolate its impact on female entrepreneurs' access to credit.

The program had a sequential roll-out through seven areas formed by collections of regions.⁵ The deployment took nine months, from January 2015 to September 2015. A description of this deployment is presented in Table 1.

Table 1. Progressive Roll-Out.

Month	Region
January 2015	Libertador Bernardo O'Higgins (Red)
March 2015	Magallanes y la Antártica Chilena, Aysén del General Carlos Ibáñez del Campo y Región de los Lagos (Green)
April 2015	Los Ríos y Araucanía (Yellow)
May 2015	Bio Bio y Maule (Orange)
June 2015	Valparaíso y Coquimbo (Purple)
July 2015	Antofagasta, Tarapacá, y Arica y Parinacota (Apple green)
September 2015	Atacama y Metropolitana (White)
Source: BancoEstado Microempresas	

CME started with a two-month pilot in the Bernardo O'Higgins Region. Afterwards, the actual and enhanced program was deployed from South to North with outdoor kick-off activities (such as female entrepreneur fairs and training courses).

It is worth noting that such deployment should not reflect pre-existing differences in the area-level characteristics of the branches, which also affect the supply and demand of bank loans. According to the subsidiary's executives in charge of CME, the main reason determining the design of the roll-out (from south to north) was the simplification of its launch, avoiding cold temperatures during outdoor kick-off activities. There are no arguments regarding using one deployment strategy over another to maximise the program's likelihood of success. The program started during the summer in the coldest regions of the country, and then, it moved to the warmest areas during the winter. Nevertheless, as I cannot rule out all the plausible relevant connections between weather patterns and other potential correlations in the econometric analyses, I include months and branch-fixed effects in one of the two models (the 79 months and the 269 branches). At the same time, I add branch-specific linear trends in the other. Branch i in month t is considered treated if the CME program operated in its zone during month t .

I expected that the number of loans granted monthly to female entrepreneurs by branches had increased due to the program.⁶ I measured the average size of loans given to women (or to men) in Chilean pesos, and I calculated it as the total amount lent to female entrepreneurs (or male entrepreneurs) by a branch i in a month t over the number of loans granted to its female customers (or male customers) during that month.

My dependent variables in the regressions are the number of loans granted by branch i (Loans) and the average size of those loans (AverageLoan). I express Loans and AverageLoan in logarithms. My independent variables consist of an indicator that indicates that the CME program was already implemented in the branch's region and another indicator that identifies whether the loans were granted to female entrepreneurs, as well as a set of indicator variables that identify the economic sector of the entrepreneurs that requested those loans.

In specification (1), I include branch and monthly fixed effects, while in specification (2) I also allow for branch-specific time trends. For both specifications, (1) and (2), I employ difference-in-difference estimation (DD). As [Bertrand et al. \(2004\)](#) observe, the resulting standard errors from a DD may be inconsistent due to the presence of serial correlation. This problem is plausible in this study as I analyse the bank loans granted over 79 months. Given that the treatment is deployed sequentially through a set of seven zones, which is not large enough, ordinary bootstrap methods do not necessarily perform well, introducing a downward bias in the standard deviation of the estimator ([Bertrand et al. 2004](#)). Consequently, as in [Roodman et al. \(2018\)](#), I use a wild bootstrap to properly consider the error terms that are clustered in a few (seven) similar sets.

The DD impact of exposure to the program is estimated by:

First model

$$y_{it} = \alpha + \beta \cdot I\{CME_{it}\} \cdot I\{F_{it}\} + \gamma \cdot I\{CME_{it}\} + \delta \cdot I\{F_{it}\} + X_{it}\theta + h_i + g_t + \varepsilon_{it} \quad (1)$$

Second model

$$y_{it} = \alpha + \beta \cdot I\{CME_{it}\} \cdot I\{F_{it}\} + \gamma \cdot I\{CME_{it}\} + \delta \cdot I\{F_{it}\} + X_{it}\theta + h_i + g_t + j_{it} + \varepsilon_{it} \quad (2)$$

where y_{it} is the outcome variable of interest, either in the number of *Loans* or the *AverageLoan*, corresponding to branch i , in month t .

Note that the interaction between indicator variables $I\{CME_{it}\} \cdot I\{F_{it}\}$ captures the effect of CME on female entrepreneurs; then, the indicator variable $I\{CME_{it}\}$ captures the effect of CME on male entrepreneurs, and $I\{F_{it}\}$ captures the effect of being a female entrepreneur.

In the case of my first outcome of interest (*Loans*), my null hypothesis posits that the total number of loans granted to female entrepreneurs does not increase after the deployment of the CME program. In the case of my second outcome of interest (*AverageLoan*), my null hypothesis posits that the average amount of money borrowed by women entrepreneurs does not decrease after the deployment of the CME program. I consider one-sided t -tests to evaluate both hypotheses. In the corresponding tables, I present wild bootstrap p -values generated using the `boottest` command in Stata 13 (Roodman et al. 2018).

2.4. Data

Table 2 shows that at the beginning of the analysis period (January 2012), BEM had 190 branches. This number increased and reached 269 branches in July 2018 (the last month of the data). As a result, the loans granted monthly rose from 6359 in January 2012 to 9723 in July 2018. As a result, the total amount lent by BEM rose from CLP 23,046 million in January 2012 to CLP 37,222 million in July 2018, while the average amount lent monthly increased from CLP 3.7 million to CLP 4 million.⁷

Table 2. Main Figures of the state-owned bank, Banco Estado Microempresas.

Area	January 2012				July 2018			
	Branches	Loans Granted	The Total Amount of Money Lent /1	Average Amount Lent by Loan /2	Branches	Loans Granted	The Total Amount of Money Lent /1	Average Amount Lent by Loan /2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	10	333	1514	4,665,885	17	479	2563	5,042,594
2	19	648	2270	3,420,075	27	883	3171	3,535,649
3	27	881	2602	3,433,318	39	1231	3963	3,756,844
4	38	1177	4185	3,321,303	57	1895	7765	3,915,905
5	23	880	3148	3,534,383	43	1449	5376	4,064,795
6	11	465	1950	3,799,510	15	552	2172	3,700,371
7	62	1975	7376	3,761,649	71	3234	12,212	4,244,989
	190	6359	23,046	3,705,160	269	9723	37,222	4,037,307

/1: Millions of Chilean Pesos. I consider inflation and express the total amount of money lent in January 2012 in terms of July 2018. I use indexes reported by the Central Bank of Chile. /2: Chilean Pesos. I consider inflation and express the average amount of money lent by loan in January 2012 in terms of July 2018. I use indexes reported by the Central Bank of Chile.

Table 3 analyses the differences between the non-treated periods.⁸ Using t -tests, I detect significant differences for the whole sample (114,465 loans), for the male sample (57,994 loans) and the female sample (53,471 loans).

Table 3. BancoEstado Microempresas loans' summary statistics—National.

Summary Statistics			
	Non-Treated	Treated	/2
Panel A: National			
Total amount lent monthly at branch level /1	CLP 24.0	CLP 25.4	***
Average amount lent by loan at branch level /1	CLP 4.1	CLP 4.2	***
<i>n</i>	53,078	61,387	
Panel A: National—Men			
Total amount lent monthly at branch level /1	CLP 30.0	CLP 30.8	***
Average amount lent by loan at branch level /1	CLP 4.4	CLP 4.6	***
<i>n</i>	28,542	32,452	
Panel A: National—Women			
Total amount lent monthly at branch level /1	CLP 17.0	CLP 19.4	***
Average amount lent by loan at branch level /1	CLP 3.7	CLP 3.8	***
<i>n</i>	24,536	28,935	
T (months)	36	43	

/1: Chilean Pesos (CLP), in Millions. I consider inflation and express money lent in terms of July 2018. I use indexes reported by the Central Bank of Chile. /2: *t*-test. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

3. Results

For illustrative purposes, before showing and analysing my main DD estimates, I present estimates of seven exercises, one per area, to provide a first approach to the program's effects on female and male entrepreneurs. As shown in Table 4, the results of this simple exercise reveal that it is plausible that CME had a positive effect on the loans granted. Indeed, I find statistically significant estimates at conventional levels of the CME program on loans granted to female entrepreneurs (the $I\{CME\} \cdot I\{F\}$ variable in Table 4) for the seven areas of the program's deployment. On the other hand, significant effects of the program on male entrepreneurs were found only in the case of four areas ($I\{CME\}$ variable in Table 4). No significant impact of CME on female entrepreneurs emerged when the average size of loans was analysed (fourth column). However, there is suggestive evidence regarding average size increases in three areas of the country in the case of male entrepreneurs.

Table 4. Effects by Area.

	Loans Granted		Average Loan	
	$I\{CME\} \cdot I\{F\}$	$I\{CME\}$	$I\{CME\} \cdot I\{F\}$	$I\{CME\}$
Area 1	0.175 *** (0.036)	0.121 (0.119)	−0.063 (0.037)	0.211 (0.127)
Area 2	0.132 *** (0.025)	−0.057 (0.081)	−0.005 (0.027)	0.016 (0.078)
Area 3	0.126 *** (0.022)	0.137 * (0.067)	0.021 (0.025)	0.138 (0.076)
Area 4	0.092 *** (0.019)	0.252 *** (0.059)	0.004 (0.021)	0.249 *** (0.062)
Area 5	0.203 *** (0.022)	0.225 ** (0.070)	0.007 (0.023)	0.222 ** (0.074)
Area 6	0.077 * (0.035)	0.122 (0.111)	−0.030 (0.033)	0.073 (0.100)
Area 7	0.123 *** (0.016)	0.227 *** (0.053)	0.004 (0.015)	0.246 *** (0.051)

Notes: Ln(total amount lent) and Ln(average amount lent by loan). All models are estimated by OLS. Time-varying controls included in the regressions consist of economic sector dummies (agricultural, retail, fishing, transport, tourism, and others). *t*-test. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

I present my principal analysis, DD, in Table 5. As can be seen, both specifications (1) and (2) show that the implementation of the CME program increased the number of loans granted to female entrepreneurs by almost 13 percentage points (pp). This result is

statistically significant at conventional levels (1 per cent). Interestingly, my results also show that CME did not alter the number of loans granted to male entrepreneurs (estimates are non-significant). Therefore, the null hypothesis of no change in the number of loans granted was rejected in the case of female entrepreneurs, as expected. Meanwhile, it was not rejected in the case of male entrepreneurs. Those results, jointly considered, suggest that the program successfully targeted women as planned but had no effects on men.

According to my results, CME did not reduce the average loan size granted to female or male entrepreneurs (column four and column five).

The female dummy variable reflects the fact that fewer loans are granted to women than men. However, it also shows that women's loans are significantly smaller, as documented by international and national evidence (Eddleston et al. 2014; Sabarwal and Terrell 2009; Superintendencia de Bancos e Instituciones Financieras 2014).

Table 5. The Effect of CME on Loans Granted and on Average Loan.

	Loans Granted		Average Loan	
	Specification (1)	Specification (2)	Specification (1)	Specification (2)
$I\{CME\} \cdot I\{F\}$	0.127 *** (0.016)	0.126 *** (0.016)	−0.016 (0.120)	−0.015 (0.149)
$I\{CME\}$	−0.027 (0.023)	−0.036 (0.023)	−0.008 (0.545)	−0.005 (0.571)
$I\{F\}$	−0.365 *** (0.030)	−0.365 *** (0.029)	−0.285 *** (0.003)	−0.286 *** (0.005)
Branch-specific linear trends		X		X
N	114,465	114,465	114,465	114,465
R2	0.359	0.365	0.217	0.224

Notes: Difference-in-difference-in-difference regressions on $\ln(\text{LoansGranted})$ and $\ln(\text{AverageLoan})$. All models are estimated by OLS. Time-varying controls included in the regressions consist of economic sector dummies (agricultural, retail, fishing, transport, tourism, and others). Standard errors are clustered at the zone level (seven clusters). Wild bootstrap p -values generated using boottest command in Stata 13 (Roodman et al. 2018) in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

After showing statistically significant positive results regarding my first outcome of interest on whether CME had effects on loans granted to women, I explore differentiated effects by economic sector.⁹ Evidence of heterogeneity by economic sector emerges, as exposed in Figure 1. Indeed, the number of loans granted to Agricultural female entrepreneurs increased by almost 22 pp, while those given to Retail female entrepreneurs rose 13 pp. I also found a significant increment in the case of 'Other Economic Sectors'¹⁰ (18 pp), while I found non-significant effects in the cases of Fishing, Transport, and Tourism.

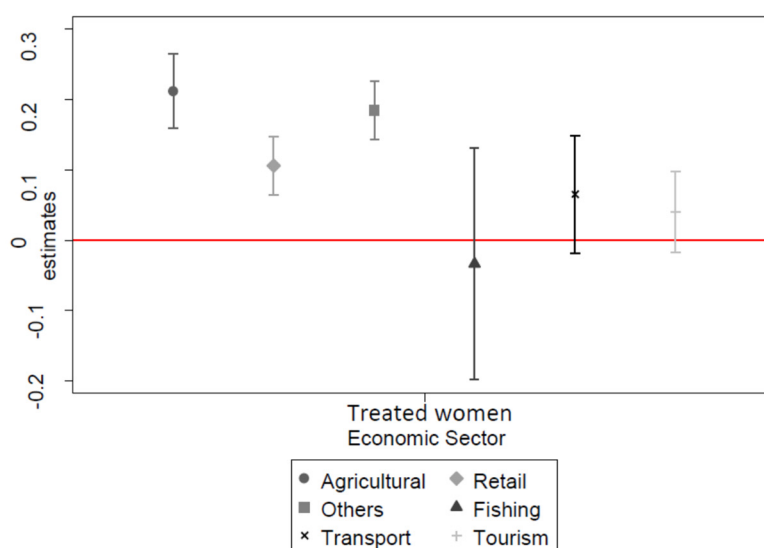


Figure 1. The Effect of CME on Loans Granted by Economic Sector (pp).

I found non-significant changes in the average loan granted to female entrepreneurs in any of the cases (Figure 2).

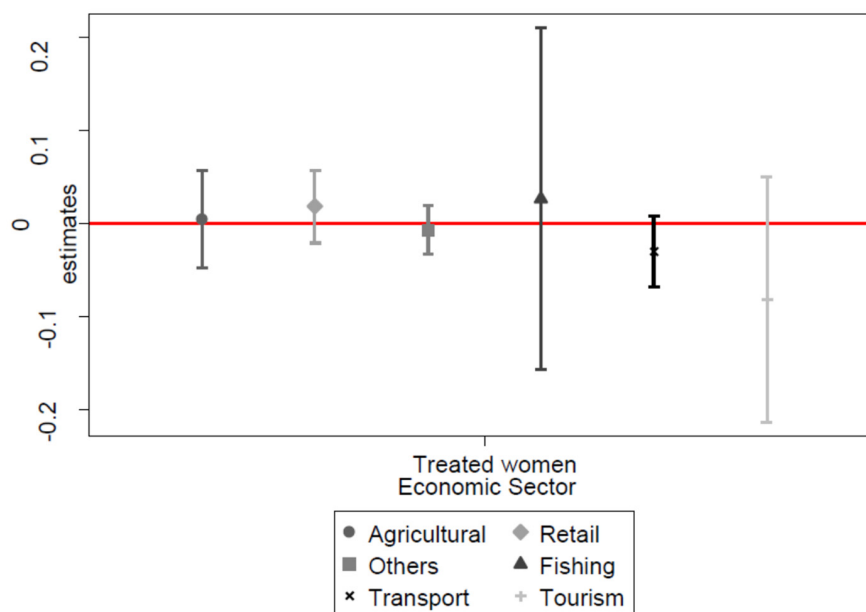


Figure 2. The Effect of CME on Average Loan by Economic Sector (pp).

The similarity of the main estimates when adding branch-specific linear trends as controls supplies some degree of confidence in the results (comparison of (1) and (2) specifications). Nevertheless, the DD results cannot be interpreted as evidence of the existence of the causal effects of the CME program on the number of loans granted to female entrepreneurs if the parallel-trends assumption is analysed and not rejected.

Therefore, to explore whether the male and female trends would have been similar in a scenario of non-implementation of CME, I regressed the dependent variables on a fake deployment dummy that assumes that the program was implemented in 2014 instead of in 2015 (the actual deployment). This analysis was conducted considering the period of January 2012 to December 2014 (before deployment). I built this fake deployment dummy considering the actual months displayed in Table 1. I also include the branch and month fixed effects (specification (1)) as well as the branch-specific linear trends (specification (2)) in the regressions. As shown in Table 6, I did not reject the parallel-trends hypotheses for either of the specifications.

Table 6. Parallel Trends Analysis—Placebo Test on Loans Granted.

	Loans Granted	
	Specification (1)	Specification (2)
$I\{CME\} \cdot I\{F\}$	0.028 (0.023)	0.025 (0.024)
$I\{CME\}$	−0.052 (0.028)	−0.018 (0.020)
$I\{F\}$	−0.376 *** (0.029)	−0.376 *** (0.029)
Branch-specific linear trends		X
<i>n</i>	46,449	46,449
R2	0.399	0.365

Notes: Difference-in-difference-in-difference regressions on $\ln(\text{LoansGranted})$ and $\ln(\text{AverageLoan})$. All models are estimated by OLS. Time-varying controls included in the regressions consist of economic sector dummies (agricultural, retail, fishing, transport, tourism, and others). Standard errors are clustered at the zone level (seven clusters). Wild bootstrap *p*-values generated using `boottest` command in Stata 13 (Roodman et al. 2018) in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The same analysis by the economic sector is shown briefly in Figure 3; only the estimate of $(I\{CME\} \cdot I\{F\})$ is exposed as it captures the program's effect on female entrepreneurs. As in the case of the total loans, non-significant effects were detected when I ran six separate analyses, one per economic sector.

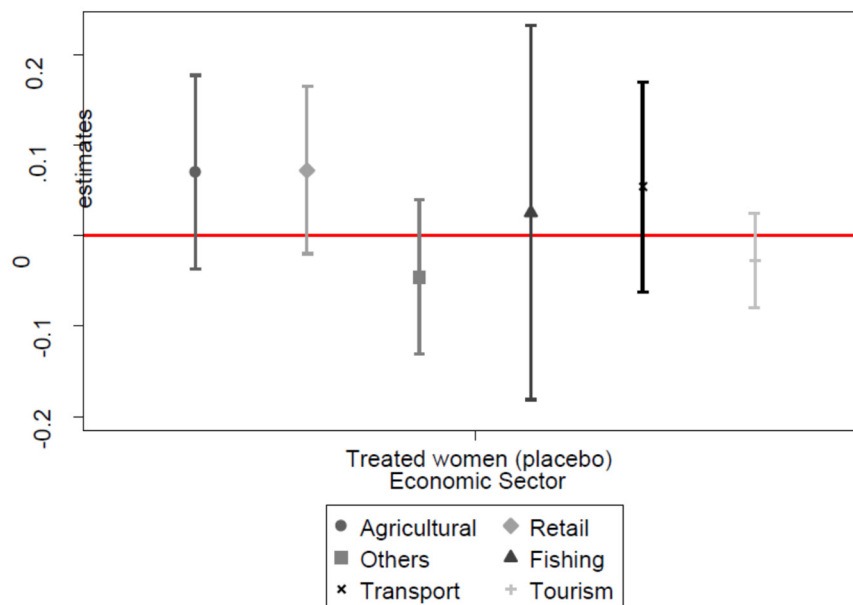


Figure 3. Placebo—Loans Granted by Economic Sector (pp).

I conducted additional analyses to evaluate the robustness and provided more evidence that the parallel-trends assumption holds in the case of my outcome of interest (loans granted to women). I conducted an event study for the total loans (Figure 4). First, it is worth noting that it shows non-significant effects before CME implementation. Indeed, Figure 4 shows the non-significant effects of loans granted to women before the implementation of CME (quarter 0 in the figure), supporting the non-rejection of the parallel-trends assumption. Other interesting patterns emerge from the studies: non-significant immediate effects after CME implementation but statistically significant effects corresponding to three quarters of 2017 (the third year after implementation).

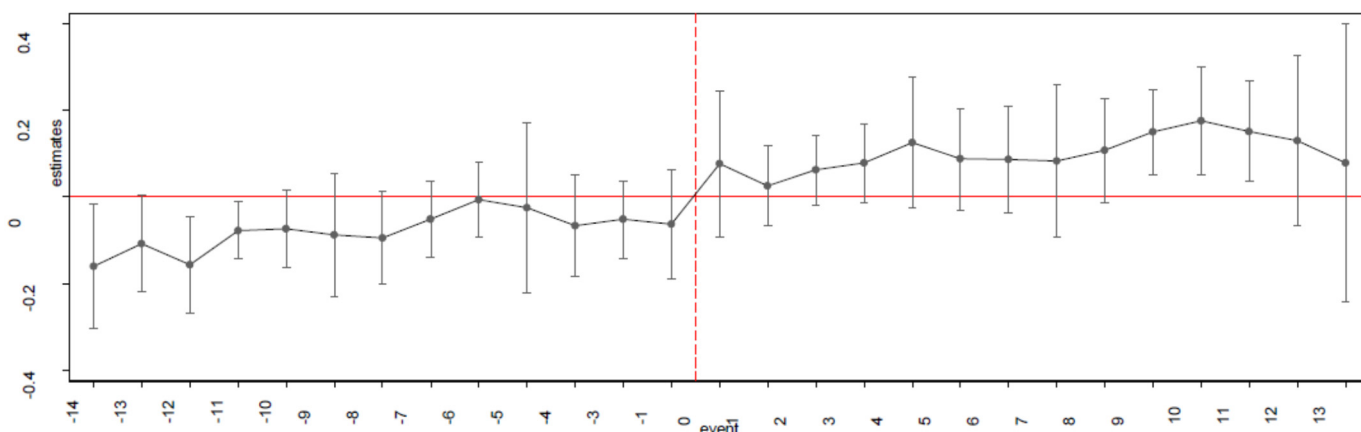


Figure 4. Parallel Trends Analysis—Event Study on Loans Granted.

These positive effects appeared to be driven by loans granted to the 'Other Sectors' female entrepreneurs as subtle increases emerge from the Retail Sector analysis and non-significant effects are detected in the cases of the other economic sectors (six figures exposing these results can be found in an annexe at the end of this document).

In sum, after addressing whether the parallel-trends assumption holds, I am confident that the main result of the analysis on the effect of CME on the number of loans granted to female entrepreneurs can be interpreted as the causal impact of the implementation of the CME program.

4. Discussion

In this paper, I present the main features of a novel program designed and implemented in Chile during the second term of President Michelle Bachelet to improve female entrepreneurs' access to funding. The CME program relies on a diagnosis that shows that women face barriers whenever they request credit in the financial system and are limited by their lack of networks and weak capabilities.

I show that CME had an average positive impact on the total number of loans granted to female entrepreneurs (close to 13 pp). As the average size of those loans remained unaltered, plausibly more female entrepreneurs were reached. Alternatively, the state-owned bank may have reached the same female customers as before, yet more intensively (more loans to female entrepreneurs).

I contribute to the women's entrepreneurship research by providing evidence that exceeds the analyses that focus on the impact of training and education programs on female enterprises. I fill an existent gap between theory and practice by analysing the effectiveness of a national micro-finance program that targets female entrepreneurs, enabling the enhancement of their access to bank loans. At the same time, the program contributes to reinforcing their networks and capabilities and their access to other financial products.

I also provide evidence of heterogeneity by economic sector. The program affects not all female enterprises. Instead, significant effects are present in the case of some economic sectors but not in others. This evidence supports researchers that have recently emphasised that public policies should not be designed and implemented under the logic of 'one type of program fits all' (Foss et al. 2018).

5. Conclusions

The program analysed in this study is an example of a national public policy that improved female entrepreneurs' access to funding, reducing gender gaps in Chile. As discussed, the program was designed as an integral initiative, aiming to simultaneously address many of the weaknesses of the Chilean female entrepreneur's environment.

Several studies stress the importance of focusing on the entrepreneurship ecosystem features and the female entrepreneur's individual characteristics (e.g., Terjesen and Lloyd 2014). This study describes how the analysed program (*Crece Mujer Emprendedora*) contributes to this literature. The program provides mentoring, advice, information, and more fluid access to checking accounts and saving accounts, as well as education and training oriented to enhancing product development, all of which are core elements of the entrepreneurial ecosystems.

As in this study, Johan and Valenzuela (2020) analyse another entrepreneurship program introduced by former President Bachelet during her second term. The business advisory program they evaluated was also carried out by a public institution (SERCOTEC). As the authors argue, Chile provides an exciting laboratory for assessing the effectiveness of entrepreneurship promotion programs in emerging countries. Indeed, 20% of workers are self-employed or business owners, 30% of the labour force is informal, and the traditional patriarchal values predominate. According to their results, SERCOTEC's advisory program had a positive impact that was more substantial for male entrepreneurs than for females.

The knowledge on female' entrepreneurship programs can be expanded if the individual data of female entrepreneurs become available. For instance, analyses of information regarding women's access to funding (amounts and interest rates), sales, costs, exports, and employment generated, among other variables, would constitute significant contributions to the field. In addition, a better understanding of public programs and the mechanisms through which they reach effectiveness in reducing gender gaps would be very insightful.

It is worth noting that due to the COVID-19 pandemic, the Government updated many national programs to face the crisis. Once enough time goes by, it would be helpful to study the impact of those changes and the necessary future actions to reduce entrepreneurship gender gaps. Preliminary evidence regarding reductions in female labour participation, entrepreneurship, and academic productivity turns on alarms. Traditional and patriarchal roles seem to have been reinforced since educational establishments (day-care centres, schools, and sports activities) were suspended for many months in Chile.

6. Annexe: Event Studies by Economic Sector

I conducted additional analyses to evaluate the robustness and provided more evidence that the parallel-trends assumption holds in the case of my outcome of interest (loans granted to women). I conducted six event studies for the total loans, conditioning by each one of the economic sectors analysed (Figures 5–10). All the figures that follow show non-significant effects before CME implementation.

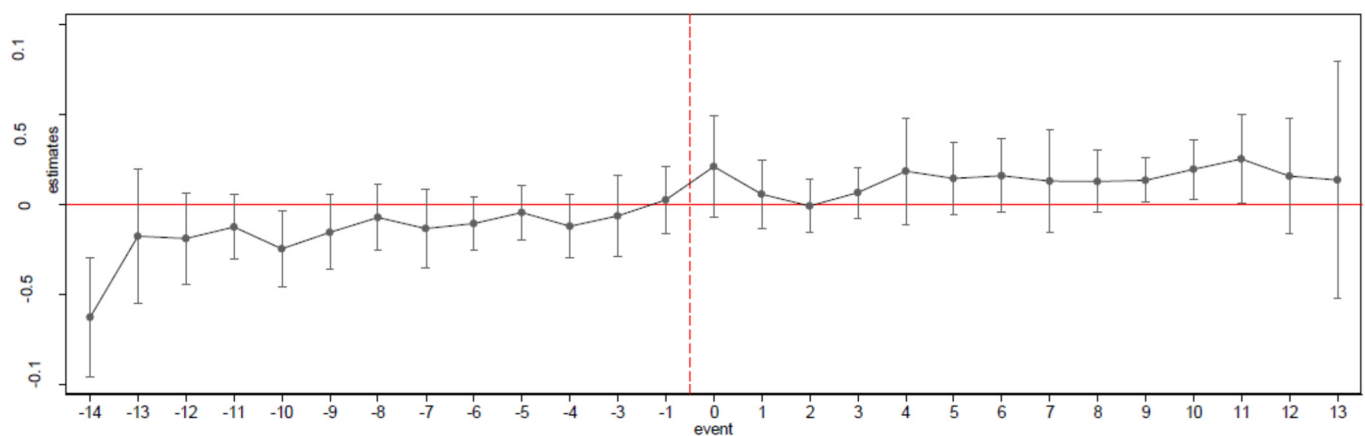


Figure 5. Parallel Trends Analysis—Event Studies on Loans Granted—Agricultural Sector.

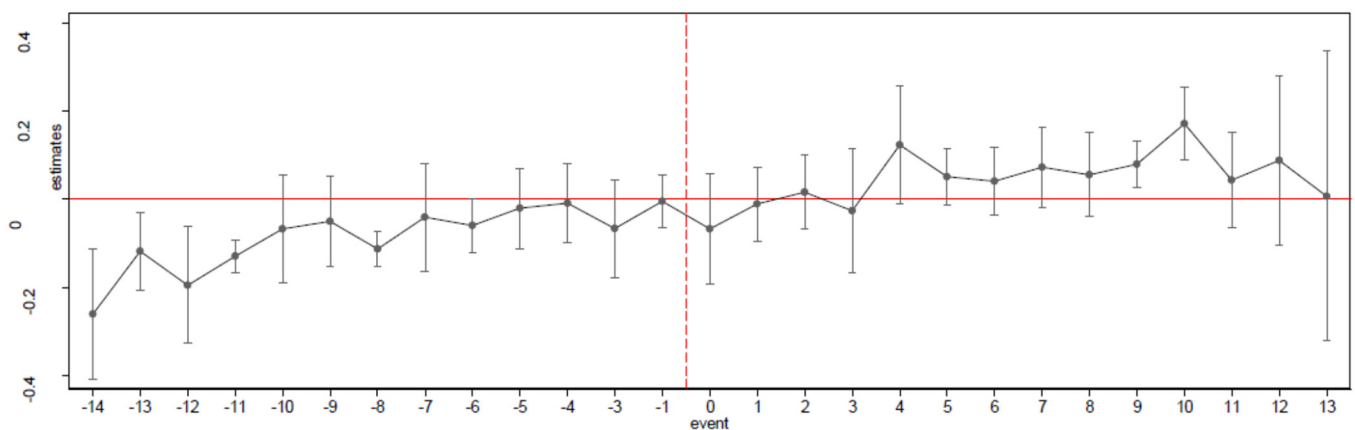


Figure 6. Parallel Trends Analysis—Event Studies on Loans Granted—Retail Sector.

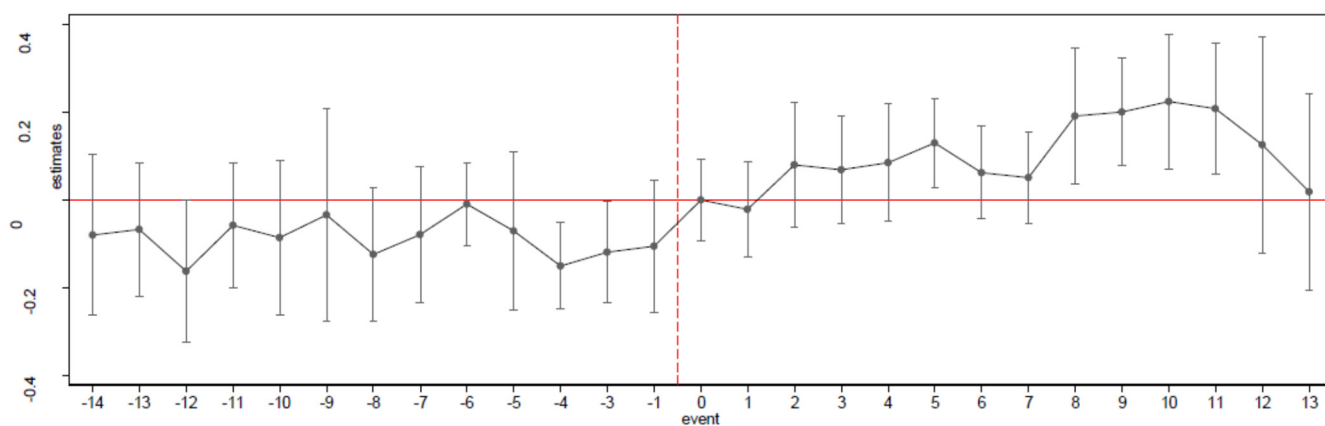


Figure 7. Parallel Trends Analysis—Event Studies on Loans Granted—Others Sector.

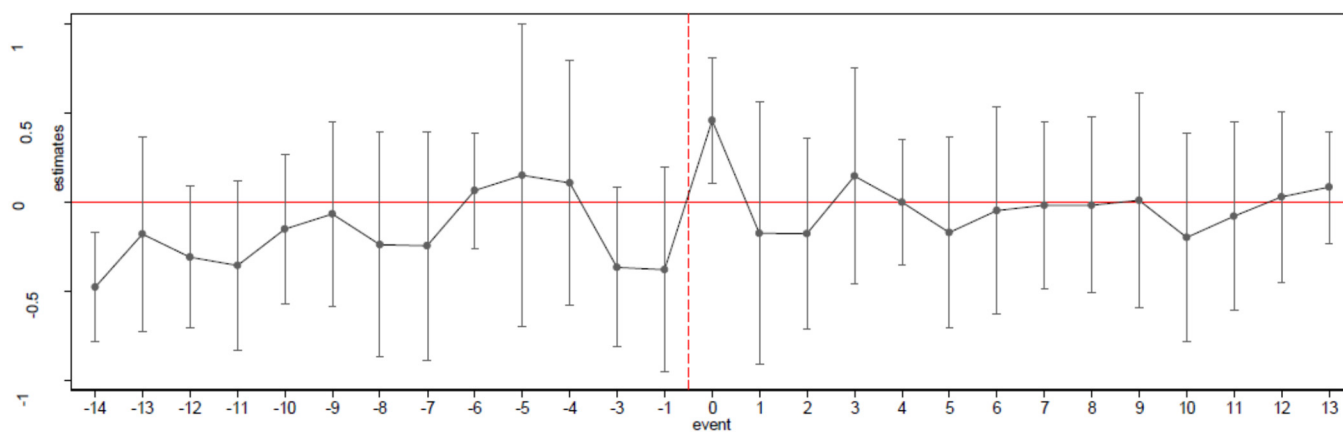


Figure 8. Parallel Trends Analysis—Event Studies on Loans Granted—Fishing Sector.

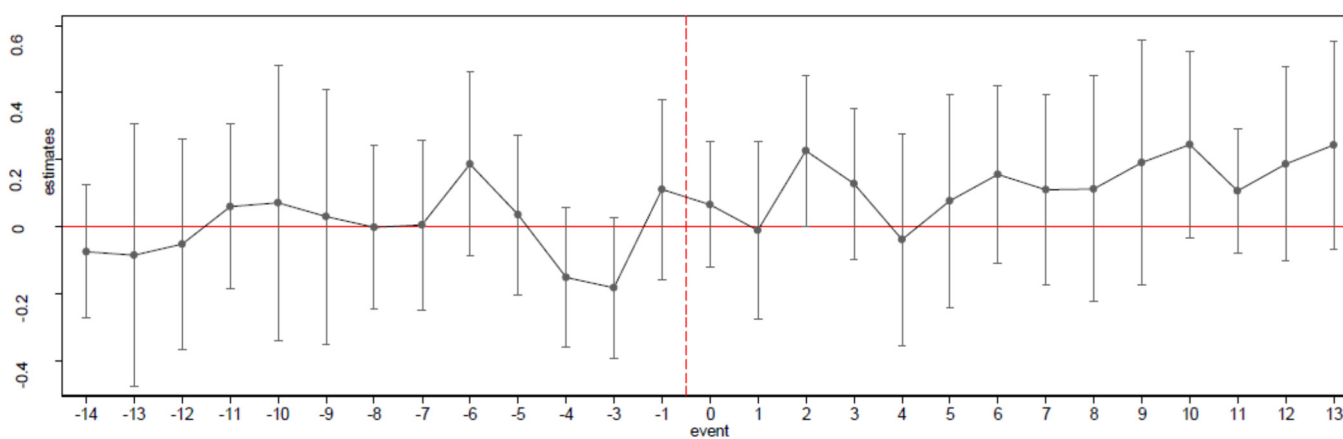


Figure 9. Parallel Trends Analysis—Event Studies on Loans Granted—Tourism Sector.

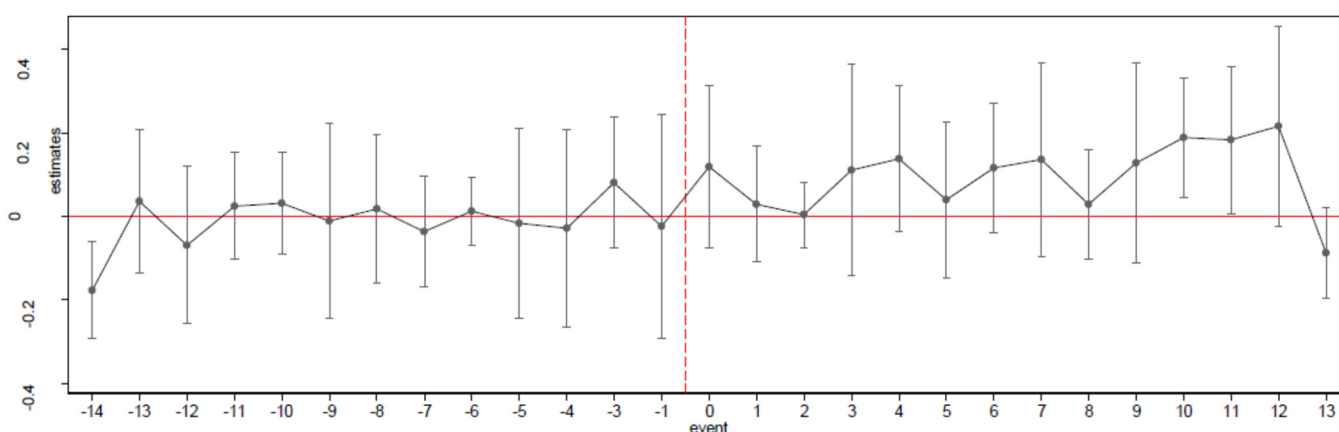


Figure 10. Parallel Trends Analysis—Event Studies on Loans Granted—Transport Sector.

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Notes

- ¹ There is evidence of gender differences in the impact of banking services on low-income clients in Mexico ([Bruhn and Love 2011](#)).
- ² Focus groups and extended interviews with customers were carried out, supporting those findings. Such evidence is consistent with [Eddleston et al. \(2014\)](#), whose results document that women entrepreneurs are less likely to obtain the same levels of bank financing than men. Moreover, they are consistent with the Mujeres [Del Pacífico \(2018\)](#) collection of evidence. Banks refuse female entrepreneurs' loan requests, arguing that their payment capacity is insufficient.
- ³ [Langowitz and Minniti \(2007\)](#) found that women perceive themselves in less favourable terms than men across the 16 countries where the Global Entrepreneurship Monitor (GEM) Project data were collected.
- ⁴ Consistent with [McGowan et al. \(2012\)](#).
- ⁵ From north to south of Chilean territory, those regions were: Arica y Parinacota, Tarapacá, Antofagasta, Atacama, Coquimbo, Valparaíso, Metropolitana de Santiago, Libertador General Bernardo O'Higgins, del Maule, de Ñuble, Biobío, Araucanía, Los Ríos, Los Lagos, Aysén, and Magallanes.
- ⁶ [Kast and Pomeranz \(2014\)](#) carried out a study in Chile that does not have the advantage of analysing a quasi-experimental national experience covering the whole country. Instead, they analyse the impact of a financial inclusion program that promotes access to saving accounts through an experiment that randomises interested people in treated and control groups.
- ⁷ The total amount lent by BEM and the average monthly loans are in Chilean pesos, considering inflation to express both in the pesos of July 2018. We use indices reported by the Central Bank of Chile.
- ⁸ Non-treated and treated periods change depending on the area. For instance, for the first area (Libertador Bernardo O'Higgins Region), the non-treated period extends from January 2012 to December 2014, while the treated period goes from January 2015 to July 2018.
- ⁹ In this case, the analysis considered branch-specific linear trends; the same graphs exposing estimates without those controls are available upon request.
- ¹⁰ (Sewing and clothing, shoes, handicrafts, clothing, and jewellery, among others).

References

- Acs, Zoltan, Elena Bardasi, Saul Estrin, and Jan Svejnar. 2011. Introduction to special issue of Small Business Economics on female entrepreneurship in developed and developing economies. *Small Business Economics* 37: 393–96. [[CrossRef](#)]
- Adkins, Cheryl, Steven Samaras, Sally Gilfillan, and Wayne McWee. 2013. The Relationship between Owner Characteristics, Company Size, and the Work-Family Culture and Policies of Women-Owned Businesses. *Journal of Small Business Management* 51: 196–214. [[CrossRef](#)]

- Bardasi, Elena, Shwetlena Sabarwal, and Katherine Terrell. 2011. How Do Female Entrepreneurs Perform? Evidence from Developing Regions. *Small Business Economics* 37: 417–41. [CrossRef]
- Beck, Thorsten, and Asli Demircug-Kunt. 2006. Small and Medium-size Enterprises: Access to Finance as a Growth Constraint. *Journal of Banking and Finance* 30: 2931–43. [CrossRef]
- Bertrand, Marianne, Esther Dufflo, and Sendhil Mullainathan. 2004. How Much Should We Trust Differences-In-Differences Estimates? *The Quarterly Journal of Economics* 119: 249–75. [CrossRef]
- Bruhn, Miriam, and Inessa Love. 2011. Gender Differences in the Impact of Banking Services: Evidence from Mexico. *Small Business Economics* 37: 493–12. [CrossRef]
- Carrillo, Paul, Nestor Gandelman, and Virginia Robano. 2014. Sticky Floors and Glass Ceilings in Latin America. *The Journal of Economic Inequality* 12: 339–61. [CrossRef]
- Coleman, Susan, Henry Colette, Barbara Orser, Lene Foss, and Friederike Welter. 2019. Policy Support for Women Entrepreneurs' Access to Financial Capital: Evidence from Canada, Germany, Ireland, Norway, and the United States. *Journal of Small Business Management* 57: 296–322. [CrossRef]
- Craig, Ben, William Jackson II, and James Thomson. 2007. Small Firm Finance, Credit Rationing, and the Impact of SBA-guaranteed Lending on Local Economic Growth. *Journal of Small Business Management* 45: 116–32. [CrossRef]
- Cuberes, David, and Marc Teignier. 2014. Gender Inequality and Economic Growth: A Critical Review. *Journal of International Development* 26: 260–76. [CrossRef]
- Deere, Carmen, and Cheryl Doss. 2006. The Gender Asset Gap: What Do We Know and What Does it Matter? *Feminist Economics* 12: 1–50. [CrossRef]
- Deere, Carmen, and Magdalena Leon. 2003. The Gender Asset Gap: Land in Latin America. *World Development* 31: 925–47. [CrossRef]
- Del Pacífico, Mujeres. 2018. Primer Informe: Programas de Apoyo al Emprendimiento Femenino en la Alianza del Pacífico. Available online: https://home.mujeresdelpacifico.org/uploads/library/5b96f4d0a1270_1er-Informe-MdP-ASELA-OAP.pdf (accessed on 12 December 2021).
- Demircug-Kunt, Asli, Leora Klapper, and Dorothe Singer. 2013. *Financial Inclusion and Legal Discrimination against Women: Evidence from Developing Countries*. Policy Research Working Paper Series 6416. Washington: The World Bank.
- Doss, Cheryl, Carmen Deere, Abena Oduro, Hema Swaminathan, Zachary Catanzarite, and J. Y. Suchitra. 2019. Gendered Paths to Asset Accumulation? Markets, Savings, and Credit in Developing Countries. *Feminist Economics* 25: 36–66. [CrossRef]
- Drori, Israel, Ronny Manos, Estefania Santacreu-Vasut, Oded Shenkar, and Amir Shoham. 2018. Language and Market Inclusivity for Women Entrepreneurship: The Case of Microfinance. *Journal of Business Venturing* 33: 395–415. [CrossRef]
- Economic Commission for Latin America and the Caribbean. 2018. Participation Rate by Sex. Available online: <http://interwp.cepal.org/sisgen/ConsultaIntegrada.asp?idIndicador=120&idioma=i> (accessed on 12 December 2021).
- Eddleston, Kimberly, Jamie Ladge, Cheryl Mitteness, and Lakshmi Balachandra. 2014. Do You See What I See? Signalling Effects of Gender and Firm Characteristics of Financing Entrepreneurial Ventures. *Entrepreneurship Theory and Practice* 40: 489–514. [CrossRef]
- Elborgh-Woytek, Katrin, Monique Newiak, Kalpana Kochhar, Stefania Fabrizio, Kangni Kpodar, Philippe Wingender, Benedict Clements, and Gerd Schwartz. 2013. Women, Work, and the Economy: Macroeconomic Gains from Gender Equity. IMF Staff Discussion Note. SDN/13/10. Available online: <https://www.imf.org/external/pubs/ft/sdn/2013/sdn1310.pdf> (accessed on 12 December 2021).
- Escobar, Bernardita. 2015. Female entrepreneurship and participation rates in 19th century Chile. *Estudios de Economía* 42: 67–91. [CrossRef]
- Escobar, Bernardita. 2016. Women in Business in Late Nineteenth-Century Chile: Class, Marital Status, and Economic Autonomy. *Feminist Economics* 23: 33–67. [CrossRef]
- Foss, Lene, Colette Henry, Helene Ahl, and Geir Mikalsen. 2018. Women's Entrepreneurship Policy Research: A 30-year Review of Evidence. *Small Business Economics* 53: 409–29. [CrossRef]
- Fossen, Frank. 2012. Gender Differences in Entrepreneurial Choice and Risk Aversion—A Decomposition Based on Microeconomic Model. *Applied Economics* 44: 1795–812. [CrossRef]
- Friedmann, Enav, and Oded Lowengart. 2016. The Effect of Gender Differences on the Choice of Banking Services. *Journal of Service Science and Management* 9: 361–77. [CrossRef]
- Global Entrepreneurship Monitor. 2013. *Reporte Nacional de Chile 2013*. Santiago de Chile: GEM. Available online: <https://negocios.udd.cl/gemchile/files/2014/10/Reporte-GEM-Chile-2013-web.pdf> (accessed on 12 October 2021).
- Global Entrepreneurship Monitor. 2019. *Reporte Nacional de Chile 2019*. Santiago de Chile: GEM. Available online: <https://negocios.udd.cl/gemchile/files/2020/07/GEM-Nacional-de-Chile-2019baja-1.pdf> (accessed on 12 October 2021).
- Johan, Sofia, and Patricio Valenzuela. 2020. Business Advisory Services and Female Employment in an Extreme Institutional Context. *British Journal of Management* 32: 1082–96. [CrossRef]
- Kast, Felipe, and Dina Pomeranz. 2014. *Saving More to Borrow Less: Experimental Evidence from Access to Formal Savings Accounts in Chile*. NBER Working Papers 20239. Cambridge: NBER Inc.
- Langowitz, Nan, and Maria Minniti. 2007. The Entrepreneurial Propensity of Women. *Entrepreneurship Theory and Practice* 31: 323–39. [CrossRef]

- Leitch, Claire, Friederike Welter, and Colette Henry. 2018. Women Entrepreneurs' Financing Revisited: Taking Stock and Looking Forward. *Venture Capital* 20: 103–14. [\[CrossRef\]](#)
- Lusardi, Annamaria, and Olivia Mitchell. 2008. Planning and Financial Literacy: How Do Women Fare? *American Economic Review* 98: 413–17. [\[CrossRef\]](#)
- Lusardi, Annamaria, and Olivia Mitchell. 2014. The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature* 52: 5–44. [\[CrossRef\]](#) [\[PubMed\]](#)
- Malapit, Hazel Jane. 2012. Are Women More Likely to be Credit Constrained? Evidence from Low-Income Urban Households in the Philippines. *Feminist Economics* 18: 81–108. [\[CrossRef\]](#)
- Marlow, Susan, and Janine Swail. 2014. Gender, risk and finance: Why can't a woman be more like a man? *Entrepreneurship & Regional Development* 26: 80–96.
- Mazzarol, Tim. 2014. *Growing and Sustaining Entrepreneurial Ecosystems: What They are and the Role of Government Policy*. SEAANZ White Paper. Melbourne: SEAANZ. Available online: https://smallbusiness.report/Resources/Whitepapers/28ea2090-9f50-4220-a098-a9435a2dbe20_iicie.pdf (accessed on 12 October 2021).
- McGowan, Pauric, Carol Lewis Redeker, Sarah Cooper, and KKate Greenan. 2012. Female Entrepreneurship and the Management of Business and Domestic Roles: Motivations, Expectations and Realities. *Entrepreneurship and Regional Development* 24: 53–72. [\[CrossRef\]](#)
- OECD. 2012. *Closing the Gender Gap. Act Now*. Paris: OECD Publishing.
- OECD. 2015a. *The Missing Entrepreneurs 2015: Policies for Self-Employment and Entrepreneurship*. Paris: OECD Publishing.
- OECD. 2015b. *Entrepreneurship at a Glance 2015*. Paris: OECD Publishing.
- OECD. 2016. *OECD Employment Outlook 2016*. Paris: OECD Publishing.
- OECD. 2018. Participation Rate by Sex. Available online: <https://stats.oecd.org/> (accessed on 12 October 2021).
- Parker, Simon. 2005. The Economics of Entrepreneurship: What We Know and What We Don't. *Foundations and Trends in Entrepreneurship* 1: 1–54. [\[CrossRef\]](#)
- Rodríguez, Paola, Mar Fuentes-Fuentes, and Lazaro Rodríguez. 2013. Strategic Capabilities and Performance in Women-Owned Businesses in Mexico. *Journal of Small Business Management* 52: 541–54. [\[CrossRef\]](#)
- Roodman, David, James MacKinnon, Morten Orregard, and Matthew Webb. 2018. *Fast and Wild: Bootstrap Inference in Stata Using Boottest*. Working Papers 1406. Kingston: Department of Economics, Queen's University.
- Sabarwal, Swetlena, and Katherine Terrell. 2009. Access to Credit and Performance of Female Entrepreneurs in Latin America (Summary). *Frontiers of Entrepreneurship Research* 29: 6.
- Superintendencia de Bancos e Instituciones Financieras. 2014. *Género en el Sistema Financiero*. Santiago de Chile: Superintendencia de Bancos e Instituciones Financieras Publishing.
- Terjesen, Siri, and Ainsley Lloyd. 2014. *The 2015 Female Entrepreneurship Index. Analysing the Conditions that Foster High-Potential Female Entrepreneurship in 22 Countries*. Washington: The Global Entrepreneurship and Development Institute.
- Thébaud, Sarah. 2015. Business as Plan B: Institutional Foundations of Gender Inequality in Entrepreneurship across 24 Industrialised Countries. *Administrative Science Quarterly* 60: 671–711. [\[CrossRef\]](#)
- Verheul, Ingrid, and Roy Thurik. 2001. Start-Up Capital: 'Does Gender Matter?' *Small Business Economics* 16: 329–46. [\[CrossRef\]](#)
- World Bank. 2011. *Gender Equality and Development, World Development Report 2012*. Washington: The International Bank for Reconstruction and Development.