

**Win Some Lose Some?  
Evidence from a Randomized Microcredit Program Placement Experiment  
by Compartamos Banco**

Executive Summary

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## I. SUMMARY

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The initial promise of microcredit, including such accolades as the 2006 Nobel Peace Prize, has given way to intense debate about if and when it is an effective development tool. Many argue that expanded access to credit, enabled through innovations in lending markets, provides the tools low-income entrepreneurs and households need to start a business, stabilize their finances, and purchase vital assets. At the same time, worries abound that access to credit can lead some to take on too much debt and do more harm than good. This debate about whether and when credit is helpful or harmful coincides with a governance debate on the impact from for-profit firms expanding credit operations. Does access to credit with a for-profit lender, charging market interest rates, create just winners who use credit to improve their lives, or also create losers who become burdened by debt?

Professors Manuela Angelucci (University of Michigan), Dean Karlan (Yale University), and Jonathan Zinman (Dartmouth College) partnered with Compartamos Banco of Mexico to bring additional evidence to bear on this question in a new paper, *“Win Some Lose Some? Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco.”* The authors draw three main conclusions about the effects of access to credit from Compartamos Banco.

**1. Access to credit from Compartamos Banco creates generally positive, but not transformative, impacts. On average, access to Compartamos Banco credit:**

- Does not crowd out other borrowing, whether formal or informal, although it does lead to a shift away from informal savings groups.
- Enables existing business owners to expand their businesses through higher revenues, but does not spur the development of new businesses or improve profits.
- Allows people to avoid selling assets in order to pay down debt, and thus to maintain a more stable level of economic well-being.
- Increases happiness and trust in others.
- Increases the fraction of women who report having a say in household financial decision making and the number of household decisions women have a say on.
- Does not lead to increased income (through business growth or other mechanisms), nor to noticeable changes in household consumption.

**2. There is some limited, but potentially actionable, evidence that access to Compartamos Banco credit creates “losers”:**

- Individuals with no previous experience of formal credit, with experience in an informal savings group, or with low incomes experience more negative effects relative to other individuals, particularly for subjective well-being outcomes.

- There is no evidence that access to credit increases the likelihood that individuals have worse outcomes after two years.

### 3. Policy implications:

- Microcredit does not appear to raise the income of the average borrower, but is still valuable as a tool to allow clients to manage their cash flows over time, and to enable existing business owners to expand their businesses.
- From a policy perspective, the negative effects seen on individuals without formal credit experience are particularly relevant given that banks may have a special role to play in helping first-time borrowers. Further research is needed to explore potential screening criteria or effective guidance to first-time borrowers.

## II. METHODS

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The study used a randomized controlled trial (RCT) design to examine the impact of access to credit. RCTs are the most rigorous evaluation methodology available for assessing social programs such as microfinance.

In an RCT, study participants are randomly assigned to one of two groups: the treatment group, which receives access to credit, or the control group, which does not receive credit access during the study period. Random assignment ensures that the composition of the two groups should be quite similar to each other on average, both in terms of characteristics that are relatively easy to observe (e.g., education and marital status), and in terms of characteristics that are not (talent and financial resources of individuals; strategic targeting by lenders to different geographies or individuals). This allows the researchers to identify the impact of access to credit among the treatment group relative to a similar group of people, the control group. If any changes in economic indicators surface among the treatment group, but not among the control group, we can reliably conclude that they were caused by access to credit. The use of both random selection and a comparison group set RCTs apart from other, less rigorous evaluation methodologies.<sup>1</sup>

- A comparison group is important because it allows the researchers to control for macroeconomic environmental factors that might have affected borrowers even if they had not received access to credit. For example, if an economic contraction causes everyone to do worse over time, but access to credit leads to improvements, these effects may offset each other and generate no change. A comparison of before to after would mistakenly conclude that the credit had no impact, when in fact it helped someone stay “as is” rather than worsen. Comparing outcomes of borrowers to non-borrowers in the same macroeconomic environment avoids this problem.
- Random assignment to treatment and comparison groups is a key second step, beyond that of merely having a comparison group. This helps remove the possibility that those who *choose* to participate are on a different trajectory in life than those who do not choose to participate in ways that we cannot

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<sup>1</sup> One further complication in determining the effects of access to credit comes from the existence of “spillover effects.” Spillover effects are changes that occur as a result of proximity to people who received access to credit rather than the credit itself. For example, if the owner of a bakery receives access to credit and takes out a loan to invest in a new oven, she may expand her business and begin to buy more flour from the owner of a grocery store nearby. If researchers just compared people who received access to loans (including the baker) with people who did not receive access to loans (including the grocery store owner), they could miss the beneficial effects of credit for the grocery store owner, or the “spillover effects.” One way to avoid this problem is to compare communities that randomly receive access to credit with communities that do not receive access to credit. Then, comparing the overall business revenues of communities in the treatment group with communities in the control group will include the spillover effects. The researchers in this study used random assignment to treatment and comparison groups, and performed this assignment at the community level, which enables them to measure these “spillover” effects.

measure. For instance, an evaluation that compared the financial outcomes of current microfinance clients to similar people who didn't take out loans won't be able to show that credit access is the only cause of differences between the two groups. Current microfinance clients might be more entrepreneurial or more willing to take risks than non-clients – factors which are hard to measure, but would likely impact their lives even in the absence of credit. Randomly assigning people to be offered credit ensures that the treatment group will not be more entrepreneurial or risk-seeking than the comparison group on average.

### III. THE INTERVENTION

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#### A. The Product: *Crédito Mujer*

The researchers partnered with Compartamos Banco in Mexico to evaluate the social and economic impact of *Crédito Mujer*, Compartamos' principal group microloan product. Compartamos is the largest microlender in Mexico with 2.3 million borrowers. It was founded in 1990 as a nonprofit organization, converted to a commercial bank in 2006, went public in 2007, and has a market capitalization of US\$2.2 billion as of November 2012.

As of 2012, 71% of Compartamos clients borrowed through *Crédito Mujer*. Loan amounts during the study period ranged from M\$1,500-M\$27,000 pesos (US\$125 – US\$2250).<sup>2</sup> Amounts for first-time borrowers ranged from M\$1,500 - M\$6,000 pesos (US\$125-US\$500), with larger amounts subsequently available after repayment of previous loans. Loan repayments were made in 16 equal weekly installments, and were guaranteed by the group. Group sizes ranged from ten to fifty. Aside from these personal guarantees there was no collateral on the loans.

Loans cost 3.9% per month, calculated “add-on” (i.e., over the original amount of the loan). Including value-added tax and required simultaneous savings, the cost of borrowing in APR terms is 110%, calculated without compounding.<sup>3</sup> For loans of this size, these rates are in the middle of the market for both non-profit and for-profit lenders in Mexico.<sup>4</sup>

#### B. Study Design & Data Collection

In early 2009, the research team worked with Compartamos to randomize the introduction of *Crédito Mujer* through three new branches in North-Central Sonora State. The study region was split into 250 “clusters,” each roughly the size of a neighborhood. 125 clusters were assigned to be in the comparison group and 125 to the treatment group.<sup>5</sup> People in treatment group clusters received door-to-door promotion of *Crédito Mujer* from Compartamos loan officers. People in comparison group clusters did not receive any promotion. To ensure differential take-up of credit between treatment and comparison groups, Compartamos required its loan officers to restrict loan access exclusively to treatment clusters.

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<sup>2</sup> 12 pesos, denoted M\$, = US\$1

<sup>3</sup> Borrowers must make an upfront deposit totaling 10% of their loan amount into a personal savings account, and contribute at least 10 pesos weekly for the remainder of the loan cycle. This “forced savings” component at either zero or low interest is not claimed as collateral, but rather meant to instill a “culture of regular deposits,” and generate a signal of the client's ability to generate and manage cash flow that can be used for the lending decisions described in the next sub-section. The forced savings is not necessarily held by Compartamos, making it a cost to the borrower but not necessarily a benefit to Compartamos. In other words, the effective APR paid by the borrower is higher than the effective APR earned by Compartamos. Mexican law does not require that the official rate reflect the forced savings and the value-added tax (16%); thus the rate advertised and publicly disseminated as per Mexican regulations is 78% APR.

<sup>4</sup> See [http://blogs.cgdev.org/open\\_book/2011/02/compartamos-in-context.php](http://blogs.cgdev.org/open_book/2011/02/compartamos-in-context.php) for a more detailed elaboration of market interest rates in 2011 in Mexico.

<sup>5</sup> For safety reasons, IPA surveyors were unable to enter 12 clusters for endline surveying, making the final total 238 clusters (120 treatment, 118 control).

Compartamos began lending to the first treatment clusters in April 2009. From November 2011 to March 2012, IPA conducted an endline survey of 16,560 women aged 18-60 who A) had a business, B) would like to start a business, or C) would consider taking a loan in the future. On average, treatment group respondents had access to credit for 26 months at the time of the endline survey.

The surveys showed that the treatment and comparison groups had similar demographic and socioeconomic characteristics, as well as levels of access to credit, before the Compartamos program was implemented. In addition, Compartamos' marketing in treatment clusters was successful in increasing loan take-up rates: 18.9% of those surveyed in the treatment areas had taken out Compartamos loans, while only 5.8% of those surveyed in the comparison areas had taken out Compartamos loans.<sup>6</sup>

#### IV. RESULTS

The study investigates the impact of credit on 34 outcomes, in addition to 9 measurements of credit and financial services usage. The analysis examines the average effects of access to credit and takes an additional step of investigating how access to credit affects certain people differently by examining effects based on distributions of the outcomes and subgroups of individuals ("heterogeneous effects").

<b>Summary of Average Effects</b>	
<b>Measures of credit use</b>	<b>Business outcomes</b>
Total # of household loans {*}	Has a business
Total amount of household loans {*}	Has ever owned a business
# of household loans from Compartamos {*}	Used a loan to expand a business {+}
Amount of household loans from Compartamos {*}	Number of employees
# of household loans from a moneylender or pawnshop	Revenues in the last 2 weeks {+}
Amount of household loans from a moneylender or pawnshop	Expenditures in the last 2 weeks {+}
Formal credit is first choice for credit	Profits in the last 2 weeks
Satisfied with access to financial services	Household business income last month
Member of an informal savings group {*}	No financial problems managing business in the last year
<b>Consumption &amp; income outcomes</b>	<b>Other welfare outcomes</b>
Did not sell an asset to help pay for a loan {+}	Depression index (higher = happier) {+}
Used a loan to buy any asset	Job stress index (higher = less stress)
Amount spent on temptation goods {?}	Locus of control index
Amount spent on groceries	Trust in institutions index
Nights did not go hungry	Trust in people index {+}
Amount spent on school and medical expenses	Satisfaction (life and harmony) index
Amount spent on family events	Satisfied with economic situation
Number of types of different assets purchased {-}	Good health status
Did not sell an asset	Fraction of children 4-17 not working
Made home improvement	Participates in any financial decisions {+}
Total income	# of household issues she has a say on {+}
Income from salaried and non-salaried jobs	# of household issues in which conflict arises

<sup>6</sup> Although Compartamos instructed loan officers not to make credit offers to residents of comparison communities during the study period, some residents of comparison communities did successfully obtain loans from Compartamos during this time. This lack of perfect compliance with the experimental design does not preclude using the randomization to identify the causal effects of access to credit: the researchers identify causal effects of access by using the random *assignment* to treatment or comparison instead of actual borrowing behavior.

Participated in an economic activity  
Amount of remittances received  
Income greater than or equal to expenses

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*Notes: The measures with {\*} at the end showed significant average differences between the treatment and comparison groups; these are measures which help determine how access to Compartamos loans changed the use of financial services. Outcomes with {+} showed significant differences and are interpreted as positive from a welfare perspective; outcomes with {-} showed changes interpreted as negative effects. Outcomes with {?} changed significantly, but the direction of the change is ambiguous from a welfare perspective.*

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## **A. Average Effects**

Several conclusions surface from the analysis of the average impact of access to Compartamos Banco credit. The findings indicate that Compartamos Banco credit:

1. Increases borrowing and does not crowd out other borrowing, whether formal or informal, although it does lead to a shift away from informal savings groups.
2. Enables existing business owners to expand their businesses through higher revenues, but does not spur the development of new businesses or improve profits.
3. Improves access to cash and allows people to avoid selling assets in order to pay down other debt, and thus to maintain a more stable level of economic well-being.
4. Increases happiness and trust in others.
5. Increases the fraction of women who report having a say in household financial decision making, and the number of household decisions women have a say in.
6. Does not lead to increased income (through business growth or other mechanisms), nor to noticeable changes in household consumption.
7. There is no evidence that access to credit increases the likelihood that individuals have worse outcomes after two years.

## **B. Heterogeneous Effects – Distributions**

Average effects can mask underlying heterogeneity in impacts. For example, an average increase in business revenues could be caused by a small percentage of credit clients who see very large revenue increases, masking a larger number of clients who see no effect or even a decline in revenues. The researchers thus investigated at what point in the distribution of the outcomes the differences between the comparison and treatment groups surfaced. For instance, values of business profits at the bottom 10% of the distributions may have been on average smaller for the treatment group than for the comparison group, but values at the top 10% of the distribution may have been higher.

These distributional effects exhibit several patterns:

1. Increases in business revenues, business expenses, business profits, grocery consumption, and school and medical expenses occur at the top of the distribution (i.e. above the 75<sup>th</sup> percentile). That is, either the large businesses and wealthier households are becoming better off or some households in the middle and low sections of the outcome distributions are experiencing large gains.
2. There is little evidence of negative impacts across all outcomes for people at the low end of the distribution for those outcomes.
3. Treatment effects on happiness and on trust in people increase in all parts of the distributions for these outcomes.

On the whole, the distributional analysis alleviates concerns that people in the lower end of the distributions of outcomes were “losers,” in the sense of ending up worse off than they previously were because of access to credit. It also highlights that not all clients were “winners” to the same degree.

### C. Heterogeneous Effects – Mean Impacts by Subgroups

The study also examined whether access to credit affected certain groups of participants differently than others based on some shared characteristic. For example, previous studies have shown that people who owned a business before being randomly assigned access to credit use their loans differently than people who did not own a business before the assignment.

The researchers looked for evidence of these different effects among twenty different groups of people, divided according to the following ten categories:

Subgroup characteristics	
Prior business ownership	Prior formal bank account experience
Education level	Prior informal savings group experience
Location	Risk aversion
Income	Present bias
Prior formal credit experience	Patience

Two subgroups fare particularly well: those with prior business ownership and those with high education. Prior business owners show eight positive effects, five of which were on business outcomes, and no negative effects. Individuals with high education show seven positive effects and zero negative effects.

The results show that some sub-groups—in particular, those with lower incomes, those with prior experience in an informal savings group, and those without prior formal credit experience—experience more negative treatment effects than others. However, these groups do not experience a negative effect on total income or happiness. The negative treatment effects are concentrated in other subjective well-being outcomes. The other seventeen subgroups experience three negative outcomes or fewer among the 34 outcomes examined. Taken as a whole, these results suggest a lack of evidence of substantial negative effects.

## V. CONCLUSION

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The researchers find that two years following the introduction of *Crédito Mujer*, access to Compartamos Banco credit generates generally positive but not transformative impacts. On average, businesses do not become more profitable and income does not increase, but people are better able to manage debt without selling assets, women gain more power in the household, and happiness increases. They also look beyond these *average* impacts to examine whether they see evidence that some win while others lose. They find much more evidence of people winning, but do find some potentially important and identifiable pockets where people do worse off: individuals without formal credit experience, with experience in an informal savings group, and with low income experience have a higher number of significant negative outcomes than other groups, and more significant negative outcomes than positive outcomes.

A few caveats accompany the conclusions drawn from the study. The results accurately capture the impact of the *Crédito Mujer* loan product in northern Mexico, but a similar product implemented in a different region, different time period, or different market environment could produce different results. Given the two to three year timeframe of the study, it cannot speak to longer-term impacts of access to

credit, although this timeframe is longer than the randomized control studies published to date on impacts of credit.

Moving forward, the authors emphasize the importance of understanding why certain subgroups may have experienced negative effects, focusing in particular on those without formal credit experience. Are there ways to support such individuals in the early stages of lending? What is it about people who don't have formal credit experience that explains the observed impacts? Given the extensive interactions banks have with first-time borrowers, they have a unique opportunity to understand why these negative impacts may be created and to test rigorously how certain policies, such as different screening criteria, disclosures, or guidance programs for first-time borrowers, may impact clients.

The authors conclude by evaluating how these results fit with recent findings from a study on Compartamos Banco's interest rates (Karlan and Zinman 2013). That nationwide study found that demand for credit is quite responsive to the interest rate: cutting APRs by roughly 10 percentage points substantially increased lending. This particular cut also proved financially sustainable for Compartamos; profits did not change with the lower rates. Combined, the two studies provide important insights into how Compartamos (and perhaps other financial institutions) can pursue a "double bottom line" mission of maximizing profit and the social welfare impacts of its programs. Within a certain range, cutting rates bring in more borrowers, who tend to benefit on average, while not sacrificing profits. So cutting rates can be a cost-effective way to expand access and thereby broaden the reach of positive impacts from microcredit.