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Mitigating asymmetric information in credit markets: Evidence from Microcredit *

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Abstract

This paper analyzes the impact of microcredit on the transition to credit lines in the rural sector. Using administrative data, we find that borrowers entering the subsidized credit market through microcredit programs transition to credit lines with higher loan volumes, lower interest rates, and longer maturities relative to borrowers who enter this market directly. Our results suggest that by reducing asymmetries of information —through both credit history and asset accumulation— microcredit expansion via public policy promotes the transition of new borrowers to credit markets dominated by large borrowers.

Keywords: Asymmetric information, microfinance, financial inclusion, rural credit

JEL Codes: G21, O12, O54

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Mitigando la información asimétrica en los mercados de crédito: Evidencia del mercado de microcrédito

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Resumen

Este documento analiza el impacto del microcrédito en la transición hacia líneas de crédito en el sector rural. Utilizando datos administrativos, encontramos que los prestatarios que ingresan al mercado de crédito subsidiado a través de programas de microcrédito transitan hacia líneas de crédito con mayores montos, menores tasas de interés y plazos más largos en comparación con aquellos que acceden directamente a este mercado. Nuestros resultados sugieren que, al reducir las asimetrías de información —tanto mediante la construcción de historial crediticio como a través de la acumulación de activos—, la expansión del microcrédito impulsada por políticas públicas facilita la transición de nuevos prestatarios hacia mercados de crédito dominados por grandes actores.

Palabras clave: Información asimétrica, microfinanzas, inclusión financiera, crédito rural

Códigos JEL: G21, O12, O54

1 Introduction

Microcredit enables borrowers who are usually excluded from the traditional credit market to access the financial system and build a credit history. This history allows financial intermediaries to use conventional technology to assess the feasibility of providing larger loans. This has the potential to mitigate adverse selection problems within this population (Agarwal et al., 2023; Cull et al., 2014). Using microdata from subsidized credit markets in Colombia, this study provides novel empirical evidence on this mechanism.

Microcredit has been shown to provide financing to those excluded from the traditional credit system (Banerjee et al., 2015; Dahal and Fiala, 2019). However, the direct impact of microcredit on agricultural producers may be limited by small loan sizes, short maturities, and high interest rates, making it difficult to use for long-term investments (Conning and Udry, 2007; Field et al., 2013). This study provides evidence of the potential indirect impact of microcredit on farmers' access to credit. By providing financial intermediaries with more accurate information about potential borrowers, microcredit reduces information asymmetries.

We examine the relationship between agricultural microcredit policies and small farmers' access to credit in Colombia. These policies are implemented through subsidized loan programs offered by financial intermediaries, such as banks and microfinance institutions, which use resources from a second-tier public bank, Finagro.[1,2]. In 2016, the country began to see an accelerated expansion of agricultural microcredit. This growth was driven by regulatory changes that made it easier to use rediscount funds for microcredit intermediation. We evaluated the transition from microcredit to traditional credit among producers who entered the financial system for the first time after the agricultural microcredit lines expanded. Although microcredit beneficiaries have a low probability of accessing traditional credit in

[1]In Colombia, this type of credit is known as *Créditos de redescuento*

[2]In this document, we refer to credit that is subsidized but not microcredit as "traditional credit" or "credit lines."

the short term, our results suggest that those who transition to the traditional subsidized credit system benefit from more favorable financial conditions. These benefits include larger loan amounts, longer repayment periods, and lower interest rates compared to producers who enter the system directly through traditional subsidized credit.

Our findings support the idea that developing a credit history through microcredit can reduce information asymmetries and improve access to financing for potentially profitable borrowers who have been marginalized in the credit market. However, it should be noted that these cases represent only a small percentage of microcredit beneficiaries. This highlights the limited scope of these potential effects and suggests that other barriers may predominate. Furthermore, we found that microcredit contributes to asset accumulation among borrowers, especially those who receive above-median loan amounts. This further enhances their credit profiles and may serve as an additional mechanism for reducing informational asymmetries.

2 Contribution to literature

Information asymmetries arise from lenders' inability to accurately assess potential borrowers' characteristics when allocating loans. This can result in loans being allocated to borrowers who are systematically riskier than others (Jaffee and Russell, 1976; Bebczuk, 2003). This phenomenon is referred to as adverse selection. Furthermore, lenders' inability to monitor borrowers' actions after granting a loan creates incentives for borrowers to default on their obligations. This is referred to as "moral hazard" in the literature (Banerjee and Duflo, 2010; Crawford et al., 2018).

The presence of asymmetric information poses significant challenges to the financial system. It leads to rationing of credit and inefficient allocation of resources, affecting both the quantity and price of credit (Stiglitz and Weiss, 1981; Bester, 1985). Therefore, it is crucial to develop mechanisms that mitigate these negative effects and promote a fair and

efficient credit distribution. For example, Agarwal et al. (2022) find that the unbanked population has a substantial demand for banking services. However, when they have access to credit products, unbanked borrowers demonstrate higher loan delinquency rates, suggesting lower credit quality. In this sense, microcredit can be used as an engagement product to address these challenges. Microcredit tests borrowers' capacity to engage in short- and medium-term relationships to repay their debts, thereby increasing the number of trusted debtors in the future (Banerjee and Duflo, 2010). At the same time, these credit products enable beneficiaries to acquire the necessary resources to start or expand their businesses, improve their ability to cope with emergencies, and maintain their consumption levels without experiencing a prolonged decline in their material well-being (Armendáriz and Morduch, 2010; Bruhn and Love, 2014).

The literature extensively studies financial inclusion and the impact of microcredit. Agarwal et al. (2023) highlight how a large-scale microcredit expansion program coupled with a credit bureau accessible to all lenders can enable unbanked borrowers to build a credit history, facilitating their transition to commercial banks. Loan-level data from Rwanda demonstrate that the program increased access to credit and reduced poverty. A significant proportion of first-time borrowers transitioned to commercial banks, which select lower-risk borrowers and offer them larger, less expensive, and longer-term loans. Recent studies further demonstrate that reforms that expand access to credit information, such as the policy implemented in Brazil and analyzed by Hsu Rocha et al. (2024) can improve credit allocation by favoring more creditworthy borrowers, reducing default rates, and improving the performance of new entrepreneurial ventures. However, increased precision in credit scoring can exacerbate disparities in access among different population groups and widen racial disparities in credit distribution.

This impact is especially notable in rural areas, where income volatility and limited collateral restrict access to formal financing. Microfinance can be crucial for managing

these uncertainties, as Collins et al. (2009) found in his study of portfolios. Brown et al. (2016) finds that proximity to microfinance branches significantly improves financial access for marginalized populations. In Ghana, loans earmarked for productive, collateralized enterprises increase the likelihood of credit approval (Mishra et al., 2020). Increasing financial inclusion for low-income households can enhance asset accumulation and financial resilience (Celerier and Matray, 2019).

Recent experimental evidence suggests that financial education alone has limited effects on financial behavior, particularly among low-income populations. Cole et al. (2011) show that, while financial literacy correlates with a greater degree of interaction with the formal financial system (e.g., banking account usage), education programs only benefit individuals with low initial literacy. Building on this, Carpena et al. (2019) demonstrate that combining financial education with goal setting and personalized counseling significantly improves budgeting, savings, and formal banking account adoption. This underscores the need to address cognitive and behavioral constraints to reduce informational asymmetries.

Microcredit may also serve as an alternative to informal lending. In India, for example, its introduction led to a decline in informal borrowing and improvements in occupational choice, business size, consumption, and women's empowerment, though the effects were not transformative across the board (Banerjee et al., 2015). Beyond financial markets, microcredit contributes to broader economic development. Beck et al. (2000) and King and Levine (1993) show that financial development correlates positively with productivity and GDP growth. Fulford (2013) finds that microcredit boosts short-term consumption and investment, while Bettoni et al. (2023) shows that microfinance programs in Brazil support small business growth, employment, and reinvestment cycles. These findings suggest long-term gains from relaxing borrowing constraints.

In the Colombian context, Estrada and Hernández (2019); Estrada et al. (2022) emphasizes the role of microcredit in reducing poverty and promoting financial inclusion. Our study

contributes to this literature by demonstrating how initial access to microcredit can improve future credit conditions. Credit histories reflect repayment capacity and reduce informational asymmetries, which facilitates access to better financing opportunities. Although the effects may be modest, borrowers who demonstrate reliable repayment behavior tend to establish positive credit profiles, enabling them to secure larger loans on more favorable terms (Karlan and Zinman, 2010).

Our study emphasizes the significance of initial access to microcredit in enhancing future credit conditions. Credit scores not only reflect borrowers' ability to meet their obligations, but also reduce information asymmetries and facilitate access to better financing opportunities. As discussed in Karlan and Zinman (2010), while microcredit may modestly improve borrowers' ability to access traditional credit in the future, those who demonstrate adequate repayment behavior tend to establish positive credit histories, enabling them to obtain larger loans with more favorable terms.

3 Background

From 2012 to 2016, Colombia implemented several regulatory changes aimed at promoting the expansion of microcredit in rural areas of the country. The following is a brief description of these changes (see Annex A for details). Resolution 7 of 2012, issued by the National Agricultural Credit Commission (CNCA), authorized Finagro to establish a rediscount program for agricultural and rural microcredit. The resolution outlines the terms and conditions of the microcredit line, including the maximum amount (25 times the legal monthly minimum wage, or SMMLV); the rediscount rate (DTF+2.5); the interest rate for end users (within legal limits); and the maximum term (two years).

Resolution 2 of 2014, issued by the CNCA, amends Resolution 7 of 2012 by authorizing financial intermediaries to use their own funds to finance the agricultural and rural microcredit line and by permitting the Agricultural Guarantee Fund (FAG) to grant guarantees.

Subsequently, Law 1731 of 2014 established the Rural Microfinance Fund (FMR), which is managed by Finagro. The FMR's objective is to finance, support, and develop rural microfinance in Colombia.

In 2015, the CNCA issued Resolution 12, which amended Resolution 7 of 2012 to include voluntary microinsurance premiums associated with microloans as eligible costs. Subsequently, Decree 2370 of 2015 expanded the funding sources for the FMR by allowing contributions from public or private entities.

In 2016, Resolution 1 of the CNCA consolidated the regulations for granting microcredit and loans for agricultural and rural development. According to the provisions of Resolution 7 of 2012, it defined the beneficiaries and the activities that could be financed, as well as the financial conditions. This CNCA regulation marked a significant shift in agricultural microcredit policy by outlining certain aspects of credit conditions and beneficiaries. The intention behind this regulatory shift was to implement the changes outlined in previous resolutions, thereby incentivizing financial intermediaries to engage proactively in this credit modality. Figure 1 shows that there was a significant acceleration in the growth of the microcredit portfolio in 2016, which had been almost nonexistent in previous years.

4 Data

Our main objective is to evaluate the impact of microcredit on information asymmetries in Colombia's subsidized credit market. To this end, we analyze Finagro disbursement data covering all subsidized credit operations conducted by financial intermediaries (credit institutions and microfinance institutions) from 2015 to 2019. The classification of subsidized operations is determined by the type of disbursement. Operations using substitute portfolios and rediscounts are classified as traditional subsidized credit operations, while operations using microcredit technology are classified as subsidized microcredit operations. Subsidized microcredit operations are governed by the conditions established in Res. 7 of 2012 of the

CNCA and its subsequent amendments. The database contains a variable that distinguishes between disbursements subject to traditional credit conditions and those subject to microcredit conditions. This variable categorizes disbursements as either traditional or microcredit.

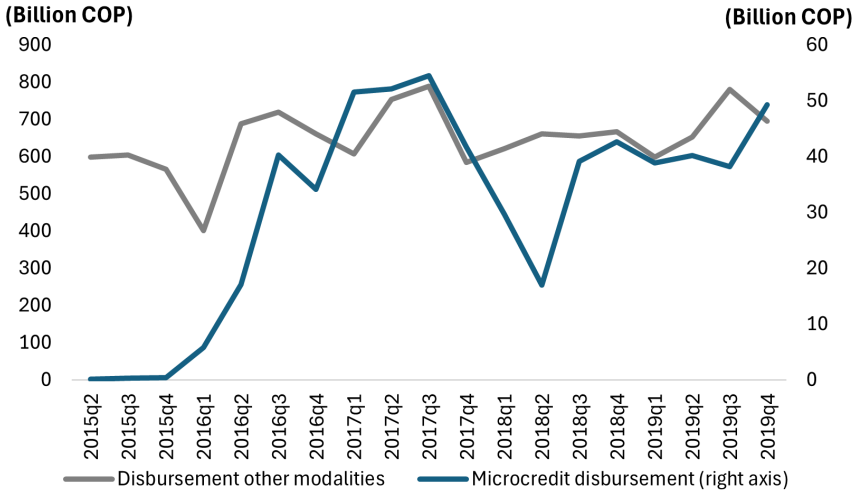
The database only contains disbursement observations, which are defined as loans that were actually disbursed to producers. It does not include information on denied loan applications and only refers to disbursements, not a credit registry.[3]. The dataset includes loan characteristics such as amount, interest rate, term, municipality, loan destination, and financial intermediary identifier. It also provides information about the borrowers, including an anonymized identifier, the value of their assets, their gender, the region in which they live, and their economic activity.

Figure 1 presents the evolution of subsidized credit disbursements from 2015 to 2019, distinguishing between microcredit and traditional credit. From the second quarter of 2016 (2016Q2) to the third quarter of 2017 (2017Q3), microcredit disbursements surged by 219%, rising from 17 billion Colombian pesos (COP) to 54 billion COP. This growth reflects a period of accelerated expansion in financial inclusion efforts, supported by regulatory changes and favorable credit conditions for small-scale rural producers. However, the trend reversed between the third quarter of 2017 (2017Q3) and the second quarter of 2018 (2018Q2). According to FINAGRO's 2018 management report, the contraction was associated with a generalized deterioration in the quality of the microcredit portfolio and rising levels of borrower over-indebtedness. This led financial intermediaries to tighten their lending criteria, particularly in rural areas, where monitoring costs and perceived credit risk are higher (FINAGRO, 2019). From the third quarter of 2018 (2018Q3) onward, disbursements began to recover. In 2019, they experienced a clear rebound, driven by renewed institutional efforts to expand access to rural credit. This pattern of expansion, contraction, and recovery highlights the sensitivity of microcredit flows to institutional, regulatory, and macrofinancial

[3]Information about borrowers' payment behavior is recorded in a credit registry. However, this type of data is not available for the loans considered in this study

factors.

Figure 1: Evolution of subsidized credit: Microcredit and traditional credit lines



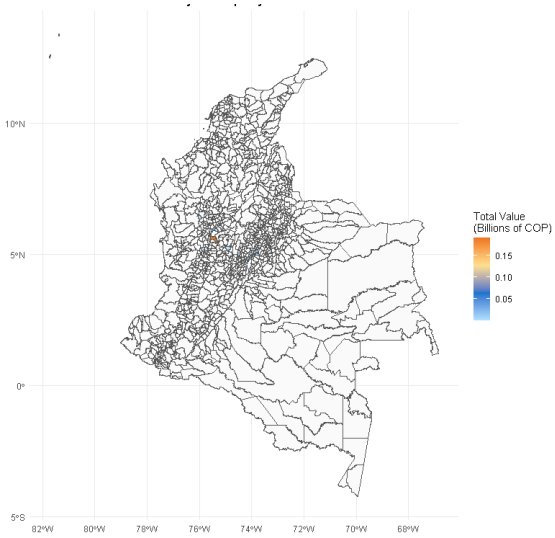
Note: Evolution of disbursements for subsidized microcredit and other subsidized modalities between 2015Q2 and 2019Q4. Includes the modalities of LEC, ordinary credit, and other modalities of subsidized credit without including agricultural card, normalizations and restructurings.
Source: FINAGRO; own calculations.

Between the second quarter (Q2) of 2016 and the second quarter (Q2) of 2017, 5.2% of beneficiaries who entered the National Agricultural Credit System (SNCA) through subsidized microcredit opted for traditional subsidized credit. Meanwhile, 20.2% accessed subsidized microcredit again, and 74.6% did not access any type of credit from the third quarter (Q3) of 2017 to the fourth quarter (Q4) of 2019. Consequently, only 5.2% of beneficiaries successfully transitioned out of the SNCA system within two years of initial enrollment.

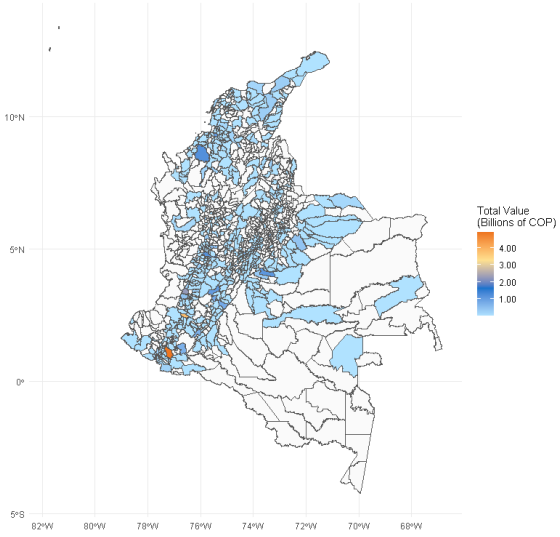
Figure 2 shows the geographic distribution and evolution of the total amount of subsidized microcredit disbursed across Colombian municipalities from 2015 to 2017. Prior to 2016, disbursements were minimal and limited to a few areas. However, starting in 2016, there was a substantial increase in the volume of funds disbursed with a broader geographic reach across agricultural regions. This upward trend continued in 2017, with higher disbursement levels observed in an increasing number of municipalities. The spatial dispersion of disbursements suggests that the expansion of subsidized microcredit was implemented as a

broad-based national policy aimed at scaling up rural financial inclusion rather than being geographically targeted.

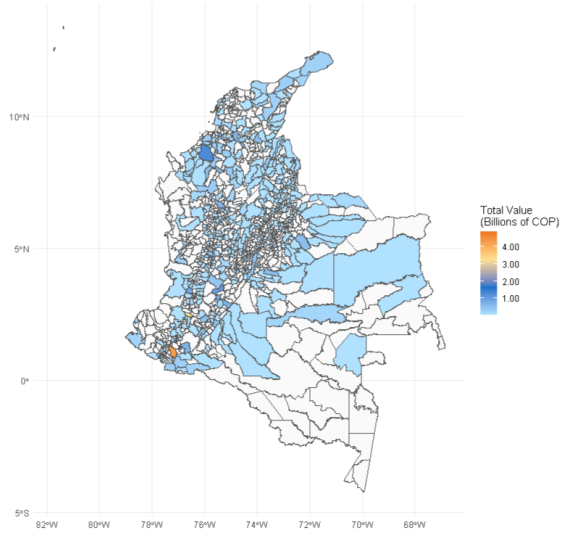
Figure 2: Evolution of subsidized microcredit disbursements by year



(a) Year 2015



(b) Year 2016



(c) Year 2017

Note: Statistics on disbursements of microcredit between 2015 and 2017. Source: FINAGRO; own calculations.

Our sample includes 1,390,872 loans from 46 financial intermediaries and 954,056 borrowers from the second quarter of 2015 to the fourth quarter of 2019. During the analysis

period, the predominant intermediaries in the subsidized microcredit market were Bancamía (43.5%), Banco Mundo Mujer (28.9%), and Banco W (13%). Notably, only four of the intermediaries are microfinance institutions that specialize in microfinance, accounting for just 1.12% of microcredit disbursements. In contrast, the predominant financial intermediary in the traditional subsidized credit sector is Banco Agrario de Colombia (BAC).

As shown in Table 1, the average microcredit operation amounts to 1.9 million pesos, whereas the average traditional subsidized loan amounts to 10.9 million pesos. Similarly, the interest rate is significantly higher for microcredit (45%) than for traditional subsidized loans (11%). The average microcredit duration is 15.6 months, whereas the average traditional loan duration is 58.9 months. These statistics suggest that microcredit imposes stricter financial conditions, indicating that switching to traditional credit could improve the profitability of borrowers' productive activities.

Table 1: Descriptive statistics of the promotion credit (2015Q2-2019Q4)

Panel A. Subsidized Microcredit

Variable	Obs	Mean	St. dev.	p25	p75	p90
Loan amount	299,684	1,977,443	1,291,521	1,050,000	2,282,654	3,420,032
Loan Rate (%)	299,684	45.59	7.42	41.60	52.72	55.22
Maturity	299,684	15.63	4.35	12	19	21

Panel B. Traditional Subsidized Credit

Variable	Obs	Mean	St. dev.	p25	p75	p90
Loan amount	1,130,332	10,900,000	9,794,508	5,000,000	12,000,000	21,900,000
Loan Rate (%)	1,130,332	11.04	2.53	9.86	12.74	13.92
Maturity	1,130,332	58.85	29.11	24	83	105

Note: Statistics on disbursements of microcredit and other modalities between 2015Q2 and 2019Q4. Includes the modalities of LEC, ordinary credit, and other subsidized modalities credit without including agricultural card, normalizations and restructurings. Credit value in pesos, rate in percentage and term in months.
Source: FINAGRO; own calculations.

Table 2 shows that microcredit disbursements have remarkable characteristics. On average, male beneficiaries receive larger disbursements than female beneficiaries. Additionally, microfinance institutions generally offer larger loans than banks. During the study period, credit institutions granted a greater number of loans, but microfinance institutions offered

longer maturities. Finally, beneficiaries with above-average assets received loans with lower interest rates and longer maturities than those with below-average assets.

Table 2: Characteristics of subsidized microcredit [4]

Panel A. 2016Q2-2017Q2

Variable	Category	Loan amount	Interest rate (%)	Maturity (Months)	Total disbursements	Total beneficiaries
Post-conflict Municipalities	Yes	1,881,830	47.20	15.17	28,573	27,070
	No	1,864,714	46.48	15.08	75,765	70,581
Gender	Male	1,913,561	46.39	15.13	52,094	48,626
	Female	1,825,345	46.97	15.08	52,243	49,024
Intermediary Type	Credit institution	1,866,575	46.71	15.07	103,499	96,829
	Microfinance Institution	2,218,105	42.58	18.97	839	822
Assets	Above P50	2,618,219	44.12	16.16	8,982	8,388
	Below P50	1,798,867	46.92	15.01	95,356	89,263
Legal entity type	Legal entity	1,894,502	45.56	15.30	16,906	14,192
	Natural person	1,864,548	46.90	15.07	87,432	83,459

Panel B. 2017Q3-2019Q4

Variable	Category	Loan amount	Interest rate (%)	Maturity (Months)	Total disbursements	Total beneficiaries
Post-conflict Municipalities	Yes	2,063,040	45.02	15.91	61,347	51,966
	No	2,023,751	45.04	15.86	130,653	109,162
Gender	Male	2,067,164	44.93	15.92	101,044	84,986
	Female	2,001,934	45.15	15.82	90,955	76,141
Intermediary Type	Credit institution	2,012,734	45.41	15.82	189,465	158,744
	Microfinance Institution	3,797,914	16.67	19.95	2,535	2,384
Assets	Above P50	3,349,639	40.05	17.99	18,895	16,073
	Below P50	1,892,949	45.58	15.64	173,105	145,055
Legal entity type	Legal entity	1,947,004	44.40	15.56	20,689	20,448
	Natural person	2,047,054	45.11	15.91	171,308	140,677

Note: Statistics of microcredit disbursements for the period 2015Q2 and 2019Q4. Credit value in pesos, rate in percentage and term in months. Includes number of disbursements and beneficiaries per category.
Source: FINAGRO; own calculations.

4.1 Empirical Strategy

In this section, we evaluate whether subsidized microcredit reduces information asymmetries in the credit market by serving as a signaling mechanism. To this end, we analyze producers' access to traditional subsidized credit when they enter the system through subsidized microcredit for the first time. Specifically, we conduct three exercises comparing the access probability and conditions of traditional subsidized loans obtained by these producers with those obtained by similar producers entering the system directly through traditional subsidized loans. In

[4]The results in the standardized mean difference tests suggest that there is a significant difference in the rate, term, and disbursed amount of microloans for the variables of banking intermediaries (EC=1, not EC=0), assets (Assets>median=1, Assets<median=0) for the periods analyzed (2016Q2 to 2017Q2 and 2017Q3 to 2019Q4). Additionally, there are significant differences in the standardized means for the rate applied to microcredit disbursement in the natural person variable (PN=1, PJ=0) only for the period 2016Q2 to 2017Q2.

addition to the reputational signal generated by repayment behavior, we explore whether microcredit facilitates asset accumulation, which could serve as an additional, observable signal of borrower quality.

The analysis period is divided into three distinct segments:

(i) 2015Q2 to 2016Q1: The period considered includes the time before Resolution 1 of 2016 was implemented. It was used to identify producers who had no access to credit before the expansion of microcredit. These producers constitute the population studied in subsequent analyses.[5]

(ii) 2016Q2 to 2017Q2: In this context, the period immediately following the implementation of the policy is particularly relevant. "Comparable producers" refers to those entering the system for the first time through the microcredit subsidy and those entering directly with traditional subsidized loans. Using this term helps identify relevant producers.

(iii) 2017Q3 to 2019Q4: The period under consideration is a maximum of two years after borrowers initially enroll in the microcredit program to facilitate their economic development. This period forms the basis of all the estimates presented below.

As a result, the estimates presented here focus on traditional subsidized disbursements allocated from Q3 2017 to Q4 2019 to the cohort of producers who did not obtain loans until Q1 2016. For analytical purposes, producers are classified into three groups. Group 1 includes producers who first entered the system through a subsidized microcredit disbursement between the second quarter of 2016 and the second quarter of 2017, which is the main focus of the study. Group 2 includes producers who first accessed the system during the same period with a traditional subsidized loan disbursed between the second quarter of 2016 and

[5]It should be noted that the scope of the present dataset includes only subsidized credit. Since the terms of subsidized loans are more favorable than those of standard market loans and the focus is on small producers, it is highly likely that any producer without access to subsidized loans by 2016Q1 also lacked access to standard market loans. Consequently, these producers can be considered as having no access to credit.

the second quarter of 2017 (hereafter referred to as the "first comparison group"). Group 3 comprises producers who entered the system with a traditional subsidized loan disbursed between the third quarter of 2017 and the fourth quarter of 2019 (the "second comparison group")[6].

4.1.1 Determinants of transition from subsidized microcredit to traditional subsidized credit

In this section, we examine the factors associated with the transition of borrowers from microcredit to traditional credit in the subsidized segment (also know as *graduation*). Specifically, we restrict the sample to borrowers who initially entered the system through microcredit between 2016Q2 and 2017Q2 (Group 1), and estimate their probability of obtaining a traditional loan between 2017Q3 and 2019Q4. Equation 1 presents the probability model used in the analysis.

$$Y_{i,t} = \alpha + \gamma \text{Borrower}_i + \theta X_{i,0} + m_t + \epsilon_{i,t} \tag{1}$$

$Y_{i,t}$ takes the value 1 if individual i receives a traditional subsidized credit in quarter t and 0 otherwise. Borrower_i refers to characteristics of the borrower i such as the log of his wealth, gender (1 female, 0 male), type of municipality (1 if it is a post-conflict municipality, 0 otherwise), whether it is a legal entity (1 if it is a legal entity, 0 otherwise), and dummies by rurality category (cities and agglomerations, intermediate, rural, and dispersed rural). The vector $X_{i,0}$ includes characteristics of the microcredit with which the borrower enters the system. In particular, it includes the type of institution providing the microcredit (1 for credit institutions and 0 for others), the amount, the interest rate and the maturity. The specification also includes time fixed-effects m_t to control for macroeconomic factors that affect the supply and demand of credit in each quarter.

[6]See Annex B for the descriptive statistics of each of these analysis groups.

As shown in table 3, borrowers with higher asset levels are more likely to transition from subsidized microcredit to traditional subsidized credit. This suggests that asset ownership signals financial soundness to credit intermediaries. In contrast, female borrowers exhibit a lower probability of transitioning. This is consistent with the existing literature that indicates that women often face greater barriers to accessing credit due to perceptions of higher risk and lower repayment capacity. Similarly, borrowers served by banking institutions are less likely to transition than those supported by microfinance institutions, possibly because the latter emphasize consumer monitoring and financial education more strongly. On the other hand, residing in a post-conflict municipality is positively associated with the likelihood of transitioning to traditional subsidized credit. This may be linked to targeted public policies or increased institutional willingness to support vulnerable populations.

Table 3: Probability of transition from subsidized microcredit to traditional subsidized credit

Variables	**Estimate**
Log (Assets)	0.021***
	(0.0006)
Gender	-0.017***
	(0.001)
Intermediary Type	-0.014**
	(0.007)
Post-conflict Municipalities	0.006***
	(0.001)
Observations	90,009
Prob > Chi2 (Wald Test)	0.0001

Notes: Estimation of the probit model presented in Equation 1. Includes controls for the logarithm of the amount, interest rate and term of the initial loan obtained by beneficiaries and dummies for region, legal entity, area (rural or urban) and time. Robust standard errors. *** p<0.01, ** p<0.05, * p<0.1.

4.1.2 Probability of access to traditional credit: Entrants with microcredit vs. entrants with traditional credit.

The following analysis compares the probability of accessing traditional credit between two groups of producers from 2017Q3 to 2019Q4. The first group consists of individuals who initially entered the system through microcredit between Q2 2016 and Q2 2017 (Group 1).

The second group consists of comparable producers who entered via traditional credit during the same period (Group 2).

To do this, we estimate the following model using data from 2017Q3 to 2019Q4:

$$Y_{i,r,t} = \alpha + \beta \text{Microcredit}_i + \gamma \text{Borrower}_i + \theta X_{i,0} + m_t + £_r + \epsilon_{i,r,t} \quad (2)$$

$Y_{i,r,t}$ takes the value of 1 if individual i in region r receives a traditional subsidized credit in quarter t, and 0 otherwise. Microcredit_i takes the value of 1 for producers who entered the system with microcredit between 2016Q2 and 2017Q2 (group 1) and 0 for those producers who entered the system with traditional subsidized credit during the same period (group 2).[7] As in the previous specification, characteristics of the borrower (gender, assets, type of municipality, legal entity, rural category) and of the loans with which borrowers enter the system (type of intermediary, amount, interest rate, and term) are included. The specification also includes time fixed-effects m_t and region fixed-effects $£_r$.

As shown in 4 , producers who entered the system with microcredit had a 23 percentage point (pp) lower probability, on average, of receiving a traditional credit disbursement between 2017Q3 and 2019Q4 than those who entered directly through traditional credit. These results are robust to the inclusion of various control variables.

[7]Only these small and medium producers are included to make the sample as comparable as possible to borrowers who have access to microcredit. Small and medium producers are included in the category of subsidized microcredit.

Table 4: Probability of access to traditional subsidized credit: Entrants with subsidized microcredit vs. entrants with traditional subsidized credit

Variables	(1)	(2)	(3)
Microcredit	-0.228***	-0.229***	-0.234***
	(0.007)	(0.006)	(0.006)
Observations	119,307	119,307	119,307
Prob > Chi2 (Wald Test)	0.0001	0.0001	0.0001

Notes: Estimates of the probit model presented in Equation 2. All specifications include the logarithm of the amount, interest rate and term of the initial loan obtained by beneficiaries, region, legal entity and time dummies. Model (1) includes as controls an indicator for post-conflict municipalities and for the gender of the borrower. Model (2) also includes the type of intermediary and model (3) includes in addition to model 2 the value of assets and an indicator for legal entities. Robust standard errors. *** p<0.01, ** p<0.05, * p<0.1.

The lower likelihood that producers in the microcredit segment will access traditional loan disbursements may reflect initial differences in the characteristics of producers in each segment. Due to the difference in interest rates between microcredit and traditional subsidized loans, producers likely enter the financial system through microcredit because they faced restrictions accessing the traditional subsidized market. These constraints may originate from financial intermediaries' perceptions of elevated borrower risk, which are often shaped by imperfect or incomplete information rather than by borrowers' actual repayment capacity.

For some producers, entering the market through subsidized microcredit can generate positive credit signals. This enables them to build a verifiable repayment history, which facilitates future access to traditional credit. However, for others, the information available to lenders may continue to convey a high-risk profile, thereby constraining their ability to transition despite improved fundamentals.

In contrast, producers who initially access the system through traditional subsidized credit have already demonstrated compliance with the eligibility criteria set by financial intermediaries. Therefore, as the empirical results suggest, these producers are more likely to receive subsequent traditional credit disbursements than their microcredit counterparts.

In summary, producers who enter through traditional, subsidized credit channels directly are more likely to maintain access to this type of financing because they meet the minimum eligibility requirements from the beginning. In contrast, many borrowers who enter through microcredit do not meet the necessary standards for transitioning to traditional subsidized credit, though some are successful. This suggests that, although microcredit provides additional information about borrowers, it is not always sufficient to overcome barriers to accessing traditional, subsidized financing.

4.1.3 Access conditions for traditional credit

To complement the previous analysis, we compared the terms of traditional loans granted from Q3 2017 to Q4 2019 for the aforementioned groups: producers who entered the system through microcredit (Group 1) and those who accessed it directly via traditional credit (Group 2) from Q2 2016 to Q2 2017.

We estimate the following equation using observed traditional subsidized credit disbursements between 2017Q3 and 2019Q4:

$$Y_{i,t,b} = \alpha + \beta \text{Microcredit}_i + \gamma \text{Borrower}_i + \theta X_{i,0} + m_b + \eta_{p,t} + \epsilon_{i,b,t} \tag{3}$$

Where $Y_{i,t,b}$ are characteristics of credit disbursed to borrower i by intermediary b in quarter t: log (amount disbursed); interest rate (in %) and log of credit duration (months). As in the previous exercise, Microcredit_i equals 1 for producers who entered the system with microcredit between 2016Q2 and 2017Q2 (group 1) and 0 for producers who entered the system with traditional credit (group 2) during the same period. As in previous exercises, Borrower_i and $X_{i,0}$ include characteristics of the borrowers and the loans with which they entered the system. The specification includes bank fixed-effects m_b granting the credit and product-time $\eta_{p,t}$ to control for unobserved bank heterogeneity, and seasonal credit demand patterns depending on the specific product they harvest (Khwaja and Mian, 2008; Jiménez

et al., 2014).

As shown in Table 5, producers who entered the system through microcredit and then transitioned to traditional credit received significantly more favorable loan terms than those who entered directly with traditional credit. On average, beneficiaries who entered the system via microcredit and successfully transitioned to traditional credit received loans that were 15.4 percentage points higher, had interest rates that were 78 basis points lower, and had maturities that were 10 percentage points longer than loans received by producers who entered the system directly with traditional credit.

Although borrowers who enter the financial system through microcredit are, on average, less likely to receive traditional credit disbursements, evidence suggests that those who transition are perceived as lower-risk clients by financial intermediaries relative to those who entered directly through traditional credit. This may reflect microcredit's role as a dynamic screening mechanism that gradually mitigates informational asymmetries. Microcredit enables borrowers to establish a verifiable repayment history and generate credible signals of creditworthiness. This facilitates more accurate risk assessment by lenders, particularly for a select group of borrowers who successfully transition. For this subset, access to traditional credit may occur on significantly improved terms that would likely be unavailable without such informational updates.

Table 5: Credit conditions for traditional loans: Entrants with microcredit vs. entrants with traditional loans

Variables	**Log(Credit)**	**Loan Rate (%)**	**Log(Maturity)**
Microcredit	0.154***	-0.788*	0.100*
	(0.020)	(0.461)	(0.057)
Observations	206,990	206,990	206,990
R-squared	0.634	0.964	0.535
Bank FE	Yes	Yes	Yes
Product-Time FE	Yes	Yes	Yes

Notes: Estimates from the linear regression model presented in Equation 3. Standard errors with bank cluster. Includes region dummies, crop-time and bank fixed-effects and other individual controls. *** p<0.01, ** p<0.05, * p<0.1.

Finally, we perform a similar exercise to the previous one, but this time we use producers who accessed subsidized traditional credit for the first time between 2017Q3 and 2019Q4 as a comparison group. In other words, we compare the loan terms of producers who migrated from the microcredit segment (group 1) with those of producers who accessed the system for the first time during that period (group 3).

The results are shown in table 6. We find that producers who enter the system through microcredit receive an interest rate that is 179 basis points lower than the rate offered to producers who enter directly with traditional loans. This suggests that financial intermediaries may obtain relevant information about microcredit borrowers, allowing them to offer better rates on traditional loans compared to those offered to unknown borrowers for their first traditional loan.

Table 6: Conditions of traditional loans: Entrants with microcredit vs. new borrowers

Variables	**Log(Credit)**	**Loan Rate (%)**	**Log(Maturity)**
Microcredit	0.012	-1.790**	0.020
	(0.029)	(0.861)	(0.016)
Observations	450,060	450,060	450,060
R-squared	0.731	0.972	0.743
Bank FE	Yes	Yes	Yes
Product-Time FE	Yes	Yes	Yes

Notes: Linear regression model estimates. Standard errors with bank cluster. Includes region dummies and other individual controls. *** p<0.01, ** p<0.05, * p<0.1.

4.1.4 Asset Accumulation as a mechanism for reducing information asymmetries

In addition to its role as a pathway to traditional subsidized credit lines, subsidized microcredit may play a fundamental role in enabling asset accumulation. This constitutes an additional channel for mitigating information asymmetries. This dimension is crucial for understanding how borrowers can establish visible indicators of creditworthiness beyond repayment history. In rural areas, where income volatility and a lack of collateral limit access to credit, asset accumulation can serve as a tangible representation of economic reputation.

The descriptive statistics in table E reveal a substantial increase in asset holdings among borrowers who accessed subsidized microcredit. The average asset value for borrowers who entered the system between 2016Q2 and 2017Q2 was COP 18.7 million. For borrowers who successfully transitioned to traditional subsidized credit between 2017Q3 and 2019Q4, this figure rose to COP 58.1 million. This evolution is also reflected in the log transformation of asset values, which increased from an average of 16.01 to 17.71. These patterns suggest that microcredit enables borrowers to accumulate productive assets over time, thereby improving their financial standing and perceived solvency.

To formally assess this relationship, we will estimate the variation in asset holdings between two groups of producers. The first group consists of producers who initially entered the system with microcredit between the second quarter of 2016 and the second quarter of 2017 and who received loan amounts above the median. The second group comprises producers who entered through traditional credit during the same period and are similar to the first group.

To do this, we estimate the following model using data from 2017Q3 to 2019Q4:

$$Y_i = \alpha + \beta \text{Microcredit*High}_i + \gamma \text{Borrower}_i + \theta X_{i,0} + m_b + \eta_{p,t} + \epsilon_{i,b,t} \tag{4}$$

Where Y_i represents the relative change in the average asset holdings for borrower i between the period 2016Q2–2017Q2 and the period 2017Q3–2019Q4. Microcredit*High$_i$ equals 1 for borrowers who entered the system with microcredit over the median between 2016Q2 and 2017Q2, and 0 for producers who entered the system with traditional credit (group 2) during the same period. As in previous exercises, Borrower$_i$ and $X_{i,0}$ include characteristics of the borrowers and the loans with which they entered the system. The specification includes bank fixed-effects m_b granting the credit and product-time $\eta_{p,t}$ to control for unobserved bank heterogeneity, and credit demand (Khwaja and Mian, 2008; Jiménez et al., 2014).

The results presented in Table 7 are robust across all specifications and indicate a statistically significant association between access to above-median microcredit and asset growth. The microcredit group consistently exhibits positive and significant coefficients, with effect sizes ranging from 2.2 to 2.3. This means that, on average, beneficiaries of microcredit experienced more than double the asset growth compared to borrowers who obtained credit through traditional means. These findings suggest that microcredit may serve as a tool not only for liquidity smoothing, but also for capital formation.

Table 7: Asset Variation: Entrants with Above-Median Microcredit vs. Entrants with Traditional loans

Variables	**(1) Asset Var.**	**(2) Asset Var.**	**(3) Asset Var.**
Microcredit*High	2.310***	2.298***	2.356***
	(0.487)	(0.511)	(0.556)
Observations	135,777	135,761	135,555
R-squared	0.006	0.021	0.115
Bank FE	Yes	Yes	Yes
Bank-Time FE	No	Yes	No
Sector-Time FE	No	No	Yes

Notes: Estimates from a linear regression model. Standard errors clustered at the bank level. All specifications include regional dummies and individual-level controls. *** p<0.01, ** p<0.05, * p<0.1.

This evidence supports the hypothesis that microcredit acts as a stepping stone toward financial deepening. It does so by enabling borrowers to accumulate tangible assets that function as observable signals. This reduces lenders' uncertainty about borrower quality. In the presence of asymmetric information, asset holdings can complement repayment history as indicators of creditworthiness. This logic aligns with classical models of adverse selection (Stiglitz and Weiss, 1981; Bester, 1985), in which the availability of credible signals improves credit allocation and reduces rationing.

Moreover, asset accumulation can strengthen borrowers' resilience to income shocks, especially in rural areas where agricultural cycles and informal labor expose households to

significant idiosyncratic risk. In this context, microcredit facilitates access to credit and may improve household economic stability by enabling investment in durable goods, equipment, or productive upgrades that expand income-generating capacity (Armendáriz and Morduch, 2010; Banerjee et al., 2015; Celerier and Matray, 2019).

It is important to emphasize that asset accumulation complements repayment history's informational role. While credit history signals borrower behavior, asset holdings are an observable indicator of economic capacity. Together, these two factors can provide a more complete borrower profile, allowing financial intermediaries to differentiate clients more accurately and reduce information asymmetries.

The relationship between repayment history and asset accumulation may explain why microcredit beneficiaries who transition to traditional credit receive more favorable loan terms. These beneficiaries have demonstrated repayment discipline and exhibited upward asset accumulation trajectories.

5 Policy Implications

Our findings indicate that, of producers who first enter the subsidized credit system through microcredit, only a small fraction transition to traditional subsidized credit lines. However, this select group of borrowers receives more favorable loan terms, including larger loan amounts, lower interest rates, and longer loan terms, compared to producers who enter the system directly through traditional subsidized credit lines. This pattern aligns with the notion that microcredit can promote financial inclusion (Armendáriz and Morduch, 2010). Through microcredit, producers who were previously excluded from the formal credit market can establish a reputation that accurately reflects their quality as borrowers. In some cases, this reputation is strong enough for financial intermediaries to lend to them in the traditional segment. For others, however, the signal remains too weak due to limited credit history, insufficient observable indicators, or underlying risk profiles that continue to deter

lenders.

Our results suggest that only a minority of producers entering the system through microcredit belong to the first group. However, they appear to be significantly better borrowers. They receive more favorable terms on their traditional loans than the average borrower in this segment. Thus, microcredit can mitigate information asymmetries by providing access to credit for high-quality borrowers previously excluded from the traditional market. The credit history and reputation developed through microcredit participation likely serve as the mechanism behind this effect (Karlan and Zinman, 2010). However, these borrowers represent only a small fraction of the total number of microcredit borrowers, so the magnitude of these possible effects seems limited. Lack of financial literacy or information about available credit products may also contribute to the continued reliance on microcredit among borrowers who could qualify for traditional credit (Sayinzoga et al., 2016).

Our findings also point to a complementary mechanism through which microcredit reduces information asymmetries: asset accumulation. Borrowers who accessed above-median microcredit experienced significantly higher asset growth than those who accessed traditional credit. This suggests that microcredit acts as both a reputational signal and a catalyst for capital formation. Accumulating productive assets, such as land, equipment, or livestock, improves borrowers' observable financial profiles and may reflect productivity gains that enhance their perceived creditworthiness. This interpretation aligns with evidence showing that microcredit can relax capital constraints and trigger reinvestment cycles that improve borrower performance and lender perception over time (Banerjee et al., 2015; Celerier and Matray, 2019).

6 Conclusions

This paper examines the expansion of agricultural microcredit and assesses its contribution to mitigating information asymmetries in the traditional credit market. First, we analyze the

factors associated with transitioning from subsidized microcredit to traditional subsidized credit. Our findings indicate that borrowers with higher asset levels are more likely to transition to traditional subsidized credit, suggesting that asset ownership enhances perceived financial stability. However, female borrowers face lower transition probabilities, consistent with evidence on gender-based barriers to credit access. Conversely, producers accessing microcredit through microfinance institutions are more likely to transition to traditional subsidized credit, potentially due to differences in lending technologies that enable these institutions to more effectively screen and select clients than traditional banks.

Second, we compare the probability of accessing traditional subsidized loans among beneficiaries who entered the system through microcredit versus those who entered directly through traditional credit. Our findings show that microcredit beneficiaries have a lower probability of receiving a subsidized loan disbursement within the first two years of entering the system. This may reflect differences between average microcredit and traditional loan borrowers. It is possible that microcredit borrowers have lower repayment capacity and are riskier for financial intermediaries. However, only a small percentage of producers (5.2%) transition to traditional subsidized loans. The repayment behavior demonstrated by these producers through subsidized microcredit allows them to obtain significantly better terms on traditional loans (i.e., higher amounts, lower interest rates, and longer maturities) than producers who enter the system directly through traditional loans.

We discuss the possible implications of these results for microcredit's role in mitigating information asymmetries. We argue that these results are consistent with the idea that microcredit-generated credit histories reduce information asymmetries and facilitate access to financing for potentially profitable borrowers excluded from the traditional credit market. However, these cases represent only a small fraction of microcredit beneficiaries, suggesting that the scope of these effects is limited and that other barriers persist. A lack of access to information on credit lines could explain why borrowers who already have access to the

traditional credit market rely more heavily on microcredit and thus transition less frequently to that market.

Furthermore, our evidence suggests that microcredit contributes to asset accumulation, especially among borrowers who receive above-median loan amounts. These borrowers experienced significantly higher asset growth than borrowers who entered the system through traditional credit. This suggests that microcredit may operate as a mechanism for capital formation. Accumulating productive assets improves borrowers' financial profiles and may reflect underlying productivity gains, enhancing their creditworthiness. This additional channel strengthens microcredit's role in reducing information asymmetries and increasing the number of borrowers who can access more favorable credit conditions.

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A Microcredit policy in Colombia

Table A.1: Regulatory changes to promote the expansion of microcredit in rural areas in Colombia

Resolution or Law	Effective Date	Description
Res. 7 of 2012	September 17, 2012	• Authorizes Finagro to implement a rediscount line of agricultural and rural microcredits, aimed at financial institutions supervised by the Superfinanciera and that have microfinance or microcredit technology. • It was allowed to meet the working capital needs of individuals or legal entities that qualify as small producers, under the terms of Decree 312 of 1991 as amended by Decree 780 of 2011 or others that modify it, or as rural micro-entrepreneurs. • Some conditions for the allocation of credits are: Amount of up to 25 SMMLV, Term of less than 24 months (changed to 36 months with Res. 7 of 2019), Financing coverage of 100% of the required capital.
Res. 2 of 2014	May 27, 2014	• Modified the overall quota limit for microcredit operations, establishing a maximum quota for each financial intermediary according to the procedure to be defined. Res. 12 of 2015 modified it and decreed the maximum amount at 20% of Finagro's equity and up to 30% considered by Finagro's board of directors. • Authorized the placement of financial intermediaries' own resources to fund the microcredit line. • It allowed the granting of guarantees from the FAG with: Coverage of a maximum of 50% of the principal amount of the loan limit, which also applies when complementary institutional guarantees are used. A 7% annual advance commission on the amount of the guarantee in force.
Law 1731 of 2014	July 31, 2014	• Created the Rural Microfinance Fund (FMR) to finance, support and develop rural microfinance in the country. • It ruled that the FMR can be capitalized with resources from the recovery of the portfolio of the MADR's microcredit agreements financed through multilateral banking schemes and programs originating in the National General Budget (PGN).

Table A.2: Regulatory changes to promote the expansion of microcredit in rural areas in Colombia

Resolution or Law	**Effective Date**	**Description**
Res. 12 of 2015	September 17, 2015	• Modifies Resolution No. 7 of 2012. • The premiums for voluntary microinsurance associated with microloans were included in the eligible costs.
Decree 2370 of 2015	December 7, 2015	• The FMR's sources of financing are expanded with resources contributed by public or private entities through agreements or transfers, non-reimbursable resources from national, international or multilateral entities, financial returns from portfolio placement generated by the resources delivered and other resources obtained or assigned to it in any capacity. • Additionally, with MADR Resolution 56 of 2016, it is established that the transfer of resources to the FMR from the portfolio recovery of the inter-administrative agreement No. 20050041 will be made once every 6 months.
Res. 1 of 2016	March 15, 2016	• It compiles the regulations governing the use of agricultural and rural subsidized loans, defines the beneficiaries and specifies the financial conditions. • Among the activities that can be financed with agricultural and rural credit are rural activities through the microcredit line. • Additionally, the financial conditions for the microcredit are specified, where the rate cannot be less than IBR + 2.5% and DTF + 2.5% e.a.
Res. 7 of 2019	May 8, 2019	• Modifies Resolution No. 7 of 2012. • In order to adjust microcredit conditions and according to income flows derived from rural and/or agricultural activities, it extends the term of operations from 24 to 36 months.
Res. 8 of 2023	November 21, 2023	• The modification of the upper limit for loans to micro-entrepreneurs from the maximum allowed rate to IBR + 28% p.a. stands out.

B Descriptive statistics of the analysis group

Table B.1: Descriptive statistics

Panel A. Group of entrants with subsidized microcredit

Variable	Obs	Mean	Des. Est.	p25	p75	p90
			Statistics for period: 2016Q2-2017Q2			
Log(Credit)	85,035	14.31	0.46	13.86	14.58	14.94
Loan amount	85,035	1,848,596	1,040,240	1,050,000	2,150,000	3,100,000
Loan rate (%)	85,035	47.03	6.83	42.96	55.70	56.48
Log(Maturity)	85,035	2.67	0.26	2.48	2.89	2.99
Maturity	85,035	15.09	3.94	12.00	18.00	20.00

Panel B. Group of entrants with subsidized microcredit who transitioned to traditional subsidized credit

Variable	Obs	Mean	Des. Est.	p25	p75	p90
			Statistics for period: 2017Q3-2019Q4			
Log(Credit)	4,414	15.57	0.76	15.07	16.12	16.40
Loan amount	4,414	7,520,865	5,876,737	3,500,000	10,000,000	13,200,000
Loan rate (%)	4,414	15.40	12.12	10.42	12.52	41.56
Log(Maturity)	4,414	3.80	0.71	3.18	4.28	4.63
Maturity	4,414	55.01	30.20	24.00	72.00	103.00

Panel C. Group of entrants with traditional subsidized credit between 2016Q2-2017Q2

Variable	Obs	Mean	Des. Est.	p25	p75	p90
			Statistics for period: 2016Q2-2017Q2			
Log(Credit)	244,223	15.93	0.69	15.60	16.30	16.81
Loan amount	244,223	10,700,000	8,624,629	6,000,000	12,000,000	20,000,000
Loan rate (%)	244,223	12.82	2.11	12.96	14.01	14.19
Log(Maturity)	244,223	4.05	0.57	4.09	4.43	4.65
Maturity	244,223	65.61	26.07	60.00	84.00	105.00

Panel D. Group of entrants with traditional subsidized credit between 2017Q3-2019Q4

Variable	Obs	Mean	Des. Est.	p25	p75	p90
			Statistics for period: 2017Q3-2019Q4			
Log(Credit)	87,452	15.72	0.87	14.95	16.30	16.81
Loan amount	87,452	9,782,860	9,409,404	3,100,000	12,000,000	20,000,000
Loan rate (%)	87,452	10.40	4.56	9.58	11.55	12.21
Log(Maturity)	87,452	3.71	0.67	3.18	4.28	4.56
Maturity	87,452	49.66	28.62	24.00	72.00	96.00

Table B.2: Descriptive statistics

Panel E. Group of entrants with traditional subsidized credit between 2016Q2-2017Q2 who do not obtain new subsidized credits

Variable	Obs	Media	Des. Est.	p25	p75	p90
Statistics for period: 2016Q2-2017Q2						
Log(Credit)	152,909	15.97	0.67	15.61	16.30	16.76
Loan amount	152,909	10,800,000	8,564,164	6,000,000	12,000,000	19,000,000
Loan rate (%)	152,909	12.84	2.09	12.96	14.01	14.19
Log(Maturity)	152,909	4.16	0.50	4.09	4.43	4.65
Maturity	152,909	70	24.39	60	84	105

Panel F. Group of entrants with traditional subsidized credit between 2017Q3-2019Q4

Variable	Obs	Media	Des. Est.	p25	p75	p90
Statistics for period: 2017Q3-2019Q4						
Log(Credit)	411,612	15.45	1.01	14.56	16.12	16.65
Loan amount	411,612	8,395,047	9,092,263	2,100,000	10,000,000	17,000,000
Loan rate (%)	411,612	20.93	16.84	10.53	38.70	51.20
Log(Maturity)	411,612	3.63	0.78	2.94	4.28	4.58
Maturity	411,612	49.06	31.69	19.00	72.00	98.00

C Characteristics of traditional subsidized loan borrowers

Table C.1: Statistics of traditional subsidized loan borrowers

Panel A. Disbursements in the period 2016Q2-2017Q2

Variable	Category	Loan amount	Loan Rate (%)	Maturity (Months)	Total disbursements	Total beneficiaries
Post-conflict Municipalities	Yes	11,042,222	12.55	67.11	100,708	95,652
	No	11,016,634	12.90	58.76	210,244	193,576
Gender	Male	11,248,367	12.79	60.99	203,840	188,363
	Female	9,791,611	12.77	62.89	104,253	98,867
Intermediary Type	Credit institution	11,019,375	12.79	61.49	310,389	288,736
	Microfinance Institution	14,082,783	13.03	49.60	563	492
Assets	Above P50	14,167,685	12.85	61.71	174,728	158,635
	Below P50	6,993,849	12.70	61.15	136,224	130,593
Legal entity type	Legal entity	12,095,461	12.23	60.96	63,496	54,186
	Natural person	10,750,226	12.93	61.60	247,456	235,042

Panel B. Disbursements in the period 2017Q3-2019Q4

Variable	Category	Loan amount	Loan Rate (%)	Maturity (Months)	Total disbursements	Total beneficiaries
Post-conflict Municipalities	Yes	11,301,454	9.85	63.70	189,116	155,951
	No	10,886,900	10.34	52.17	419,320	312,464
Gender	Male	11,089,559	10.22	55.54	397,680	302,002
	Female	9,649,613	10.10	56.82	201,975	161,607
Intermediary Type	Credit institution	10,995,180	10.18	55.80	605,675	466,429
	Microfinance Institution	15,528,902	10.49	46.59	2,761	1,986
Assets	Above P50	12,983,078	10.15	55.63	423,438	309,487
	Below P50	6,512,785	10.26	56.05	184,998	158,928
Legal entity type	Legal entity	13,462,705	11.40	55.43	81,575	75,121
	Natural person	10,636,901	10.00	55.81	526,842	393,276

D Additional probit model estimations

Table D.1: Probability of Transition to Microcredit taking into account access to FAG guarantees

Variables	**(1)**	**(2)**	**(3)**	**(4)**
FAG	0.00714	0.0125	0.0128**	0.00804
	(0.00980)	(0.00912)	(0.00584)	(0.00880)
Post-conflict Municipalities	0.00507***	0.00509***	0.00509***	0.00575***
	(0.00175)	(0.00168)	(0.00168)	(0.00165)
Legal entity type	0.0132***	—	—	0.0154***
	(0.00208)	—	—	(0.00201)
Log(Assets)	0.0193***	—	—	0.0244***
	(0.000760)	—	—	(0.000858)
Assets > p50	—	—	—	-0.0152***
	—	—	—	(0.00263)
Gender	-0.0157***	-0.0207***	-0.0208***	-0.0176***
	(0.00169)	(0.00155)	(0.00155)	(0.00151)
Intermediary type	-0.00545	-0.000571	—	-0.00657
	(0.0118)	(0.0116)	—	(0.0111)
Observations	90,008	90,008	90,008	90,008
Time FE	Yes	Yes	Yes	Yes

Notes: Estimates from the probit model presented in Equation 1. All specifications include the logarithm of the amount, interest rate and term of the initial loan obtained by beneficiaries and region and time dummies. Robust standard errors. *** p<0.01, ** p<0.05, * p<0.1.

E Descriptive statistics of subsidized microcredit – Assets (2015Q2–2019Q4)

Table E.1: Descriptive statistics of subsidized microcredit – Assets

Panel A. Treatment Group: 2016Q2–2017Q2

Variable	**Obs**	**Mean**	**St. Dev.**	**p25**	**p75**	**p90**
Asset Value	85,035	18,700,000.00	55,600,000.00	3,798,000.00	22,000,000.00	45,000,000.00
log(Assets)	84,919	16.01	1.26	15.15	16.91	17.62

Panel B. Graduated Group: 2017Q3–2019Q4

Variable	**Obs**	**Mean**	**St. Dev.**	**p25**	**p75**	**p90**
Asset Value	4,414	58,100,000.00	40,500,000.00	39,000,000.00	70,000,000.00	90,000,000.00
log(Assets)	4,414	17.71	0.64	17.48	18.06	18.32

Notes: Summary statistics for the treatment and graduated groups. Obs refers to the number of observations, Mean is the average value, St. Dev. is the standard deviation, and p25, p75, and p90 represent the 25th, 75th, and 90th percentiles, respectively.