

State-sponsored microcredit and enterprise outcomes in Ghana*

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Abstract

Microfinance plays an important role in the anti-poverty strategy of many countries, and many have parastatal enterprises providing group loans. It is, to date, unclear whether state-sponsored microfinance plays the same role as the one provided by the private and non-governmental sector. We study a parastatal microlender of Ghana that offers joint liability loans to microenterprises. We highlight several differences with regular microfinance: subsidized interest rates, slow disbursement, low repayment rates, and interactions between borrowers and political operatives. We then study the impact of loans on microenterprise outcomes six to ten months after borrowing, by leveraging an unexpected lending freeze which caused some borrowers to not be able to obtain a loan they qualified for. Entrepreneurs receiving credit had higher profits. The effects are driven by borrowers whose applications were not endorsed by political party operatives.

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1 Introduction

Microcredit has revolutionized the way credit is provided to small and micro entrepreneurs in Low and Middle Income countries (LMICs), as attested by the significant growth in the number and reach of both for profits and not-for-profit microfinance institutions, as well as by a client base that numbers into the hundreds of millions. Microcredit is typically provided by either for-profit or not-for-profit institutions, and an empirical literature has demonstrated that the institutional arrangement influences the reach and impact of the credit (De Quidt et al., 2018), particularly because for profit and non-profit lenders consider different trade offs between profitability and pro-poor reach (Cull et al., 2007). Much less is known about the implications of providers that are neither one of these types: specifically, when the lender is a public sector enterprise. This is an important oversight, as many countries have parastatal enterprises that provide microcredit to the poor¹.

In this paper, we fill this void by analyzing the microcredit operations of MASLOC, a lending parastatal established by the Government of Ghana in 2006. MASLOC provides a number of credit products, including joint liability microloans for qualifying small-scale entrepreneurs. Using data we collected from MASLOC loan applicants, we show that there are several differences between the microloan products MASLOC offers and standard microfinance. First, interest rates are heavily subsidized, amounting to approximately one third of the going market rate, and there is no savings collection. Second, clients often wait a long time before their loans are disbursed. Third, repayment rates are very low, amounting to approximately 45% of the amount owed in a sample of loans we observe. Finally, political actors (i.e., operatives belonging to political parties) play an active role in the lending pro-

¹To our knowledge there is no existing documentation listing government-owned microlenders around the world. State-owned MFIs include NEDCO in Trinidad and Tobago, NIRSAL in Nigeria, Pronafim in Mexico. Kaboski and Townsend (2012) evaluated Thailand’s Million Baht Microfinance Scheme. The Thai scheme had some unique features, including by the fact that joint liability groups could be as large as an entire village. See also Hossein (2018) for an anthropological discussion of state-sponsored microfinance in Caribbean states.

cess: they facilitate groups in the preparation and submission of their credit applications. Taken together, these factors indicate that parastatal micro-lending differs in significant ways from private sector micro-lending; instead, it appears to be quite similar to state-sponsored agrarian credit, which was commonly found in LMICs in the 1970s and 1980s.

In the second part of the paper, we explore the impact of parastatal lending on business outcomes of borrowers. Obtaining causal estimates of state-sponsored loans without relying on randomized control trials is usually challenging, due to the fact that recipients of credit have different characteristics than those who are unwilling or unable to access a loan. Here, we take advantage of a natural experiment, which we argue provides a suitable way to identify treatment effects under fairly relaxed assumptions. On December 7, 2020, the sitting CEO of MASLOC was elected to a contested MP position in Ghana's general elections. Following the victory, he resigned from his position within MASLOC. The replacement, appointed by the President of Ghana, was not immediately selected. While the Board of Directors continued to operate and took over the day-to-day management of MASLOC, it was not given the CEO's authority to approve the disbursement of loans that had been issued. Hundreds of borrowers who applied and were approved for a loan ahead of the General Election were thus temporarily unable to collect their disbursement. The resulting lending freeze was expected to be temporary and of short duration. In reality, the replacement CEO was selected only after July 2021, and lending did not, in fact, resume immediately after that date.

We obtained the contact information of a sample of approved applicants who applied between June and December 2020, and interviewed them between May and June 2021, i.e., between five and six months after the onset of the lending freeze. We compare those who received credit against those who were approved for disbursement but whose disbursements were not completed ahead of the election date. Identification relies on a conditional independence assumption for which we provide some supporting evidence.

We find that, despite of the challenges described in the first part of the paper, business

microloans had a positive impact on a number of business outcomes. Microentrepreneurs report higher levels of capital stock and higher economic profits. The implied rates of return are within the ballpark of previous studies showing high rates of return for capital (De Mel et al., 2008 or Fafchamps et al., 2014 for the context of Ghana). These average effects hide significant heterogeneity: for example, we find that higher profitability is driven by entrepreneurs whose applications were not facilitated by political operatives. While this result is consistent with multiple different mechanisms, we do not discount the possibility that the involvement of political agents is due to political patronage, which leads to adverse selection and moral hazard problems for the lender. We are, unfortunately, unable to separately identify these mechanisms, due to the fact that we do not observe either individual or group repayments for participants in our sample.

In the final part of the paper we ask whether the heterogeneity in business outcomes (specifically, heterogeneity in profits) could help explain the strikingly low repayment rates of MASLOC loans. That is, business owners whose returns on the loan are lower than the amount owed may choose to avoid repayment, as this would require tapping other resources from the business or the household. To address this question, we approximate the fraction of businesses whose returns exceed the instalment amount, and compare that to the repayment rate. We do this using a machine learning method which identifies quintile treatment effects on profits. We find that the change in profits are positive (and in excess of the amount owed) for approximately 40% of the sample. The remaining 60% of the sample had zero or decreases in profits. These proportions are similar to the proportion of borrowers that repay the loan, leaving open the possibility that low repayments are driven by strategic default.

To our knowledge, this is the first paper that measures the characteristics and impact of group loans delivered by the public sector to microenterprises. We thus contribute to a number of literatures. First, our paper complements the existing literature focused on the importance of the type of microcredit lender on borrower outcomes and profits (Cull et al.,

2007, De Quidt et al., 2018) by providing novel insights on public sector microfinance. A related literature studies public sector (standard) lending. Several features discussed in this paper, including interest rate subsidies, credit misallocation, politicization and unsustainability have been identified by this older literature (Adams and Von Pischke, 1992, Adams et al., 1984, Von Pischke et al., 1983); we contribute with novel insights on borrower-level impacts, finding that state-sponsored credit does generate higher profits for some enterprises.

Second, we provide novel estimates of the impact of microfinance. The existing literature is largely focused on the for-profit and non-profit sectors (Banerjee et al., 2015, Cai et al., 2021). Note that our measures of impacts are for the population of borrowers. This is an innovation relative to previous studies that have focused on the larger population of microenterprises.

Finally, our paper also contributes to a literature focused on the interplay between political actors, credit markets, and development. Cole (2009) finds that agricultural credit in India tracks the electoral cycle, and Dinç (2005) shows that public sector lending increases relative to private sector lending during elections in emerging countries. Political actors may improve the efficiency of governmental programs (i.e., Basurto et al., 2020); in the context of credit, they may have information advantages which could be useful in screening applicants. In our paper, we study credit that is issued right before the election. Consistent with an influence of the electoral cycle, we find that a high proportion of loans were facilitated by political actors, but our findings suggest that borrowers associated with political actors have lower marginal rates of return on loans received.

The rest of the paper is organized as follows. Section 2 provides background information on the lender, the lending process, and the natural experiment. In section 3 we characterize MASLOC lending, and compare it against traditional state-sponsored rural credit and the microcredit sector. In sections 4, we report estimates of the impact of credit using the loan freeze as a natural experiment. Section 5 provides insights on the mechanisms and explores

profit heterogeneity. Section 6 concludes.

2 Background information

2.1 The lender

In 2006, the Government of Ghana established the Micro-Finance and Small Loans Center (MASLOC) as part of Ghana’s Growth Strategy for Poverty Reduction (GSPR). MASLOC was tasked to “provide, manage and regulate... funds for microfinance and small scale credit schemes...”², and aimed at promoting beneficiaries’ start-ups, business development and sustainability, in order to create wealth and jobs. The parastatal is present in every region of Ghana through regional offices; district offices are staffed in many, but not all, districts. Notably, these offices are not formal branches, and are often housed within other government offices. Outreach for MASLOC is thus done by loan officers, who are tasked with traveling across districts and regularly visit marketplaces. Additional outreach may involve local government institutions; representatives of political parties; and limited media advertising (radio and television). The parastatal does not collect savings, and therefore relies on loan repayments and government disbursements to sustain lending activities.

2.2 Loan products and lending process

MASLOC offers three types of loan products: 1) group loans, 2) individual and 3) on-lending loans. In the first category, groups of 16 to 25 borrowers are given a single loan under a joint liability contract. In the second scheme, individuals with collateral and guarantees are given a maximum of GH¢10,000 (approx. US\$1,750). In the third category, bigger loans are advanced to other microfinance institutions for onward lending to small-scale businesses. In the period 2017-2019, MASLOC disbursed an average of GH¢400 (US\$70) of short-term

²From www.masloc.gov.gh/objectives.html, Accessed August 5, 2020.

loans to over 9,300 micro and small business owners, having facilitated the opening of approximately 570 start-ups and 200 offices in rural communities across the country (Ghana Business News, 2020).

2.2.1 The Group loan product

In this study, we restrict our attention to joint liability loans. Initial joint liability loans have a fixed value of GH¢1,000 per person, have a length of one year, and carry an interest rate of 12% per annum, prorated to 1% per month. This is approximately one third of the typical commercial rate for small business loans. Collections occur during a regular monthly group meeting attended by the credit officer, and are intended to be completed within one year (12 meetings). Repayment of group loans could lead to future loans, up to GH¢ 2,000 per borrower.

2.2.2 Loan application process

Joint liability loans are provided to existing and established groups composed of entrepreneurs who must own a small or micro business. The typical MASLOC group is an existing association of traders and artisans, social club, ROSCA, or grassroots organization. The application process starts with a visit by the loan officer to group members to verify the existence of businesses, observe the operations of the group, and decides whether the group can apply for a loan. The application consists of an application form, supporting materials which are typically put together by the association leader, and a business assessment of each applicant carried out by the loan officer. Unlike personal loans, borrowers do not need to report a business plan covering the loan use, and loan utilization is not enforced by MASLOC.

2.2.3 Loan approval process

Loan applications are evaluated centrally and not at the local office. Thus, all completed files are sent to the headquarters in Accra, where a loan committee reviews the files for completeness and approves the allocation of funds to the group. Our interviews with regional directors indicate that completed applications are not turned down; occasionally, files can be delayed in cases where the committee requires additional information or clarifications from the loan officers. Thus, screening is concentrated at the beginning of the application process and not at the end.

2.3 The 2020 Disbursement Freeze

The General Election in Ghana took place on December 7, 2020. In that election, the CEO of MASLOC won an MP seat, and resigned from his job of managing the parastatal. The President of Ghana did not appoint a replacement at that time. Lacking a legal entity to sign off on disbursements, all lending was stopped. This affected many borrowers who had submitted a loan application and had been approved, but whose loans had not been disbursed. The loan freeze was completely unexpected and without precedent, did not affect staffing levels at MASLOC, and did not influence loan recovery activities at the firm. By the time data collection activities were completed in June 2021 the flow of funds was still interrupted. A new CEO was appointed in September 2021, after the conclusion of the study.

3 Defining features of parastatal lending

In this section we report some descriptive statistics of the parastatal lender, and argue that MASLOC represents a departure from standard microfinance. Rather, it is best thought of as an evolution of traditional rural and agricultural credit schemes that were widespread in LICs between the nineteen-sixties and eighties. These traditional programs were often run

by commercial banks and provided individual loans to the agricultural sector. Relative to these schemes, parastatal microlending differs along two important features: first, credit is provided to microentrepreneurs outside of agriculture. Second, contracts utilize joint liability as a strategy to improve repayment rates. Despite these innovations, we document similar failures to those existing in past agricultural lending schemes: unreliability of credit, deficient repayment rates, reliance on government allocations, and possible political influence.

3.1 Repayment rates

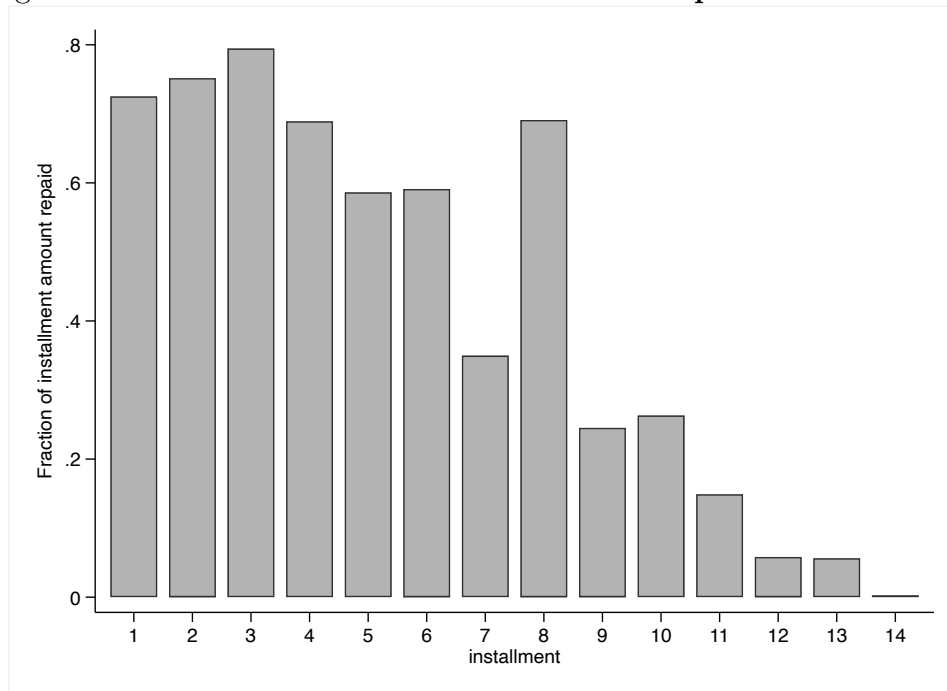
Like a standard joint liability microcredit, the lender issues a single loan to each group, and tracks the repayment of that loan rather than the repayment of each individual member. While each borrower in a group is responsible for repaying their share of the joint liability loan, group leaders are held responsible for and tasked to follow up on the defaulters. Moreover, loan officers visit groups in person on a monthly basis to enforce repayments. Despite this, MASLOC suffers from low repayments. Figure 1 shows the repayment rates of 36 group loans composed of 10-25 members (average: 19).³ On average, installment payments vary over time, and they fall sharply after the third and fourth instalment. By the end of the loan cycle, only 46% of the total amount owed is paid back. This is in line with reported numbers provided by MASLOC to the local media (Business Ghana, 2022). These repayment rates are significantly lower than the standard repayment rates in microfinance (Dalla Pellegrina, 2011), and similar to the repayments observed by traditional state-run banks which ranged between 20 and 50 percent (Sharma and Zeller, 1997).

One issue with the above statistic is that, given the overlap of these records with the loan freeze, it is conceivable that the fall in repayments is due to the freeze. Fortunately, we can directly verify this, as there is variation in the timing of loan applications. We

³To be clear, these loans were issued between June and December 2020, and therefore might not be representative of the overall loan portfolio. Moreover, these loans are not tied to the interview data we have from borrowers, which is analyzed in section 4.

identify instalments that were due before and after the freeze. We then regress the amount paid in a particular instalment on (1) whether the instalment was due after the freeze, and (2) instalment fixed effect. We find no difference in the amount paid between instalments preceding the freeze and those following it (p-value: 0.48).

Figure 1: **Fraction of installment owed that is paid in instalment**



Source: Repayment records from 36 group loans issued in Ashanti and Greater Accra region between October and December 2020.

3.2 Disbursement timing

Given low repayment rates, below-market interest rates, and lack of access to client’s savings, the lender relies on government allocations to fund most loans. Since most funds are not generated internally, the parastatal institution depends on the timing of government allocations in disbursing approved loans. This is feature of past lending schemes in Ghana and elsewhere (Kane, 1984); in the past, a stated reason for the collapse of most schemes has been the drying out of external funding (Adams et al., 1984).

The fact that loan generation depends on external financing has an important consequence for the lender’s clients: disbursements are often delayed by the lack of funds, and their timing can be quite unpredictable. While we do not have information on the timing of government disbursements to the parastatal institution, we can see evidence of bunching of loan disbursements in our survey data, represented in Figure 2, Panel A. Disbursements are not happening continuously, instead they are bunched at the beginning of the month.

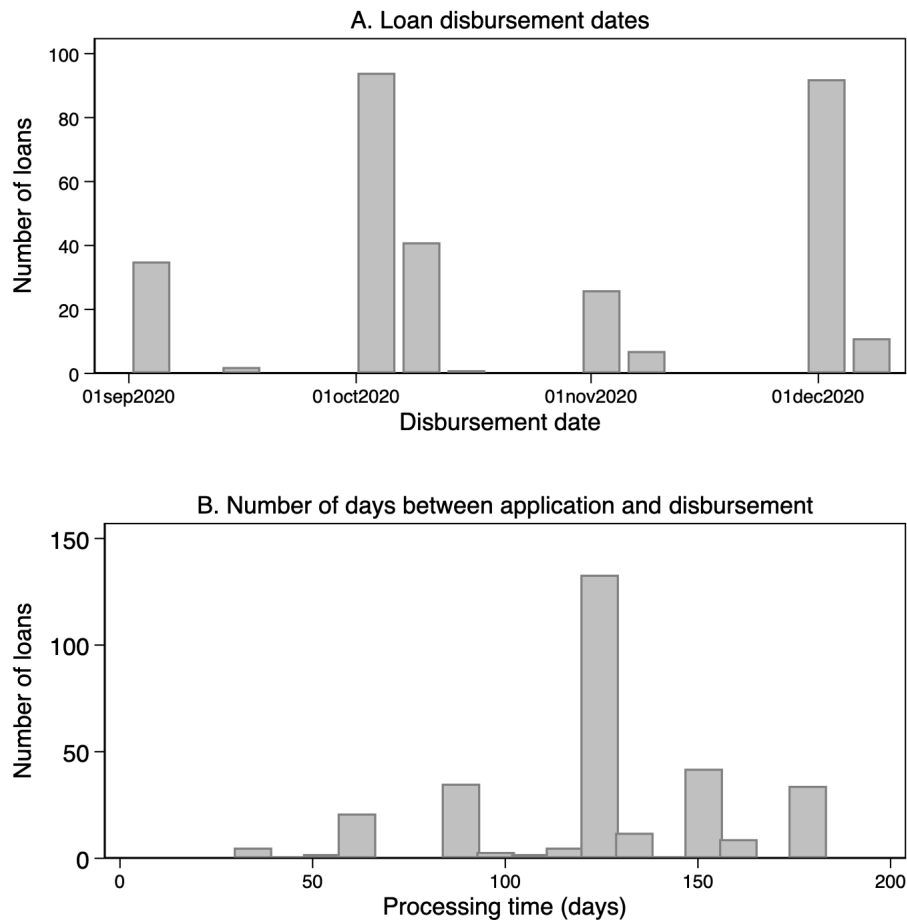
Since disbursements occur infrequently, waiting times to access loans can be quite long. Again, this is evidenced by the survey data. Figure 2, Panel B, reports the number of days that passed between the date clients reported submitting the loan application and the date when the loan was disbursed. Very few loans were issued within 50 days of the application date. Most loans took between four and five months to be issued.

3.3 Political involvement

We finally report the involvement of political actors in the lending process. The most obvious type of political influence on credit markets is the imposition of restrictions on lending activities, including limiting lending requirements, imposing preferential rates, and directing credit to specific clients (Tillairajah, 1994). For MASLOC, this is evidenced by the provision of microfinance credit at below market rates, the direction of micro loans to communities facing natural or man-made disasters by the country’s President ahead of the election⁴, and by the widespread belief that individual liability loans are often given preferentially. Concerns of political meddling are less serious for the group liability product, since loans are small in size and provided to microentrepreneurs organized in groups. However, survey evidence from microloan clients and conversations with loan officers indicate that political actors do play an implicit role in loan acquisition, as they often facilitate the loan application

⁴A number of clients received “emergency loans” through MASLOC to victims of a fire that ravaged the Odawna Market on November 18, 2020, three weeks ahead of the election. Those loans were disbursed quickly, by Presidential directive. Borrowers from those loans have been excluded from our analysis (Business and Financial Times, 2020).

Figure 2: **Timing of disbursements of loans**



Source: Self-reported information from borrower interviews, limited to those who borrowed from the group loan as discussed in section 4.2.

process (i.e., they support the collection of documents, arrange photos, and collate screening information). In our sample of respondents, almost half (44%) reported having a political party officer facilitate the loan application, a proportion that is much higher than those filled out by MASLOC officials (31%) or by a non-political group leader (16%). Given that the loans in our sample were provided in the pre-electoral period, it is possible that political operatives are directing support to existing applicants as part of their electoral activities, and that they are directing microcredit loans to supporters. Since the latter case could affect the distribution of characteristics of borrowers, we will show that the characteristics

of borrowers with and without political connections are similar.

4 Impact of credit on business outcomes

4.1 Identification strategy

We next address the question of whether parastatal lending is inherently wasteful, or whether it does achieve its objectives of improving business outcomes of borrowers. To do so, we take advantage of the lending freeze. We compare outcomes for MASLOC borrowers who applied for a loan, were approved, and received the loan (treatment group) against those who also applied, were approved, but did not receive the loan due to the lending freeze (control group). We restrict the analysis to applicants who borrowed as part of a joint liability loan (JL), which we identify in the data as loans of 1,000 Ghana Cedis or less, and who applied between June 1 and December 7 2020, i.e., before the loan freeze.

Denoting a relevant outcome variable for applicant i by y_i , The basic regression of interest is the following:

$$y_i = \alpha_1 \text{ReceivedLoan}_i + X_i\beta + \delta_c + \epsilon_i, \quad (1)$$

where the matrix X includes the respondent's age, gender, education level (divided into four categories of schooling), whether the business is formal or informal, indicators for business sector⁵, and whether the loan application received some support from a political operative. δ_c represent a set of fixed effects associated with the location (specifically, the electoral constituency) of the borrower. The identification assumption in the above model is that, conditional on the set of control variables in X , whether the borrower received the loan is uncorrelated with the outcome variable. To clarify this assumption, we need to consider

⁵The sectors are: agroprocessing, artisan, fashion & beauty, food & beverages, hawking & petty trading, ICT & digital services, agriculture, education, trading, transport, water & sanitation.

the factors that could explain why, at the onset of the loan freeze, certain borrowers whose applications were approved were yet to receive credit. While we do not need to worry about the selection of loan approvals (all applications are approved), we do need to consider the possibility that borrower or group characteristics may influence the likelihood of receiving a loan. A particular concern is that preferential treatment is given to loans associated with a political operative or from a politically sensitive constituency. In Section 4.2 we show that the treatment is correlated with whether a political operative was involved in the loan application process. However, we will also offer evidence that clients supported by political operatives have the same baseline characteristics of other clients. In our regressions we control for the potential for political interference by including an indicator for those who received support by political operatives, as well as by including constituency fixed effects (five constituencies). We then show that, conditional on these variables, the treatment is uncorrelated with observable variables, i.e., the treatment arms are balanced. Finally, we run all regressions with constituency fixed effects and no individual level control; the results are very similar (and presented in the appendix).

A final issue to consider when interpreting the results is the possibility that the average treatment effect of the treatment group may be different from the average treatment effect of the control group, arising from the differences in political involvement across the two treatments. This would arise if, for instance, loan use depends on whether the loan application was supported by a political operative, i.e., the loan is understood to be a transfer that need not be paid back and can therefore be spent on non-productive uses. In that case, equation 1 identifies a treatment effect on the treated provided that the potential outcomes for the control condition are the same across the treatment and control group:

$$E(Y^C | ReceivedLoan = 1) = E(Y^C | ReceivedLoan = 0).$$

This condition would be violated if potential outcomes differ between those borrowers who received support by a political operative and those who did not. In section 4.2 we provide an indirect check by comparing the outcomes Y^c for the two types of applicants in the control group only.

4.2 Data

We use information from a sample of applicants from Ashanti and Greater Accra who applied for group loans between June and December 2020. In March 2021, MASLOC provided a list of those applicants who successfully obtained a loan, and also a second list of applicants who were still in a waiting list. We randomly picked people within the two lists and contacted them between May and June 2021. Interviews were done in person by a team of interviewers. Thus, outcome variables are measured five to six months after the start of the freeze. Interviews were developed as quickly as possible in order to complete data collection before the end of the freeze. At the time, we lacked information on whether the freeze was going to be lifted. At the time of interviews, none of those in the waiting list had received credit.

The list provided by MASLOC included both joint liability and individual liability borrowers. Unfortunately, in our survey we did not include a variable that clearly separated these two types of borrowers. Since individual loans are typically large and have a minimum loan size of 2,000 Cedis, we limited our analysis to clients whose loans are valued at Cedis 1,000 or less ($N=689$), as that is the initial group loan size for microcredit clients. Moreover, we also excluded clients who received emergency loans by presidential directive (footnote 4).

Summary statistics of socioeconomic characteristics are presented in Table 1. 76% of applicants are female, which is consistent with the strategy of forming groups composed mostly of women. Education levels are somewhat low, and three-fourths have either primary or no schooling. Only 10% of businesses are self-reported as being registered (thus, formal).

Table 1: **Summary statistics & balance table**

Variable	Obs	Mean	SD	Mean	SD	Mean	SD	Diff.
		Full Sample		Treated		Control		(p-val.)
Borrower characteristics								
Age	688	46.16	9.35	46.33	8.89	46.00	9.79	0.188
Male applicant	689	0.24	0.43	0.05	0.21	0.43	0.50	0.359
Marital status	592	1.66	1.15	1.68	1.15	1.63	1.15	0.165
Number of dependents	675	4.72	2.49	4.72	2.20	4.72	2.76	0.351
<i>Education level:</i>								
Primary	689	0.53	0.50	0.60	0.49	0.46	0.50	0.532
None	689	0.21	0.41	0.25	0.44	0.17	0.38	0.764
Secondary	689	0.19	0.39	0.12	0.32	0.25	0.44	0.302
Tertiary	689	0.07	0.25	0.03	0.17	0.11	0.31	0.430
Business characteristics								
Formal sector	689	0.10	0.30	0.05	0.22	0.15	0.36	0.119
Owns business location	628	0.34	0.47	0.29	0.46	0.38	0.49	0.119
Baseline sales Oct 20	507	332.1	470.6	328.9	460.1	336.4	485.7	0.915

Summary statistics of MASLOC clients in the sample of group loan borrowers (borrowed 1,000 Cedis) and who did not receive emergency loans. Treated column includes only those borrowers who received the loan. Control column includes only borrowers who were approved for disbursement but did not receive the loan at the time of the loan freeze. Heteroskedasticity robust p-values are computed using a regression of the characteristic on the treatment indicator with constituency fixed effects.

The table also compares these baseline characteristics between the treated and control groups, and reports whether those differences are statistically significant after controlling for the constituency. The two groups are similar across a variety of characteristics. To further test that the treatment is uncorrelated with borrowers' characteristics, we regress whether the loan was disbursed on the entire set of controls and constituency fixed effects⁶. We find that the joint test of significance (excluding the political proxies) fails to reject the null hypothesis (p-value: 0.21).

Even though demographic and business characteristics are similar, the two samples are not balanced on the source of support received when applying for the loan, as can be seen by Table A1: since applicants who received support from a political party operative applied

⁶To make full use of the data and avoid dropping observations with missing values, we replace all missing values with a zero, and include a set of additional indicators that, for each variable in the regression, take the value of one when the associated variable had a missing value.

later in time, they are over-represented in the control group. A concern is that applicants supported by political parties are somehow different from other applicants, and that this could skew the results. Appendix Table A2 shows that, at least along the baseline characteristics we observe, this is not the case, and applicants supported by political parties are similar to other applicants. Moreover, reported loan uses also appear to be similar (Appendix Table A3), and both types of borrowers received their loan around the same time (difference is 3.7 days, p-value is 0.33). Finally, in Appendix Table A4 we regress the key outcome variables on the indicator for applicants that are supported by political operatives, among the control group only. Supported enterprises are larger, as measured by monthly revenues and costs (columns 3 and 4). However, they have similar levels of stocks and workers and are not more profitable. Out of caution, we report regressions results which control for whether the application was supported by the political party.

4.3 Results

Table 2 reports the effects of receiving the loan on business inputs (value of existing stock and materials; number of workers) as well as the value of total inputs (wage bill and total expenditures for the preceding month), at the time of the interview. Receiving a loan has a (noisily estimated) positive effect on the amount of stock held by the microenterprise (an additional 1,112 Cedis, 20% higher than the control group). This is consistent with reporting on the use of the microfinance loan (which was mostly used to purchase stock), and is very close to the loan amount of 1,000 Cedis. The number of employees (column 2) is smaller in the treated group (by approximately 0.25 workers, a statistically significant 17% lower than the control group); however, the overall wage bill is not significantly lower (column 3), which we speculate indicates that either businesses are reducing the number of unpaid employees from the household, or they hire fewer, more qualified workers who complement the added capital. The point estimate for business expenditures is also negative and quite

noisy. Overall, then, the intervention might have led to a reallocation of business inputs from labor to stocks, without an increase (or decrease) in expenditures.

Table 2: **Business inputs (OLS estimates)**

VARIABLES	(1) Value of stock	(2) Number of workers	(3) Wage bill	(4) Monthly expenditures	(5) Index of inputs
Received Loan	1,112.77 (697.06)	-0.252** (0.106)	-62.627 (47.851)	-230.692 (202.657)	-0.034 (0.098)
P-value	[0.111]	[0.018]	[0.191]	[0.255]	[0.729]
FDR q-value	{0.200}	{0.085}	{0.237}	{0.237}	
Observations	473	684	633	684	451
R-squared	0.084	0.313	0.298	0.139	0.318
Constituency f.e.	Yes	Yes	Yes	Yes	Yes
Sector f.e.	Yes	Yes	Yes	Yes	Yes
Control mean	5,448	1.534	740.5	1,654	0.167

All regressions are inclusive of individual-level controls from table 1, an indicator for receiving assistance from a political operative in the application process, constituency fixed effects (7 constituencies), and enterprise sector fixed effects. Columns 1, 3 and 4 are measured in Ghanaian Cedis (GHC), and the top two percent are winsorized. Column 5 is an index constructed as the average of the four business inputs variables, after each variable was standardized. Robust standard errors in parentheses. Anderson’s q-values are computed for the first four columns.

Table 3 turns to business outcomes: revenues, profits, and business survival. The estimate on business revenues is positive but small and close to zero. Given that revenues were essentially unchanged but costs were somewhat lower, profits are higher for the treatment group by close to 300 Cedis. While this estimate is quite large in magnitude (it is 26.2% higher than the control group), the estimate is noisy and statistically insignificant. An alternative measure of profitability is reported in column 3, which reports a higher proportion of microentrepreneurs saying that they have higher profits now than six months prior in the loan group than in the control group. Finally, we also find that receiving the loan had no effect on microentrepreneurs’ ability or willingness to shut down a business (column 4).

Next, we study business outcomes among those who filled the application through a

Table 3: **Business outcomes (OLS estimates)**

	(1)	(2)	(3)	(4)
VARIABLES	Monthly revenues	Profits	Reported higher profits	Quit a business
Received Loan	66.209 (337.217)	286.412 (260.741)	0.145*** (0.054)	-0.019 (0.034)
P-value	[0.844]	[0.272]	[0.007]	[0.567]
FDR q-value	{0.997}	{0.691}	{0.031}	{0.998}
Observations	558	558	682	682
R-squared	0.109	0.075	0.168	0.167
Constituency f.e.	Yes	Yes	Yes	Yes
Sector f.e.	Yes	Yes	Yes	Yes
Control mean	2,839	1,091	0.272	0.155

All regressions are inclusive of individual-level controls from table 1, an indicator for receiving assistance from a political operative in the application process, constituency fixed effects (7 constituencies), and enterprise sector fixed effects. Profits are computed as the difference between revenues and costs. Both revenues and profits are measured in Cedis, and winsorized at the top and bottom 2 percent. Column 3 is an indicator variable equal to 1 if the respondent claimed that profits have increased a little or a lot relative to six months prior. Column 4 is an indicator equal to 1 if respondent claimed that they stopped any business activity in the previous year. Anderson’s q-values are reported for the family of four outcome variables. Robust standard errors in parentheses.

political operative separately from those who sought the loan through a party. To do so, we interact the treatment variable with the indicator that identifies support from a political party operative and estimate the following regression:

$$y_i = \beta_1 \text{ReceivedLoan}_i + \beta_2 \text{Party}_i + \beta_3 \text{ReceivedLoan}_i \times \text{Party}_i + X_i \gamma + \epsilon_i. \quad (2)$$

The estimates β_1 identify the difference in outcomes between loan recipients and those who are not, among borrowers who did not receive facilitation by a political operative. β_3 is the difference in difference estimates that identify the differential effect of the treatment for those who received facilitation, relative to those who did not. Results are reported in table

4. For simplicity, we combine both inputs and outputs in the same table.

Overall, the positive impacts of the intervention on business outcomes are driven by entrepreneurs who did not have an association with politics. Specifically, for this group, estimates on stock and revenues are positive, while estimates on expenditures are negative (but none are significant). On the other hand, imputed profits (column 6) and the self-reported measure of positive profit change (column 7) are both positive and significant. For borrowers who are associated with a political operative stock values, expenditures and revenues are all lower, and the estimated effect on profits is, in fact, negative (-181 Cedis). While the positive effects of credit are mostly associated with non-political borrowers, both types of borrowers report similar increases in the amount of business stock they own, consistent with the self-reported loan use. Yet, those additional levels of stock do not translate to higher revenues for borrowers associated with political party operatives.

Table 4: Differences in impacts by political support in loan application

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Value of stock	Num. of workers	Wage bill	Monthly exp.	Monthly revenues	Profits	Reported higher profits	Quit a business
Received Loan (β_1)	1,215.3 (881.3)	-0.087 (0.147)	5.7 (74.1)	-144.7 (222.2)	543.8 (372.4)	566.5* (306.9)	0.170*** (0.065)	-0.021 (0.041)
Received loan	-267.3	-0.396	-188.2	-234.5	-1,340.6**	-754.1	-0.078	0.009
X Party (β_3)	(1,465.0)	(0.245)	(119.2)	(342.3)	(567.2)	(578.0)	(0.076)	(0.055)
Observations	473	684	633	684	560	560	684	684
R-squared	0.110	0.316	0.302	0.139	0.117	0.077	0.168	0.167
Constituency f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
P-val: $\beta_1 + \beta_3 = 0$	0.407	0.007	0.019	0.220	0.117	0.694	0.165	0.790

The table reports the results of regression equation 2. All controls from table 2 are included. Outcome variables are the same as in tables 2 and 3. Heteroskedasticity-robust standard errors reported.

5 Discussion

Mechanisms The previous section showed that microcredit loans are profitable for a subset of recipients and are not profitable for others. In this section, we highlight the mechanisms that can explain these heterogeneous effects. To begin, we rule out the possibility that the results are driven by differences in the timing of the loan between politically supported and independent borrowers. Both types of (treated) borrowers receive their loans at the same time (difference in loan receipt is 3.7 days, p-value 0.33), and also applied at the same time (difference in application submission is 2.7 days, p-value 0.37).

One possibility is that treatment effects differ by political support due to the adverse selection among those connected to politicians. This selection could be the result of a variety of processes, including one where groups that are made up of relatively lesser able entrepreneurs seek out the support of political operatives when applying for the loan. The more plausible selection process works in the opposite direction: politicians provide loan application services in exchange of electoral support, targeting even those with low marginal returns of capital.

An alternative explanation is that the two types of borrowers face different incentives to repay, which in turn influences the use of the loan and its impact on business outcomes. These differences in incentives might arise if those who borrow with the help of a political operative think that they do not have to repay, i.e., they will not be the subject of a collection attempt by the lender in the future. In this situation, the “best use” of a loan might well be on consumption and not on business development, and could explain the low returns on profits.⁷

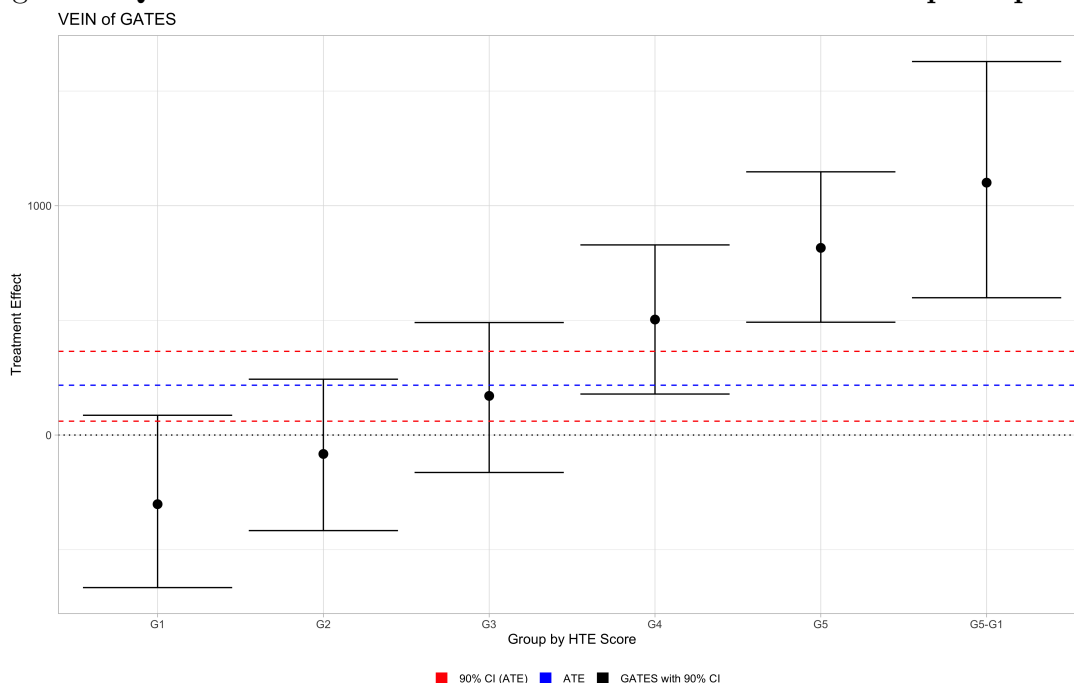
Repayment and returns The mechanisms discussed above are harmful to the lender if they cause less than full repayment. In an ideal setting, we would observe loan outcomes

⁷While plausible, this explanation is in conflict with the fact that the value of stock does increase for both types of borrowers.

(default and partial repayment) for borrowers in the study and tie repayments to borrower characteristics and behavior to separately identify these possible mechanisms. Unfortunately, our data are limited and we lack loan repayment information at the individual level. However, we can address a related question: whether returns on profits are sufficiently high to cover the monthly loan instalment. If the answer is no, low returns may be a potential explanation for the low repayment rates reported by MASLOC. To repay the monthly instalment of 94 cedis (approximately USD 16) without drawing from other sources, the increase in profits due to the loan should exceed 94 cedis. We will thus derive the proportion of borrowers whose returns are above this amount, and compare it to the repayment rate. To do so, we explicitly measure loan impact heterogeneity by computing Group Average Treatment Effects (GATEs) according to the procedure developed by Chernozhukov et al. (2018). That is, we estimate individual treatment effects of loans on profits, divide up the sample into quintiles of treatment effects, and report the average treatment effect for each quintile.

The results of this exercise can be seen in figure 3. As expected from the analysis of table 4, there is a significant amount of heterogeneity. Average treatment effects are negative (albeit not statistically significant) for the bottom two quintiles, while they are well above the monthly repayment amount and significant for the top two quintiles. The figure thus shows that, for three quintiles of the sample, returns are not be sufficiently high to cover monthly loan instalments, and may help explain the low repayment rates experienced by MASLOC. To be clear, high treatment effect heterogeneity in profits from traditional microfinance has been found in other settings (Meager, 2019, Banerjee et al., 2019), and returns are positive only for a small proportion of entrepreneurs. Since traditional microcredit has very high repayment rates, it must be the case that most borrowers repay credit obligations through sources other than business profits. We thus speculate that para-statal borrowers, unlike their traditional counterparts, are less inclined to use resources outside of their business to make repayments.

Figure 3: Quintiles of treatment effects of loans on microenterprise profits



Group Average Treatment Effects for Profits. Profits are the residual of a regression of imputed profits on constituency fixed effects. Baseline variables listed in Table 1 are used after replacing missing observations of each variable to the mean value of that variable. Estimation using the R package GenericML. Training and testing sets were split 50/50. We chose the method with the highest prediction value among LASSO, Random Forest and SVM. We report the median value for each quintile in the graph from 100 iterations.

6 Conclusion

The paper studies the characteristics and impacts of microfinance loans provided by paras-tatal entities. We find that this market is characterized by partisan participation in the screening of borrowers, slow delivery of loans, and low repayment rates. Despite this, we find that loans are productive in the sense that they increase short-term profits, consistent with findings from previous studies focused on the effect of micro credit on business enterprise outcomes. Entrepreneurs receiving credit had larger capital stocks, and reported higher profits. The effects are highly heterogeneous, and are driven by borrowers whose applications were not facilitated by political operatives. We speculate that political interactions lead to lower quality borrowers, or lower willingness to repay loans.

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A Appendix Tables

Table A1: **Support received by the applicant during the loan application process**

Variable	Obs	Mean	SD	Mean	SD	Mean	SD	Diff.
		Full Sample		Treated		Control		(p-val.)
Who facilitated loan application process:								
Political party	689	0.51	0.50	0.36	0.48	0.66	0.47	0.000***
MASLOC official	689	0.23	0.42	0.25	0.44	0.21	0.41	0.895
Group leader	689	0.16	0.36	0.27	0.44	0.04	0.20	0.005***
Self	689	0.05	0.21	0.06	0.24	0.03	0.18	0.000***
Relative or friend	689	0.01	0.09	0.00	0.00	0.02	0.13	0.315

Table shows the tabulation of the answer to the question “who usually fills your loan application.” Last column reports the p-values of the difference between the treatment and the control group, calculated from a regression of the variable on treatment indicator and controlling for constituency fixed effects.

Table A2: **Characteristics of applicants, by whether the application was supported by a political party operative**

VARIABLES	(1)	(2)
	Political party application	
Age	0.003 (0.002)	0.003 (0.002)
Male recipient	0.119** (0.057)	-0.073 (0.069)
Household head	-0.033 (0.021)	-0.031 (0.019)
Number of dependents	0.007 (0.009)	0.006 (0.008)
Informal business	0.074 (0.070)	0.000 (0.064)
Owns business location	0.020 (0.044)	-0.026 (0.042)
Basic School	0.056 (0.053)	0.037 (0.050)
Secondary Education	0.113* (0.066)	0.033 (0.060)
Tertiary Education	-0.049 (0.095)	-0.091 (0.087)
Observations	612	612
R-squared	0.073	0.230
Constituency f.e.	No	Yes
F-stat	3.383	1.464

Outcome variable is an indicator for borrowers whose loan applications were facilitated by a political operative. Regressions include employment fixed effects. Heteroskedasticity-robust standard errors reported in parentheses.

Table A3: **Reported uses of MASLOC loans (full sample)**

Loan use	Full Sample		Party application		Other application	
	Mean	SD	Mean	SD	Mean	SD
Expand business	0.649	0.478	0.777	0.417	0.516	0.500
Purchase stock	0.450	0.498	0.363	0.482	0.540	0.499
Purchase machinery	0.062	0.242	0.063	0.243	0.062	0.241
Start a new business	0.025	0.155	0.011	0.106	0.038	0.192
Family expenses	0.012	0.107	0.003	0.053	0.021	0.142
Repay business debt	0.006	0.076	0.009	0.092	0.003	0.054
Build kiosk	0.003	0.054	0.006	0.075	0.000	0.000
Hire workers	0.001	0.038	0.003	0.053	0.000	0.000
Observations	689		350		339	

Tabulation of intended use of the loan at the time of request. Columns do not add up to one as multiple responses are allowed. Party

Table A4: Outcomes for control group only, by whether the application was supported by a political party operative

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Value of stock	Number of workers	Wage bill	Monthly expenditures	Monthly revenues	Profits	Higher reported profits	Quit a business
Political party application	-603.5 (1,188.6)	0.310 (0.237)	56.809 (115.864)	796.3*** (239.5)	918.7** (439.2)	209.5 (431.1)	-0.008 (0.062)	-0.035 (0.046)
Observations	220	339	315	339	278	278	339	339
R-squared	0.214	0.308	0.275	0.217	0.172	0.132	0.107	0.277
Constituency f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-party mean	3,943	1.133	563.6	1,381	2,693	1,110	0.378	0.139

Table reports results of a regression of outcome variable on whether the loan was supported by a political operative. Only those in the control group are included in the regression. Refer table 2 and 3 for an explanation of how outcomes are measured and the controls in the regressions. Heteroskedasticity robust standard errors are included in parentheses.

Table A5: **Business inputs (OLS estimates), without individual controls**

VARIABLES	(1) Value of stock	(2) Number of workers	(3) Wage bill	(4) Monthly expenditures	(5) Index of inputs
Received Loan	1,181.459*	-0.238**	-41.050	-264.920	-0.054
	(623.116)	(0.103)	(42.544)	(197.486)	(0.092)
FDR q-value	{0.097}	{0.097}	{0.202}	{0.137}	
Observations	475	689	637	689	453
R-squared	0.061	0.217	0.178	0.079	0.240
Constituency f.e.	Yes	Yes	Yes	Yes	Yes
Sector f.e.	No	No	No	No	No
Control mean	5,448	1.534	740.5	1,654	0.167

Same as table 2, but without any individual level control. See notes on table 2 for details on each regression.

Table A6: **Business outcomes (OLS estimates), without individual controls**

	(1)	(2)	(3)	(4)
VARIABLES	Monthly revenues	Profits	Reported higher profits	Quit a business
Received Loan	93.744 (329.082)	289.348 (251.965)	0.140*** (0.052)	-0.009 (0.031)
FDR q-value	{1.00}	{0.606}	{0.030}	{1.00}
Observations	563	563	689	689
R-squared	0.070	0.039	0.131	0.127
Constituency f.e.	Yes	Yes	Yes	Yes
Sector f.e.	No	No	No	No
Control mean	2,839	1,091	0.272	0.155

Same as table 3, but without any individual level control. See notes on table 3 for details on each regression.

Table A7: Differences in impacts by political support in loan application, without individual controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Value of stock	Num. of workers	Wage bill	Monthly exp.	Monthly revenues	Profits	Reported higher profits	Quit a business
Received Loan	1,296.3** (638.3)	-0.225** (0.112)	14.2 (48.9)	-386.1* (204.8)	202.8 (341.6)	404.2 (274.9)	0.168*** (0.054)	-0.002 (0.033)
Received loan X Party	-505.9 (898.2)	-0.043 (0.140)	-190.0*** (66.5)	414.0 (270.5)	-481.5 (370.8)	-507.1 (401.5)	-0.096* (0.053)	-0.022 (0.036)
Observations	475	689	637	689	563	563	689	689
R-squared	0.062	0.217	0.186	0.084	0.072	0.042	0.136	0.127
Constituency f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector f.e.	No	No	No	No	No	No	No	No
P-val: $\beta_1 + \beta_3 = 0$	0.421	0.061	0.003	0.923	0.522	0.789	0.258	0.547

Same as table 4, but without any individual level control. See notes on table 4 for details on each regression.