Micro Entrepreneurship Training and Assets Transfers: Short Term Impact on the Poor[1]

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Abstract

Micro entrepreneurship programs have been widely thought as a tool to help poor individuals to escape poverty, and an important effort in microcredit has been leading the support to individuals attempting to start a business. However, micro entrepreneurs usually lack not only of capital for starting their projects, but also basic knowledge tools to run their businesses. The profitability of such small-scale business has been frequently questioned, so that micro entrepreneurship has also been seen as a way to keep individuals at work while they wait for an opportunity as wage earners. By using a randomized control trial approach in a large scale publicly run micro entrepreneurship program in Chile, we assess the effectiveness of this strategy in getting individuals out of poverty. The program provides business training and an asset transfer. Additionally, as part of the evaluation to estimate the return to capital, a random group received a second asset transfer seven months after the first one. We find that the program does significantly increase employment and income in 16% and 28% respectively. Moreover, we estimate that the monthly return rate would be around 4.4%.

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1 Introduction

In recent years, a great amount of effort has been put in place to give poor citizens the chance to overcome their situation through the development of their own business. A fine example of these poverty alleviation policies is the micro-credit initiatives that have been adopted by almost all developing countries (for a review see Morduch (1999)). Explicitly or implicitly, these initiatives assume that financial constraints are important, and that access to the financial sector will provide a way out of poverty. However, Banerjee et al (2010) shows that access to microcredit has a heterogeneous effect depending on the pre existence of a business, and therefore it is not a poverty alleviation strategy that would be useful for all individuals.

But finance may not be the only constraint to the existence and growth of microenterprises: factors such as ability and motivation matter and adequate business training might affect their performance (De Mel, McKenzie and Woodruff (2008)), Karlan and Valdivia (2011)). Micro entrepreneurs might not only lack not of capital for starting or improving their projects, but also basic knowledge tools to run their businesses.

However, little is known about the specific human capital and skills that are needed to manage a micro-firm or become a successful self-employed individual. Also, there is no certainty about which skills make a good micro-entrepreneur, and whether it is possible to teach those skills. In an extreme case, if there are specific skills that are needed to succeed as a micro-entrepreneur then the access to the financial sector by itself will have a very limited effect on reducing poverty.

Access to the financial sector through loans impose a risk on the individuals and usually require short-term returns to pay the regular payments. In the Chilean context, individuals with low income levels have wide access to credit for consumption through retail stores (65% in our baseline), but there is still limited access to loans intended to finance small-scale business, specially if individuals have previously failed paying loans.

De Mel, McKenzie and Woodruff (2008) have shown that assets transfers to micro entrepreneurs have high returns (55%-63%) per year. Therefore, assets transfers could be

seen as a way to facilitate entrepreneurship and overcome any potential lack of credit of the poor.

Little is known about the effectiveness of micro entrepreneurship programs on extremely poor individuals. By using a randomized control trial approach in a large scale publicly run micro entrepreneurship program in Chile "Micro Entrepreneurship Support Program" (MESP)[5]*),* we assess the effectiveness of this strategy in getting individuals out of poverty. The program consists on a transfer to finance the start-up capital for a value of about US$600 and training in business practices. The transfer is made in capital stock chosen by the entrepreneur according to a business plan developed in the training. As far as we know, this is the first randomized evaluation of a public program of these characteristics.

Our study allow us to identify the surviving rate of businesses in the short and medium term compared to a control group, assessing if individuals increase their income after participating in the program. Moreover, by giving micro entrepreneurs additional capital after their businesses have been running for six to seven months, we obtain capital return rates, which are crucial to assess their profitability, and whether these small-scale businesses would benefit from additional capital support.

This kind of training, in the context of poverty alleviation, has not been studied in the literature. In fact, few studies have focused on the non-credit aspects of the microcredit programs, such as McKernan (2002) and Karlan and Valdivia (2009), who find mixed evidence. In the same line, Drexler, Fischer, and Schoar (2010) evaluate the effects of two different financial literacy programs in the Dominican Republic and find that effects on business outcomes can differ significantly according to the type of training.

In parallel, a common question about micro entrepreneurship is the return rate this kind of businesses has. De Mel, Mckenzie and Woodruff (2008, 2009) find high returns rates in Sri Lanka, but no evidence is available for Latin America. For the purpose of addressing this issue this study also considers giving micro entrepreneurs additional capital after their businesses have been running for a while. This allows obtaining capital return rates on the business that will allow determining the profitability of entrepreneurships, which are crucial

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[5] PAME: Programa de Apoyo al Microemprendimiento

to assess whether these small-scale businesses would benefit from additional capital support.

The rest of the paper is organized as follows. The description of the program and the intervention is carried out in section 2. The data collection process and the balance and attrition of the sample are analyzed in section 3. The empirical strategy and the results are presented in section 4 and 5 respectively. Finally, section 6 summarizes the main results and its implications.

2   Description of the Intervention.

The evaluation consisted in studying the impact of MESP as the government implements it, and an additional intervention designed for this evaluation, that consisted in increasing the amount of capital transferred to participants after the normal MESP had finished. In this section we describe both interventions in detail.

2.1   The Micro Entrepreneurship Support Program (MESP)

The "Micro Entrepreneurship Support Program" (MESP)[6] started in 2006 as one of the main programs aimed at alleviating extreme poverty run by the Chilean Government. The program provides training and financial support to allow participants to start their own business. The main purpose of the program is that unemployed people become able to generate income independently, so that they can rise above the poverty line.

The rationale of the MESP is based on the belief that extremely poor do have entrepreneurial capabilities that would allow them to produce monetary resources for their households on a permanent basis. However, the basic assumption is that poor individuals lack of basic entrepreneurial skills to start up and manage their businesses, and they also lack of funding access under favorable terms. In other words, it is assumed that the individuals do have profitable projects that lack of funding, and that credit markets constraints plus the inability of saving, prevent them from obtaining the resources needed to start businesses that require a minimum indivisible initial capital. Then, the MESP program attempts to fill in this gap.

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[6] In Spanish: "Programa de Apoyo al Micro Emprendimiento" (PAME). The program is carried out by the "Solidarity and Social Investment Fund" (in Spanish: Fondo de Solidaridad e Inversión Social, FOSIS).

The program has two components: training and a subsidy for their business. The training component of the program extend for four months, where the first three weeks are of intensive formal training in micro entrepreneurial skills, and rest consists only of monitoring visits. The training sessions attempt to teach businesses planning tools, basic administrative planning as keeping record of sales, prices, expenses, among others. Training lasts eighty hours during three weeks.

After this formal training, the financial support comprises a lump sum subsidy of about US$600 that the beneficiaries can spend in machinery, raw materials, or other inputs.[7] Beneficiaries do not receive the money transfer, but the capital they choose. Usually, the service provider escorts the entrepreneur to buy the inputs for the business, after which a receipt is proof of what they used the money for. A maximum amount of 10% could be received in cash or as working capital. The distribution of the amount of funding is standard, and does not differ by type of business, economic sector, or geographical location.

The monitoring process of the entrepreneur activity lasts another three months, period in which beneficiaries are visited three times by the implementing institution to follow up the performance of the businesses and to advice on the it. Table 1 in the Annex describes in detail the content of the training sessions. All MESP graduates must have at least 80% of class attendance, which means they only missed two out of the twelve sessions carried out.

The training session aim to improve individuals business skills in different aspects, namely business planning, marketing and management (see Appendix for more details on the components of the program). Moreover, the follow-up visits allow complementing the acquisition of skills in the implementation of the business plan developed during the training.

The mechanism of the intervention hopes to generate minimum competencies and skills to start up and run their businesses. The initial capital is used in setting up the businesses (complimenting and/or substituting other funding sources), ensuring the sustainability of the business in the long run. The expected results are that vulnerable individuals get

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[7] The amount they receive is Ch$300,000.

involved in entrepreneur activities, and they become able to generate a flow of additional monetary resources that allow them escaping poverty.

Extremely poor people "over 18 years old, who benefit from social security and are unemployed or have an irregular job", compose the target population of the MESP program. Applicants must demonstrate they belong to the extremely poor population by having a Social Security Score (SSC) below a certain threshold.[8] Beneficiaries of the Antipoverty Program "Chile Solidario'' may apply directly to the MESP.

The MESP program treats about 24,000 beneficiaries each year. Implementing institutions that are selected through a bidding process carry out the provision of the services. They can be private institutions such as foundations, public institutions such as municipalities, or tertiary education institutions that hold State recognition. The same institution provides all services as a package, and there are standardized instruments for this provision.

2.2 Additional Funding

The additional funding component corresponds to a sum of US$250,[9] to be given to beneficiaries in addition to the US$600 funding received under the normal MESP program. The resources were delivered seven months after the end of the normal MESP program. The implementing institutions delivered this additional funding and they had to obtain receipts of successful delivering. This transfer allow us to estimate pure returns to capital and examine only assets transfers instead of a combination of training and assets transfers.

2.3 Experimental design
Our study consists in the evaluation of the MESP program and the additional funding in the Metropolitan Region of Santiago in 2010 using a randomized control trial approach.

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[8] The SSC is "Ficha de Protección Social" (FPS). The threshold in the SSC is established by the government according to economic resources, needs and risk factors. The threshold for the MESP was set at 8,500 points. People with less than this threshold could be eligible for the program.
[9] US$250 = Ch$120,000.

The evaluation was designed to evaluate MESP as it was currently implemented, and to identify returns to capital for different asset transfers. As it was not politically possible to create a diluted MESP, with the training component or the capital component alone, the strategy was to add-up components. The program intervention was implemented in the Metropolitan Region of Santiago, as this would allow a better monitoring and supervision of the project.

Eligibility criteria were defined by the implementing agency under as in any other implementation of the program. After the call for application for the program, we randomized among eligible individuals in three treatment arms: (i) control group, (ii) access to the MESP program, and (iii) access to additional funding. The intervention was conducted from October 2010 to February 2011.

We stratified applicants using the SSC score in four equally large groups, recalling that this score indicates the degree of vulnerability of the applicant's household.[10] In randomly assigning individuals to different treatments, we also stratified by cluster (implementing institution) to control by possible heterogeneous treatments. Each cluster was composed of about ninety individuals. (Note that the control group has only one cluster, as they do not participate in the program.)

The treatment arms were implemented with a total of 1948 individuals that were randomly assigned to each group. Table 1 shows that 566 individuals were assigned to the control group 689 to the "normal" MESP (T1) and 693 to the "normal" MESP plus additional funding (T2). Note that individuals in T2 did not know about the additional funding until the "normal" MESP has finished.

Comparing T1 to the Control Group will provide the impact of the regular MESP program as it is implemented today. Comparing T2 to T1 will provide the effect of additional funding (as long as there is no additional effect of the training with this additional funding).

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[10] The four groups were built using three cuts: 2168, 2298.5, and 3445 points. Note that the upper limit to enter the program was 8500 points.

3 Data and Measurement

Data was collected through a face-to-face surveys independently run from the government agency and the implementing institutions

The baseline survey that took place between September and October 2010 obtained a 94% response rate. The follow up survey was run between October and November 2011 and obtained a response rate of 88%[11]. We address balance among treatments group and attrition in the following subsections.

3.1 Balance among treatments and control groups

We use baseline survey data for variables of interest to test the randomness of the treatment assignment using a mean comparison test for the subsample interviewed in both waves. In Table 2 we present the mean values for the Control Group, Treatment MESP (T1), and Treatment MESP plus additional funding (T2). In the last three columns we present the p-values for the test of differences in the mean comparing T1 against Control group, T1 against T2, and T2 against Control group.

Looking at the characteristics of the individuals in each treatment, it can be observed in Table 2 that between 93 and 95 percent of beneficiaries are females. Average age is on average 36 years old. Around 32 percent of individuals have primary education only, while only 4 to 6 percent have some tertiary education. SSC score is on average between 3,550 and 3,625 points, well below the entrance threshold requirement of 8,500 points. None of the observed differences in individual characteristics between treatments are statistically significant as all p-values are above 0.05. The fact that the beneficiaries are low educated and are highly vulnerable (according to the SSC score) indicates that the MESP program fulfills its goal of addressing poor individuals. We will focus on income variables below.

More into the income related variables it can be observed that 65 percent of individuals report being employed, and between 48 to 50 percent report being working independently. Average monthly labor income is between Ch$51,000 and Ch$58,000 (approximately between US$102 and US$116). Besides, self-generated individual income reaches on average between Ch$70,000 and Ch$75,000 (approximately between US$140 and

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[11] These response rates are calculated over the population randomized.

US$150). Again, none of the differences observed for income related variables are statistically significant as the p-values are all above 0.05. The fact that a significant proportion of individuals already work indicate that working may not be the most serious aspect of their vulnerable condition, as it is the low income they obtain for their work.

The number of workers within households is on average between 1.38 and 1.46. The number of workers over the number of persons in the household (inverse of the dependency ratio) is on average between 0.30 and 0.31. Monthly household labor income is between Ch$161,000 and Ch$170,000 in different treatment groups. Total household income is between Ch$226,000 and Ch$237,000. According to the mean difference tests, none of these differences is statistically significant.

The number of individuals within the household is between 4.7 and 5.0 depending on the treatment group, and the number of families within each household is on average between 1.4 and 1.5. Per capita monthly total household income is between Ch$48,000 and Ch$50,000 (approximately US$98 and US$100 respectively), well below the official national poverty line of Ch$65,000 (approximately US$130). Poverty headcount ratio is between 76 and 77 percent, and poverty gap is between 0.33 and 0.34 percent. Households hold assets on average worth between Ch$406,000 and Ch$438,000 (between US$816 and US$876). Again, none of the observed differences are statistically significant, except for number of individuals between the control group and the MESP group. The low value of the per capita income, the high poverty head count and poverty gap indexes, and the low level of assets indicate that the MESP program actually reaches very poor households.

It is also worth noting that other interesting variables of the data are also well balanced. For example, credit related variables, and risk aversion and financial literacy indexes do not exhibit significant differences between treatment groups. From all these results, we are confident our randomization guarantees that the sample is well balanced among treatment groups and that we can make good inference out of it.

3.2 Attrition

In order to test whether attrition could be heterogeneous among different treatment groups, we ran the following regression:

$$y_i = \alpha + \alpha_1 \times T1_i + \alpha_2 \times T2_i + \varepsilon_i \hspace{3cm} (1)$$

where y_i is equal to 1 if the individual is present in the follow up survey, and equal 0 otherwise. [12]The variables $T1_i$ and $T2_i$ are dummy indicators of the treatment status. Variable $T1_i$ will be equal to 1 if the individual i was randomly assigned to the normal MESP program, and it will be equal to 0 otherwise. Variable $T2_i$ will be equal to 1 if the individual i was randomly assigned to the MESP program plus the additional funding, and 0 otherwise. We obtained that the coefficient associated to T1 is not statistically significant, indicating that attrition is not different in between individuals randomly assigned to the Control group and those assigned to the normal MESP program.

However, we obtained that attrition was lower in the MESP with additional funding group. In fact, the coefficient associated to T2 is significant. Also, the difference test between the coefficients associated to T1 and T2 supports that attrition was lower in the group with additional funding compared to that of the normal MESP program. Hence, the results we obtain for T2 in the following section must be taken with care as they might be influenced by the response rate. In section 5 we show how they are affected when we consider bounds to assess this issue (Lee (2002) and Kling and Liebman (2004)).

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[12] The simple consists of the people in the baseline. Similar results are obtained for the simple of randomized individuals.

4 Empirical strategy

The empirical strategy relies in the random allocation of each eligible individual to a treatment group, which guarantees that individuals in each treatment group are, on average, the same. As shown in the previous section, this assumption is strongly supported by the data. We will compare outcomes of interest y for individuals in the control group and those individuals who participated in the normal MESP (T1). We will also compare individuals who were assigned to participate in the normal MESP program and those who were offered additional funding (T2).

Then, our main estimation equation will be:

$$y_i = \beta_0 + \beta_1 \times T1_i + \beta_2 \times T2_i + \Sigma_j (\gamma_j \times x_{ij}) + \varepsilon_i \tag{2}$$

where y_i is an outcome variable (as employment, income or poverty), $T1_i$ and $T2_i$ dummy indicators of the treatment status as explained above, and x_{ij} is a set of baseline variables we use as controls. We discuss control variables below.

Following equation (1), the coefficient β_1 will inform about the effect of being offered participating in the normal MESP program compared to the control group (base group of comparison). Therefore it should be interpreted as an intent to treat. If the coefficient is significantly different from zero in the estimated equation, this will be evidence that the effect of offering MESP on the corresponding outcome is significant. Accordingly, the coefficient β_2 will inform about the effect of being offered participating in the MESP program plus the additional funding compared to the control group. The incremental effect of additional funding on top of normal MESP program requires comparing β_2 with β_1. If β_2 is statistically significant from β_1 that will be evidence of a significant effect of additional funding on top of the MESP program as long as there is no interaction effect between the training and the additional capital.

5 Results

Following our empirical strategy, we now turn into the estimation results of equation (2) for different key outcomes. All tables of result follow the same structure. All estimation results included as control the SSC score we used for stratification in the randomization. In the first column, this is the only control included. The second column also includes as controls a set of characteristics of the baseline survey (gender, age, education, number of persons in household, number of families in household, assets, risk aversion, and financial literacy index). The third column considers also as controls the lagged employment indicator. The fourth column includes as additional controls the lagged employment indicator, and the set o characteristics of the baseline survey.

Employment and Individual Income

The first outcome of interest is employment as it is the main objective of the MESP program. The first row of Table 3 corresponds to the coefficient of the normal MESP program (T1), indicating that there is a stable 10.7% of higher employment due to program compared to the control group. All regressions specifications are highly significant. In parallel, the MESP with additional funding treatment (T2) produces a coefficient between 15.7% and 17%, depending on the specification. Again, those impacts are highly significant. This is strong evidence that the MESP program with and without additional funding generate a high significant impact on employment. At the bottom of Table 3 we show the p-value of the t test of equality of the effect of T1 and T2. It can be seen that the MESP program with additional funding produced larger and significant effects compared to the "normal" MESP.

The rationale of the MESP program also considered that individuals would be better off by moving into independent work developing their micro businesses. The impact of the MESP program on independent work is between 11.9% and 12.8%, always highly significant statistically (last four columns of Table 3). Moreover, the impact of MESP with additional funding is even larger, reaching between 20.6% and 21.7%. Again, in both cases, it is important to point out that the coefficients are stable across the different specifications. Comparing T1 with T2 it can be seen that the large different in their coefficients is statistically significant. Hence, the MESP program with and without additional funding

does produce an increase of the number of individuals into independent work, fulfilling another key goal of the program.

An important question regarding micro entrepreneurship programs is the underlying assumption that individuals can move into micro businesses that bring them larger incomes that what they were obtaining in their other activities. According to our estimations results, the MESP program produces significant increases labor income (see first four columns in Table 4). Depending on the specification of the regression, we estimate the impact at between Ch$20,800 to Ch$23,400 (between US$42 and US$47), with highly significant coefficients. This impact implies that MESP beneficiaries are obtaining labor income 33% larger than those of the control group. In addition, MESP with additional funding produces increases in labor income of between Ch$30,000 and Ch$33,000 (US$60 and US$66), again highly significant. Then, the labor income obtained by those who attended the MESP with additional funding obtained 42% larger labor income than those of the control group. The differences between MESP and MESP with additional funding are not statistically significant as the nature of the labor income implies rather large variances.

Beyond labor income, it is expected that the individuals that attended the MESP program become better able to obtain self-generated income. The estimations results we obtained indicate that in fact the MESP program produces and increase in self-generated income of 28% on top of the control group (see Table 4). At the same time, MESP with additional funding produces and increase of 34% on top of the control group. Both impacts are highly significant. However, the impact of MESP with additional funding is not statistically larger than the impact of the normal MESP.

With these results, we can support a positive significant impact of the micro entrepreneurship program. Individuals are significantly better off due to the MESP program with and without additional funding.

We now turn into attempting to better understand the effects of the MESP program on the behavior of the individuals and their households. We first focus on working hours. Our estimation results in Table 5[13] indicate that there is significant increase in the number of working hours due to the MESP program. The program would induce 4.2 hours per week

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[13] We do not have baseline measures of hours worked, therefore we cannot control by their baseline values.

on top of the control group, which is 21% larger working hours from a base value of 19.3 hours per week in the control group. Besides, the MESP with additional funding generates an impact of 7.4 hours per week, which is 38% longer hours than the control group. The difference of the impact of the MESP with additional funding and the normal MESP is only mildly significant. Nevertheless, the MESP program induces the beneficiaries to work longer hours, which is also one the key objectives of the program: to put individuals to work.

The joint increase of labor income and working hours could cast doubts about the productivity of the labor activities of the individuals. However, our results in Table 5 (last four columns) indicate that there is a significant increase in the hourly labor income. In fact, the MESP program produces an increase of 49% in the hourly labor income compared to the control group. This is particularly important as it reveals the profitability of the businesses of the individuals. However, the MESP with additional funding produces and increase of 37% in the hourly labor income compared to the control group. This result is evidence of decreasing returns to the hours worked, which is reasonable to expect.

Household outcomes

Since the one of the goal of the MESP program was to help poor individuals overcoming poverty, we now turn into analyzing what happened within the household as a whole. We first focus our attention on employment. As expected, there is a significant increase in the number of persons employed within the household because of the program, as at least we observed the beneficiaries increased their employment rate (see Table 6). It could have also been expected that the development of the entrepreneurial activities had generated and impact on employment of the rest of the household by participating in the business. On the other hand, there could be a substitution of workers within the household. The results indicate that there is no significant increase in employment of the rest of the members of the household, nor for the MESP program and not for the MESP with additional funding (last four columns of Table 6). We do not find a differential effect between these T1 and T2 in these household employment variables.

Total household labor income increases significantly due to MESP program in 11%, and due to the program with additional funding in 15% (first four columns in Table 7). Self-generated household income also increases significantly in 11% and 13% for the respective

treatments (last four columns in Table 7). However, these increases are modest when compared to the poverty of 33% reported in the baseline. Again, there is no statistical difference between the effects of T1 and T2.

Total working hours within the household do increase significantly for both normal MESP and MESP with additional funding (see first columns of Table 8). Interestingly, the size of the increment is similar for both treatments (recall that increase in working hours of the beneficiary was larger for the additional funding treatment). Total working hours of the rest of the household do not increase significantly for the normal MESP nor with additional funding (last columns of Table 8).

We now focus our attention into the structure of the household in an attempt to develop a better understanding of the complex intra household processes. We compare the number of people within the household and observed that there are no significant differences between treated and control group (first four columns of Table 9). Nevertheless the ratio of number of employed individuals over the number of persons in the households does increase significantly for both MESP treated and MESP with additional funding treated (last columns of Table 9).

The effect of an unchanged number of members within the household plus a relative increase in the number of employed individuals is expected to produce an increase in per capita income. In fact, per capita household labor income does increase significantly for both treatments arms (with no statistical difference between them). While normal MESP produces an increase of 11%, normal MESP plus additional funding produces a rise of 13% in per capital household labor income (see first four columns of Table 10). Moreover, there is also a significant increase in household self-generated income. An 11% increase in this income can be associated to both normal MESP and MESP with additional funding. This is good news for this type of program, but still it means a modest improvement when compared to the 34% poverty gap reported above.

Bounds

The response rate of the follow-up survey was 90%, conditional on being interviewed in the base line, however there are differences by treatment type. The response rate of the control group was 89%, for the MESP treatment was 88% and for the additional funding treatment

was 93%. We study the implications of the differences in response rate constructing lower bounds. Since, only the additional funding treatment presents different response rates, we calculate the bounds for the comparison of additional funding and the control group.

First, we follow Lee (2002) and impute the minimum value of each variable of the control group to the non-responders in the additional funding group. At the same time, we impute the maximum observed value of each variable in the additional funding and MESP groups to the non-responders in the control group.

Second, we follow Kling and Liebman (2004) and impute as a lower bound to the non-responders in the additional funding group the mean minus 0.25 standard deviations of the observed distribution of the control group. Likewise, we impute to non-responders of the control group, the mean plus 0.25 standard deviations of the observed distribution of the additional funding and MESP group. We repeat this exercise for 0.1 and 0.05 standard deviations.

Table 11 shows that for individual outcomes, the lower bound is positive, with the exception of the extreme case of Lee (2001). For household outcomes, the lower bound is positive at a 10% level, when we assume that non-respondent outcomes are different in 0.1 standard deviations or less than the average outcome of the respondent individuals.

6 Concluding remarks

Teaching entrepreneurship and providing access to capital to poor individuals has been considered the cornerstone of micro entrepreneurial programs that aim to help people escape from poverty. However, there is little evidence about whether this type of program could actually produce the expected benefits for those extremely poor. In this paper we have intervened a large-scale publicly funded program (MESP) aimed to support micro entrepreneurial activities among extremely poor individuals in Chile in order to produce a random control group that allow us to assess the effectiveness of the program. The intervention also considered an additional treatment that added to the normal program additional capital to support the sustainability of the entrepreneurial activities beyond the normal program. As far as we know, this is the first evaluation of a large scale public program of these characteristics.

Our results show compelling evidence that the MESP program does in fact significantly improve poor's people lives. We found that the MESP program does increase key outcomes. The program does increase employment and independent activities in 16% and 30%, respectively. The program also increases the number of hours devoted to work in 21%. Moreover, the program does increase labor income and self-generated labor income by 33% and 28%, respectively. The gain in hourly labor income because of the program reaches 49%. In sum, per capita self-generated household income increases in 11%. These are particularly good news for a large-scale program run by the government that is in fact well targeted to the extremely poor.

The novel treatment introduced in to the evaluation of additional funding on top of the normal MESP has proven to be rather successful. It actually did produced positive effects on top of the normal MESP. In fact, the additional funding treatment does increase employment and independent activities in 25% and 52% compared to the control group, respectively. This treatment also increases the number of hours devoted to work in 38%. Moreover, the program does increase labor income and self-generated labor income by 42% and 34%, respectively. The gain in hourly labor income because of the program reaches 37%. This last figure is lower than the impact of the normal MESP, indicating that decreasing returns to hours worked may be in pace. In parallel, per capita self-generated household income increases in the same 11% as the normal MESP.

The effectiveness of the MESP program can be addressed by comparing the increasing in income to the cost of the program. A back of the envelope calculation that the total direct cost of the MESP program of Ch$600,000 (US$1,200) where half of it is the cost of training and the other half is capital, is retrieved in 24 months of increased income. This is a very short period. Actually, the monthly return rate of the capital given to the individuals by the MESP program is computed at 8.3 percent, which would be an annual return rate of 99 percent. This is compelling evidence of the profitability of the program. However, this calculations assume that the program will last for another 12 months, which will only be known after the second follow up survey planned for October 2012.

On the hand, the treatment of additional funding is also highly profitable. The overall cost of that treatment is Ch$120,000 (US$240) larger than the normal MESP, but the higher

increase of income generated by this treatment implies that the treatment cost is retrieved in 24 months. The monthly return rate of the capital given to the individuals by the MESP plus additional funding reaches 7.2%, which would be an annual return rate of 86%. This indicates the return rate could be decreasing in the amount given to the individuals.

However, these results should be carefully considered according to the research design: the evaluation of the program was implemented over individuals that applied to MESP and were eligible according to the implementing institution, and are valid for this type of population. If individuals that apply to the program are different to those that do not (a possibility that should be considered, when about 94% of the sample is female and 65% of them are employed, which compares to an average of 42% of employment for women in Chile), these results should not be interpreted as the average effect on any random individual.

Finally, from the estimated results we also can compute a pure capital return rate by comparing the difference in increased income generated by the MESP with additional funding over the normal MESP. We estimate the monthly return rate of capital at 4.4 percent, which would be an annual return rate of capital of 53 percent. This is a very high return rate of capital considering the precarious businesses of the extremely poor individuals of the MESP program. This figure compares to that estimate by De Mel et al, who obtained a monthly return rate of capital between 4.5 to 5.3 percent in Sri Lanka.

7 References

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I. Appendix

Table 1: Program intervention design

Group Random Assignment		
(Number of individuals)		
Control Group	Pure Control Group	566
T1	MESP	689
T2	MESP + Additional Funding	693
Total		1948

Table 2: Variable means and difference test between treatments group

Variables	N obs	Control	T1	T2	p-val T1=C	p-val T1=T2	p-val T2=C
Gender (1=Male)	1661	0.06	0.06	0.07	0.79	0.38	0.57
Age	1661	35.79	36.44	36.17	0.34	0.66	0.57
Primary Education	1658	0.31	0.32	0.33	0.73	0.76	0.52
Secondary Education Incomplete	1658	0.24	0.24	0.26	0.87	0.26	0.37
Secondary Education Complete	1658	0.41	0.38	0.36	0.31	0.44	0.08
Tertiary Education	1658	0.04	0.06	0.05	0.06	0.25	0.41
SSC score	1642	3560	3576	3625	0.91	0.72	0.65
Employed	1661	0.65	0.66	0.65	0.99	0.82	0.84
Independent Work	1661	0.49	0.50	0.48	0.76	0.57	0.82
Labor income	1661	53386	50918	57966	0.56	0.07	0.30
Self-generated income	1661	71842	70238	75260	0.74	0.27	0.47
# of workers in Hh	1661	1.46	1.45	1.38	0.82	0.18	0.13
# of workers rest of Hh	1661	0.81	0.79	0.73	0.81	0.20	0.13
# of workers over persons in Hh	1661	0.31	0.31	0.30	0.58	0.31	0.68
Hh Labor Income	1661	170023	161122	168565	0.37	0.41	0.88
Hh self-generated income	1661	210009	198608	205601	0.26	0.46	0.68
Hh Total Income	1661	237901	226136	231614	0.25	0.57	0.55
Number of persons in Hh	1661	5.01	4.76	4.80	0.04	0.71	0.08
Number of families in Hh	1661	1.56	1.48	1.48	0.09	0.99	0.09
Per capita Hh self-generated income	1661	42219	42129	43904	0.96	0.33	0.38
Per capita Hh labor income	1661	33394	33433	35612	0.98	0.22	0.24
Per capita Hh total income	1661	48305	48478	49640	0.93	0.52	0.49
Per capita workers in Hh	1661	0.31	0.31	0.30	0.58	0.31	0.68
Per capita workers rest of Hh	1661	0.14	0.15	0.14	0.63	0.36	0.69
Poverty gap	1661	0.35	0.34	0.34	0.65	0.98	0.63
Headcount poverty	1661	0.76	0.78	0.76	0.56	0.57	0.96
Assets	1629	437862	420740	406509	0.72	0.77	0.53
Applied for a credit	1661	0.07	0.06	0.09	0.57	0.12	0.37
Credit rejected	120	0.38	0.35	0.31	0.80	0.67	0.48
Debt Holding	1661	0.65	0.62	0.63	0.30	0.71	0.49
Risk Aversion index	1659	0.45	0.51	0.47	0.08	0.20	0.58
Financial Literacy index	1661	7.18	7.04	7.46	0.56	0.05	0.21

Table 3: Employment and Independent Work (Individual Level)

	y = Employed				y = Independent Work			
T1	.1087	.1076	.1088	.107	.1283	.123	.1257	.1192
sd	.01887	.01568	.01887	.01563	.02476	.02539	.02409	.02469
p-value	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001
T2	.1695	.1579	.1714	.1611	.2149	.2068	.2175	.2088
sd	.02165	.02228	.02014	.02084	.02579	.02421	.02474	.0227
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
y2010			.2463	.2342			.2666	.2605
sd			.0496	.04914			.01669	.01716
p-value			0.0001	0.0002			0.0000	0.0000
N	1657	1620	1657	1620	1657	1620	1657	1620
R2	.03179	.05147	.105	.1158	.03266	.04727	.1037	.1133
Mean C	.6498	.6573	.6498	.6573	.3966	.4013	.3966	.4013
p-val T1=T2	.04261	.0762	.0348	.05665	.01316	.01487	.005789	.005638
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 4: Labor Income, Self-generated Income (Individual level)

	y = Labor Income				y = Self-generated Income			
T1	20792	22819	22246	23366	22496	24425	23214	24856
sd	8285	7547	8495	8147	8214	7523	8564	8120
p-value	0.0219	0.0073	0.0174	0.0102	0.0135	0.0045	0.0143	0.0067
T2	33279	32401	30532	30057	32287	31334	30692	30160
sd	6885	6611	6019	5918	6684	6240	6214	5868
p-value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
y2010			.6114	.5684			.476	.4406
sd			.1305	.1407			.1019	.1054
p-value			0.0002	0.0008			0.0002	0.0006
N	1657	1620	1657	1620	1661	1624	1661	1624
R2	.007671	.03529	.08257	.09295	.007591	.03305	.06228	.07514
Mean C	70231	71009	70231	71009	86760	87643	86760	87643
p-val T1=T2	.215	.3376	.3627	.4797	.3271	.4784	.4016	.5589
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 5: Working Hours, Hourly Labor Income (Individual Level)

	y = Working Hours				y = Hourly Labor Income			
T1	4,258	4,185			308.6	328.2		
sd	.9411	.9283			109.7	110.3		
p-value	0.0003	0.0003			0.0115	0.0081		
T2	7,569	7,406			252	248.8		
sd	1,058	1,081			65.91	67.99		
p-value	0.0000	0.0000			0.0012	0.0018		
y2010								
sd								
p-value								
N	1661	1624			1625	1588		
R2	.0209	.04664			.007313	.02055		
Mean C	19.33	19.48			654.3	664.9		
p-val T1=T2	.05106	.05669			.5325	.3849		
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 6: Number of Hh Members Employed, Rest of Hh Members Employed (Hh Level)

	y = N Household Members Employed				y = N Rest of Household Employed			
T1	0,09785	0,1289	0,1025	0,1146	-0,009637	0,02252	-0,004426	0,004146
sd	.04638	.04188	.04127	.03986	.04144	.03634	.0346	.0343
p-value	0.0491	0.0065	0.0230	0.0101	0.8187	0.5433	0.8996	0.9051
T2	0,1356	0,1675	0,1609	0,1744	-0,03395	0,009601	-0,0046	0,0147
sd	.04228	.0418	.04062	.04085	.0416	.04098	.03698	.03841
p-value	0.0049	0.0008	0.0009	0.0005	0.4250	0.8174	0.9024	0.7065
y2010			.3191	.2585			.3969	.3426
sd			.03733	.04379			.03478	.04147
p-value			0.0000	0.0000			0.0000	0.0000
N	1661	1624	1661	1624	1661	1624	1661	1624
R2	.005063	.08859	.1074	.1388	.007026	.1109	.17	.1927
Mean C	1,379	1,383	1,379	1,383	0,731	0,727	0,731	0,727
p-val T1=T2	.534	.54	.2611	.2963	.6994	.8361	.9975	.856
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 7: Hh Labor Income, Hh Self-generated Income (Hh Level)

	y = Hh Labor Income				y = Hh Self-generated Income			
T1	14728	23212	18692	22552	17383	26008	21931	26378
sd	11407	10910	11296	11199	11180	10772	10692	10698
p-value	0.2130	0.0475	0.1153	0.0592	0.1374	0.0266	0.0551	0.0240
T2	26039	33631	26305	30582	22555	30778	24078	28978
sd	10582	10713	9641	9736	10770	10808	10036	10049
p-value	0.0242	0.0057	0.0138	0.0056	0.0507	0.0107	0.0275	0.0099
y2010			.449	.3961			.4076	.3353
sd			.04871	.04957			.04509	.0473
p-value			0.0000	0.0000			0.0000	0.0000
N	1661	1624	1661	1624	1661	1624	1661	1624
R2	.004348	.06566	.09938	.1209	.004544	.07182	.08896	.1127
Mean C	203487	203950	203487	203950	231244	231796	231244	231796
p-val T1=T2	.4027	.4744	.5827	.5844	.6876	.7253	.8668	.8469
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 8: Hh total working hours, Rest of Hh members working hours (Hh Level)

	y = Hh total working hours				y = Rest of Hh members working hours			
T1	5,957	7,631			1,698	3,446		
sd	2.04	1,895			1.88	1,624		
p-value	0.0091	0.0008			0.3783	0.0480		
T2	6,689	8,799			-.8804	1,392		
sd	2,107	2,247			1,952	1,928		
p-value	0.0052	0.0010			0.6574	0.4794		
y2010								
sd								
p-value								
N	1661	1624			1661	1624		
R2	.0104	.09203			.0107	.1148		
Mean C	52.21	52.15			32.88	32.66		
p-val T1=T2	.8122	.714			.3811	.4647		
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 9: Number of people in Hh, Employed over Hh members (Hh Level)

	y = Number of people in Hh				y = Employed over Hh members			
T1	-.1534	-.02441	-.009265	.03389	.02853	.02171	.02638	.02056
sd	.08787	.08527	.062	.06151	.008754	.007964	.007483	.007256
p-value	0.0979	0.7780	0.8829	0.5884	0.0044	0.0138	0.0024	0.0110
T2	-.0181	.07835	.1066	.1389	.0329	.02841	.03401	.03094
sd	.1024	.1101	.09588	.09067	.008589	.008766	.007588	.007866
p-value	0.8616	0.4858	0.2808	0.1430	0.0012	0.0045	0.0003	0.0010
y2010			.583	.7471			.3982	.3789
sd			.02476	.02249			.02183	.02633
p-value			0.0000	0.0000			0.0000	0.0000
N	1661	1624	1661	1624	1661	1624	1661	1624
R2	.003557	.1126	.3637	.4035	.008806	.05294	.1511	.171
Mean C	4,716	4,686	4,716	4,686	.305	.3079	.305	.3079
p-val T1=T2	.2302	.3521	.2288	.2862	.7233	.5784	.4985	.3479
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 10: Per Capita Hh Labor Income, Per Capita Hh Self-generated Income (Hh Level)

	y = Per Capita Hh Labor Income				y = Per Capita Hh Self-generated Income			
T1	5289	5141	5284	5027	5730	5285	5768	5473
sd	2723	2607	2694	2669	2600	2470	2506	2434
p-value	0.0679	0.0642	0.0655	0.0759	0.0408	0.0463	0.0335	0.0373
T2	6908	6824	5710	5724	6149	5892	5345	5277
sd	2577	2432	2280	2181	2542	2351	2273	2133
p-value	0.0153	0.0117	0.0221	0.0172	0.0264	0.0220	0.0303	0.0236
y2010			.4892	.4702			.4279	.3891
sd			.04671	.04148			.04043	.04069
p-value			0.0000	0.0000			0.0000	0.0000
N	1661	1624	1661	1624	1661	1624	1661	1624
R2	.005706	.03339	.0938	.1077	.005598	.0434	.07887	.09705
Mean C	42655	43037	42655	43037	49256	49725	49256	49725
p-val T1=T2	.6229	.6027	.8978	.8351	.8942	.8395	.8891	.9476
Controls	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars	SSC	SSC 2010vars	SSC y2010	SSC y2010 2010vars

Table 11: Lower bounds for Treatment Effects

		Labor Income	p-value	Working Hours	p-value	Hourly Labor Income	p-value
(1)	T2	-271481	0.0000	-6.522	0.0000	-2967	0.0000
	SD	6760		1.03		63.16	
(2)	T2	21276	0.0048	5.432	0.0000	139.1	0.0368
	SD	6608		.9954		61.67	
(3)	T2	25333	0.0011	6.008	0.0000	177.6	0.0097
	SD	6521		.9896		61.37	
(4)	T2	26686	0.0007	6.2	0.0000	190.4	0.0061
	SD	6494		.988		61.28	

Continuation Table 11: Lower bounds for Treatment Effects

		HH Labor Income	p-value	Per Capital HH Labor Income	p-value
(1)	T2	-290265	0.0000	-72508	0.0000
	SD	10921		2678	
(2)	T2	11588	0.2693	3547	0.1711
	SD	10166		2489	
(3)	T2	17777	0.0927	4857	0.0629
	SD	10012		2449	
(4)	T2	19840	0.0619	5293	0.0435
	SD	9965		2437	

(1) Imputes the maximum value of the observed variable in the treated group (MESP or additional funding) to the non-responders of the control group, and the minimum value of the observed variable in the control group to the non-responders of the additional funding group. (2) Imputes the mean plus 0.25 standard deviations of the observed variable in the treated group (MESP or additional funding) to the non-responders of the control group, and the mean minus 0.25 value of the observed variable in the control group to the non-responders of the additional funding group. (3) is the same as (2) but for 0.1 standard deviations. (4) is the same as (2) but for 0.05 standard deviations. We consider observations in the baseline and the estimations include only the information on the SSC.

Table A - PAME training sessions

Subject	Duration	Number of sessions	Description
Diagnosis	3 hours	1	In this session, an analysis of the skills that beneficiaries have in relation to their business plan is carried out, as well as the strengths, weaknesses, opportunities and threats of the plan. The exercise allows them to do a SWOT analysis of their business, so that they can adapt their business idea to the reality of the environment.
Business plan	3 hours	1	In this session the objective is to answer questions such as: what product will I sell? Who are my customers? In particular, concepts of strategy, target population, entrepreneurship, marketing, competition, legal procedures, suppliers, and time commitment are taught to beneficiaries.
Marketing	3 hours	2	Activities that help to publicize, advertise or offer the business or service in order to attract more clients.
Formalization	3 hours	2	Activities that help to legalize the business. In other words, we look at the procedures required for the initiation and/or business development which will depend on the type of work performed. For this reason it is crucial to find out all permissions, documents and procedures that are needed to support the business legally.
Support networks	3 hours	2	Activities that allow starting or maintaining contact with institutions or individuals who can support or assist business development. For example, meetings with other entrepreneurs, meetings with officials from the municipality or meetings with vendors.
Implementation costs	3 hours	2	This section's aim is to explain the various costs in the implementation of the business, broken down by infrastructure, machinery and tools,

			incidentals and supplies.
Selling price and records	**3 hours**	**2**	This section teaches individuals the difference between fixed and variable costs, and how they are calculated. In addition, the selling price is calculated based on the percentage of profit chosen.