

# Jump-starting self-employment? Evidence among welfare participants in Argentina<sup>1</sup>

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**Abstract:** One important concern of governments in developing countries is on how to phase-out large safety nets programs. This paper evaluates the short run effects of one possible exit strategy, programs that promote self-employment, in Argentina. We provide evidence that a small fraction of beneficiaries were attracted by this program. Overall, potential participants to self-employment are more likely to be female household heads and more educated beneficiaries relative to the average *Jefes* beneficiaries. Using nonexperimental methods, we show that participation in the program does affect labor supply of participants, by reducing the probability of having an outside job especially for males and increasing the total number of hours worked. However, the intervention fails to produce on average income gains to participating individuals and households in the short run. The fact that a very small subset of former welfare beneficiaries are attracted to the program, coupled with the fact that only a subset of participants (younger and more educated beneficiaries, and with previous self-employment experience) has important implications for this intervention to represent a viable exit strategy from welfare.

**Keywords:** Self-employment, Labor Markets, Impact evaluation, Argentina.

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## 1. Introduction

Large scale workfare programs can be effective in providing protection to the poor following a macro-economic (or agro-climatic) crisis (e.g., Besley and Coate, 1992, Ravallion, 1999).<sup>2</sup> However, as soon as the economy starts recovering from the crisis, providing social insurance becomes less important. As new economic opportunities pick up, the participants' opportunities in the labor market improve and the net gains from program participation decrease. As a consequence, maintaining these large programs becomes increasingly costly.<sup>3</sup> In middle income countries strategies available to governments to gradually phase out such safety nets range from supply-side interventions (e.g., training programs for wage earners), to demand side interventions (e.g., wage/employment subsidies, support to foster self-employment) and to programs to improve the match between supply and demand (e.g., employment agencies). In spite of the importance of the topic, substantial gaps remain in our knowledge on how to help welfare program beneficiaries' transition towards a more stable source of income (Blank 2002). The evidence on the effectiveness of these programs is even scarcer for developing countries.<sup>4</sup>

In this paper we study a program that promotes self-employment among workfare beneficiaries in Argentina. We use a non-experimental approach which was designed primarily to mitigate potential problems associated with the self-selection of the most entrepreneurial individuals to the self-employment program to quantify the effect of the program on employment and income, one year after the program started.

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<sup>2</sup> With no rationing, a binding work requirement and a sufficiently low wage, these programs have a built in incentive for the poorest and more vulnerable segments of the population to self-target into the program (Besley, Coate, 1992, Ravallion 1999).

<sup>3</sup> The Employment Guarantee Scheme in Maharashtra (India) is an example of a workfare program with a counter-cyclical budget, contracting automatically as the economy is in a 'good state' (Ravallion 1999).

<sup>4</sup> Some exceptions include Galasso, Ravallion, Lazo and Philipp (2005 and Galasso, Ravallion and Salvia (2004).

Following the severe economic crisis in 2001, the Argentinean government introduced a large scale workfare program, *Jefes*.<sup>5</sup> This program rapidly scaled up to reach about two million beneficiaries by the end of 2002 (about 10% of the adult population in the country). The economy subsequently recovered strongly, making it costly to sustain this large scale safety net. In the context of phasing-out *Jefes*, the Argentinean government is considering alternative ways to help *Jefes* beneficiaries obtain a sustainable source of income, so that their dependence of social assistance is reduced. In this context, a program was proposed to promote self-employment, called *Microemprendimientos Productivos* (henceforth MEP).<sup>6</sup> The program provides *Jefes* beneficiaries with two complementary inputs for their self-employment activities.<sup>7</sup> First, it provides financial support in the form of grants to finance inputs and equipment. The maximum transfer possible is substantial (15,000 pesos or 30 months of the *Jefes*' transfer for an average group of three beneficiaries) and must take place during a six month period. A specific feature of this program is that the grants are provided in-kind, with the local municipalities in charge of the purchases of inputs and equipment on behalf of the beneficiaries. Second, the program provides technical assistance through periodic visits of "tutors" to the beneficiaries to assist in achieving sustainability of the financed project.<sup>8,9</sup>

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<sup>5</sup> Prior to *Jefes*, the Argentine Government implemented the smaller scale *Trabajar* workfare program. For evidence on the effectiveness of *Trabajar* in reaching the poorest see Ravallion (2000) and Jalan and Ravallion (2003). *Jefes* was intended to reach a broader segment of the population. For evidence on the effectiveness of *Jefes* in reducing poverty and unemployment see Galasso and Ravallion (2004).

<sup>6</sup> This program is also known as *Componente Materiales – Tipología 6* or *Herramientas y Trabajo*.

<sup>7</sup> Participation in the program does not imply that the beneficiaries loose the transfers from other programs. In particular, they still receive the *Jefes* monthly payment (150 Argentinean Pesos). We evaluate the effect on labor market outcomes of being a MEP beneficiary, on top of other transfers.

<sup>8</sup> The technical assistance is given by qualified specialists in the areas of general management and business education as well as on more technical issues which are specific to each project.

<sup>9</sup> Even though there is some research on the effects of micro finance programs on labor and profitability outcomes, much less is known about the effects of technical assistance in addition to the financial assistance. One exception is Karlan and Valdivia (2006). They analyze the impact of entrepreneurship training in a micro finance program in Peru. They find that these non-financial services have an impact on sales and profits but no effect on income of the program beneficiaries. The question of whether entrepreneurship can indeed be taught has indeed received very little attention from the empirical literature.

The program rationale to represent a viable exit strategy from *Jefes* relies on two key assumptions: (i) that a ‘sizable’ proportion of *Jefes* beneficiaries would be willing to set up a self-employment activity; (ii) that are prevented to do so due to a combination of lack of credit or asset to finance their start-up capital and low business training.

The first assumption requires that a large fraction of beneficiaries would self-select into this type of program. We characterize the profile and the size of the potential pool of welfare beneficiaries who might be attracted by the program (what in the evaluation literature is usually referred to as ‘entry effects’). To our knowledge there is very little evidence on the profile of the participants who would choose to participate in this type of program and on their effectiveness in generating a sustainable source of income for beneficiaries (Betcherman, Olivas and Dar, 2004).

The second assumption draws from a large theoretical literature that low-growth poverty traps can arise if production technologies are non-convex and capital markets have imperfections. Banerjee and Newman (1993) and a large literature that followed, developed models with fixed costs to start a business and where households are credit constrained.<sup>10</sup> *Jefes* participants come from poor segments of the population; have low endowments of assets and human capital (Galasso and Ravallion, 2004). If there are high start-up costs of setting up self-employment activities, and if individuals are credit constrained, the poor would be prevented from taking up profitable investments and to accumulate wealth. According to this ‘poverty trap’ view, jumpstarting a productive project with financial assistance together with tutoring activities should help constrained households to establish on a business with a minimal level of operation, which could be sustained over time with reinvested profits. The assumption is that some *Jefes* beneficiaries would be willing to set up a self-employment activity but that they refrain to do so

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<sup>10</sup> Banerjee and Newman (1993) develop a theoretical model where low wealth entrepreneurs cannot finance profitable ventures due to indivisible start up costs. Aghion and Bolton (1997) and Lloyd-Ellis and Bernhardt (2000) also develop models where entrepreneurial activity requires a minimum wealth level.

due to lack of financing and/or due to low business training. The empirical evidence has strongly supported the hypothesis that poor households are indeed credit constrained but has failed to empirically confirm the existence of non-convexities in the production technology (e.g., McKenzie and Woodruff, 2006, Mesnard and Ravallion, 2006).<sup>11</sup>

A complementary literature has emphasized the voluntary and entrepreneurial aspect of an important share of the unregulated, small-scale and low-productivity informal sector. For example, Maloney (2004) argues that a substantial fraction of self-employed in Latin America is similar to small firms in industrialized countries in many respects. First, conditional on a given skill level, the reason for these firms to be small could be more related to family tradition or to their own knowledge of the market rather than due to the lack of credit. Second, these firms are characterized by high rates of failure and by having workers with low education, assets and skills *“trying their luck at entrepreneurship (risk-taking), often failing and not engaging in formal institutions until they grow. (Maloney, 2004, pp. 1167)”*. The self-employed might not know how good entrepreneurs they are or how productive the activity is until they actually engage in it. Finally, the flexibility to combine self-employment activities with household activities might make it a particularly attractive sector for women. According to this ‘entrepreneurial’ view, the scale of operation and the sustainability of this activity as a source of income would also depend on the individual’s preferences, their motivation and entrepreneurial ability. The extent to which these individual characteristics are complementary to other production inputs determines the success of the program. In this context, jumpstarting self-employment through start-up capital and basic business education would be expected to have a positive impact only for those individuals who are intrinsically more suited to be self-employed to begin with. In practice,

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<sup>11</sup> McKenzie and Woodruff (2006) provide evidence that access to start-up capital does not determine the size of microenterprises in Mexico. Mesnard and Ravallion (2006) look at business startups from return migrants in Tunisia and also find weak evidence of non-convexities at low levels of wealth.

whether the injection of inputs and equipment together with business training is sufficient by itself to jumpstart self-employment or whether the intervention is complementary to other individual characteristics is an empirical question.

The analysis of this type of active labor market programs, where participation is non-random, raises the problem of the possible self selection of individuals into the program. For example, *Jefes* beneficiaries with a stronger preference for a self-employment, a higher entrepreneurial ability or organizational capacity or with a larger labor market experience are more likely to self select into the program. To the extent that some of these characteristics are unobservable, this problem is difficult to address. The evaluation design of the productive grants was planned to mitigate significantly this source of bias, by exploiting two fundamental features of the program implementation. First, although the program has been promoted nationally through national newspapers and radio messages, municipalities and/or the local offices of the Ministry of Labor organized an additional effort to promote the program among *Jefes* beneficiaries with seminars and public presentations. In this process, a registry with information on the beneficiaries who showed up at these public presentations and show potential interest in the program.<sup>12</sup> We used these registries to draw a sample of non-participants. Second, some municipalities experienced long delays in submitting projects or decided to opt out of the program, at least initially. This happened mostly due to the high administrative costs that the program imposes on municipalities. Hence, we can identify a group of *Jefes* beneficiaries that were interested in the project from having signed up to the promotional activities but that ended up not participating either because they live in ‘non-participating’ municipalities or because there were delays in the project approval. This sample is likely to be quite similar to the group of MEP beneficiaries in

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<sup>12</sup> *Jefes* interested in participating signed up for additional program information. In some cases, they even gave a general description of the project for which they would like to have financing.

the (unobservable) characteristics determining program participation and, hence, is likely to represent a credible comparison group.

A baseline survey was conducted just after the beginning of program (November 2004) and one year later (December 2005) to both participants and non-participants in the program.

The descriptive statistics give an indication that a selected subsample of *Jefes* beneficiaries is likely to be attracted by this program. When we compare the socio-demographic profile of those beneficiaries included in the sample with the average *Jefes* participants in the area we find that the sample is more likely to include female heads of households, slightly more educated and older than the average *Jefes* participant.

The effectiveness of the program depends ultimately on whether the program raises significantly the labor supply and income of the beneficiaries. We use difference in difference methods to evaluate the short-term impact of the program on different labor market outcomes.<sup>13</sup> Our results show that beneficiaries of the self-employment program are less likely to maintain or to find wage jobs outside the project, especially in the case of male beneficiaries. We also find evidence that the program significantly increases the total hours of work (either in the market or in the program). Finally, while the program on average did not result on income gains to the participants on average, there are specific subgroups of beneficiaries who stand to benefit the most, namely younger and more educated beneficiaries. When we exploit the geographical variation of municipal participation, we find that the signs and significance of the effects are unchanged, though the magnitudes on hours and income effects are overestimated. Overall, we interpret this evidence as being supportive of the second ‘entrepreneurial’ view, where the jumpstarting self-employment through start-up capital and basic business education is to have a

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<sup>13</sup> This program was implemented at a small scale. For this reason, we have abstracted from any indirect effects of the program on the local labor markets, through possible effects on non-participants (general equilibrium effects).

positive impact only for those individuals who were intrinsically more suited to begin with, due to their motivation or initial human capital endowments.

The paper proceeds as follows. In section 2 we present the economic background and describe the main features of the program. Section 3 describes the evaluation design and the empirical methodology used in the evaluation. Section 4 describes the data. Section 5 describes the findings and briefly discusses the profitability of the projects. Finally, section 6 concludes.

## 2. Background

The workfare program, *Jefes*, was introduced in the aftermath of the severe economic crisis in 2001, which brought about a contraction in real GDP by more than 10% in 2002 and a significant fall in real income of more than 20% for large sections of the population (McKenzie 2004). The objective of the program was to provide a direct income support to heads of households with dependents who had lost their earnings as a result of the crisis. The income support was accompanied by a work requirement (minimum of 20 hours a week). Despite a lack of explicit focus on targeting based on poverty indicators, *Jefes* was successful in reaching poor segment of the income distribution.<sup>14</sup> The assessment of the program impact shows that the program had a social protection role, partially protecting participants' income loss and lowering their likelihood of falling into extreme poverty (Galasso and Ravallion 2004). Subsequently, the economy strongly bounced back reaching an average annual growth rate of 9% between 2003

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<sup>14</sup> There are also some evaluations of a previous Argentinean workfare program, *Trabajar*. Galasso, Ravallion and Salvia (2004) find evidence that *Trabajar* beneficiaries that received wage subsidies are more likely to find a job than those that did not receive this support. This effect is stronger for young, more educated women in the informal sector. Moreover, consistent with evidence for other countries, they find no evidence that skill training helps the transition of welfare beneficiaries to a wage job. Galasso, Ravallion, Lazo and Philipp (2005), study the income effects of the transition to wage employment following the participation in *Trabajar*. They estimate that the transition from the program to employment is associated with a short run income loss, which is sizable though it decreases over time.

and 2005. A projection of the estimated impact of the program from 2002 onwards shows that early during the recovery (first half of 2003) the income gains from the program (program benefits net of the opportunity cost) had already halved (from around 2/3 of the cash transfer of 150 pesos to about 1/3) (Galasso 2004).

When the labor market opportunities outside the workfare program improve relative to a fixed nominal transfer payment for the majority of beneficiaries, one would expect that the program naturally contracts. However, there are many reasons why program attrition might not be as high as one would expect. First, the program did not set a time limit for the end of the transfer payment. This might have induced participants to rely on this payment as a stable income source. Second, the program might have created a disincentive effect to search for a formal job caused by the fear of losing the eligibility to the transfer (Gasparini et al., 2006). Finally, the counterpart work required by the program was not substantial, and could easily be combined with part-time work on other activities.<sup>15</sup> Moreover, some anecdotal evidence suggests that, given the large scale of the program, there was weak capacity to organize, supervise and enforce the work requirement at the local level.<sup>16</sup> Hence, only *Jefes* beneficiaries with a sufficiently attractive full-time option in the labor market will voluntarily leave the program. *Jefes* beneficiaries who obtained formal employment (with recorded social security contributions) were automatically excluded from the program.<sup>17</sup> *Jefes* beneficiaries who obtained full-time informal employment would voluntarily leave the program only if the workfare

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<sup>15</sup> In Argentina many poor households have multiple occupations. The same happens in many other developing countries (Banerjee and Duflo 2006).

<sup>16</sup> The work requirement could be basic community work, training activities or school attendance. Municipalities and local NGOs were in charge of organizing the work activities. Provincial offices of the Ministry of Labor together with municipal councils were responsible for monitoring the work activities.

<sup>17</sup> These workers can be identified with the (monthly) comparisons between registrations of *Jefes* beneficiaries and the social security contributors.

counterpart work was strictly enforced by the municipality. Through the end of 2006, about 450,000 beneficiaries had been dropped from the Program for this reason.

The government of Argentina has planned to move away from costly emergency assistance and to promote the transition of *Jefes* beneficiaries to a set of programs which are designed to strengthen the individual's long term capacity to generate income. The policy mix that is being considered reflects the need to transform a uniform workfare transfer to interventions tailored to the heterogeneous universe of participants. The labor market policies currently under implementation range from those aiming to promote wage employment (creation of employment offices, and completion of adult education) to those promoting self-employment activities (MEP).<sup>18</sup> While the former exit strategies are still being designed, MEP was launched with national scope in January 2004, with a seven months window to submit a proposal (The deadline for submitting a proposal was July 31st 2004). Yet, despite wide dissemination and promotion, the scale of the program remained very limited, attracting less than one percent of the total number of *Jefes* beneficiaries (see table 1).

The program promotes the development of a productive activity by *Jefes* beneficiaries. The program provides grants for inputs and equipment together with technical assistance. The program finances a wide range of activities, ranging from agro-industrial production to the production of small manufacturing goods and to selected service activities. All *Jefes* beneficiaries are eligible to participate. However, the program required beneficiaries to associate and form a minimum of three beneficiaries in order to submit a proposal. This requirement has

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<sup>18</sup> An alternative exit strategy is to transfer *Jefes* households requiring longer term assistance - namely female headed households with a large number of dependents - into a conditional cash transfer program.

been perceived as a constraint during the submission of the proposals as well a potential obstacle to success (e.g., generating internal disputes within the group, Etchegaray, 2005).<sup>19</sup>

Proposals for the productive projects are submitted to the Ministry of Social Development through their local municipality. These are then transferred to the project implementation unit (jointly staffed by the Ministries of Social Development and Labor), where they are analyzed by professionals, who assess their economic, productive and financial viability.<sup>20</sup>

Approved projects receive grants to purchase inputs and equipment up to 15,000 Argentinean pesos for a maximum period of six months. The maximum transfer is substantial, amounting nominally up to 30 times the monthly transfer by *Jefes*. However, the beneficiaries cannot use the nominal grant value to purchase inputs and equipment themselves. These purchases have to be made by the local municipalities, who then transfer them to the beneficiaries. This indirect implementation mechanism introduced a high transaction cost and inefficiencies in program implementation (Etchegaray, 2005). The procurement by the municipalities experienced substantial delays. Bureaucratic intermediation and initial lack of experience at the municipality level for this type of transactions often resulted in delays in the receipt of the inputs and in an imperfect match between what was requested and what was received. The municipalities also often wished to promote local business development by purchasing the inputs locally, instead of looking for the best (quality-price) inputs and equipment. Finally, the intermediation of the municipalities created some confusion on the ownership of these inputs and equipment, with some beneficiaries afraid of a possible expropriation in the event of a project failure.

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<sup>19</sup> In practice, it sometimes happened that not all of the 3 participants sustained their participation in the enterprise. However, it was checked that all 3 were participating at the beginning, since the formats had to be signed by each. Just as important, is that in practice also, what also occurred is that you had “non-Jefes participants involved in the enterprise” in addition to the 3.

<sup>20</sup> More specifically, the approval of the proposal involves a technical evaluation, which covers a cost-benefit analysis, the evaluation of its sustainability and environmental impact, the evaluation of the prior experience of the beneficiaries in the main project activity and its commercialization plans. The *evaluators* could plan field visits to the projects to assess *in loco* the viability of the project..

Approved projects also receive technical assistance from local institutions -universities, technical institutes or NGOs. This assistance is given by agents (*tutores*) and covers general management practices and more specific technical assistance.<sup>21</sup> The objective of providing these services is to ensure the financed projects are sustainable. During the six month period, the agents are supposed to visit the project at least four times (for general purposes) and one time for a specific technical tutoring activity. An in-depth review of a sample of projects highlights some shortfalls in the design and implementation of the technical assistance (Etchegaray 2005).<sup>22</sup>

### **3. Survey Design and Methodology**

#### **3.1 Survey Design**

We use data from the survey implemented in the Greater Buenos Aires (hereafter GBA) area, which included *Capital Federal* and *Conurbano*. The survey restricted the attention to this geographical area for different reasons. First, within GBA there was geographical variation in the incidence of the program (some municipalities implemented the program while others did not). Second, GBA had a relatively homogenous labor market and, municipalities conducted similar MEP promotional activities. Third, there was a reliable list of beneficiaries interested in the program which could be used as a sampling frame for the survey. Finally, the GBA area accounted for almost 1/5 of the total financing as of 2004.

The sample of MEP participants was drawn in July 2004 from a list of approved projects just after the deadline for the submission of proposals. Since the program assignment was not

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<sup>21</sup> This technical assistance was very wide ranging, covering management, administration and commercialization techniques. The *tutores* are experts from local universities, technical institutes or NGOs that were previously selected by the Ministry of Social Development based on their experience and academic background..

<sup>22</sup> Some of these shortfalls highlighted in the qualitative work (sample collected in November 2004) might have been typical of the early stages of program implementation and presumably should have improved over time, some might be more structurally inherent to the program design.

random, the (non-experimental) evaluation must overcome the difficult problem of constructing a suitable comparable group in the analysis, which overcomes the possible selection bias. The evaluation design was built on two interesting features of the program's promotion and implementation that are likely to have substantially mitigated the scope for selection bias. The first is that it was possible to elicit the willingness of *Jefes* beneficiaries to participate in the MEP program, using local promotional activities. In addition to the program being nationally advertised (through newspapers and radio), the local offices of the Ministry of Labor or the municipalities actively promoted the program through informational campaigns.<sup>23</sup> In this process, a registry was collected with information on those *Jefes* beneficiaries that have showed interest in the program.<sup>24</sup> These registries were used as a sampling frame to identify the comparison group for the evaluation. Restricting the analysis to those beneficiaries who have shown interest in the program is likely to reduce the problems associated with the self-selection into the program of those with higher expected gains (for example due to their entrepreneurial ability or motivation). The assumption is that attending the promotional campaigns and eventually providing details on possible productive activities, reveals some unobservable individual characteristics, which are possibly correlated with program participation and with the labor market outcomes of interest. As a robustness check, we will also use a smaller comparison group in the evaluation which restricts the attention to those individuals that were interested in participating in the project, have actually applied for a grant but have not yet received the

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<sup>23</sup> The promotion of the program activities was implemented in two ways. First, the local offices of the Ministry of Labor distributed program leaflets at the payment locations for *Jefes* (*boca de pago*) and encourage beneficiaries to come to the local Ministry of Labor office to learn more about the program characteristics. A registry was kept at the local offices of the Ministry of Labor with the information on the identity of the interested beneficiaries. Second, the program was promoted with public meetings/workshops for *Jefes* beneficiaries in given municipalities. The workshop was held by the local offices of the Ministry of Labor together with the municipality. During these sessions, the workshop organizers collected a registry with a list of all potentially interested beneficiaries.

<sup>24</sup> In this process participants identify themselves, provide a description of the project and list the number of participants involved in the project.

approval. This is arguably a tighter comparison group because applicants have also supported a cost (e.g., in time, effort) of putting together and submitting the project proposal (Angrist 1998, Galasso and Ravallion 1994).

The second feature of the program which will be important for the evaluation strategy relies on the geographic variation across municipalities in their willingness to participate in the program. The municipality was responsible for the procurement and for the delivery of the purchases to the beneficiaries. During the initial phase of the program implementation, some municipalities were concerned with the administrative burden associated with the program and decided not to participate immediately. Nevertheless *Jefes* beneficiaries in these areas were exposed to the promotional activities. This implies that *Jefes* beneficiaries with similar characteristics (observable or unobservable) will have a different probability of participating in the program simply because they live in different municipalities. In our sample, about 1/5 of the individuals not participating in the program live in non-participating municipalities.

### 3.2. Empirical Methodology

We will explore a quasi-experimental methodology. In particular, we use a difference-in-difference (DD) methodology to evaluate the impact of the project. This approach compares the outcomes of interest for project participants before and after the intervention with those of non-participants. Let  $y$  be the outcome of interest,  $D$  denote program participation, and  $t$  represent time. We want to obtain an estimate for the average effect of the program,  $\alpha$ . The difference-in-difference estimator for this parameter is given by:

$$\alpha = [\bar{y}_{D=1,t=1} - \bar{y}_{D=1,t=0}] - [\bar{y}_{D=0,t=1} - \bar{y}_{D=0,t=0}]$$

where  $t=0$  represents the baseline period and  $t=1$  represents one year later. With a difference-in-difference methodology the conditional outcomes of interest in the absence of the program can be written as a sum of a time effect (common to the two groups) and a group effect (constant over time). Under these assumptions, the effect of the program,  $\alpha$ , can be estimated with a fixed effect model for the pooled sample across groups (participants and non-participants) and time periods:

$$Y_{it} = D_{it}\alpha + \mu_i + \eta_t + \varepsilon_{it} \quad (1)$$

where  $Y_{it}$  is the outcome of interest for individual  $i$  at time  $t$ ,  $D_{it}$  is a dummy variable assuming the value one if individual  $i$  participates in the program at time  $t$ ,  $\mu_i$  is an individual fixed effect,  $\eta_t$  is a time dummy (for 2005) and  $\varepsilon_{it}$  is the error term. We will report fixed effect estimates of (1), with and without controlling for observed individual characteristics (e.g., education, age, household size). Adding additional covariates will help account for individual heterogeneity in levels, and might improve precision in the estimates.

The identification assumption behind differences in differences is that all the correlation between program participation,  $D_{it}$  and the error term,  $\varepsilon_{it}$ , is accounted for by the time-invariant (and additive) individual fixed effect,  $\mu_i$ . In other words, program participants in the absence of the program, would have had trends in the outcome comparable to those in the comparison group.

It might be still the case that there are some time-varying unobserved heterogeneity that we haven't controlled for that might bias the results. It is difficult to exactly predict the sign of the bias, but it is likely with more able individuals are more likely to participate in the program but

are also more likely to have a higher wage or income *growth* (on top of a higher wage level).<sup>25</sup> If this were the case the difference in difference estimates would overestimate the real effect of the program. The most credible way to solve this problem is to have an instrument that is simultaneously correlated with program participation but that is exogenous to the outcomes of interest. To this end, we will exploit the fact that, at least during the initial implementation of the program, some municipalities were too concerned with the administrative burden and decided not to participate.<sup>26</sup> As such participation at the municipal level represents a valid instrument in that it is (positively) correlated with the individual participation, but affects outcomes only directly through individual participation. We will adopt a FE-IV (fixed effects instrumental variable) method to estimate:

$$\begin{aligned} Y_{it} &= D_{it}\alpha + \mu_i + \eta_t + \varepsilon_{it} \\ D_{it} &= \delta Z_i + \xi_{it} \end{aligned} \tag{2}$$

#### 4. Data and Descriptive Statistics

A baseline household survey, carried out under the supervision SIEMPRO, was administered to participants and non-participants in November 2004.<sup>27</sup> The same households were re-interviewed one year later, at the end of 2005. The questionnaire was based on a shorter version of the Argentinean labor force survey (the Permanent Household Survey). It collects information on basic individual and household characteristics including, their education, labor market history and income sources. For MEP beneficiaries it also collects detailed information on project

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<sup>25</sup> The classic references for the bias associated with differences-in-differences estimates of the impact of the program is related to a possibly pre-program drop in earnings (or the Ahenfelter's dip as in Ashenfelter, 1978).

<sup>26</sup> Let  $Z$  be a dummy variable that assumes the value one if municipality  $c$  participated in the program. We will estimate equation (2) under the assumption that  $Z$  is independent of the error term but not of  $D$ . The non-participating municipalities include *Ciudad Autonoma de Buenos Aires*, *Almirante Brown* and *Escobar*.

<sup>27</sup> SIEMPRO is an Argentinean public agency which carries out analyses in the area of poverty and monitoring of social programs.

characteristics, including information on the timing and quality of the inputs and of the technical assistance.<sup>28</sup> For individuals in the comparison group, the survey collects information on whether they have submitted a project proposal and its current approval status.

Table 2 shows the sample structure. The baseline survey covers 309 program participants (covering 301 households and a total of 1,340 individuals) and 244 non-participants (covering 244 households and a total of 1,116 individuals). During the one year period, some productive projects failed, beneficiaries left the project or they simply could not be found by the interviewers in the follow up survey. Hence, only 86% of the individuals in the baseline survey (or 85.3% of the households) were followed up in 2005 survey.<sup>29</sup> Since we will use a differences-in-differences methodology, we will restrict the analysis to the balanced sample. Our final sample covers 476 individuals (covering 465 households and a total of 2,104 individuals) and a total of 113 projects.

Table 3 compares the demographic, employment and household characteristics in our final sample with a random sample of *Jefes* beneficiaries in the GBA area taken from the Permanent Household Survey (EPH) at the same survey time (the end of 2004 and 2005).<sup>30</sup> Those individuals interested in starting a self-employment activity are predominantly females (as in the case of *Jefes*, more than 2/3 of the individuals), have more than 8 years of schooling and are on average 39 years old. A notable difference with respect to the average *Jefes* participant is due to the fact that more than 70% are heads of household. Their average household size tends to be smaller than for the average *Jefes* (4.5 persons versus 5.2 persons in 2004). As found for other

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<sup>28</sup> As explained in Section 2, the associability requirement of the project required 3 *Jefes* beneficiaries to submit a proposal for a self-employment project. However, only one of the participants reported information on project characteristics in the survey (*Referente*).

<sup>29</sup> Table A1 in the annex reports a probit regression of sample attrition on relatively exogenous individual characteristics. We do not find any evidence, both in treatment and in the control group, that those individuals that exit from the sample differ significantly in their socio-demographic characteristics.

<sup>30</sup> A random sample of 226 *Jefes* beneficiaries in the GBA area was extracted from the Permanent Household Survey (EPH) at the end of the fourth quarter of 2004 and 2005.

countries, participants in programs promoting self-employment tend to be more educated (almost 1 more year of schooling) and older (Betcherman, Olivas and Dar, 2004). Even though household income is likely to be underestimated in our sample, we find that average household per capita income is slightly higher than average per capita income for a *Jefes* beneficiary.<sup>31</sup> Finally, the findings also show that in our sample the income of the beneficiary represents a more important source of income for the household (between 48% and 52% in our sample versus approximately 35% for the average *Jefe*).

In the empirical work, we consider that an individual  $i$  has been affected by the program (i.e., has having received “treatment”) during period  $t$  if the he/she has received inputs and equipment for the project *and* if he has received technical assistance (measured by at least one visit from the tutors). Using this definition and depending on the project status of the individuals in each period, we group the final sample of 476 individuals into: *Never Beneficiaries* (298 individuals are never MEP beneficiaries in any of the two periods), *Entrants* (155 individuals are not MEP beneficiaries in 2004 but become beneficiaries in 2005), *Drop-outs* (3 individuals are MEP beneficiaries in 2004 but are no longer beneficiaries in 2005) and *Always Beneficiaries* (20 individuals are MEP beneficiaries during the two periods).

Table 4 reports some descriptive statistics for the different groups at the end of 2004 (baseline survey). Column (1) refers to all individuals who have never been program participants, column (2) refers to those who have never been program participants but that have applied to the program, column (3) refers to the entrants and column (4) to those participants during the two periods. The comparison shows that the groups are relatively homogeneous in

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<sup>31</sup>There are two major reasons why individual income in our sample is underestimated when compared to the EPH. First, time and cost constraints in the implementation of the survey implied that only the beneficiary was interviewed (as opposed to all household members in EPH). The income of other members could only be inferred by the household aggregate income. Second, the survey collects information on fewer income sources than the EPH.

terms of most of the variables of interest. The most significant differences refer to MEP non-participants having smaller hours of work, a shorter tenure in their previous occupation and slightly worse off incomes than the other groups. These differences could raise some concerns about differences in individual (unobservable) characteristics between treatment and comparison group.

Table 2 in the annex describes the 113 self-employment activities in our final sample with respect to sector of activity, location, growth constraints, quality of the inputs received and of the technical assistance, self-employment preferences of the participants and project sustainability. Most of the projects are in areas with predominantly female work (more than 50% in textiles and 20% in food processing). Most of the projects are located in the house of one of the beneficiaries and, in most cases, this location is either rented or borrowed. Approximately 1/3 of the projects reports having problems with sales. The main reasons relate to being a small scale, low value added projects, facing very competitive environment (high competition, high costs). When asked about the major constraints for project development (before the start of MEP), inputs and equipment are the most cited priorities, followed by commercialization and the need to have a physical site separate from the participants own house. Access to credit is reported as being a priority only for 6% of the projects.<sup>32</sup> A significant part of the beneficiaries report experiencing problems with the inputs received through the municipality, either due to errors in the purchases (56%) or due to delays in the delivery (35%). These supply side bottlenecks were substantial and, as a consequence, the duration of most of the projects in our sample is relatively short. In particular, approximately 1/3 of the projects were operating for about one year, 1/2 of the projects were operating for more than 6 months, and about 1/5 of the sample for a shorter period of time.

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<sup>32</sup> About 1/5 of the MEP beneficiaries subsequently apply to obtain a credit.

The technical assistance is perceived to be useful by 75% of the participants.<sup>33</sup> Most of this assistance is focused on administrative work or in organization. Despite the implementation issues, it is notable that the overall majority of beneficiaries expect their activity to be continued in the future. Most beneficiaries (82%) have very positive expectations about the sustainability of their activity at the baseline, measured by their ability to self-sustain the project with (reinvested) profits. After one year of operations, these expectations were only slightly revised downwards (80%).<sup>34</sup> Moreover, the self-employment does not seem to be a stepping stone to a more permanent wage employment position. Around 90% of MEP beneficiaries' in the two periods report that they would like to continue working as self-employed (either in MEP or in another self-employment activity) rather than having a wage employed position.

## 5. Estimates of the Effect of the Program

### 5.1 Main Findings

We are interested in quantifying the effect of the program on some labor market outcomes. In particular, we look at the individual's participation in the labor market (job outside MEP), total hours of work (either in the market or in MEP), total individual income as well as household income. We are also interested in capturing labor supply responses at the household level, by looking at the share of household members who are employed.<sup>35</sup>

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<sup>33</sup> The assistance focused on general administration and accounting techniques, having less emphasis on product commercialization or on direct technical assistance on the inputs/equipment.

<sup>34</sup> For a more detailed description of some of the projects Kremenutzky and Massad (2006).

<sup>35</sup> We define the following variables as follows: *Individual Employment* has a dummy variable that equals one if the individual has a job outside MEP; *Individual Total Hours Work* as the total number of weekly hours of work (either in MEP or in another job); *Individual Total Income* is the sum of work-related earnings (MEP or other job), financial transfers from government programs (e.g., *Jefes*, *Familias nacional*, *Plan Mayores 70*, pensions or scholarship grants) and financial transfers from other sources (e.g., severance payments, unemployment insurance, remittances); *HH Total Income per capita* is the aggregate income in the household divided by household size; *Other Household Members Employed* is the share of the other household members that has a job (either in MEP or outside).

Table 6 presents the least squares estimates of equation (1). Errors are clustered at the project level. Panel A considers all the individuals that were ever MEP participants relative to all non-participants, Panel B restricts the attention to MEP entrants versus all non-participants and Panel C considers only MEP entrants versus MEP applicants.<sup>36</sup>

The main findings are quite consistent across the different samples. We find that program participants substitute away from other jobs (market) and significantly increase their total (weekly) hours worked by 14 to 18 hours. The findings do not show any labor supply responses for other household members: the impact of the program on the share of employed household members (excluding the beneficiary) is small and not statistically significant.<sup>37</sup> We also do not find robust evidence that, in the short run, the program significantly increases individual income or total household income. The labor supply effects together with the (lack) of income effects suggest that participants are hanging on the alternative source of income waiting for the income stream from self-employment to stabilize. Possibly the income gains from the self-employment activity are reinvested to increase its chances of sustainability in the medium term. Table A2 in the annex controls for additional worker characteristics (e.g., age schooling, household size), which could vary over time. Adding covariates does not change substantially the findings obtained above.

To check the robustness of our findings to a remaining possible correlation between the outcomes of interest and program participation, we also estimate equation (1) using fixed effects-instrumental variables. We instrument individual program participation with a dummy variable

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<sup>36</sup> Panel A and B should yield similar findings for the effect of the program, since the source of identification is the same. Nevertheless, the two samples could yield different estimates for the other variables included in the model.

<sup>37</sup> We also do not find any evidence that the program changes the total hours of work of other household members (not reported).

that equals one if the individual is located in a non-participating municipality.<sup>38</sup> The findings reported in table 7 show that there are no qualitative differences in the direction of the effects to our main findings. However, the magnitude of the point estimates suggests that the fixed effects estimates (table 6) are underestimating the substitution effect in the supply of labor and overestimating the effect on hours of work and income. These results are consistent with the fact that those individuals being more likely to self select into the program and simultaneously being more likely to have a job outside MEP, of working more hours and to have a higher individual income (although the IV estimates for hours worked and income are not statistically significant).

## 5.2 Heterogeneity in the Effects of the Program

So far we have focused on the average effect of the program. In this section we allow the effect to vary according to some socio-economic characteristics of the beneficiary (gender, education, age and previous experience in the activity) and to some characteristics of the self-employment activity (e.g., sector, duration). Table 8 reports the fixed effect estimates for the effect of the program and for its interaction with initial characteristics. We use the sample of MEP entrants and all MEP non-participants and look at the probability of having an outside job and on total individual income.<sup>39</sup> We also report the P value for the test that the effect of the program does not depend on the initial conditions. The findings show a significant heterogeneity in the returns of the project. Females are less likely to substitute away from other sources of employment, and are, therefore, more likely to combine the self-employment

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<sup>38</sup> The number of observations in each regression is smaller than in table 6 because we estimate equation (1) in growth rates and instrument the *changes* in program participation. In the first stage of the regression (not reported) being located in the “non-participating” municipalities decreases the probability of being a program participant by 0.36 [0.03]\*\*\* with an F test of 29.15.

<sup>39</sup> We do not report the interactions with initial conditions for the other variables previously analyzed because, in most of the cases, we cannot reject the null hypothesis that the effect of the program does not vary with the initial conditions. The only exceptions relate to a smaller increase in total hours worked for the Textiles projects.

activity with other jobs. Beneficiaries engaged in textile activities have significantly lower income gains relative to those engaged in services or industrial activities.

Moreover, even though income gains are not significant for the average program participant they are concentrated in specific groups, possibly initially better positioned to take advantage of the program. In particular, individual income gains are larger (and significant) for those with more education, those beneficiaries 30-40 years old and those for whom MEP activities were related to an ongoing activity.

Finally, we briefly analyzed the profitability of the projects as a function of the beneficiaries' characteristics. Kremenutzky and Massad (2006) used a subsample of the 113 projects covered in our sample for which detailed cost and sales information was collected and compute their profitability.<sup>40</sup> Table A4 in the annex reports the averages of some variables of interest for three groups: projects with negative profitability (9), those with medium or low profitability (24) and projects with high profitability (32). The findings show that there is no clear systematic correlation between profitability and gender or with education. Projects with higher returns tend to have younger beneficiaries (around 38 years old), fewer household heads, less children in the household and a slightly smaller household size. Beneficiaries are also less likely to have an outside job and to work more hours (average of 32 hours) when the project has a higher rate of return. Finally, and one would expect, these beneficiaries also receive higher labor incomes.

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<sup>40</sup> They can obtain these estimates for a total of 65 projects. They compute the project's profitability subtracting from total revenues (from sales) the cost of inputs and machinery and the estimated "minimum return" per each beneficiary involved (equivalent to 150 pesos, which is the *Jefes* transfer). A project has a negative return if it does not raise enough revenues to pay for the inputs and the implied remuneration for each beneficiary.

## 6. Conclusions

After economies have recovered from crisis, governments in developing countries are concerned with phasing out large safety nets programs. One possible exit strategy is to promote self-employment activities. This paper evaluates the short run effects of one of these programs in Argentina. The program provides grants and technical assistance to participants. Our analysis shows that only a very small and selected subset of beneficiaries is attracted by this type of program, possibly discouraged in part by substantial supply side bottlenecks in its implementation. The pool of potential participants is more likely to be represented by female household heads and more educated *Jefes* beneficiaries and self-reports to have chosen self-employment as a preferred employment strategy and permanent source of income. The program rationale of providing inputs and tools seems to have matched the perceived constraints for self-employment of participants. Yet, our empirical results show that participation in the program reduces the probability of having an alternative wage job (especially for males), that it increases the supply of total hours of work, but fails to have significant effect on individual labor income or total household income in the short run. The results of the evaluation have to be read in light of the limited running time of program implementation. The lack of income gains does not make the program cost-effective on average in this very short run.

The results however, did show significant effects of the program on individual income for a selected subset of beneficiaries, younger and more educated, and those for whom the self-employment was related to an ongoing activity. Overall the results are consistent with the nuanced view that participating individuals are voluntarily selecting into the self-employment activities and operate under significant financial and market constraints. Those who stand to benefit from the intervention are those who were intrinsically more suited to run self-

employment activities, due to their unobserved skills and to their human capital endowments. The fact that a very small subset of former welfare beneficiaries are attracted to the program, coupled with the fact that only a selected subset of participants benefited from participation, cast doubts that this intervention may represent a sizeable exit strategy from welfare. Nonetheless the heterogeneous results leave open the possibility that, at least for some households, the program might produce longer term returns in terms of its ability to create a sustained source of income.

Overall, the evaluation of this intervention raises important questions for project design in the future. Beneficiaries self-report on the value of inputs and machinery as well as the positive response to tutoring suggests that the combination of both components in one program might be a promising venue for self-employment programs. Yet, there are various dimensions of this type of interventions that are still relatively unexplored and for which it would be useful to provide further experimentation in the future, such as the balance between grants and credit, the provision of inputs in-kind versus cash, and the length and content of the business education and tutoring for program beneficiaries.

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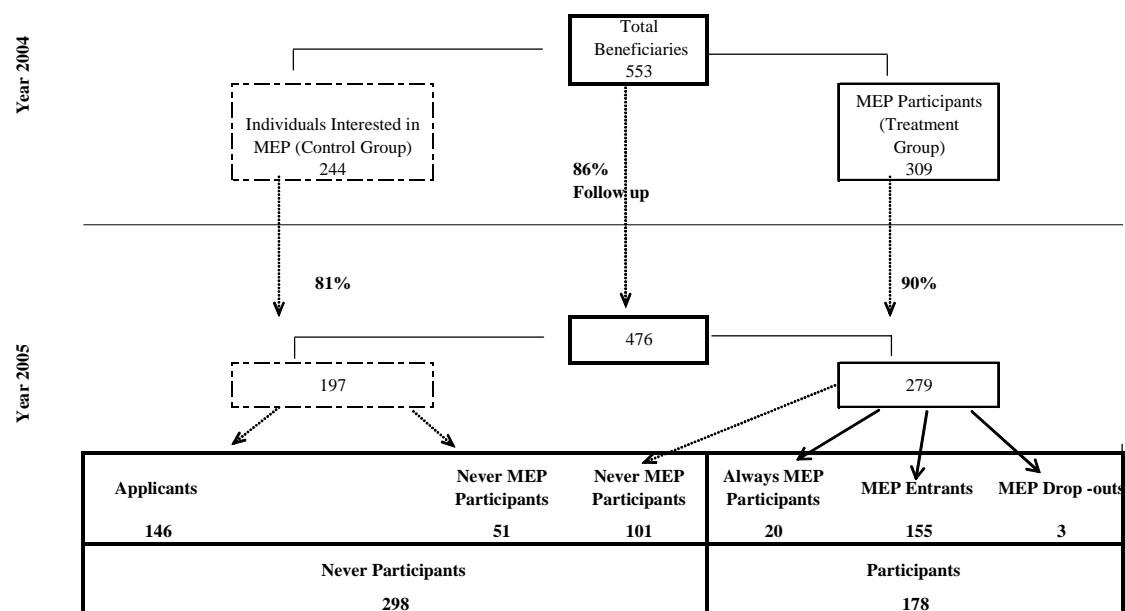
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**Table 1: Total number of participants, by year and geographic area**

Month year	Nationally			Greater Buenos Aires Area GBA			Municipalities in the Sample		
	(1)	(2)	(2)/(1)	(2)/(1)	(2)	(2)/(1)	(2)	(2)/(1)	
	Jefes Beneficiaries	MEP Beneficiaries	Share MEP	Jefes Beneficiaries	MEP Beneficiaries	Share MEP	Jefes Beneficiaries	MEP Beneficiaries	Share MEP
Nov. 2004	1,603,266	7,024	0.44%	491,651	1,329	0.27%	412,693	1,306	0.32%
Dec. 2005	1,449,097	12,956	0.89%	437,946	2,633	0.60%	368,389	2,512	0.68%
Dec. 2006	1,128,942	9,555	0.85%	332,204	1,667	0.50%	273,834	1,583	0.58%

**Table 2: Descriptive statistics: MEP Sample (2004 -2005), by groups**



**Table 3: Descriptive statistics: comparison with *Jefes* participants in the Greater Buenos Aires area**

Descriptive statistics	<b>Jefes participants in GBA<sup>(1)</sup></b>				<b>Jefes participants – MEP sample<sup>(2)</sup></b>			
	Fourth Quarter 2004		Fourth Quarter 2005		2004		2005	
	Mean	st.dev.	Mean	st.dev.	Mean	st.dev.	Mean	st.dev.
<u>Individual demographics:</u>								
Male	0.27	0.44	0.23	0.42	0.30	0.46	0.30	0.46
Age	39.2	11.0	39.7	11.5	39.4	10.5	40.3	10.5
Marital status – single	0.16	0.37	0.20	0.40	0.12	0.33		
Marital status – married	0.63	0.48	0.58	0.50	0.57	0.50		
Head	0.41	0.49	0.49	0.50	0.72	0.45	0.74	0.44
Spouse of head	0.38	0.49	0.34	0.47	0.20	0.40	0.18	0.39
Son/daughter of head	0.15	0.35	0.12	0.33	0.07	0.26	0.07	0.25
Years of education	7.66	2.97	7.65	3.12	8.21	2.76	8.21	2.83
<u>Employment status:</u>								
Doing counterpart work (min 20 hrs)	0.39	0.49	0.18	0.38	0.34	0.47	-	-
Employed	0.84	0.37	0.74	0.44	0.55	0.50	0.45	0.50
Unemployed	0.04	0.19	0.06	0.24	0.14	0.34	0.06	0.24
Inactive	0.12	0.33	0.20	0.40	0.08	0.27	0.07	0.26
Total hours worked	20.72	18.84	19.76	20.05	18.40	21.96	32.77	25.13
Total hours worked in main activity	18.11	15.91	17.47	18.46	5.88*	15.37	16.11*	23.77
Total hours worked=0	0.20	0.40	0.28	0.45	0.32	0.47	0.23	0.42
<u>Household characteristics:</u>								
H'hold size	5.20	2.36	5.00	2.11	4.57	1.88	4.97	2.16
No. children<18	2.32	1.85	2.36	1.61	2.21	1.46	2.26	1.60
Total h'hold income	654	475	778	616	514	348	578	424
H'hold p.c. income	144	124	171	129	123	86	126	86
Individual total income	226	141	279	196	270	146	282	182
No. observations in the sample	226		229		476		476	

Notes: <sup>(1)</sup> own calculations from the Encuesta Permanente de Hogares Continua (EPHC). <sup>(2)</sup> Own calculations, MEP sample of both participants and non-participants in MEP. \* Hours worked in main activity in the MEP sample refer to hours worked in MEP and are not strictly comparable to the EPHC.

**Table 4: Descriptive statistics at baseline 2004, by participation status (\*)**

Descriptive statistics	never-participants				Entrants		Participants in both years	
	all		applicants		Mean	St.Dev	Mean	St.Dev
	Mean	St.Dev	Mean	St.Dev				
<u>Demographics:</u>								
Age	39.78	9.97	39.36	9.62	38.17	11.02	43.50	12.19
Female	0.73	0.44	0.77	0.42	0.67	0.47	0.50	0.51
Years of education	8.21	2.93	8.40	2.78	8.32	2.42	7.15	2.28
Head	0.73	0.44	0.73	0.44	0.72	0.45	0.75	0.44
Spouse of head	0.20	0.40	0.24	0.43	0.17	0.38	0.20	0.41
Son/daughter of head	0.06	0.23	0.03	0.16	0.10	0.31	0.05	0.22
H'hold size	2.25	1.50	2.21	1.47	2.11	1.40	2.30	1.45
No. children<18	4.61	1.92	4.51	1.88	4.45	1.86	4.70	1.30
Marital status – single	0.13	0.33	0.13	0.34	0.12	0.33	0.10	0.31
Marital status – married	0.56	0.50	0.58	0.50	0.57	0.50	0.65	0.49
Marital status - divorced/widowed	0.32	0.47	0.29	0.46	0.30	0.46	0.25	0.44
Doing counterpart work (min 20 hrs)	0.54	0.50	0.86	0.35	0.00	0.00	0.00	0.00
<u>Labor supply (and labor force history)</u>								
Inactive	0.16	0.37	0.18	0.39	0.11	0.31	0.00	0.00
Unemployed	0.19	0.39	0.23	0.42	0.14	0.34	0.00	0.00
Employed	0.68	0.47	0.64	0.48	0.75	0.43	1.00	0.00
Total hours worked=0	0.40	0.49	0.49	0.50	0.21	0.41	0.10	0.31
Total hours worked	13.4	17.1	10.4	15.6	23.2	24.5	48.4	26.6
Share hh'ld members in labor market	0.29	0.21	0.29	0.21	0.33	0.23	0.30	0.19
employment major duration =current	0.54	0.50	0.65	0.48	0.49	0.50	0.72	0.46
tenure employment major duration	78.0	81.5	71.1	73.0	92.3	84.5	131.9	102.2
employment major duration=self emplom	0.27	0.44	0.36	0.48	0.27	0.44	0.28	0.46
No. observations in the sample	298		146		155		20	

Note: Sample MEP, excluding those initial participants (3) who dropped out at follow up.

**Table 5: Trends in outcomes, by participation status**

	PARTICIPANTS				NEVER -PARTICIPANTS			
	2004		2005		2004		2005	
	mean	<i>std dev</i>	mean	<i>std dev</i>	mean	<i>std dev</i>	mean	<i>std dev</i>
Any employment (excl. MEP)	0.55	<i>0.49</i>	0.37	<i>0.48</i>	0.55	<i>0.49</i>	0.49	<i>0.50</i>
Total hours worked	26.7	<i>26.3</i>	45.3	<i>22.7</i>	13.4	<i>17.1</i>	21.9	<i>21.9</i>
Share other hh'ld members employed (excl MEP)	0.32	<i>0.22</i>	0.28	<i>0.21</i>	0.29	<i>0.21</i>	0.29	<i>0.21</i>
Share other hh'ld members employed (all activities)	0.44	<i>0.18</i>	0.44	<i>0.19</i>	0.32	<i>0.20</i>	0.34	<i>0.21</i>
Individual total income	301.8	<i>159.9</i>	340.8	<i>186.0</i>	251.6	<i>134.6</i>	247.4	<i>171.0</i>
Indiv. total income (excl <i>Jefes</i> )	154.3	<i>159.3</i>	213.4	<i>194.5</i>	149.4	<i>139.7</i>	126.9	<i>184.3</i>
Total hh'ld income p.c.	142.4	<i>99.0</i>	153.7	<i>92.5</i>	111.5	<i>74.2</i>	109.1	<i>77.4</i>
No. obs.	<i>178</i>		175		<i>298</i>		<i>301?</i>	

**Table 6: Differences-in-Differences Estimates**

	Individual Employment (Market)	Individual Total Hours Work	Individual Total Income	HH Total Income per capita	Other HH Members Employed
	(1)	(2)	(3)	(4)	(5)
Panel A: Ever MEP Participants and All Non-Participants					
MEP participant	-0.171 [0.063]***	14.74 [3.061]***	14.04 [20.426]	5.95 [9.452]	-0.015 [0.068]
Observations	952	858	946	952	952
R -squared	0.62	0.75	0.68	0.74	0.78
Panel B: MEP Entrants versus All Non-Participants					
MEP participant	-0.159 [0.066]**	13.79 [3.119]***	33.396 [19.140]*	10.30 [9.896]	-0.006 [0.072]
Observations	906	812	900	906	906
R -squared	0.62	0.74	0.69	0.74	0.76
Panel C: MEP Entrants versus Applicants but All Non-Participants					
MEP participant	-0.144 [0.077]*	17.93 [3.444]***	30.306 [20.859]	8.64 [10.649]	0.053 [0.096]
Observations	602	558	599	602	602
R -squared	0.60	0.75	0.73	0.78	0.77

Source: Author's calculations based on MEP sample (2004, 2005).

Note: \* denotes significance at the 10% level, \*\* at the 5% level and \*\*\* at the 1% level. Table reports the least squares estimates of equation (1) in the text. Standard errors are clustered at the project level for beneficiaries and at the municipio level for other individuals. Panel A considers the sample of individuals who have ever been MEP participants versus all non-participants, Panel B considers the sample of MEP entrants versus all non-participants and Panel C considers the sample of MEP entrants versus non-participants who have applied for a MEP.

**Table 7: IV Fixed Effects Estimates**

	Individual Employment (Market)	Individual Total Hours Work	Individual Total Income	HH Total Income per capita	Other HH Members Employed
	(1)	(2)	(3)	(4)	(5)
Panel A: Ever MEP Participants and Non-Participants					
MEP participant	-0.848 [0.228]***	10.58 [8.836]	14.014 [75.780]	10.618 [34.945]	-0.33 [0.341]
Observations	476	383	470	476	476
Panel B: MEP Entrants versus All Non-Participants					
MEP participant	-0.814 [0.212]***	10.981 [8.061]	-2.033 [70.014]	5.261 [32.534]	-0.318 [0.317]
Observations	453	360	447	453	453
Panel C: MEP Entrants versus Applicants but Non-Participants					
MEP participant	-0.830 [0.257]***	7.568 [11.088]	36.875 [69.769]	5.467 [40.836]	-0.206 [0.351]
Observations	301	258	298	301	301

Source: Author's calculations based on MEP sample (2004, 2005).

Note: \* denotes significance at the 10% level, \*\* at the 5% level and \*\*\* at the 1% level. Table reports the instrumental variable estimates of equation (1) in the text in growth rates, when the instrument is a dummy variable that equals 1 if the municipio where the individual is located did not participate in the program. Standard errors are clustered at the at the project level for beneficiaries and at the municipio level for other individuals. Panel A considers the sample of individuals who have ever been MEP participants versus all non-participants, Panel B considers the sample of MEP entrants versus all non-participants and Panel C considers the sample of MEP entrants versus non-participants who have applied for a MEP.

**Table 8: Heterogeneity in Differences-in-Differences Estimates**

	Individual Employment (Market)	Individual Total Income
	(1)	(3)
<i>Panel A: Gender</i>		
MEP participant	-0.320 [0.093]***	34.2 [33.1]
Mep * Female	0.250 [0.11]**	-6.1 [34.0]
Observations	601	598
P value:	0.021	0.85
<i>Panel B: Education</i>		
MEP participant	-0.240 [0.08]***	7.3 [24.1]
Mep * 7 years Education	0.015 [0.009]*	5.1 [2.7]*
Observations	905	899
P value:	0.090	0.06
<i>Panel C: Age</i>		
MEP participant	-0.240 [0.09]**	29.7 [25.1]
Mep * Age <30	0.3 [0.13]**	-17.8 [43.3]
Mep * Age 30-40	0.07 [0.12]	55.8 [30.9]*
Mep * Age 40-50	-0.06 [0.13]	-32 [37.9]
Observations	905	899
P value:	0.060	0.07
<i>Panel D: Previous Experience</i>		
MEP participant	-0.130 [0.07]*	4.3 [30.1]
Mep * Previous Experience	-0.039 [0.1]	46.4 [35.7]
Observations	905	899
P value:	0.700	0.19
<i>Panel E: Sector of Activity</i>		
MEP participant	-0.027 [0.10]	93.5 [34.3]***
Mep * Food	-0.150 [0.18]	-126.1 [58.0]**
Mep * Textiles	0.009 [0.12]	-53.7 [35.3]
Observations	458	457
P value:	0.660	0.076

Source: Author's calculations based on MEP sample (2004, 2005).

## Appendix

**Table A1: Sample Attrition**

	MEP participant			Comparison Group		
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.029 [0.038]	-0.034 [0.038]	-0.045 [0.039]	-0.053 [0.065]	-0.053 [0.066]	-0.058 [0.067]
Years Schooling <7	0.040 [0.077]	0.049 [0.077]	0.048 [0.078]	0.117 [0.111]	0.119 [0.113]	0.118 [0.114]
Years of Schooling = 7	-0.060 [0.066]	-0.054 [0.066]	-0.058 [0.067]	0.142 [0.098]	0.142 [0.099]	0.147 [0.100]
Years of schooling >8 and <11	0.008 [0.065]	0.013 [0.065]	0.014 [0.065]	0.102 [0.096]	0.1 [0.098]	0.101 [0.098]
Head of Household	0.010 [0.041]	0.017 [0.042]	0.000 [0.045]	-0.006 [0.060]	-0.005 [0.061]	-0.021 [0.067]
Age (<30)	-	0.066 [0.053]	0.059 [0.054]	-	0.015 [0.087]	-0.021 [0.067]
Age (30-40)	-	0.003 [0.054]	-0.008 [0.056]	-	0.01 [0.076]	0.018 [0.089]
Age 40-50	-	0.041 [0.050]	0.040 [0.051]	-	0.001 [0.077]	0.013 [0.082]
Number Children	-	-	0.023 [0.022]	-	-	0.005 [0.079]
Household Size	-	-	-0.020 [0.017]	-	-	0.004 [0.032]
Observations	309	309	309	245	245	245

Source: Author's calculations based on MEP sample (2004, 2005).

Note: Table reports a probit regression of a dummy variable that equals one for those *Jefes* beneficiaries that are interviewed in 2004 but are not in 2005. Column (1)-(3) reports the results for the sample of MEP participants and columns (4)-(6) for the comparison group.

**Table A2: Descriptive of Self-Employment Activities**

<b>Panel A: Sector</b>	
Agriculture	5%
Food Products	16%
Textiles	16%
Clothing	33%
Other Industrial Activities	28%
Services	3%
<b>Panel B: Location</b>	
Home	71%
Other	29%
Owned Beneficiary	32%
Rented	39%
Borrowed	29%
<b>Panel C: Constraints to Sales Growth</b>	
Problems with Sales?	37%
<i>of which</i>	
Low Quality Products	5%
Delays in Production	7%
High Cost	21%
High Competition	31%
Other	20%
<b>Panel D: General Constraints to Growth</b>	
Technical Assistance	14%
Sales	33%
Inputs	48%
Human Resources	15%
Location	20%
Credit	6%
<b>Panel E: Quality of Inputs and Technical Assistance</b>	
Problems with Inputs Received	56%
Delays Delivery	35%
Technical Assistance Useful	75%
Help in Inputs and Equipment	6%
Help Work Organization	36%
Help Administrative Work	39%
Help Sales	11%
Help Product Quality	3%

Source: Author's calculations based on MEP sample (2004, 2005). Table reports descriptive statistics in the baseline period for different project characteristics. For example, the first number in Panel A means that 5% of the projects are in Agriculture related Products.

**Table A2: Descriptives for Self-Employment Activities (cont)**

	2004	2005
<b>Panel F: Future Work Preferences</b>		
Remain in MEP Project	71%	90%
Find wage employment	10%	8%
Start another self-employment activity	19%	2%
<b>Panel G: Project Sustainability</b>		
Definitely sustainable	82%	80%
Probably sustainable	16%	16%
Probably not sustainable	0%	2%
Definitely not sustainable	0%	2%
No Knowledge	2%	0%
<b>Panel H: Income Sustainability</b>		
Definitely sustainable	77%	66%
Probably sustainable	18%	25%
Probably not sustainable	1%	8%
Definitely not sustainable	1%	2%
No Knowledge	3%	0%

Source: Author's calculations based on MEP sample (2004, 2005). Table reports descriptive statistics in the baseline period for different project characteristics. For example, the first number in Panel F means that 71% of the MEP beneficiaries in 2004 report that if they could choose in the future they would remain in MEP.

**Table A4: Descriptives for Project Rentability**

	Negative Rentability	Low/medium Rentability	High Rentability
	(1)	(2)	(3)
Share Females	0.8	0.5	0.7
Av. Years Schooling	8.5	8.0	8.5
Age	39.1	40.1	38.5
Share of HH Heads	0.8	0.7	0.6
Number of Children in the HH	2.0	2.0	1.9
Size of household	4.8	4.3	4.3
Share Employed (outside MEP)	0.4	0.6	0.5
Total Hours Work	29.1	25.3	32.0
Total income (individual)	286.6	277.0	339.8
Total labor income	145.9	121.0	186.7
Other income (exc. Social transfers)	0.0	13.1	3.2
Number of Projects	9	24	32

Source: Author's calculations based on MEP sample (2004, 2005). Table reports means for some variables in the baseline period for projects with negative rentability, low or medium rentability or for high rentability projects. For example, the mean in the first row of column (1) means that 80% of the individuals in projects with negative rentability are females.

**Table A3: Robustness to Additional Individual Characteristics**

	Individual Employment (Market)	Individual Total Hours Work	Individual Total Income	HH Total Income per capita	Other HH Members Employed
	(1)	(2)	(3)	(4)	(5)
Panel A: Ever MEP Participants and All Non-Participants					
MEP participant	-0.171 [0.063]***	14.442 [3.101]***	13.571 [20.502]	5.472 [9.429]	-0.021 [0.064]
Observations	951	857	945	951	951
R -squared	0.62	0.76	0.69	0.75	0.82
Panel B: MEP Entrants versus All Non-Participants					
MEP participant	-0.159 [0.066]**	13.392 [3.176]***	33.824 [19.267]*	9.579 [9.904]	-0.02 [0.069]
Observations	905	811	899	905	905
R -squared	0.62	0.75	0.70	0.74	0.80
Panel C: MEP Entrants versus Applicants but All Non-Participants					
MEP participant	-0.151 [0.078]*	18.198 [3.619]***	30.104 [21.430]	9.147 [10.855]	0.052 [0.090]
Observations	601	557	598	601	601
R -squared	0.61	0.77	0.74	0.78	0.80

Source: Author's calculations based on MEP sample (2004, 2005).

Note: \* denotes significance at the 10% level, \*\* at the 5% level and \*\*\* at the 1% level. Table reports the least squares estimates of equation (2) in the text but also controlling for individual characteristics (gender, education, age and household size). Standard errors are clustered at the project level for beneficiaries and at the municipio level for non-participants. Panel A considers the sample of individuals who have ever been MEP participants versus all non-participants, Panel B considers the sample of MEP entrants versus all non-participants and Panel C considers the sample of MEP entrants versus non-participants who have applied for a MEP.