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Impact Assessment of the State Support Program for Micro and Small Enterprises in Georgia

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Abstract

This paper analyzes the effects of a state support program for micro and small enterprises in Georgia in 2016. Grants were awarded through a scoring system, according to which only those business plans that scored above a certain threshold were able to claim government subsidies. We use a sharp discontinuity design to study the impact of these government subsidies on firm-level outcomes. Official data from the implementing agency, Enterprise Georgia, was complemented by a firm-level survey of both program beneficiaries and non-beneficiaries. This unique, combined data set allows us to examine a wide range of the social and economic impacts of the government program. We find significant treatment effects on total firm investment in the first year of the program. However, these impacts disappear in subsequent periods. The subsidies appear to have had no effect on sales or employment, even at the early stages of the program. Individual, entrepreneur level social and economic outcomes also seem to be unaffected by the government subsidies. If anything, entrepreneurs receiving support are less likely to be content with the job they are doing.

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1. Introduction

Different business support programs are being implemented across the world. Grants, interest-rate subsidies, and equity participation are among the most widely adopted tools for promoting firm performance (Dupont and Martin 2006). For example, low-interest rate loans and cash transfers to new and small firms are designed to overcome financial constraints (Hubbard 1997). Such programs might also be aimed at helping firms adopt new technologies (Wallsten 2000; Bronzini and Piselli 2016; Dimos and Pugh 2016). Moreover, sometimes governments use public subsidies to promote industry development in areas that are lagging, such as the Regional Selective Assistance program in the UK (Harris and Robinson 2005) or the regional policy subsidies used in Sweden (Bergstrom 2000) and Italy (Cerqua and Pellegrini 2014; Bernini et al. 2017).

Given the active use of business support programs, researchers and policy makers have given increased attention to evaluating their effectiveness. Despite such interest, this branch of literature has been plagued with endogeneity problems that arise when addressing the topics mentioned above. Consequently, the credibility of quantitative evaluations of SME support programs on firm-level outcomes has been limited to a small number of opportunities for quasi-natural experiments that allow for reasonable causality interpretations of specific policy interventions. Regression discontinuity design (RDD), which exploits discontinuity in the program assignment mechanism, has increasingly been applied in the business support program evaluation literature. Despite their robustness, the findings of the studies remain mixed and inconclusive on the impact of the support programs on economic outcomes.

Using multiple regression discontinuity design (MRDD), Cerqua and Pellegrini (2011) find the impact of an Italian regional policy, Law 488/92, on investment and production of the financed firms to be positive and statistically significant. In a subsequent paper, Cerqua and Pellegrini (2014) further expand their study on the effects of the L488 regional policy by using a nonparametric MRDD design. They reach the conclusion that the policy has a growth-enhancing effect, while the effect on productivity is unimportant. Decramer and Vanormelingen (2016) also use regression discontinuity design (RDD) to find a positive effect on firm-level investment, employment, output and productivity for the firms that were granted a subsidy in Flanders from 2004 to 2009, but only for smaller firms. Utilizing RDD, Bronzini and Ianchini (2014) and Howell (2017) analyze impact of government R&D incentive programs in Italy and the United States, respectively; however, the findings of the two studies are mixed. While estimated impacts of R&D grants in the United States are positive for all firms, incentives for R&D in Italy seem to be less effective, only affecting smaller size firms.

This paper contributes to the existing literature on government support program assessment in a number of ways. First of all, Georgia's Micro and Small Enterprise financing program represents one of those rare opportunities for a natural experiment that allows the credible use of a regression discontinuity methodology. Moreover, the environment in which the program has been implemented is unique. Institutions in Georgia are quite strong (i.e. very few corruption practices), even though the country is still developing (i.e. going through a major structural transformation). Therefore, the findings provide the cleanest evidence yet on government support programs in the developing world. Finally, the paper uses a unique dataset—a combination of administrative and

survey data. This allows us to investigate related outcomes beyond economic and financial differences alone. This is important, since such programs are often justified on social grounds—although as yet no studies based on real data from the developing world exist that are able to support this argument.

2. Micro and Small Business Support (MSBS) program

Since 2015, Enterprise Georgia[1] has been implementing the Micro and Small Business Support (MSBS) program to promote entrepreneurship by stimulating the establishment of new enterprises and supporting the expansion of existing ones. The amount of financial support varied between 5,000 Georgian lari (GEL) and 15,000 GEL.[2] Since 2015, Enterprise Georgia has invested around 40 million GEL in supporting micro and small businesses, while the total volume of all investment, including the co-financing component, is about 50 million GEL.

Participation in the program is through submission of business plans, which are assessed by a committee of independent experts. The committee examines the projects and assigns a score for each of the following elements: project specification (max. 12 points), managerial aspects (max. 36 points) and financial standing (max. 52 points). MSEs scoring above a predetermined threshold are given funds whereas those falling below that are not funded.

This paper studies the business outcomes for enterprises that were awarded MSBS grants in 2016 in the Samtskhe-Javakheti and Shida Kartli regions.

3. Data and Empirical Strategy

Our econometric analysis is based on a combination of two different datasets. The first dataset is administrative data that comes directly from Enterprise Georgia and includes all participating firms, both financed and non-financed. The data includes important information such as the running variable (score), the amount of grant provided, and the location and industry in which the firm operates. The information on the financial and economic indicators of the participating firms were collected through face-to-face interviews. A number of additional variables, including on the financial education of the managers and their perceptions were also collected through the interviews.

After linking the data from the two datasets, we ended up with a sample of 284 firms[3], out of which 122 received funding and 162 did not. The first part of our survey contains questions about entrepreneurs, such as their age, level of education, experience, sources of income, and perceptions

[1] In June 2014, the Ministry of Economy and Sustainable Development of Georgia, together with the Ministry of Agriculture, launched a new government program "Produce in Georgia". Enterprise Georgia is the implementing partner of "Produce in Georgia" and is responsible for business support, export promotion, and investment in Georgia.

[2] USD 2,100 and USD 6,300, respectively at the average exchange rate between USD and GEL in 2016. As a comparison, GDP per capita in 2016 amounted to USD 3,857 (GDP per capita PPP of 9,994).

[3] In 2016, the contractor organization evaluated 410 business plans in total. We excluded firms that got a high enough score but then refused funding as well as firms that received any funding from additional subsidy programs.

about their personal well-being[4]. Every respondent filled out this part of the survey. The second part includes questions about the company's characteristics and performance. Not all questions were answered by all respondents.

We aim to evaluate the impact of government subsidies on firm performance by comparing beneficiaries to similar applicants that did not receive funding (non-beneficiaries). A common challenge of program evaluation is that it is difficult to estimate causal effect, since beneficiaries and non-beneficiaries may differ in a systematic way. To address this possible endogeneity problem, we exploit the score-based grant assignment mechanism. We use a sharp regression discontinuity (RD) design to calculate the local average treatment effect (LATE) of the program by comparing outcome variables for those beneficiaries and non-beneficiaries that scored close to the threshold. In other words, if we assume that an outcome variable is a function of the score, then LATE can be estimated by the magnitude of discontinuity at the cut-off point (Lee and Lemieux, 2010). When using RD, there are some important assumptions that should be satisfied in order to estimate the true effect of the policy. The assumption of no manipulation is one of them—meaning that program participants should not be able to control their scores with a high degree of precision (Lee 2008). If treatment is random around the cut-off, beneficiaries and non-beneficiaries should be similar in that range. This assumption can be tested by calculating the differences between treated and non-treated firms in different covariates as well as by checking the continuity of the covariates across the threshold. One limitation of this approach is that it allows for identification of the program impact for those beneficiaries that scored close to the threshold, while generalization of the estimated impact on the whole distribution of beneficiaries remains limited.

Our main analysis is performed using a nonparametric RD design applying a triangular kernel function with a polynomial of order one and an MSE-optimized bin size. The triangular kernel function assigns zero weight to all observations with a score outside the interval. The maximum weight is assigned to observations at the cutoff, the weights decline symmetrically and linearly as the value of the score gets farther from the cutoff. Results are unaffected by alterations to the econometric specification.

4. Empirical Results

4.1. Pre-treatment characteristics

We begin by testing whether the pretreatment characteristics of the subsidized firms are similar to those of the non-subsidized firms. For this we first conduct a *t*-test for mean differences in baseline covariates and pre-treatment outcomes. As Table 1 shows, the treatment and control groups are on average quite different. The control group enterprises are older, have a higher share of women employees, a greater value of the assets, they have invested more and have had more sales and employment. However, the difference between the two groups disappear closer to the cut-off point. For comparison, we study two groups close to the threshold. In the first case (column (2)), we test mean differences between the two groups with the observed score within ten points of the threshold

[4] Full questionnaire can be found in the online appedix

of 55, while in the second case we look at the observations within five points of the threshold. The magnitude of differences between means of the two groups and, in the most cases, their significance decreases for the longer interval with no statistical significance at the short interval level.

Table 1: Pre-treatment mean differences between treated and untreated firms

VARIABLES	(1) Full Sample	(2) Long Interval	(3) Short Interval
Firm Age	-1.037**	-0.434	-0.936
	(-0.478)	(-0.523)	(-0.741)
Share of Women Employees	-0.164**	-0.127	-0.062
	(-0.067)	(-0.078)	(-0.097)
Market Value of Assets	-1,543	-885.0	-1,178
	(-3,212)	(-4,052)	(-4,545)
Investment	-1,128**	-801.8	-765.0
	(-501.9)	(-601.7)	(-1,048)
Turnover	-2,920***	-1,756	-1,680
	(-990.4)	-1,110	-1,599
Number of Employees	-0.897***	-0.670***	-0.333
	(-0.205)	(-0.242)	(-0.329)

Note: Except for the Share of Women Employees, all mean-differences refer to the pre-treatment year. In the full sample, 102 firms are treated and 69 are untreated. In the long interval sample (+-10 points from the cutoff), there are 94 treated and 38 untreated firms; in the short interval (+-5 points) sample there are 67 treated and 15 untreated firms

*** p<0.01, ** p<0.05, * p<0.1

We also check for any discontinuity around the funding threshold above which the firms in the following year received a government subsidy by performing RDD analysis for the year 2015. As shown in Table 2, we find no evidence of statistically significant discontinuity in the outcome variables before the subsidy was assigned. Subsidized firms near the threshold determined by the RDD model seem to be smaller in terms of turnover, number of employees, and investments. These differences are not, however, statistically significant.

Table 2: RDD estimates of the pre-treatment differences in turnover, size, and investment

VARIABLES	(1) Investment 2015	(2) Turnover 2015	(3) Employees 2015
RDD Estimate	-5,466	-8,634	-2.358
	(5,627)	(6,782)	(1.447)
Observations	171	171	188

Note: Standard errors in parentheses. Models are estimated using a triangular kernel function with polynomial of order one and MSE optimal bin size.

*** p<0.01, ** p<0.05, * p<0.1

4.2. Economic and Financial Outcomes

In the first part of the analysis, we study the impact of the program on firm-level yearly outcomes. First, we look at the impact of the support program on investment by year. As expected, investment in the first year of the program increased substantially for the beneficiary group. Nonetheless, no significant impact on the amount invested can be observed in subsequent years. If anything, we see a crowding out of private investment in the subsequent years for the beneficiary enterprises. In other words, the investments made in 2016 were completely offset in the following two years.

Table 3 reports the impact of the program on firm survival. Survival is measured through respondents' answers to the question regarding whether they still continue with the business venture they had applied for, regardless their beneficiary status. Around the cut-off point no significant increase in the probability of survival can be observed.

Table 3: RDD estimates on firm investment and survival

VARIABLES	(1) Investment 2016	(2) Investment 2017	(3) Investment 2018	(4) Survival
RDD Estimate	4,247**	-2,994	-2,330	0.140
	(1,992)	(3,841)	(2,121)	(0.291)
Observations	164	167	160	279

Note: Standard errors in parentheses. Models are estimated using a triangular kernel function with polynomial of order one and MSE optimal bin size.
*** p<0.01, ** p<0.05, * p<0.1

Table 4 presents the results on the total turnover of the firms. The impact of the program at the cut-off point seems to be economically quite large and negative; however, this is not statistically significant. Very similar results can be observed when analyzing the impact of the program on firm size measured through employment.

Table 4: RDD estimates on firm turnover and size

VARIABLES	(1) Turnover 2016	(2) Turnover 2017	(3) Turnover 2018	(4) Employees 2016	(5) Employees 2017	(6) Employees 2018
RDD Estimate	-7,523	-6,995	-11,127	-1.071	-1.051	-0.559
	(7,402)	(9,853)	(7,491)	(1.357)	(1.358)	(1.456)
Observations	164	166	159	184	186	186

Note: Standard errors in parentheses. Models are estimated using a triangular kernel function with polynomial of order one and MSE optimal bin size.
*** p<0.01, ** p<0.05, * p<0.1

4.3. Individual-level economic and social outcomes

Finally, we make use of the additional socio-economic variables collected through the survey. While no information on the baseline values of these indicators is available, it is still interesting to see whether there is any systematic difference between owners of treated and non-treated firms in terms of their individual well-being.

Respondents were asked to compare their quality of life to that of two years ago (at the start of the program). No significant impact of the program can be observed on the categorical variables for income, change in income, or on this subjective assessment of their quality of life. Finally, we look at the respondents' assessments of the job they are doing. The results show that those respondents who received funding from the government are not really happier with the job they are doing compared to those who did not receive funding.

Table 5: RDD estimates on individual outcomes

VARIABLES	(1) Quality of Life	(2) Monthly Net Income	(3) Change in Income	(4) Self-Fulfillment
RDD Estimate	0.490	-0.605	0.335	-0.581*
	(0.477)	(1.109)	(0.277)	(0.352)
Observations	279	263	278	278

Note: Standard errors in parentheses. Models are estimated using a triangular kernel function with polynomial of order one and MSE optimal bin size.
*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

In this paper, we study Georgia's Micro and Small Business Support program. Participant firms were assessed independently and scored through a centrally prescribed scoring system. Only business plans that scored above a certain threshold were given government subsidies. Additionally, we conducted a survey with the beneficiaries and non-beneficiaries. Using an RDD methodology, we find significant treatment effects on total firm investment in the first year of the program, but these do not last in subsequent periods. Furthermore, the financial support appears not to have had any effect on sales or employment, even early on in the program. These findings are mostly consistent with the literature on this topic, which finds a positive impact of government subsidy programs on the investments of enterprises (Criscuolo et al. 2016; Decramer and Vanormelingen 2016; Cerqua and Pellegrini 2014; Mouque 2012); however, unlike this literature we could not find any significant impact of the program on the employment, sales or longevity of firms. Moreover, entrepreneur-level outcomes in terms of socio-economic well-being seems to

have been unaffected by program participation. This remains the key preliminary contribution of our paper to the literature.

From the policy perspective, the absence of the policy impact points to potential weaknesses in the program design. The selection criteria, at least close to the threshold, does not seem to target cash-constrained firms for financial support. Independent of the targeting, it might be the case that the amount and allocation mechanism for funding is not appropriate to the needs of the firms. This could be due to the absence of sector- or region-specific criteria in the selection and disbursement of grants. Finally, this once again points to the need for more evidence-based policymaking. Appropriate measures in the program design would allow for a targeted approach to policy problems and higher efficiency of public funding.

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