THE EFFECTS OF FINANCIAL AND TECHNICAL ASSISTANCE ON EMPLOYMENT GROWTH IN BULGARIA AND MACEDONIA[1]

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Abstract

Using survey data on Bulgarian and Macedonian firms that participated in USAID programs providing technical and financial assistance for small and medium-sized enterprises (SMEs) and on firms that did not, we estimate the effectiveness of such assistance in increasing the growth of employment in the assisted firms. We control for firm characteristics, as well as for the business environment using a difference-in-differences methodology. We find that USAID assistance enabled firms in Bulgaria and in Macedonia to increase employment more rapidly, than firms that did not receive assistance did. In both countries this effect was evident over a two-year period following assistance, and in Macedonia the evidence suggests that the effect lasted for longer than this two-year period.

Keywords: *job creation, assistance to firms, small and medium-sized enterprises, foreign aid, program evaluation, USAID*

JEL Classification: D21, H25, H43, H81, P23

Introduction

One of the more troubling aspects of the economic transition in Eastern Europe has been the fact that the rapid growth of aggregate output since the early to mid-1990s has been accompanied

by stagnant or declining employment, particularly in South East Europe (SEE). This has resulted in significant gains in wages, clearly a desirable result, but in some countries, it has also resulted in high levels of unemployment or underemployment, creating a phenomenon that some observers have called "jobless growth".[4] The lack of job growth, particularly in the SEE countries has contributed to a variety of social and political problems, and dealing with them has been a serious policy concern, both in the countries of the region and among foreign assistance donors. In this paper, we examine the effectiveness of two sets of programs, those administered by USAID in Bulgaria and Macedonia, in creating jobs by providing technical and financial assistance to firms in these two countries. Our findings are based on data drawn from surveys of 200 firms in each country, about half of which received USAD assistance and half that did not. On the basis of econometric tests, we find that USAID assistance to firms in these two countries had both a statistically and an economically significantly positive effect on job growth at recipient firms.

In the next section of the paper, we briefly sketch USAID programs in the two countries, discuss issues of program evaluation, as they bear on the design of our sample surveys, and explain how firms were selected for sampling and discus the sampling procedure. In Section III, we specify and estimate an econometric model that tests for the effectiveness of USAID programs using the so-called "difference-in-differences" methodology.[5] The final section provides some quantitative estimates of the number of jobs USAID assistance provided in our sample of firms, and we conclude with some policy implications and suggestions for future research.

Evaluating job creation effects

USAID programs in Eastern Europe

In 1989 the United States Congress passed the Support for East European Democracy (SEED) Act, also known as Assistance for Eastern Europe and the Baltic States. Like similar assistance provided by the European Union (EU) and the governments of other countries, as well as by international organizations, such as the World Bank and the IMF, this assistance was at first directed toward creating the institutional infrastructure for the transition to a market economy. Thus, programs helped to support the privatization of state-owned firms, to assist counties to develop new legal and regulatory frameworks, to make governments more effective, to create market-oriented tax codes and budget systems, to support the emergence of sound financial institutions, and to open transition economies to the global economy.

Beginning in the mid-1990s, USAID's and other donors' programs in the region increasingly came to include programs for the development and expansion of the private sector, with special emphasis on small and medium enterprises (SMEs).[6] The emphasis on SME's was in part driven by the fact that such firms were a major source of job creation and dynamism in these economies.[7] SME's were seen as being particularly vulnerable to corruption, to shortcomings in contract enforcement and to a lack of access to finance. Moreover, given the lack of experience with a market economy and the large structural changes that took place in the pattern of production during the transition, managers of SMEs likely lacked both basic business skills, as well as technical skills needed to enable their firms to survive and grow in a difficult

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4   For a discussion of this phenomenon and related labor market issues see, Svejnar (2002a, b).

5   See Meyer (1995) for a description of this methodology.

6   USAID, "Work, Economic Growth, and Trade: Economic Policy," Website location: http://www.usaid.gov/our_work/economic_growth_and_trade/eg/econ_pol.html, accessed on February 23, 2007.

7   For example, Acquisiti and Lehmann (1999), Konings et al. (1996) and Konings (1997) examined Russia, Poland and Slovenia, Hungary and Romania respectively and found that SMEs were a major source of both gross and net job creation, in most cases in an environment where total employment was falling mainly as the result of net job destruction in SOEs. Also see, Haltinwanger et al. (2003) and OECD (2005) for the role of SMEs in job creation in the later phase of the transition.

economic environment. Thus, the new USAID programs were targeted toward strengthening the capacities at the firm level so as to provide managerial and technical skills to managers and their staff and to increase the availability of small credit loans, credit guarantees, and other financial support to firms. It is the capacity of these programs to enable firms to increase the number of people they employ that is the subject of this paper.

Data requirements and firm-level surveys

In an ideal environment, the effectiveness of a policy intervention at the firm level could be estimated using a random sample of firms, with information covering periods before, after, and during the period of policy intervention. If participation in the program is not random, then steps should be taken to account for the possibility of selection bias. If a random sample of firms is not available, then there should be some effort to control for differences between the firms receiving assistance and those not receiving assistance in terms of major firm characteristics such as: size, industry, location, etc., and the differences between the two groups of firms should be controlled for in the specification of the model. Unfortunately, there was no systematic collection of data on firm performance of firms either before or after they participated in USAID programs, and this data, as well as data on the performance of firms that did not participate in USAID programs had to be obtained *ex post* through field surveys.[8]

The surveys consisted of a questionnaire administered in face-to-face interviews of 20–60 minutes in Bulgaria or Macedonia respectively. Our surveyors asked for a count of employees and not the wage bill, which would be a better measure of the beneficial effects of technical and financial assistance, because it was deemed unlikely that a sufficiently large number of respondents would be able to recall the history of their wage bill in sufficient detail, and that requiring wage-bill information would introduce a bias toward larger and more successful firms. We did, however, seek to obtain information on both full-time and part-time employment in order to investigate whether part-time employees were cannibalizing the jobs of full-time workers, as well as on a number of firm characteristics and respondents' subjective perceptions of barriers to growth.

In each country the surveys were administered by a local market research firm. The objective was to obtain a sample of 100 firms that had participated in USAID assistance programs and a control group of 100 firms, known not to have received assistance, matched for location and, where possible, for business sector. Some of the programs in which firms participated are reported in Table 1, which also gives some idea of the different types of assistance provided to firms. To identify potential respondent firms that had received USAID assistance, we sought out their names in several ways. First, we combed publicly available sources of information on USAID activities. This effort yielded only a small number of contacts. Second, we asked USAID offices in each country to supply names. Third, we approached USAID contractors and implementers, in both their in-country and U.S. offices. Finally, we used data from USAID's TraiNet database. Because some of our contact data were over a decade old, we identified about 400 firms that may have received USAID assistance for each country.

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8   A shortcoming of such a retrospective approach is that firms that have not survived until the time that the sampling took place are not included. If USAID programs had some effect on firm survival rates, this effect cannot be measured.

Table 1. USAID programs with at least three contacts in sample

BULGARIA – 1034 contacts

Acronym	Program name	Predominant Assistance Type
UM	Ustoi Microfinance	Financial Assistance
BACB	Bulgarian-American Credit Bank	Financial Assistance
BAEF	Bulgarian-American Enterprise Fund	Financial assistance
EGIP	Economic Growth and Investment Program	Technical assistance
EMED	Entrepreneurial Management and Executive Development Program	Technical Assistance
FLAG	Firm-Level Assistance Group	Technical assistance
PSP	Private Sector Program	Technical Assistance
PTP	Participant Training Program	Technical Assistance
SEAF	Small Enterprises Assistance Fund	Financial Assistance
START	Strategic Technical Assistance for Results with Training Program	Technical Assistance

MACEDONIA – 786 contacts

Acronym	Program name	Predominant Assistance Type
EMED	Entrepreneurial Management and Executive Development Program	Technical Assistance
MEF	Macedonian Equity Fund	Financial Assistance
FORECAST	FORECAST	Technical Assistance
MER	Macedonia Enterprise Restructuring Program	Technical Assistance
MPA	Macedonian Privatization Assistance	Technical Assistance
MAMA / LOL	MAMA Program / Seal of Quality / Agribusiness Assistance Program	Technical Assistance
MCA	Macedonia Competitiveness Activity	Technical Assistance
Moznosti Makedonija	Moznosti Makedonija	Financial Assistance
PTP	Participant Training Program	Technical Assistance
RFI	Rural Financial Institutions Program	Technical Assistance
SEAF	Small Enterprises Assistance Fund	Financial Assistance
SME	Macedonian SME Fund	Financial Assistance
START	Strategic Technical Assistance for Results with Training Program	Technical Assistance

Source: authors' compilations

Ideally, these samples would have mirrored the balance of USAID funding for the two main types of assistance programs sponsored by USAID: technical assistance to firms and financial assistance. In fact, in both countries the number of recipients of financial assistance we were able to obtain from contractors and implementers fell short of this. Thus, we included in our potential sample every firm that received USAID-program financial assistance in our survey, and then we sampled randomly from the remaining contacts. This yielded samples with financial-to-technical assistance ratios of 15:85 in Bulgaria and 14:86 in Macedonia. Our survey firms, upon receiving the sample, analysed it by sector and geographic region and produced a matching sample of companies, not known to have received USAID assistance with the same sectoral and regional distribution as our test sample.

The surveys were administered from July to August 2007 in both Bulgaria and Macedonia. Almost half (48 percent) of contact attempts in Bulgaria led to successful interviews. The corresponding figure for Macedonia was 32 percent. Of the remaining attempts, refusals made up 16 percent of all attempted interviews in Bulgaria and 14 percent in Macedonia. The remainder of non-successful interviews resulted from scheduling problems and vacations (7 percent in Bulgaria and 13 percent in Macedonia) and bad addresses, bankrupt firms, etc. (29 percent in Bulgaria, 42 percent in Macedonia). Among firms that could be located, response rates were 76 percent in Bulgaria and 70 percent in Macedonia. Summary statistics for our sample show that in Bulgaria 50 percent of firms sampled had received their first USAID assistance before or by 2001. In Macedonia, nearly 50 percent of firms had received their first aid before or by 2003.

Before we turn to the results, we should explain why we use the number of jobs created as the measure of the effectiveness of USAID performance. Although a count of jobs created is not the best measure of the effectiveness of USAID programs, we chose this as the dependent variable for two reasons. First, it provides compatibility with other studies of job growth or job loss in transition country firms, most of which also use the number of jobs created or destroyed as the dependent variable. Our second reason is a practical one. A retrospective survey of firms, especially one that covers a period of as much as 10 to 15 years, must rely on information that is relatively easy for respondents to provide. Most firms were able to provide employment data. Asking firms to provide more complex measures, such as average wages, the growing complexity of skills required by the firm, etc., would have reduced response rates, introduced biases, and probably yielded "guesstimates" and inaccurate responses.

A difference in differences approach to measuring the effects of assistance on job growth

An intuitive and widely used model of firm growth in transition economies (Brown et al. 2004, Johnson et al. 2000) proposes that firm growth depends on the following broad categories of factors:

Firm Characteristics. In our surveys, we obtained information on firm characteristics such as age, location, business organization, size, sector of activity, export intensity, etc.

Owner and employee characteristics. We asked about owners' education, nationality, and past experience in business and government, as well as workers' education and labor union participation. We obtained data on part-time employment, as well as on the gender of employees.

Economic environment. Given the large swings in GDP encountered in the course of the transition, we used the growth of real GDP as a control for changes in the economic environment.

Business and institutional environment. We used two approaches to measure how conducive the regulatory, legal and business environment and institutions in the country were to the growth of private enterprise. One was the Index of Economic Reform compiled by the European Bank for Reconstruction and Development (EBRD). This index has the advantage of being available for the relevant period, of providing sub-indexes for various sectors and reform activities such as privatization, market liberalization, etc., and of being comparable across countries. Its disadvantages are that the categories indexed are quite broad and the index tends to focus on "formal" measures of reform performance. We supplemented the EBRD index by asking respondents to rank the importance of various types of barriers to the growth of their firms for the years during which their firm existed. We asked them to rate each barrier from

zero (no barrier to growth) to two (very serious barrier to growth). The major difference between this measure of barriers to growth and the EBRD index is that the former provides a measure of the business environment that applies to all firms, while the latter provides a firm-specific measure of each firm's perception of the effect of the environment on its ability to grow. The latter approach allows us to ask about specific barriers, such as the effect of grey market firm competition, for example. In addition, it reflects not only the existence of barriers, but also their importance to local firms and the perceived intensity of the impediment. The disadvantages of this approach include the subjective nature of the responses, the need for careful interpretation of the results, and difficulty in cross-county comparison of responses. In the event, the firm reported barriers to growth proved to be much better at explaining firm growth, than were the more general EBRD indicators.

Assistance received by firms. We asked respondents who reported receiving assistance to identify the type of aid their firm had received over the life of the firm and the source of the assistance. For USAID assistance, we constructed three variables. The first indicates whether the firm had received USAID assistance. The second distinguished between technical assistance and financial assistance. The third recorded whether the firm received assistance, regardless of source or nature, after the initial experience with USAID.[9]

A comprehensive model based on a longitudinal survey of firms that covers both firms receiving USAID assistance, as well as those not receiving it, can be specified as:

$$gemp_{i,t} = F\,(Firm\ characteristics_{i,t}, Owner\ and\ employee\ characteristics_{i,t},$$
$$Economic\ Environment_{i,t,\ (or\ t)},\ Business\ and\ institutional$$
$$environment_{i,t\ (or\ t)},\ Assistance\ received\ by\ firms_{i,t}\,)\qquad\text{Eq. 1}$$

The dependent variable is defined as year-to-year growth in the number of full-time workers in firm *i* in year *t*, where *t* is time and *i* is an index of the 200 firms in each national sample:

$$gemp_{i,t} = y_{i,\,t}\,/\,y_{i,\,t-1}\qquad\qquad\qquad\text{Eq. 2}$$

where $y_{i,\,t}$ is the number of full-time workers in year *t* in firm *i*.

We began by testing firm characteristics and relevant responses to the survey questionnaires for inclusion in regressions based on Equation 1. In doing so, we discarded variables lacking explanatory power and focused our efforts on variables with a clear economic, or policy rationale for inclusion in the regression equations. To facilitate the discussion of the results, brief definitions of these variables are provided in Table 2.

Table 2. Definition of variables

Variable	Definition
gemp	growth of employment = y_t/y_{t-1}, data from 1991 to 2007. We exclude the year of establishment or last change of ownership
	Firm and Owner Characteristics
size	firm size measured by employment
parttime	ratio of part-time employees to full time employees in year t
sector	sector dummy = 1 for industry and/or services with agriculture as the base
exports	1 if exports are more than 50% of production, 0 otherwise

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9 The number of respondents who received additional assistance after their work with USAID was small enough that it would not have been useful to distinguish between different types of "post-USAID" assistance.

owner_ed	1 if the owner has a higher degree, 0 otherwise
employee_ed	1 if the one or more employees have a higher degree, 0 otherwise
foreign	1 if at least 1 major partner/owner is reported as being a foreigner
age	Number of years of existence of the firm in year t
union	1 if at least 50% of employees are members of a union
	Economic Environment
gdp	gdp growth = log(gdp_t)-log(gdp_t-1)
	Environmental Barriers to Growth
mgrskill	availability of skilled managers rated from 0 = easy to find managerial skills for the firm to 2 = finding managerial skills very difficult
laborav	labor force availability rated from 0 = easy to obtain appropriate labor skills, to 2 = finding workers with appropriate skills very difficult
buspremise	obtaining business premises rated from 0 = easy to 2 = very difficult to find business premises
intfin	internal finance rated from 0 = could finance firm's needs internally to 2 = lack of internal finance a serious barrier to growth
extfin	external finance rated from 0 = easy to obtain eternal financing to 2 = very difficult to obtain outside financing
inputs	business services inputs rated from 0 = easy to obtain business services to 2 = difficult to obtain business services
taxes	taxes a burden on growth rated from 0 = taxes not a burden to 2 = taxes are a serious burden
blackkmkt	competition from unregistered firms rated from 0 = competition from grey economy not a serious impediment to 2 = grey economy is a very serious impediment
busenv	business environment- registration and regulation rated from 0 = not a barrier to firm performance to 2 = serious barrier to firm performance
legaldisp	legal disputes rated from 0 = not a serious barrier to firm performance to 2= serious barrier
	External Assistance to the Firm
T	=dummy variable = 1 for receiving any USAID assistance
T1	=dummy variable = 1 for receiving non-financial assistance from USAID
T2	=dummy variable for receiving financial assistance from USAID
T3	=dummy variable for receiving USAID or other assistance subsequent to the first receipt of USAID assistance

A key issue with respect to the specification of Equation 1 is how to measure the duration of the effects of USAID assistance and the relative effectiveness of different kinds of USAID programs*.* In order to gauge whether the effect of USAID intervention was mainly short-term or lasted for a longer period, we constructed "received assistance" or "T" variables in two different ways. To test for long-term effectiveness of assistance, we set a T variable for a firm to zero in years prior to its first participation in a USAID program and one for all subsequent years, as shown in Figure 1. Firms in the control group have a value of zero for all years. A significantly positive value for this variable implies that the annual growth rate of jobs in that firm was, on average, higher in the post-participation years than it was in both the firm's pre-participation years and in firms that did not receive USAID assistance. The extent to which this variable is able to measure long-term effects must be interpreted in the context of the discussion above of the length of our sample and the years in which firms participated in USAID programs. For many firms in the sample, the "long-term" may not encompass more than three or four years.
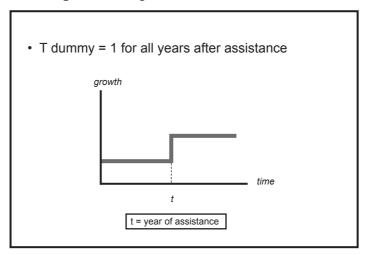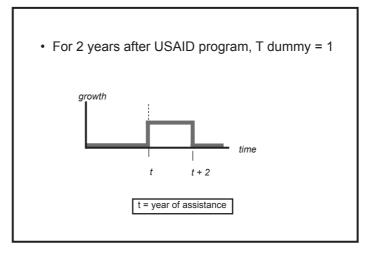
Figure 1. Long - term effect of assistance

We also tested for short-term effectiveness of USAID programs. In this case, the value of T was set equal to one for the two years following USAID assistance and zero for all other years, as shown in Figure 2. This two-year effect is a longer time period than the one-year effect measured in a number of other studies. A significant coefficient for T in this specification indicates that the annual growth of employment in the firm was greater in the two years after participating in a USAID program, than it was in other years and in firms that did not receive USAID.

Figure 2. Short - term effect of assistance

The type of USAID assistance was also specified in several different ways. In one case, all USAID programs were included in a single T variable. A significant coefficient for this variable signifies that any type of USAID program had a significant effect on job growth, either for two years or longer, depending on the values of the short-term and long-term variables. We also separated USAID programs into two types, those involving non-financial assistance and those that involved financial assistance.[10] In this case, the specification included two T variables, one set to 1, if the firm

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10 We had originally planned a much finer-grained analysis, but given the relatively small number of programs for which we had
sufficient detail on the nature of a firm's participation, the only distinction we could make reliably across programs was "technical
assistance" vs. "financial assistance."

received non-financial assistance and the other set to 1, if the firm received financial assistance. If the coefficient values for the two aid variables were significant, but differed from each other we could conclude that both types of assistance increased job growth, but that one did so more than the other, providing a measure of differences in program effectiveness. We also included an assistance dummy to capture the effect of subsequent assistance on firm growth.

For each country, the sample consisted of a panel of approximately 200 firms, 100 that we had identified as having received USAID assistance and 100 that had not. We used both the full sample period, starting from 1991, as well as a reduced sample period, starting in 2000. The latter provided more robust parameter estimates in some cases, because much of the USAID assistance was received after 2000. The choice of the terminal year depended on the availability of exogenous variables.[11] A variety of specifications of Equation 1 was used to derive our conclusions regarding the effect of USAID programs on firm growth.[12] In part, this is because there is no *a priori* expectation that all of the explanatory variables, e.g. firm characteristics (location in capital city vs. outlying areas; industry vs. services; unionized or not, etc.), should lead to significant differences in firms' ability to increase employment. Moreover, a relatively full set of explanatory variables uses up a large number of degrees of freedom and, in part due to multi-colinearity among some explanatory variables, results in high standard errors. We experimented with a variety of specifications that utilized subsets of the explanatory variables by dropping explanatory variables that seemed the least informative. Some typical regression results for Bulgaria are reported in Table 3 for the short-term effect of assistance and those for Macedonia for the long-term and short-term effect of assistance are reported in Tables 4 and 5. We do not report results for the long-term effect of assistance in Bulgaria, because the effect of assistance in the long-term specification was generally not significant. Coefficients the values of which are significantly different from zero at least at the 10% level are marked in bold.

Table 3. Sample regression for Bulgaria
(dependent variable: short-term employment growth)

Variable	Coefficient	Std. Error	t-ratio	P>|t|
T	**0.2078**	**0.0895**	**2.32**	**0.053**
mgrskill	**-0.8275**	**0.3238**	**-2.56**	**0.038**
laborav	-0.1517	0.1754	-0.86	0.416
buspremise	0.0241	0.1442	0.17	0.872
inputs	0.0705	0.1199	0.59	0.575
taxes	0.0341	0.2083	0.16	0.874
intfin	**0.6430**	**0.1666**	**3.86**	**0.006**
extfin	**-0.3996**	**0.1705**	**-2.34**	**0.052**
blkmkt	0.0284	0.1152	0.25	0.812
age	**-0.0963**	**0.0382**	**-2.52**	**0.040**
size	**0.6623**	**0.2578**	**2.57**	**0.037**
parttime	**-0.1273**	**0.0364**	**-3.50**	**0.010**
constant	**0.8571**	**0.2675**	**3.20**	**0.015**

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11 In a few cases firms were dropped because of missing data.

12 It is common in studies that seek to find the effect of aid programs, treatments, policy interventions, etc., to employ statistical procedures that take into account the fact that the "treated" firms may, as evidenced by the fact that they were selected for the treatment, have characteristics that made them better suited to benefit from the treatment. Such a procedure is especially appropriate if the sample is a random draw. In our case, however, the sample of non-treated firms was selected to have the same characteristics as the treated firms. Moreover, because we use the "differences in differences" method (Meyer, 1995), we also test each firm's performance against itself, not only against untreated firms.

Table 4. Sample regression for Macedonia
(dependent variable: long-term growth)

Variable	Coefficient	Std. Error	t-ratio	P>|t|
T	**0.1702**	**0.0847**	**2.01**	**0.045**
T3	-0.2118	0.1458	-1.45	0.147
age	**-0.0074**	**0.0028**	**-2.59**	**0.010**
owner-ed	0.0897	0.0780	1.15	0.251
employee_ed	0.0503	0.0753	0.67	0.504
laborav	-0.0051	0.0395	-0.13	0.897
buspremise	-0.0587	0.0510	-1.15	0.250
inputs	0.0504	0.0532	0.95	0.344
taxes	0.0563	0.0452	1.25	0.213
intfin	0.0271	0.0618	0.027	0.661
extfin	-0.0178	0.0684	-0.26	0.795
busenv	**-0.0967**	**0.0513**	**-1.89**	**0.060**
legaldisp	0.0122	0.0373	0.330	0.744
blackmkt	-0.0523	0.0361	-1.45	0.149
size	0.0141	0.0120	1.18	0.238
parttime	-0.0040	0.0036	-1.12	0.265
industry	**-0.2020**	**0.0731**	**-2.76**	**0.006**
constant	**1.2767**	**0.0897**	**14.23**	**0.000**

Table 5. Sample regression for Macedonia
(dependent variable: short-term growth)

Variable	Coefficient	Std. Error	t-ratio	P>|t|
T1	**0.4464**	**0.2268**	**1.97**	**0.050**
T2	0.3160	0.3641	0.87	0.387
T3	0.3160	0.3641	0.87	0.387
age	**-0.0531**	**0.0142**	**-3.74**	**0.000**
size	**-0.1197**	**0.0678**	**-1.76**	**0.081**
parttime	-0.0106	0.0112	-0.95	0.346
services	**1.1947**	**0.3145**	**3.80**	**0.000**
mgrskill	**0.2207**	**0.0855**	**2.58**	**0.011**
busenv	0.013122	0.1753	0.07	0.940
employee_ed	**0.7203**	**0.2350**	**3.07**	**0.003**
extfin	0.3641	0.2492	1.46	0.147
intfin	-0.3525	0.2425	-1.45	0.149
laborav	**-0.2671**	**0.1554**	**-1.72**	**0.089**
inputs	**-0.3567**	**0.1443**	**-2.47**	**0.015**
taxes	-.0011109	.1501152	-0.01	0.994
legaldisp	-0.1359	0.1470	-0.92	0.358
blackmkt	**-0.4323**	**0.1179**	**-3.67**	**0.000**
constant	**1.754**	**0.2419**	**7.25**	**0.000**

The results for Bulgaria and Macedonia yield robust and significant conclusions about the effectiveness of USAID programs, as well as some additional information about the influence of environmental variables and firm and employer characteristics on job growth. Among the firm characteristics that were often significant across specifications were firm size and age. Also noteworthy was the fact that completion from unregistered firms and grey or black market competitors were often mentioned as barriers to firm growth by Macedonian respondents. Conclusions regarding the effectiveness of assistance are summarized in Table 6.

Table 6. Summary of difference in differences estimates of the effect of USAID programs on job growth in Bulgaria and Macedonia

	Difference in differences estimate of effect	
Significant effect of:	**Bulgaria**	**Macedonia**
Long -term effect of:		
All USAID assistance	**No**	**Yes**
Technical assistance	**No**	**Yes**
Financial assistance	**No**	**No**
Post USAID assistance	**No**	**No**
Short - term effect of:		
All USAID assistance	**Yes**	**Yes**
Technical assistance	**Yes**	**Yes**
Financial assistance	**No**	**No**
Post USAID assistance	**No**	**No**

In Table 6 we report positive and significant effects of USAID assistance on job growth in Bulgaria and Macedonia in the short run and also in Macedonia in the long run. We report "yes" in Table 6, signifying evidence of positive effects of USAID assistance on job growth at recipient firms, if the coefficient for the relevant dummy T variable is statistically significant at the 5% level. As a partial robustness check, we require that the coefficient for T be significant across several different specifications, because there is no theoretical guidance on which explanatory variables should be included in the specification. Second, if some subsets of explanatory variables yield a significant T coefficient for one country, we require that we find a significant T coefficient for some of the same subsets of explanatory variables in the other country, in order to report a "yes" for both countries of the identical treatment. That is to say, we require that, in order to report "yes" for both countries, there must be identical specifications of Equation 1 that yield a significant T coefficient for both countries. We encountered no case where we found that specifications in one country that yielded a significant effect for assistance did not yield a significant value for T in the other country. In the case of long-run effectiveness, there were specifications that yielded a significant coefficient for T for Macedonia, but these specifications did not yield a significant coefficient using Bulgarian data. Further, we were not able to obtain significant coefficients for T in the long-term model for Bulgaria using other specifications. On the other hand, in the case of short-run effectiveness, there were several specifications where the T coefficient was significant for both Macedonia and Bulgaria, and thus we report "yes" for both countries.

It is worth remarking that it is not necessary to use identical specifications for both countries in order to infer the effectiveness of USAID assistance, but we chose to use this approach to impose a higher burden for claiming program efficiency and not simply to try to show effectiveness by seeking out one or two specifications for each country that would yield a significant T coefficient.

In the case of Macedonia, the effects of all USAID assistance and of USAID technical assistance are significant and positive, both for the two-year horizon and for the longer term, although, of course, the length of the longer term varies from firm to firm. The inability to obtain a significant coefficient for financial assistance is likely due to the small number of firms in our sample that received financial aid. In the case of Bulgaria, the regressions seeking to find a long-term impact of USAID program participation on employment growth yielded no significant coefficients for the variables indicating participation in USAID programs, but there was a significant increase in the growth rate over the two-year horizon for all firms participating in USAID programs, as well as for firms participating in technical assistance. Part of the reason for our inability to obtain significant long-term effects for USAID programs in Bulgaria, and as well as for assistance offered by other aid donors may well be due to the large proportion of the firms in our sample that received assistance late in the sample period.

Economic implications and conclusions

Beyond statistical significance, what is more important for program evaluation is the magnitude of the effect of USAID assistance on job growth. This can be approximated by comparing the value of the coefficient for T relative to the value of the dependent variable in the difference in differences method. The mean value of employment growth in our sample of both treated and untreated firms over the sample period was about 9% for Bulgaria and 13% for Macedonia. The value of the coefficient for the short-term T dummy in Bulgaria is about 0.07 in the difference in differences estimations. This means that job growth in Bulgarian firms that received USAID assistance was about double that of the entire sample for the two years following the receipt of USAID assistance. In the case of Macedonia, the growth effects of USAID programs were even stronger*.* First, they were found to be significant for the two-year period, as well as for the longer period, where we seek above-average growth for all years subsequent to the firm's participation in a USAID program. Second, the absolute value of the T coefficients was greater in the case of Macedonia than in Bulgaria. The mean job-growth for our sample was about 1.13 and the T coefficients ranged in value from 0.12 to 0.20 across a range of specifications for the difference-in-differences estimates. Thus, Macedonian firms that received USAID assistance grew at a rate roughly equal to 13 + (12 to 20) = 25 to 33% per year. The Macedonian firms that received USAID assistance had average employment of slightly over 40 workers, and so they employed about 4,100 workers. The faster growth thus created 490 to 1100 additional jobs in the first year and even more additional jobs in the second year following the receipt of USAID assistance. This represents a major positive effect on employment at these firms, and it is clear evidence that the assistance that these firms received did have a major impact on their ability to create new jobs.

We close this discussion with two caveats. First, there is the possibility that these estimates of the positive effects of USAID programs may be biased upwards, because our sample was limited to firms that were still in existence in 2007. Firms that went out of business after participating in USAID programs were not included in the sample, limiting us to measuring growth at "successful" firms. Second, in our specifications, we treat all USAID programs as being the same, other than the distinction we make between financial and non-financial assistance. Thus, differences in the design, implementation and effectiveness of USAID programs across countries may be responsible for some of the evident differences in outcomes across countries. While we have used a broad categorization of USAID programs, clearly within each category there are different contractors and program designs. A more extensive review of these programs might reveal differences in program design that explain some of the difference in cross-country performance of assistance programs revealed by our study.

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