

Do Government Private Subsidies Crowd Out Entrepreneurship?

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Abstract

Although several studies have found a negative relationship between government spending and entrepreneurship, much debate remains regarding the components of government spending responsible for this association. This paper contributes to the literature by specifically exploring the relationship between government private subsidies and entrepreneurship. By

combining macroeconomic government spending data with individual level entrepreneurship data, the paper finds a negative association between the share of private subsidies and entrepreneurship. However, findings are less straightforward when the analysis delves deeper into the components of private subsidies and their association with different kinds of entrepreneurship.

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1. Introduction

Recent empirical literature on entrepreneurship and institutions has established a negative correlation between total government spending and the initiation of startups. Reasons attributed for this relationship have ranged from the regulatory burden faced by firms to the presence of a large welfare state (see Aidis et al., 2012 for a review). The intuition is that larger welfare payments increases disincentives to engage in entrepreneurial activities by raising the opportunity cost of entrepreneurship. In this study we refine the hypothesis by specifically exploring the relationship between government private subsidies and entrepreneurship. Thus we test an alternative viewpoint to the narrative in the literature; the expansion of government spending goes hand in hand with private subsidies, and that could possibly be the culprit for the observed negative correlation between government spending and entrepreneurship instead of the expansion of welfare expenditures. The relationship between government private subsidies and entrepreneurship has to our knowledge not been explored in the literature.

Private subsidies, typically targeted towards large private sector firms, have little or no economic justification as a form of government intervention, i.e., they do not aim to alleviate any market failure. They are typically justified under the guise of “economic development.” They tend to be captured by large firms and induce a great degree of rent seeking activities. Examples include agricultural subsidies, fuel and energy subsidies, manufacturing subsidies, marketing subsidies, as well as exorbitant national defense spending.

The mechanisms linking government private subsidies to entrepreneurship are essentially threefold. (i) Increases in government private subsidies may crowd out the private sector, creating potential barriers to entry for new firms as the existing firms that capture the subsidies enjoy specific advantages over new entrants. This, of course, increases the cost of engaging in entrepreneurial activities. (ii) Private subsidies tend to attract a great deal of rent seeking as the benefits accrue to small groups in the economy who can

more efficiently lobby for rents. Thus rent seeking activities may attract labor from different sectors of the economy, potentially depriving the economy of potential entrepreneurs. (iii) Increases in private subsidies can come at the cost of spending on public goods such as education and health. The positive correlation between education attainment and entrepreneurship has well been established (Parker, 2004). Thus private subsidies may crowd out the government budget at the cost of other types of spending that may encourage entrepreneurship.

Our empirical strategy is to exploit individual level variation in entrepreneurship activity and cross country variation in government spending. To achieve this we combine cross-country micro-economic panels from the Global Entrepreneurship Monitor with country-specific government spending data. Our data cover 43 countries, spanning 2001-2009 for about 360,000 observations¹. Concerns about simultaneity bias are ameliorated in our use of aggregate country-level explanatory variables because the individual decision of a potential entrepreneur should not affect country-level factors. However, endogeneity may arise because the mean country-level individual entrepreneurship outcome may affect some of the country-level variables, so we lag all our macroeconomic and institutional variables by one year.

2. Empirical Methods

We obtain individual level data from the Global Entrepreneurship Monitor (GEM). The data are generated through stratified samples of 2,000 individuals surveyed per country. We use two definitions of entrepreneurship. The first definition is the standard definition by Reynolds et al. (2005) and is already available in the GEM data set. An individual is considered a nascent entrepreneurs if he or she is between

¹ List of countries include: Algeria, Argentina, Australia, Bolivia, Chile, China, Croatia, Czech Republic, Denmark, Egypt, Arab Rep., Finland, Greece, Guatemala, Hungary, India, Iran, Islamic Rep., Italy, Jordan, Kazakhstan, Latvia, Lebanon, Malaysia, New Zealand, Norway, Philippines, Poland, Portugal, Romania, Russian Federation, Serbia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Syrian Arab Republic, Thailand, Uganda, United Kingdom, United States, Uruguay, Venezuela RB.

the ages of 18 and 64 and has taken some action towards starting a business in the last year, and expects to own or share the business they are starting, which must not have paid any wages or salaries for more than 3 months (nascent startups). The second definition uses the standard definition of entrepreneurship with the additional requirement that the entrepreneurs expect to create ten jobs or more within the next five years, a definition also used by Estrin and Mickiewicz (2011) to identify high aspiration entrepreneurs. The cut-off point of ten jobs or more was selected as it is consistent with the standard distinction between small and micro enterprises. In our sample, the mean percentage is 4.8% for nascent startups and 1.6% for high aspiration startups.

We obtain government spending data on private subsidies from the International Monetary Fund's Government Financial Statistics (GFS). Our key variable of interest is the share of government spending on private subsidies over total government spending. We define government spending in private subsidies as spending on agriculture, forestry (timber), hunting, fishing, wildlife, energy and fuel, manufacturing, mining, and defense spending. The advantage of using the shares of spending is twofold – first we obtain unit free measures of spending devoid of currency and inflation fluctuations, and second we identify the source of financing of private subsidies being all other types of government spending given that we control for total government consumption in the estimations. In the sample, the share of private subsidies in government spending has a mean of 8.6% with the minimum being 2.1% (Ireland) and the maximum being 31.6% (Syria).

We control for several macro-economic factors such as the level development of the economy and as well as the quality of institutions. We also include controls for individual characteristics such as education, age, and connection to networks. Our choice of control variables are the same as those used in the literature (Estrin and Mickiewicz, 2011; Aidis et al., 2012). Our estimation model is a random country effects probit model with fixed year effects.

$$(1) \quad \text{Prob(Entry)}_{ijt} = f(\text{Share of private subsidies}_{jt}, \text{Total Government consumption}_{jt}, \text{Investment}_{jt}, \text{GDP/Capita}_{jt}, \text{GDP growth rate}_{jt}, \text{Individual level controls}_{ijt})$$

Where i denotes individuals, j denotes country, and t denotes time. Entry is a dummy equal to 1 if the individual is engaged in nascent entrepreneurial activity. We also include our second definition of entrepreneurship with the additional requirement of having the intention to create 10 or more jobs.

3. Results

Column 1 of table 1 presents the results for nascent entrepreneurship and the share of total private subsidies. In both cases we have a negative correlation between the share of government spending in private subsidies and entrepreneurial activity with at least a 5% level of statistical significance. A natural extension would be to see if the components of private subsidies have a significant correlation with entrepreneurial activity. Thus for columns 2 through 5, we present the results for Defense spending, Agriculture, forestry & fishing, Fuel & Energy, Manufacture & mining subsidies respectively. This is the finest level of spending categorization available in the GFS database. All coefficients are negative, with only defense, and Fuel & Energy being statistically significant at the 1 % level. The coefficients for the controls are also consistent with the literature with education and network variables having a positive correlation with entrepreneurial activity.

Table 2 follows the same pattern as table 1 with the exception of the dependent variable which is nascent entrepreneurship with the expectation of creating 10 or more jobs. The rationale for this measure is to weed out individuals who wish to engage in entrepreneurship mainly as a means of self-employment due to the lack of other alternatives. The basic results for aggregate private subsidies and entrepreneurial activity stand; there is a negative relationship that is statistically significant at least at the 10% level.

However, the results for the components of private subsidies are in contrast to table 1. In table 2, Agriculture and Manufacture & mining subsidies have a significant negative correlation with entrepreneurial activity, in contrast to table 1 where only defense and energy subsidies were significant.

The take away point is that on the aggregate we do see a negative correlation between government private subsidies and different measures of entrepreneurial activity. However, the story is more complex when private subsidies are disaggregated, potentially inviting areas of future research.

4. Conclusions

Inspired by studies linking total government spending and entrepreneurial activity, we extend the literature by exploring the relationship between government private subsidies and entrepreneurial activity and find a negative correlation. We find this relationship is consistent regardless of the definition of entrepreneurial activity we use, or whether or not we consider defense spending to be a private subsidy. We do find some puzzling results at further disaggregation of private subsidies which may imply that reducing private subsidies cannot be achieved piecemeal but must be attempted through a broad spectrum if the objective is to increase unfettered entrepreneurial activity.

Although we do point out the advantages of diminishing spending in private subsidies on entrepreneurial activity, we do accept that policy may not be practically feasible. The political backlash that may follow for anyone opposing private subsidies may create cause for hesitancy for embarking on any policy to reduce private subsidies. Regardless, there are important tradeoffs but one should note that unwarranted government intervention may have far more negative consequences in addition to limiting entrepreneurial activity.

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Table 1: Government Private Subsidies and Nascent Start Ups

Dependent variable: Start-up	(1) coef/se	(2) coef/se	(3) coef/se	(4) coef/se	(5) coef/se
Share of private subsidies lagged by 1 year	-1.360*** (0.407)				
Share of defense spending lagged by 1 year		-1.334** (0.522)			
Share of Ag, Fishing, Forestry, Hunting spending lagged by 1 year			-0.107 (1.132)		
Share of Fuel and Energy spending lagged by 1 year				-7.223*** (1.182)	
Share of mining, manufacturing & construction spending lagged by 1 year					1.878 (3.082)
Share of government consumption - 1 year lag	-2.824*** (0.936)	-2.687*** (0.923)	-2.422*** (0.892)	-7.746*** (1.218)	-7.529*** (1.291)
Share of investment - 1 year lag	0.025 (0.219)	-0.113 (0.229)	0.060 (0.218)	1.286*** (0.352)	0.672*** (0.248)
Currently own or manage a business	0.414*** (0.009)	0.414*** (0.009)	0.414*** (0.009)	0.421*** (0.009)	0.423*** (0.009)
Knows Entrepreneurs - Personally know someone who started a business in the last	0.378*** (0.008)	0.378*** (0.008)	0.379*** (0.008)	0.369*** (0.008)	0.382*** (0.008)
Fear of failure would prevent start up engagement	-0.240*** (0.009)	-0.240*** (0.009)	-0.240*** (0.009)	-0.248*** (0.009)	-0.246*** (0.009)
Female	-0.125*** (0.008)	-0.126*** (0.008)	-0.126*** (0.008)	-0.129*** (0.008)	-0.128*** (0.008)
Age	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)	0.019*** (0.002)	0.017*** (0.002)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Currently works part-time or full-time	0.205*** (0.010)	0.205*** (0.010)	0.204*** (0.010)	0.199*** (0.011)	0.191*** (0.011)
Attained some secondary degree	0.126*** (0.030)	0.134*** (0.030)	0.138*** (0.030)	0.134*** (0.032)	0.105*** (0.032)

Attained some post-secondary degree	0.202*** (0.031)	0.210*** (0.031)	0.214*** (0.031)	0.206*** (0.032)	0.180*** (0.033)
Attained some graduate degree	0.211*** (0.032)	0.218*** (0.032)	0.222*** (0.032)	0.214*** (0.034)	0.188*** (0.034)
Business angel - personally provided funds for other start-ups	0.259*** (0.015)	0.259*** (0.015)	0.259*** (0.015)	0.275*** (0.015)	0.268*** (0.015)
Constraints on executive - 1 year lag	0.045*** (0.013)	0.032** (0.013)	0.036*** (0.013)	0.085*** (0.015)	0.042*** (0.013)
Annual GDP per capita growth - 1 year lag	-0.005* (0.003)	-0.005* (0.003)	-0.006** (0.003)	-0.001 (0.003)	-0.001 (0.003)
Log Real GDP per capita (USD \$2000) - 1 year lag	-0.128*** (0.037)	-0.104*** (0.035)	-0.100*** (0.034)	-0.181*** (0.050)	-0.098** (0.041)
Constant	-0.840** (0.363)	-1.006*** (0.345)	-1.229*** (0.327)	-0.813* (0.459)	-1.160*** (0.400)
Year effects	YES	YES	YES	YES	YES
Number of observations	365,592	365,592	365,592	344,058	347,455
Number of countries	43	43	43	41	41
Log likelihood	-61608	-61611	-61614	-57025	-56908
Wald Chi sq.	10351	10349	10346	9806	9845

note: *** p<0.01, **
p<0.05, * p<0.1

Table 2: Government Private Subsidies and High Aspiration Start Ups

Dependent variable: Start-up, expects 10 jobs or more	(1) coef/se	(2) coef/se	(3) coef/se	(4) coef/se	(5) coef/se
Share of private subsidies lagged by 1 year	-0.954** (0.472)				
Share of defense spending lagged by 1 year		-0.634 (0.574)			
Share of Ag, Fishing, Forestry, Hunting spending lagged by 1 year			-4.053*** (1.382)		
Share of Fuel and Energy spending lagged by 1 year				0.216 (1.196)	
Share of mining, manufacturing & construction spending lagged by 1 year					-10.528*** (3.972)
Share of government consumption - 1 year lag	-1.735 (1.100)	-1.640 (1.068)	-1.614 (1.086)	-3.735*** (1.284)	-2.604** (1.300)
Share of investment - 1 year lag	0.051 (0.290)	-0.035 (0.288)	0.087 (0.288)	-0.258 (0.407)	0.504 (0.319)
Currently own or manage a business	0.199*** (0.014)	0.199*** (0.014)	0.199*** (0.014)	0.210*** (0.014)	0.202*** (0.015)
Knows Entrepreneurs - Personally know someone who started a business in the last	0.367*** (0.012)	0.367*** (0.012)	0.367*** (0.012)	0.357*** (0.013)	0.366*** (0.013)
Fear of failure would prevent start up engagement	-0.240*** (0.013)	-0.240*** (0.013)	-0.240*** (0.014)	-0.241*** (0.014)	-0.246*** (0.014)
Female	-0.213*** (0.012)	-0.213*** (0.012)	-0.213*** (0.012)	-0.220*** (0.013)	-0.226*** (0.013)
Age	0.009*** (0.003)	0.009*** (0.003)	0.009*** (0.003)	0.016*** (0.003)	0.012*** (0.003)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Currently works part-time or full-time	0.141*** (0.015)	0.140*** (0.015)	0.140*** (0.015)	0.118*** (0.016)	0.118*** (0.016)
Attained some secondary degree	0.086* (0.048)	0.093* (0.048)	0.100** (0.048)	0.124** (0.051)	0.113** (0.052)
Attained some post-secondary degree	0.210*** (0.049)	0.216*** (0.049)	0.223*** (0.049)	0.241*** (0.051)	0.234*** (0.053)
Attained some graduate degree	0.212*** (0.051)	0.218*** (0.051)	0.225*** (0.051)	0.256*** (0.053)	0.236*** (0.054)
Business angel - personally provided funds for other start-ups	0.303*** (0.020)	0.303*** (0.020)	0.304*** (0.020)	0.322*** (0.020)	0.319*** (0.020)
Constraints on executive - 1 year lag	0.031* (0.018)	0.025 (0.018)	0.043** (0.019)	0.044** (0.020)	0.036* (0.020)
Annual GDP per capita growth - 1 year lag	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)	0.000 (0.004)	0.000 (0.004)
Log Real GDP per capita (USD \$2000) - 1 year lag	-0.130*** (0.038)	-0.110*** (0.034)	-0.140*** (0.037)	-0.132*** (0.040)	-0.137*** (0.039)

Constant	-1.184***	-1.368***	-1.208***	-1.374***	-1.399***
	(0.374)	(0.341)	(0.349)	(0.375)	(0.376)
Year effects	YES	YES	YES	YES	YES
Number of observations	363,772	363,772	363,772	342,530	345,852
Number of countries	43	43	43	41	41
Log likelihood	-25620	-25622	-25618	-23648	-23572
Wald Chi sq.	3619	3619	3623	3432	3442

note: *** p<0.01, **
p<0.05, * p<0.1