"Entrepreneurs out of necessity": a snapshot

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Abstract

"Entrepreneurs out of necessity" as identified by the Global Entrepreneurship Monitor (GEM) survey are a sizeable group across countries. This paper documents that they tend to have low education, run smaller firms, expect their firms to grow less, but are likely to stay in the market. This evidence matters for policy supporting small businesses. It is a challenge for existing theories of heterogeneous firms and points to the importance of heterogeneous outside options.

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1 Introduction

Growth theory, in particular of the Schumpeterian variety, identifies entrepreneurs as a crucial engine of growth. Similarly, policy makers appear convinced that entrepreneurship is a universally beneficial phenomenon. Yet the reality of firms is more nuanced: most firms are small, and only some grow substantially, suggesting that not all entrepreneurs are drivers of growth.

Indeed, at the opposite end of the spectrum there are "entrepreneurs out of necessity" who, when asked in the Global Entrepreneurship Monitor (GEM) survey "Are you involved in this start-up/firm to take advantage of a business opportunity or because you have no better choices for work?", opt for the latter. The GEM dubs these people "entrepreneurs out of necessity".[1]

Figure 1 shows that they make up a sizeable fraction of entrepreneurs, in particular in countries characterized by high entrepreneurship rates.[2] As a result, they do not just account for a larger proportion of entrepreneurs, but also for a larger proportion of the labor force in these countries. What is more, these countries also tend to have low GDP per capita, implying that necessity entrepreneurs may be of importance for understanding development.[3]

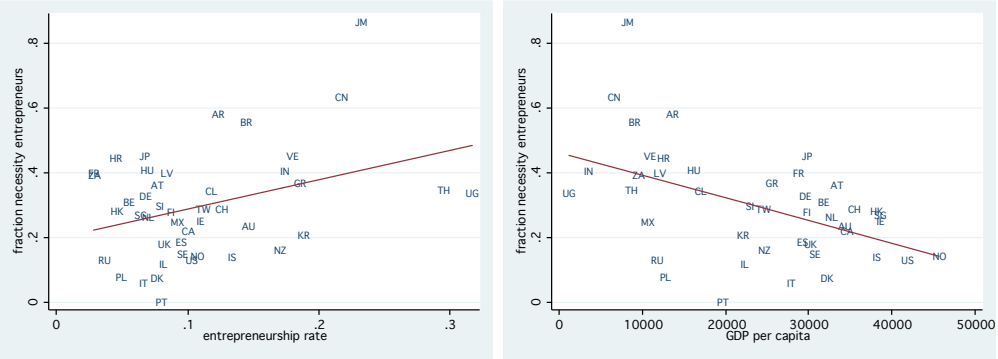
Knowledge of these relationships might well temper the rosy view of high entrepreneurship rates in developing countries that some policy maker in industrialized economies often express. Instead, more information about necessity entrepreneurs helps provide a rounded perspective on entrepreneurship in general and its importance for development more specifically. It also helps policy design, since many policies bent on promoting entrepreneurship are bound to be taken up not just by "opportunity

[1]The GEM data, now broadly used in entrepreneurship research, consists in cross-country micro data with a focus on entrepreneurs, collected in a harmonized way. For details, see Reynolds et al. (2005) and `http://www.gemconsortium.org/`.

[2]Here and in the following, respondents are classified as entrepreneurs if they derive income from running a business of which they own a share, whether they employ others or not.

[3]See Gollin (2007) for an analysis of GDP per capita and self-employment rates more broadly.

Figure 1: The fraction of necessity entrepreneurs across countries and ...



(a) the entrepreneurship rate (b) GDP per capita

Notes: GEM micro data, country averages for 2001-2005 reported, entrepreneurs only, classifying as entrepreneurs respondents who derive income from running a business of which they own a share, whether they employ others or not. Observations for countries with at least 100 responses to entrepreneurship out of necessity question. Respondents aged 18-64. GEM weights for this population group used. In addition, real GDP per capita for 2005 at purchasing power parity from the Penn World Tables (Summers and Heston 1991, Heston, Summers and Aten 2009). All plotted OLS regression lines are significant at the 5% level.

entrepreneurs", but also, and maybe even more so, by "necessity entrepreneurs".

This paper documents who these necessity entrepreneurs are, and what the firms they run are like, using recent GEM micro data. Knowledge of the characteristics of necessity entrepreneurs can then inform policy design.

It can also help theory. There is no space for necessity entrepreneurs in most standard theories of heterogeneous firms and entrepreneurship, where typically only the most productive firms survive (see e.g. Jovanovic 1982, Hopenhayn 1992, Melitz 2003). Introducing self-employment in such a model does not change this (Gollin 2007). While some entrepreneurs may tolerate low performance e.g. because they like being their own boss (Hamilton 2000), it seems unlikely that they would classify themselves as necessity entrepreneurs. The existence and relative prevalence of necessity entrepreneurs in poorer countries may instead point to the importance of theories where the alternative to entrepreneurship matters and individuals may be pushed into entrepreneurship due to unsatisfactory outside options (see e.g. Poschke 2010).

2 Characteristics of "necessity enterprises"

This section describes the firms run by necessity entrepreneurs, while the next section describes their owners. The GEM data set provides quantitative information on a few firm attributes, in particular current and expected future employment and firm age. Unfortunately, only very rough information on income from the firm is available. Therefore, I use the more detailed data on employment, which in general is strongly correlated with productivity (see e.g. Foster, Haltiwanger and Krizan 2001), as an indicator of firm performance.

Table 1 shows that across the countries in the GEM data set, the fraction of necessity entrepreneurs is almost 30%, an average of 21% in OECD countries and almost 50% in non-OECD members. In all countries, the fraction of necessity entrepreneurs is substantially higher among the self-employed (defined as having no employees) and small firms.

Table 1: The percentage of necessity entrepreneurs across firm size classes

	all countries		OECD members		non-OECD members	
employment at firm	%	(% firms in size class)	%	(% firms in size class)	%	(% firms in size class)
0	32.9	28.8	25.1	29.3	52.4	27.7
1-4	31.4	46.2	22.4	44.3	51.0	51.1
5-19	19.2	18.3	16.6	19.3	27.3	15.8
20+	14.6	6.6	13.1	7.1	20.3	5.4
total	28.4		21.1		46.5	
observations	12686		9123		3563	

Notes: GEM micro data, 2001-2005 surveys pooled, entrepreneurs only, classifying as entrepreneurs respondents who derive income from running a business of which they own a share, whether they employ others or not. Observations for countries with at least 100 responses to entrepreneurship out of necessity question. Respondents aged 18-64. GEM weights for this population group used.

This is not just due to differences in characteristics of owners. Table 2 shows results from regressions of employment (n_t) on whether the firm is run by a necessity

entrepreneur, controlling for the entrepreneur's gender, age and education. Being a necessity entrepreneur is strongly significantly correlated with size in all specifications. It raises the probability of not having employees ($n_t = 0$) by almost 8% (column 4). Given that 29% of firms in the sample do not have employees, this is an economically very large effect. Even if they have employees, necessity entrepreneurs have about 3.2 fewer of them (column 6). Relative to an average size of 9.6 overall and 13.9 for employer firms, this is again economically very significant. Other coefficients overall have expected signs; while the R^2 is low, this is not surprising given that it is known that firms are extremely heterogeneous even within narrowly defined sectors.

Table 2: Necessity entrepreneurship and firm size

dependent	employment (n_t)		self-employment ($n_t = 0$)		employer firms ($n_t \mid n_t > 0$)	
variable	(1)	(2)	(3)	(4)	(5)	(6)
necessity	-4.485 ***	-2.881 **	0.062 ***	0.079 ***	-5.435 **	-3.119 *
entrepreneur	(1.481)	(1.246)	(0.023)	(0.017)	(2.040)	(1.674)
female		-1.625		0.065 ***		-1.259
		(1.447)		(0.014)		(2.041)
age		0.68 *		0.002 **		1.042 **
		(0.341)		(0.001)		(0.495)
age^2		-0.008 *				-0.012 **
		(0.004)				(0.006)
schooling:						
12 years		3.561 ***		-0.032 *		4.47 **
		(1.268)		(0.018)		(1.720)
13-16 years		3.019 **		-0.023		3.884 **
		(1.334)		(0.023)		(1.632)
17-20 years		4.662 ***		-0.05 *		6.067 ***
		(1.400)		(0.028)		(2.060)
country dummies		yes		yes		yes
constant	10.048 ***	-5.966			13.759 ***	-10.74
	(1.586)	(7.676)			(2.073)	(10.860)
adjusted R^2	0.001	0.016			0.001	0.018
N	10453	9619	10453	9560	7380	6780

Notes: Data as in Table 1. For education, the reference group is < 12 years of schooling. Columns 1-2 and 5-6 estimated by OLS, columns 3-4 by probit, marginal effects reported. Robust standard errors clustered within country in parentheses.

Necessity entrepreneurs also expect their firms to grow less, as shown in Table 3. That table shows results from regressions of expected firm size in five years ($\mathbb{E}n_{t+5}$) on whether the firm is run by a necessity entrepreneur, controlling for current firm size and the entrepreneur's gender and age. (Education is not significant in this setting; not reported.) This specification allows analyzing growth without facing the problem of computing growth rates when size can be 0. Necessity entrepreneurs are 6% more likely to expect not to have any employees in 5 years, controlling for a similar circumstance today ($n_t = 0$). Even conditional on expecting positive future employment, they expect

it to be almost 9 employees lower than their "opportunity" counterparts. Thus, they expect the already existing size difference with respect to opportunity entrepreneurs to grow over time. Again, all coefficients are of an economically very significant size.

Table 3: Necessity entrepreneurship and expected firm growth

dependent variable	expected employment in 5 years ($\mathbb{E}n_{t+5}$)		expected employment in 5 years = 0 ($\mathbb{E}n_{t+5} = 0$)		expected employment in 5 years > 0 ($\mathbb{E}n_{t+5}|\mathbb{E}n_{t+5} > 0$)	
	(1)	(2)	(3)	(4)	(5)	(6)
necessity entrepr.	-8.109 ***	-7.465 ***	0.047 ***	0.063 ***	-9.658 ***	-8.944 ***
	(2.507)	(2.371)	(0.013)	(0.013)	(3.085)	(2.786)
female		-4.261 **		0.018 *		-4.436 *
		(2.082)		(0.009)		(2.448)
age		-0.339 **		0.003 ***		-0.385 **
		(0.145)		(0.000)		(0.172)
n_t	1.051 ***	1.008 ***			1.045 ***	0.998 ***
	(0.108)	(0.109)			(0.107)	(0.109)
$n_t = 0$			0.530 ***	0.519 ***		
			(0.016)	(0.021)		
country dummies		yes		yes		yes
constant	10.307 ***	25.543 ***			12.955 ***	29.838 ***
	(2.668)	(6.964)			(3.324)	(8.033)
adj. R^2	0.428	0.430			0.424	0.429
N	9122	8683	10453	9906	7035	6696

Notes: Data as in Table 1. Columns 1-2 and 5-6 estimated by OLS, columns 3-4 by probit, marginal effects reported. Robust standard errors clustered within country in parentheses.

Firms run by necessity entrepreneurs thus are on average smaller, and have lower growth expectations. This may suggest that they should last less long in the market. Table 4 shows that this is not the case: except among young firms, the average age of firms run by necessity entrepreneurs is not statistically significantly different from other firms, suggesting a similar survival rate. This suggests that while some necessity entrepreneurs start their activity as a stopgap measure and abandon it again as soon as they find a better opportunity (see also Rissman 2003), some of them stay in the

business for as long as other firms. Necessity entrepreneurship thus is not purely a short-lived phenomenon of people e.g. trying to bridge an unemployment spell. Many firms run by these entrepreneurs are there to stay, although they are smaller and expect to grow less than other firms.

Table 4: Necessity entrepreneurship and firm age

dependent variable	firm age (years)		firm age, young firms (age < 5 years)	
	(1)	(2)	(3)	(4)
necessity entrepr.	0.160	0.220	-0.186 ***	-0.111 *
	(0.325)	(0.251)	(0.061)	(0.064)
female		-0.475 **		-0.080
		(0.233)		(0.058)
age		0.160 ***		0.011 ***
		(0.028)		(0.003)
country dummies		yes		yes
constant	7.236	0.972	2.199 ***	1.819 ***
	(0.281)	(1.086)	(0.049)	(0.101)
adjusted R^2	0.0002	0.147	0.004	0.057
N	10251	9786	4145	3952

Notes: Data as in Table 1. Firms older than 40 years excluded. Estimation by OLS. Robust standard errors clustered within country in parentheses. Significance levels: * 10%, ** 5%, *** 1%.

3 Characteristics of "necessity entrepreneurs"

Having analyzed "necessity enterprises", what are the characteristics of their owners? Table 5 shows that entrepreneurs with low educational attainment are more likely to be necessity entrepreneurs. The same is true for women in non-OECD countries.

The regression results in Table 6 show that controlling for age and education, female entrepreneurs in OECD countries are actually slightly less likely to be necessity entrepreneurs, while this is much more likely outside the OECD. When also including country dummies, gender effects retain their sign but become less significant. Across

Table 5: Demographic characteristics of necessity entrepreneurs (% necessity entrepreneurs in each demographic group)

	all countries		OECD members		non-OECD members	
	%	(% firms in group)	%	(% firms in group)	%	(% firms in group)
gender:						
male	26.9	62.9	20.7	64.2	43.5	59.5
female	31.1	37.1	21.7	35.8	51.1	40.5
schooling (years):						
1-11	42.0	34.7	29.2	28.2	59.3	52.0
12	24.9	22.5	21.1	24.4	39.5	17.6
13-16	19.4	21.3	16.6	22.9	29.1	17.1
17-20	16.9	21.4	15.3	24.5	25.5	13.3

Notes: Data as in Table 1.

specifications, more educated entrepreneurs are less likely to be necessity entrepreneurs. Although the education group coefficients increase in absolute size with education in all specifications, the most significant effect is associated with having 12 or more years of education. The effect of education documented here is in line with results by Ardagna and Lusardi (2008).

4 Conclusion

Entrepreneurs out of necessity are a sizeable group in all countries. The concept has clear empirical content: these entrepreneurs have lower education, run smaller firms, and expect their firms to grow less. Still, they are likely to stay in the market.

This evidence is hard to reconcile with theories where only the most productive firms survive. Instead, it could be consistent with theories where individuals have heterogeneous outside options in employment, making entrepreneurship a good choice for some people even if it yields a low return. If outside options are of particularly low value in poor countries, e.g. because there is queuing for formal sector jobs, "necessity

Table 6: Probability of being a necessity entrepreneur as a function of demographics

	(1)		(2)		(3)		(4)	
female	0.039	***	-0.044	*	0.032	**	0.019	
	(0.015)		(0.023)		(0.014)		(0.016)	
female × non-			0.258	***			0.039	
OECD country			(0.060)				(0.028)	
age	0.002	***	0.003	***	0.003	***	0.003	***
	(0.001)		(0.001)		(0.001)		(0.001)	
schooling (years)								
12	-0.147	***	-0.131	***	-0.096	***	-0.096	***
	(0.041)		(0.035)		(0.018)		(0.018)	
13-16	-0.185	***	-0.17	***	-0.129	***	-0.128	***
	(0.046)		(0.037)		(0.017)		(0.017)	
17-20	-0.215	***	-0.199	***	-0.155	***	-0.155	***
	(0.041)		(0.035)		(0.021)		(0.021)	
country dummies					yes		yes	
N	10374		10374		10374		10374	

Notes: Data as in Table 1. Estimation by probit, marginal effects reported. Robust standard errors clustered within country in parentheses.

entrepreneurship" may become even more attractive.

If this is indeed the case, policies intended to promote small firms because of their expected contribution to growth have to be implemented with particular care. At the same time, labor market policies may matter a lot for the quality of active entrepreneurs, as they may have a strong impact on the value of outside options.

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