Obstacles to Registering: Necessity vs. Opportunity Entrepreneurs

Mohammad Amin*

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Using a new dataset on informal or unregistered firms in Ivory Coast, Madagascar and Mauritius, this paper identifies the type of firms or entrepreneurs that experience greater obstacles to registering. We find important differences between necessity and opportunity entrepreneurs. Averaged over six different obstacles, the severity of obstacles to registering is much higher for necessity compared with opportunity entrepreneurs. This finding appears to be driven by important obstacles including taxes that registered businesses have to pay, registration fees and information required to complete registration procedures. We argue that our results have important policy implications.

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*Enterprise Analysis Unit, World Bank, Washington DC, 20433. Email: mamin@worldbank.org. Phone: (202)-473-1915.

1. Introduction

Recent estimates suggest that a substantial proportion of economic activity takes place in the informal sector. For the world as a whole, between 22.5 and 34.5 percent of all economic activity is estimated to occur in the informal sector; for countries in the lowest quartile of GDP per capita, the estimates range between 29 and 57 percent (La Porta and Shleifer, 2008). It is widely believed that bringing the informal sector within the fold of the formal sector (registration) could lead to substantial efficiency gains and higher income for those engaged in the informal sector. However, existing literature offers little insight on the transition from the informal to the formal sector, the type of problems or obstacles that firms may face in registering, and whether the obstacles to registering are more burdensome for some informal firms than others. The present paper contributes to this literature by analyzing six different potential obstacles to registering and identifying the sorts of informal firms that find these obstacles more constraining than others. In this context, we find significant differences between necessity and opportunity entrepreneurs within the informal sector.

The distinction between necessity and opportunity entrepreneurs is quite old and closely related to the very idea of why some firms and individuals prefer to go informal. In the context of the present paper, a necessity entrepreneur (equivalently, necessity firm) is defined as one who started (or took over) a business because he or she could not find a satisfactory job. In contrast, an opportunity entrepreneur (equivalently, opportunity firm) is one who started (or took over) a business to take advantage of a business opportunity. In our sample of over 300 informal or unregistered firms in Ivory Coast, Madagascar and Mauritius, close to 42 percent are necessity firms. Early work by Lewis (1954), Fields (1975) and Dickens and Lang (1985), among others, argued that, in many developing countries, the labor market is highly segmented in which some workers do not have access to jobs in the regulated formal sector. These workers are therefore forced to set up businesses in the informal sector. This view of the informal sector is also consistent with the broader findings in the literature on the low level of

efficiency and wages in the informal relative to the formal sector. That is, entrepreneurship by necessity is hardly a good sign for firm-efficiency. However, empirical evidence on the labor market segmentation and the consequent informality is mixed, forcing many to argue that entry into the informal sector is more by choice to exploit business opportunities than by necessity (Maloney, 2004; Yamada, 1996 and Saavedra and Chong, 1995).

Understanding the sorts of (informal) firms that experience greater obstacles to registering is important for a variety of reasons. First, it can help identify target groups more in need of policies that facilitate a move from the informal to the formal economy. Second, it sheds light on the sorts of firms and individuals most likely to benefit from easing registration procedures, important for assessing the overall as well as the distributional implications of registration reforms. Third, identification and characteristics of firms or individuals that find obstacles to registering more constraining than others may provide some leads as to why and how the obstacles in question hamper registration.

The structure of the present paper is more descriptive than analytical, dictated largely by data limitations. Our results show that on average, obstacles to registering are less severe for opportunity relative to necessity entrepreneur. While there is some variation across the various obstacles, in no case do we find registration problems to be more severe for the opportunity entrepreneurs. We note that our focus is squarely on differences in the severity of registration related problems across firms within the informal sector. However, we do not explain why these differences, if any, exist. We only rule out some of the possible explanations such as differences in the level of overall development and the quality of the business environment across countries, firm-size and the level of education of the owners. The robustness of our results to country, sector and firm characteristics suggests latent differences

associated with the underlying motivation for starting the business are most likely responsible for the results that we find.[1]

2. Data and Main variables

The data we use is a survey (cross-section) of informal or unregistered firms in three countries in Africa conducted by the World Bank's Enterprise Surveys in 2008-09. The countries include Ivory Coast, Madagascar and Mauritius. The sampled firms are a mix of manufacturing and service firms. Table 1 provides information on the sample across countries and sectors as well as some descriptive statistics for our main variables. The survey provides valuable information on a number of issues related to the informal firms such as, characteristics of owners, use of infrastructure services, access to finance, employment, production structure, location and obstacles to registering and the overall quality of the business environment as experienced by the firms. We use this rich information to show that our main results are robust to a number of controls.

2.1 *Dependent variable*

In one question, firms were asked about the severity of various obstacles to registering. These obstacles include taxes that registered businesses need to pay, fees to complete registration procedures, getting information on what one needs to do to register, time it takes to complete registration procedures, inspections and meetings with government officials registered businesses must have, and bribes that registered businesses need to pay. For each of these obstacles, responses of firms were recorded on a 0-4 scale defined as no obstacle (0), minor obstacle (1), moderate obstacle (2), major obstacle (3) and a very severe obstacle (4). For each of the obstacles, we define a dummy variable equal to 1 if the firm reported the obstacle as major or very severe and 0 otherwise. In the various specifications and without

[1] In a different context, McKenzie and Sakho (2010) also find substantial heterogeneity within the informal sector in how tax registration affects the profit of businesses depending on their size.

much loss of generality, we use these dummy variables as our dependent variable. As an overall summary measure of the severity of obstacles, we also use the average over all the stated dummy variables as the dependent variable.

The obstacle most widely considered by firms to be a major or very severe for registering is taxes on registered business (54%), followed by registration fees (50%) and bribes that registered businesses need to pay (36%). For more details, see Table 1.

We note that our dependent variables are subjective rather than objective measures based on firm's experience or perception about the registration procedure. Such subjective measures have been shown to be well correlated with the underlying objective measures and are becoming increasingly popular in the literature (see, for example, Treisman, 2000; Pierre and Scarpetta, 2006; Amin, 2009). Nevertheless, the subjective measures may suffer from some limitations. For example, it is possible that differences in reported severity of the various obstacles to registering could arise from different interpretation across firms of what is, for example, a minor vs. a major obstacle. Similarly, some firms may be more prone to complaining than others for reasons that have nothing to do with the difficulty of registering. Further firm characteristics such as the education level or experience of the manager could affect the how firms feel about registration laws. While we provide some evidence below to guard against some of the limitations mentioned above, some caution is necessary in interpreting the results.

2.2 *Explanatory variables*

The main explanatory variable relates to the owner's motivation for the starting or taking over a (non-family) business.[2] It is a dummy variable, *Necessity*, equal to 1 if the main owner started or took over the

[2] For owners who joined an existing family business (5.67 percent of the sample), the motivation for starting or taking over the business was not asked.

business because he or she could not find a satisfactory job and 0 otherwise (to take advantage of a business opportunity).[3]

The broader literature on informality suggests a number of factors that affect the overall size and structure of the informal sector. For example, La Porta and Shleifer (2008) find strong evidence that the size of the informal sector is inversely correlated with the overall development of a country. Heavy regulation and high taxes (de Soto, 1989; Loayza, 2006) and ethnicity (Lassen, 2003; Teilhet-Waldorf, 1983) have also been found to be important determinants of the size and structure of the informal sector.

We use a number of controls rule out the above and other factors from spuriously driving our main results. In our main specification, we control for country fixed effects, manufacturing sector dummy, ethnicity fixed effects (Asian and European/Caucasian, and the residual category of other ethnicities; the omitted category is African ethnicity), and fixed effects for the level of education of the largest owner (less than secondary education and higher than secondary education; the omitted category is secondary education level). For additional robustness, we include variables such as firm-size, use of infrastructure services, hours of operation and the presence of female owners. These are discussed in detail below.

3. Estimation

Without any loss of generality, we begin with the results for taxes on registered businesses as the obstacle for registering. This is the most commonly cited obstacle to registering in our data and also in the broader literature. Regression results for this obstacle using the logit specification with robust standard errors are provided in Table 2. The estimated coefficients shown are log odds ratios. Without

[3] Firms were allowed to choose the residual category of "other" motivation for starting or taking over the business. This category was chosen by 18 firms (4.69 percent of the sample). We exclude these firms from the empirical analysis that follows.

any other control, the estimated coefficient value of *Necessity* equals 0.667, significant at less than the 1% level (column 1). The implied marginal effect of moving from an opportunity to a necessity entrepreneur is an increase of 16.3 percentage points in the probability of taxes on registered businesses being a (major or very severe) obstacle for registering. This is a large effect given that the mean value of the dependent variable in the full sample is about 54%. The estimated coefficient value of *Necessity* remains positive, economically large and statistically significant when we add our main controls to the specification (columns 2-4, Table 2). Quantitatively, the coefficient value shows some decline when we control for country fixed effects (column 2) and a slight increase when we control for ethnicity and the education level of the largest owner (columns 3, 4). The implied marginal effect of *Necessity* on the dependent variable in columns 2-4 equals 13.6, 14.4 and 14.6 percentage points, respectively. These effects are not too different in magnitude from what we found without any controls (16.3 percentage points).

3.1 *Other controls*

For additional robustness, we begin by controlling for the gender composition of the owner(s). Discrimination in the formal sector labor market against female workers could push females into the informal sector as necessity entrepreneurs. If obstacles to registering are gender-biased, our results above could suffer from an omitted variable bias problem. A similar argument can be made regarding firms located inside as opposed to outside of household premises. We check for these potential problems with our estimation results using two dummy variables indicating if the largest owner of the firm is a female and if the firm is located outside household premises. Regression results in column 5 of Table 2 show that these controls hardly affect the estimated coefficient value of *Necessity*.

Our next set of controls aims to capture how firms operate. The motivation here is to check if the distinction between necessity and opportunity firms for the severity of registration related problems

is spuriously driven by other firm characteristics. The controls include total number of employees, hours per week that the business normally operates and a dummy variable indicating if a firm uses paid (as opposed to all unpaid) labor. Estimated coefficient value of *Necessity* remains roughly unaffected by these additional controls (column 6).

Use of public infrastructure services such as electricity and water, dependent in part on the registration status of firms, could affect how firms perceive obstacles to registering. If use of public services also varies systematically across necessity and opportunity firms, an omitted variable bias problem for our main variable could still arise. We control for two dummy variables indicating if the firm uses electricity and water for its business. However, these controls made no significant difference to the estimated coefficient value of *Necessity* (column 7, Table 1).

One concern with the results discussed above could be that they are based on a subjective measure of obstacles to registering. That is, how firms experience or perceive various problems to registering. It is possible that systematic differences may exist in firms' tendency to simply complain about various obstacles or what they think constitutes a minor as opposed to, for example, a major constraint. Although, there is not much reason to believe that such differences, if any, across firms should be correlated with the underlying motivation (necessity vs. opportunity) of starting the business, the possibility cannot be ruled out completely. To check for this, we construct a measure of the severity of all other obstacles to doing business included in the survey. These obstacles include electricity, water, crime, access to finance, access to land, political instability and corruption. For each of these obstacles and on a 0-4 scale, firms were asked if it were no obstacle (0), minor (1), moderate (2), major (3) or very severe obstacle (4). We take the average over the reported scores on all these obstacles for each firm (Complain). Controlling for this average measure, we find that it made very little difference to the estimated coefficient value of *Necessity* (column 8, Table 2).

We also checked for the robustness of the results above controlling for a number of additional variables (not shown in the regression tables). For example, we controlled for the age of the firm, a dummy indicating if the largest owner is also the main decision maker, a dummy indicating if the firm experienced one or more incident of crime during the previous year, a dummy indicating if the firms uses machines, a dummy indicating if the firm faced high absenteeism due to sickness of the employees and a similar dummy for absenteeism due to HIV/AIDS of the employees and fixed effects of city-size (capital city, cities with population of more than 1 million population excluding capital cities, cities with population of less than 1 million but more than 50, 000 and the omitted residual category of cities with a population of less than 50,000). With all these controls added to the specification above, the estimated coefficient value of *Necessity* remained positive and significant at less than the 5% level, equaling 0.608 in magnitude compared with 0.640 above (column 8, Table 2). We note that the difference between these two estimated values of *Necessity* is due to the change in sample size (missing observations).[4]

4. Other obstacles to registering

Regression results for the remaining obstacles to registering are provided in columns 1-5 of Table 3. Panel A shows the results without any other controls. In Panel B, we include only the main controls (main specification). Results with the full set of controls are provided in Panel C. These results are obtained using the logit estimation method with robust standard errors. In column 6, we use the average over all the six obstacles to registering and estimate the model using the ordered logit specification with robust standard errors.[5] The table reveals that necessity entrepreneurs are much

[4] The sample size drops from 274 in column 8 of Table 2 to 262 when we add the various controls discussed above but not included in the regression tables. Keeping the sample size constant, the estimated coefficient value of *Necessity* for the specification in column 8 of Table 2 equals 0.594 (p-value of 0.049) and 0.608 with the additional controls as mentioned above.

[5] The averaged measure takes 7 values equaling 0, 0.16, 0.33, 0.5, 0.67, 0.83 and 1. Regression results for the averaged measure using the Ordinary Least Squares (OLS) method are qualitatively similar to the ones discussed above.

more likely to report registration fee and the information required for registering as obstacles to registering compared with the opportunity entrepreneurs. For example, with all the controls discussed above, the probability that a firm reports registration fee as an obstacle to registering increases by 16.1 percentage points (against a mean value of 50 percent of the dependent variable) when we move from an opportunity to a necessity entrepreneur. In contrast, the difference between necessity and opportunity entrepreneurs is small and statistically insignificant for the three remaining obstacles: time to register, inspections and bribes. For the average measure, necessity firms are significantly more likely to find them constraining for registration relative to the opportunity firms (column 6, Table 3).

Summarizing, necessity entrepreneurs are more likely to find the stated obstacles constraining compared with the opportunity entrepreneurs. However, the finding is not uniform across all the obstacles. Hence, due caution is required in extending our results to other possible obstacles to registering that are not included in the present paper.

5. Conclusion

Registration of informal firms is widely considered to be critical for improving wages and productivity of the existing informal firms. However, empirical work on the obstacles firms face in registering and how these obstacles vary across different types of informal firms is extremely limited. The present paper attempts to fill this gap by analyzing six different obstacles to registering and how these vary with the firm's underlying motivation for starting the business. On average, obstacles to registering are less severe for opportunity compared with necessity entrepreneurs. However, this difference between the two entrepreneur-types is not uniform across all potential obstacles to registering. Hence, a case-by-case analysis of the various obstacles to registering is recommended.

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Table 1: Descriptive statistics of the main variables statistics

	Mean	Standard deviation	Observations
Major or very severe obstacles (dummy)			
Getting information on registration procedures	0.287	0.453	321
Time it takes to register	0.339	0.474	310
Registration fees	0.498	0.501	309
Taxes registered businesses have to pay	0.540	0.499	302
Inspections/meetings with government officials that registered businesses must have	0.199	0.400	286
Bribes that registered business need to pay	0.359	0.481	281
Average of the above dummies for the obstacles	0.356	0.316	257
Other dummy variables			
Necessity (dummy)	0.417	0.494	302
Ivory Coast	0.281	0.450	302
Madagascar	0.401	0.491	302
Mauritius	0.318	0.466	302
Manufacturing	0.497	0.501	302
Capital city	0.235	0.425	302
City with over 1 million population (other than capital city)	0.265	0.442	302
City population between 1 million to 50,000	0.325	0.469	302
City population less than 50,000	0.175	0.381	302
African ethnicity	0.301	0.460	302
Asian and European/Caucasian ethnicity	0.156	0.363	302
All other ethnicities	0.543	0.499	302
Largest owner has less than secondary education	0.315	0.465	302
Largest owner has secondary education	0.487	0.501	302
Largest owner has higher than secondary education	0.199	0.400	302

Statistics for "Other dummy variables" are for the sample for firms that report on all of the following variables: taxes registered businesses have to pay as an obstacle, *Necessity*, ethnicity and the education level of the largest owner. Statistics for the "Average of the above dummies for the obstacles" shown above is computed for the sample of firms that report on each of the six obstacles listed, *Necessity*, ethnicity and the education level of the largest owner. Statistics for the six obstacles (major or very severe) are computed for the sample of firms that report on *Necessity*, ethnicity and education level of the largest owner, and the individual obstacle. Sample size (Observations) vary due to missing data.

Table 2: Taxes that registered businesses need to pay

Dependent variable: Taxes	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Necessity	0.667***	0.553**	0.588**	0.597**	0.650**	0.644**	0.652**	0.640**
	[0.005]	[0.030]	[0.025]	[0.024]	[0.018]	[0.027]	[0.027]	[0.030]
Country fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manufacturing dummy		0.29	0.335	0.315	0.268	0.207	0.146	0.099
		[0.246]	[0.184]	[0.220]	[0.311]	[0.458]	[0.606]	[0.729]
Asian, European ethnicity			0.324	0.313	0.274	0.434	0.404	0.514
			[0.543]	[0.556]	[0.612]	[0.456]	[0.487]	[0.401]
Other ethnicity			1.207**	1.197**	1.238**	1.008*	1.004*	1.284**
			[0.020]	[0.021]	[0.019]	[0.080]	[0.077]	[0.033]
Less than secondary education				0.033	0.073	0.034	0.054	-0.008
				[0.916]	[0.815]	[0.921]	[0.874]	[0.982]
Higher than secondary education				-0.201	-0.256	-0.306	-0.31	-0.392
				[0.556]	[0.468]	[0.398]	[0.390]	[0.274]
Largest owner of the firm is a female					-0.081	-0.077	-0.104	-0.089
					[0.766]	[0.792]	[0.723]	[0.763]
Firm operates outside household					-0.138	-0.225	-0.195	-0.203
					[0.664]	[0.516]	[0.603]	[0.591]
Largest owner is main decision maker						-0.197	-0.227	-0.344
						[0.683]	[0.632]	[0.467]
Number of employees (log)						0.309	0.244	0.161
						[0.404]	[0.520]	[0.669]
Hours per week the business normally operates						-0.008	-0.008	-0.007
						[0.361]	[0.356]	[0.411]
Firm uses paid labor						-0.376	-0.467	-0.485
						[0.346]	[0.268]	[0.259]
Firm uses electricity							0.259	0.094
							[0.405]	[0.778]
Firm uses water							0.266	0.256
							[0.444]	[0.469]
Complain								0.403*
								[0.084]
Observations	302	302	302	302	298	275	274	274

p-values in brackets. All standard errors are Huber-White robust. Sample size varies due to missing observations. Significance level is denoted by *** (1%), ** (5%) and * (10%). All regressions run using a constant term (not shown). Estimates shown in the table are the log odds ratios obtained from ordered logit estimation method.

Table 3: Other obstacles to registering

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Registration fee	Information	Time to register	Inspections	Bribes	All obstacles
			Panel A: With no other controls			
Necessity	0.768***	0.690***	0.493**	0.525*	0.416*	0.699***
	[0.001]	[0.006]	[0.043]	[0.079]	[0.098]	[0.002]
Observations	309	321	310	286	281	257
			Panel B: With the main controls (base regression)			
Necessity	0.682***	0.600**	0.317	0.497	0.288	0.493**
	[0.008]	[0.031]	[0.223]	[0.109]	[0.322]	[0.038]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Manufacturing dummy	0.491*	0.762***	0.153	0.059	0.075	0.416*
	[0.051]	[0.009]	[0.559]	[0.851]	[0.793]	[0.075]
Asian, European ethnicity	0.614	0.874	0.417	-0.081	0.802	0.217
	[0.278]	[0.187]	[0.479]	[0.896]	[0.273]	[0.719]
Other ethnicity	1.747***	2.311***	1.009*	0.12	1.665**	1.338***
	[0.002]	[0.001]	[0.057]	[0.831]	[0.018]	[0.007]
Less than secondary education	0.265	-0.442	0.052	-0.313	-0.282	0
	[0.364]	[0.192]	[0.868]	[0.417]	[0.422]	[0.999]
Higher than secondary education	-0.014	-0.209	0.359	0.07	0.163	0.186
	[0.968]	[0.572]	[0.291]	[0.864]	[0.669]	[0.538]
Observations	309	321	310	286	281	257
			Panel C: With the full set of controls			
Necessity	0.651**	0.750**	0.270	0.494	0.202	0.635**
	[0.020]	[0.011]	[0.359]	[0.134]	[0.523]	[0.025]
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Manufacturing dummy	0.343	0.649**	-0.068	-0.229	-0.266	0.131
	[0.230]	[0.042]	[0.823]	[0.551]	[0.429]	[0.662]
Asian, European ethnicity	0.795	0.63	0.321	0.168	0.76	0.566
	[0.239]	[0.304]	[0.613]	[0.801]	[0.318]	[0.385]
Other ethnicity	2.068***	2.096***	1.277**	0.71	2.015**	1.75***
	[0.002]	[0.007]	[0.032]	[0.278]	[0.010]	[0.002]
Less than secondary education	0.206	-0.392	0.041	-0.583	-0.35	-0.026
	[0.523]	[0.279]	[0.910]	[0.180]	[0.365]	[0.932]
Higher than secondary education	-0.215	-0.362	0.348	-0.153	-0.184	-0.079
	[0.560]	[0.392]	[0.367]	[0.727]	[0.655]	[0.826]
All other controls (listed in Table 1)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	281	291	280	260	257	235

p-values in brackets. All standard errors are Huber-White robust. Sample size varies due to missing observations. Significance level is denoted by *** (1%), ** (5%) and * (10%). All regressions run using a constant term (not shown). Estimates shown in the table are the log odds ratios. Estimation method is logit for columns 1-5 and ordered logit for column 6.