



# A tale of two species: Revisiting the effect of registration reform on informal business owners in Mexico<sup>☆</sup>

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## ABSTRACT

Some argue that informal business owners are viable entrepreneurs who do not register due to complex regulation. Others claim that they are making a living while searching for a job. This paper suggests that a mix of both views is correct. I separate informal business owners into those who have characteristics similar to wage workers and to formal business owners and study the impact of a business registration reform in Mexico on these two species. Informal business owners from the wage worker species are less likely to register due to the reform, but more likely to become wage workers since the reform created jobs. Informal business owners from the formal business owner species are more likely to register, but only in municipalities with high pre-reform constraints to formal entrepreneurship. These results explain why Bruhn (2008, 2011) finds no effect of the reform for all informal business owners taken together.

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## 1. Introduction

Most firms in developing countries are informal, that is they operate without registering with the government (OECD, 2009, and data from IFC, 2010). This can pose disadvantages to firms since they may be subject to government penalties and they may not have access to low cost sources of financing, government contracts, and public contract enforcement (Jansson and Chalmers, 2001). It can also limit firms' market size since they cannot issue formal receipts to customers (McKenzie and Sakho, 2010). From the government's perspective, informality may result in lower tax collection, restricting the government's ability to finance public services (Levy, 2008).

Historically, different views have been put forward to explain why many firms operate informally. One view, associated with De Soto (1989), argues that informal business owners are viable entrepreneurs who are being held back from registering their firm due to complex regulation. This regulation includes the initial procedures for obtaining an operating license, as well as ongoing compliance costs for registered firms, such as taxes and labor contributions. Another view, expressed for example by Tokman (1992), sees informal business owners as individuals who are trying to make a living while they search for a wage job.

Several papers have developed theoretical models supporting either view.<sup>1</sup> Other papers examine empirically which view is correct, leading to different conclusions (La Porta and Shleifer, 2008, 2011; Maloney, 1999, 2004). Recently, some have emphasized that informal firms are heterogeneous and that a mix of both views may be correct (OECD, 2009). Self-reported statistics support this mixed view. In World Bank Enterprise Survey data on informal firms in Madagascar, Côte d'Ivoire, and Mauritius, about 62 percent of business owners report that they started their firm to take advantage of a business opportunity, while the remainder says they were not able to find a satisfactory job elsewhere (Amin, 2009). Maloney (2004) also presents similar numbers for Brazil and Mexico.

De Mel et al. (2010) investigate heterogeneity in the informal sector in Sri Lanka through discriminant analysis, a tool used by biologists to separate animals or plants into species on the basis of easily measured characteristics. The authors classify a sample of self-employed microenterprise owners into those who have personal characteristics similar to wage workers and those who have characteristics similar to larger firm owners<sup>2</sup>. Their analysis shows that about 70 percent of

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<sup>1</sup> See for example Bennett and Estrin (2009), Bennett (2010), and Straub (2005) for models supporting the De Soto view and Fields (1975) and Fields (2004) for models supporting the Tokman view.

<sup>2</sup> Employers and wage workers differ along many dimensions, including personal background characteristics, attitudes, and cognitive ability measures. Djankov et al. (2005, 2006) also find this to be the case in Brazil, China, and Russia.

microenterprise owners fall into the first category and 30 percent fall into the second category.

This paper uses the context of a reform in Mexico that simplified local business registration procedures to provide further evidence for the existence of two different species of informal business owners. The business registration reform was implemented in different municipalities at different times, providing an estimation strategy for identifying its effects on formal firm creation and employment. Bruhn (2008, 2011) shows that the reform increased the number of registered business owners, and that it also created additional wage jobs in eligible sectors. However, the results indicate that the increase in registered business owners was due to former wage earners opening businesses. Former informal business owners were not more likely to register their business after the reform, on average.

In this paper, I follow the approach of De Mel, McKenzie, and Woodruff and use discriminant analysis based on personal characteristics of informal business owners to separate them according to their potential for becoming formal business owners. The discriminant analysis classifies half of the informal business owners in my sample as wage workers and the other half as formal business owners.

I then examine the impact of the business registration reform on these two separate groups and find that informal business owners from the wage worker species are less likely to become formal business owners after the reform, but they are 22.3 percent more likely to become wage workers. This is consistent with the finding in Bruhn (2008, 2011) that the reform led to job creation and it helps to explain why the effect of the reform on business formalization is zero for the group of all informal business owners taken together.

The reform impact on informal business owners from the formal business owner species is less clear. In the full sample, the results indicate that they are more likely to register their business due to the reform, but this effect is not statistically significant. I then divide the sample into municipalities with low and high pre-reform constraints to formal entrepreneurship. The results show that the reform had no effect on firm formalization among informal business owners from the formal business owner species in municipalities with low pre-reform constraints to entrepreneurship. However, in municipalities with high pre-reform constraints informal business owners from the formal business owner species are 26.2 percent more likely to register their business due to the reform.

Overall, these results support the argument that the informal sector consists of different types of business owners. Some operate informally due to stringent regulation and simplifying regulation can entice them to register their business. Others run informal businesses while they are looking for a job and they switch to being wage earners when more job opportunities arise. The evidence in this paper does not exclude the possibility that there could be more than two different species of informal business owners. For example, there may be a third group of individuals that does neither want to formalize nor become a wage earner. In my data, a large number of firms continue to operate informally even after the business registration reform. In fact, evidence from Bolivia and Indonesia suggests that not all informal firms benefit equally from registering and for some firms in Bolivia, formalization lowers profits (McCulloch et al., 2010; McKenzie and Sakho, 2010, see also Perry et al., 2007).

This paper is also related to Hsieh and Klenow's (2009) argument that low aggregate productivity in developing countries is in part due to misallocation of resources across firms and that complex regulation is one factor that can contribute to this misallocation. The findings of this paper suggest that business registration reform allows individuals to better sort across occupations, thus promoting reallocation of resources and potentially raising productivity. More broadly, the results imply that studies of regulatory reforms may need to go beyond measuring average effects since reforms can have important effects on productivity through reallocation.

The remainder of this paper is structured as follows. Section 2 describes the data and the classification of informal business owners into wage worker and formal business owner species. Section 3 discusses the business registration reform and hypotheses for how this reform affects different species of informal business owners. Section 4 lays out the identification strategy and summarizes transitions into different occupations in the pre-reform period. Section 5 presents the impact estimates of the reform on firm formalization and transitions on wage work. Section 6 concludes.

## 2. Mexican employment survey data and species classification

The main data source used in this paper is the Mexican National Employment Survey (ENE), the survey that the Mexican government relies on for calculating unemployment statistics and the size of the informal sector. The ENE was conducted quarterly starting in 2000-II and covers a random sample of approximately 150,000 households. Each household remains in the survey for five consecutive quarters. I use data for 2000-II to 2004-IV (19 quarters in total).<sup>3</sup>

The ENE includes detailed information on each individual's employment status and occupation. In particular, the survey asks all currently employed individuals whether they work as wage workers or whether they are employers or self-employed in their main job. I group employers and the self-employed together and call them business owners. The survey then asks these business owners whether their business is formally registered with the authorities. Close to 50 percent of business owners report that their business is not registered with the authorities. I refer to these business owners as informal business owners.<sup>4</sup> Among working age (20 to 65) individuals in the ENE, 49.5 percent are wage workers, 8.6 percent are formal business owners and 8 percent are informal business owners. The remaining individuals are not employed (either unemployed or not in the labor force).

### 2.1. Personal background characteristics

Following De Mel et al. (2010), I classify the group of informal business owners into wage worker and formal business owner species using discriminant analysis. As described in De Mel, McKenzie and Woodruff, discriminant analysis is a tool used by biologists to separate animals or plants into species on the basis of easily measured characteristics. For the species classification, De Mel, McKenzie, and Woodruff rely on a large number of background, ability, and attitude measures, collected through their own survey. I have to work with a less rich set of personal characteristics since the ENE only includes basic background characteristics for each individual: age, gender, marital status, education, whether or not the individual is a head of household, and whether or not the individual is a migrant (defined as living in a state that is different from the state where the person was born). The reason for using ENE data in this paper is that it is high frequency data with broad geographic coverage that allows me to identify informal business owners and to track them over time. These features are essential for the impact analysis performed in later sections of this paper.

Table 1 displays averages and standard deviations for the personal background characteristics, by occupation group. The sample here includes individuals in their first quarter of observation in the ENE before the business registration reform was implemented in the municipality where the individual lives. The stars on the averages for formal business owners and wage workers denote the statistical

<sup>3</sup> After 2004-IV, the ENE was changed to a new survey, the ENOE, and some of the questions used to define the variables in this paper were modified, limiting comparability across the two surveys.

<sup>4</sup> See Appendix A for a more detailed description of how the different occupation groups are defined.

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