

## Comparing Informal Firms in Buenos Aires and Chaco

Mohammad Amin

**T**his note highlights differences between informal businesses in two regions of Argentina—Buenos Aires and Chaco. Labor productivity is much higher in Buenos Aires than Chaco. This difference is partly due to higher sales and partly due to lower employment in firms in Buenos Aires. Relative to Buenos Aires, firms in the Chaco region are more likely to use machinery and vehicles in the production process and they also face larger seasonal fluctuations in sales. Firms are more likely to report various benefits from registering—including better access to finance, markets and government subsidies, less bribes to pay and being able to issue receipts—in Chaco than in Buenos Aires. Important firm-characteristics, such as the level of education of the owner of the firm, and the perception of corruption and crime as obstacles to business, also differ sharply across the two regions. These findings suggest a greater need to design policies towards the informal sector at the local level rather than at the national level.

### Introduction

Recently, the Enterprise Analysis Unit of the World Bank conducted a survey of informal or unregistered firms in two regions of Argentina<sup>1</sup>—Buenos Aires (Greater Buenos Aires metropolitan area) and Chaco (Greater Resistencia area). The Greater Buenos Aires area is the commercial, industrial and financial center of Argentina, with a population of about 12.8 million per the 2001 Census and GDP per capita of U.S. \$28,200 (in 2006, purchasing power parity adjusted). In contrast, the Greater Resistencia area is relatively less developed with a population of about 0.36 million (Census 2001). The city of Resistencia is considered to be one of the poorest cities in Argentina.

The survey provides a rich source of information on various aspects related to the structure, conduct and performance of the firms. This note uses data from this survey to highlight some of the important differences between informal firms located in Buenos Aires and Chaco. This is important given that the informal economy is large and little understood. Recent estimates suggest that for the world as a whole, between 22.5 percent and 34.5 percent of all economic activity occurs in the informal economy; for countries in the lowest quartile of GDP per capita, the estimates range between 29 percent and 57 percent (La Porta and Shleifer 2008).

The survey excludes firms in the agricultural sector but contains a roughly equal mix of manufacturing and service sector firms. Firms were classified into 20 different industries within the manufacturing and service sectors. The representation of these industries shows some variation between Buenos Aires and Chaco. The most noticeable difference within manufacturing is that compared with Chaco, Buenos Aires has a much larger proportion of firms making handcrafts (23.6 percent vs. 12.2 percent) and fewer firms making furniture (6.4 percent vs. 24.5 percent). Within the service sector and compared with Chaco, Buenos Aires has more firms engaged in construction (7.6 percent vs. 0 percent) and less selling of food or groceries (17.4 percent vs. 41.2 percent). All results discussed below are robust to industry fixed effects; that is, to differences in industry composition between the two cities.

Informal firms are known to be extremely small, often run by the owner alone. Such small firms target the local market for their sales and the purchase of inputs. Hence, local factors are likely to play a key role in the structure, conduct and performance of informal businesses. For example, in one study focusing on informal manufacturing firms in India, Mukherjee (2005) finds wide variations in labor productivity levels across different regions of the country. Regional differences in the quality of governance and infrastructure availability are two possible explanations

for these observed differences. In another study, Kim and Kang (2009) find that the size of the informal activity varies significantly across different regions of Russia depending on the delay in implementing reforms and the quality of governance at the regional level.

This note extends the regional analysis of informal firms. It is important to note that due to lack of proper sampling frames, the survey used in this note is based on a random selection of informal firms. The sample is therefore not necessarily representative of the informal economy at the country level or even the city level. Hence, the results presented below pertain to the structure of the informal firms surveyed rather than the informal economy per se.

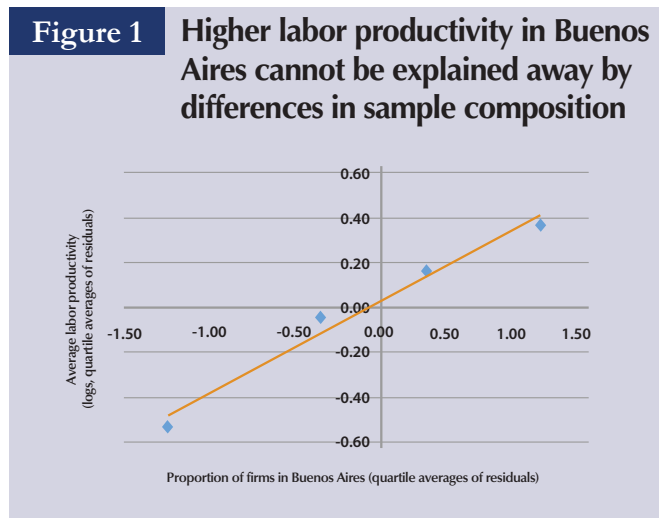
## Labor productivity and firm-size

Firm-efficiency as measured by the ratio of total sales (in U.S. dollars) to employment in a regular month (labor productivity) is almost twice as high in Buenos Aires as in Chaco. That is, the median value of labor productivity for firms in Buenos Aires equals U.S. \$258 versus a mere U.S. \$129 for firms in Chaco. It is possible that differences in the composition of the sample across the two regions could be responsible for the observed difference in labor productivity. However, on closer inspection this explanation does not appear to be too strong, although it cannot be ruled out completely. For example, figure 1 shows that labor productivity (log values) increases with

a move from Chaco to Buenos Aires even after taking into account the sector of the firm (manufacturing vs. service), gender of the largest owner, whether the business operates from inside or outside of household premises, whether a firm uses machinery or not, age of the firm and firm-size measured by the total number of employees in a regular month. The figure clearly illustrates that none of the listed variables can explain away the difference in labor productivity across the two regions.<sup>2</sup>

## Firm-size does not show a consistent pattern across Buenos Aires and Chaco

Using two separate measures of firm-size, number of employees and total sales in a regular month, the survey shows that there is no consistent difference in firm-size across the two regions. In terms of employment, an average firm in Buenos Aires is about 90 percent of the size of an average firm in Chaco and this difference is significant; like labor productivity, it does not appear to be due to differences in the composition of the sample across the two regions.<sup>3</sup> However, looking at monthly sales as the measure of firm-size, the opposite result holds. The median firm in Buenos Aires is 1.7 times larger than the median firm in Chaco. As with employment, the difference in total sales is large and significant and cannot be explained away by differences in the composition of the sample across the two cities.<sup>4</sup>



Source: Enterprise Surveys.

Notes: (a) The figure is a partial scatter plot of the relationship between labor productivity (logs) and the dummy for Buenos Aires and it is based on quarterly averages of the residuals obtained from two separate linear regressions of the (log of) labor productivity for the Y-axis and the dummy for Buenos Aires for the X-axis on the following variables: location of business (inside vs. outside), gender of the largest owner (female vs. male), age of the firm (log), number of employees in a regular month (log), industry (20 industries within manufacturing and service sectors). (b) The positive relationship in the figure is statistically significant at the 5 percent level, computed using Huber-White robust standard errors.

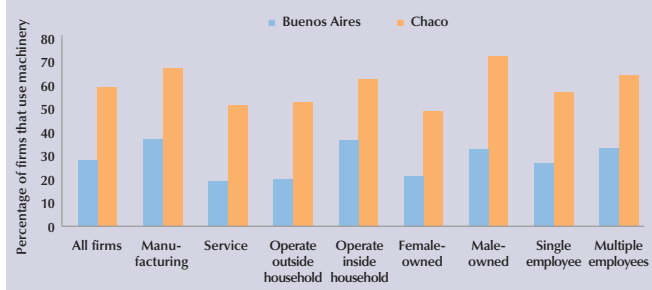
## Use of machinery and other equipment is more common in Chaco compared with Buenos Aires

The survey provides information on the use of machinery, use of own vehicle or other means of transportation and use of cell phones in the business activity. For all these three variables, equipment usage is much more common in Chaco than Buenos Aires—figure 2 illustrates the point for the use of machinery across various subsamples within each region. For vehicle usage, 17.6 percent of the firms in Buenos Aires compared with 30 percent in Chaco use their own vehicle or other means of transportation. The corresponding figures for cell phone usage are 36.7 percent and 47 percent, respectively. These differences across the two regions are significant and robust.

## There are some differences between the two regions in how businesses finance day-to-day operations, use family labor and in seasonal fluctuations in total sales

Economic development and financial development are known to be highly correlated. Hence, one might suspect that compared with Chaco, firms in Buenos Aires are less likely to use internal or their own funds and more likely to borrow

**Figure 2** Use of machinery is much more common in Chaco than Buenos Aires



Source: Enterprise Surveys.

from external sources. In both of the regions, a roughly similar percentage of firms (close to 90 percent) report internal funds as the most important source of finance. However, compared with Buenos Aires, a much larger percentage of firms in Chaco use internal funds (97 percent vs. 75 percent) as well as external funds (18 percent vs. 5.3 percent), where external funds include credit from suppliers or advances from customers and loans from micro finance institutions, banks and moneylenders. This suggests a greater tendency among firms in Chaco than in Buenos Aires to diversify across internal and external funds.

In the sample under study, the ratio of total sales of a firm in the busiest to the slowest month averages 3.1. However, the ratio is significantly higher in Chaco at 3.7 compared with 2.9 in Buenos Aires. The higher seasonality in Chaco holds within the various subsamples, such as manufacturing and service firms.

Informal business is often associated with the use of family labor. Unable to find suitable jobs in the formal sector, many unemployed prefer to join the family informal business. As one might expect, the data confirm the percentage of firms that use family labor is much higher in the relatively less developed Chaco region (figure 3). This difference between the regions persists when accounting for various firm characteristics including the ones highlighted in figure 3.

### Firms in Buenos Aires and Chaco are similar in a number of important characteristics

Many important firm-characteristics show roughly similar levels in Buenos Aires and Chaco. Some examples include the number of years of managerial experience, whether the firm has a single owner or multiple owners, marital status of the largest owner (single vs. married, divorced or widowed), percentage of firms that maintain accounts of the business separately from household expenses, percentage of firms that report internal funds as the most common source of finance for day-to-day operations and the education level of the largest owner's parents.

**Figure 3** Use of family labor is more common in Chaco than Buenos Aires



Source: Enterprise Surveys.

In the case of some firm-characteristics, the difference between Chaco and Buenos Aires holds within certain categories of firms but not in the full sample. For example, the percentage of firms with the largest owner having secondary education or higher is much larger in Buenos Aires than in Chaco but only among firms located outside household premises (63 vs. 48 percent) and not otherwise (61 vs. 54 percent).

### Corruption and crime are bigger obstacles to business in Chaco than Buenos Aires

The survey reports firms' perception of whether factors such as crime, corruption and poor access to finance are a severe obstacle to doing business or not. Across the two regions, there is not much difference in how firms report on access to finance. However, a much larger percentage of firms perceive corruption as a severe obstacle in Chaco than in Buenos Aires (53 percent vs. 27 percent). The same holds for crime (62 percent vs. 38 percent). These differences are large, robust to various checks and also hold within various subsamples. These findings suggest that the quality of institutions and governance may be much more important to informal firms located in the relatively less developed cities. This is also consistent with the fact that the benefits from registration appear to be greater in Chaco than Buenos Aires (discussed below).

### More firms in Chaco perceive positive effects of registration

About 56 percent of the firms in Chaco compared with a much lower 37 percent in Buenos Aires report wanting to register their business. The higher percentage in Chaco compared to Buenos Aires is robust to a number of controls and holds within various subsamples such as manufacturing firms (47 percent vs. 35 percent), service

firms (65 percent vs. 38 percent), female-owned firms (55 percent vs. 28 percent), male-owned firms (57 percent vs. 46 percent), firms that operate from inside (53 percent vs. 29 percent) and outside (71 percent vs. 42 percent) household premises.

The survey provides valuable information on the potential benefits from registering as perceived by the firms. These benefits include better access to finance, better access to raw materials, infrastructure and government services, less bribes to pay and being able to issue receipts. For each of these potential benefits, the percentage of firms reporting in the affirmative is much higher in Chaco than Buenos Aires. This finding is robust and holds within various subsamples. For example, taking the percentage of firms that report positively on the various benefits listed and taking the average over these percentage figures, the results show that this average equals 56 percent in Chaco compared with a much lower 29 percent in Buenos Aires. This difference holds within various subsamples and is robust to a number of controls.

One might wonder if other unreported potential benefits from registering may be more important to firms in Buenos Aires than Chaco. This seems unlikely, as the survey also reveals that a much larger percentage of firms in Buenos Aires (45 percent) report no potential benefit from registering (as perceived by them) as the main reason for not registering, compared to only 22 percent of firms in Chaco. This difference is robust and holds within the various subsamples.

In contrast to the findings on the benefits from registering, various elements of the cost of registering do not show any significant difference between Chaco and Buenos Aires. That is, roughly the same percentage of firms in both regions report the following as the primary reason for not registering: time, fees and paper work required for registering, taxes that registered businesses have to pay, inspections and meeting with government officials that follow registration and bribes that registered businesses need to pay.

There are significant differences between informal firms located in the Buenos Aires and Chaco regions of

Argentina. These differences relate to various aspects of firm-performance, firm-characteristics, business climate and the perceived benefits of registering. Policies aimed at improving income levels of those in the informal sector are likely to yield better results if they take into account local factors or regional differences such as the ones discussed above.

## Notes

1. The Enterprise and Informal Surveys implemented in Latin America and Caribbean countries, are jointly conducted by the World Bank and the Inter-American Development Bank for this geographic region.
2. Regression analysis shows that the listed variables explain less than 11 percent of the gap in labor productivity (log values) between Buenos Aires and Chaco. The significantly higher labor productivity in Buenos Aires compared with Chaco also holds within various subsamples, although in the subsamples (e.g., businesses operating from inside household premises) it is somewhat weak without controlling for whether a firm uses machinery or not.
3. That is, the difference in employment level is not due to differences across cities in the industry composition (20 industries within manufacturing and service) of firms, belongs, age of the firm, gender of the largest owner, whether the business operates from inside or outside household premises, whether the firm uses machinery or not, proportion of workers that are family members of the largest owner and the education level of the largest owner.
4. That is, the stated difference in monthly sales across the two cities is robust to the factors listed for employment in the previous footnote. However, the difference is small and insignificant in some subsamples such as firms that operate from outside household premises.

## References

- Kim, Byung-Yeon, and Youngho Kang. 2009. "The Informal Economy and the Growth of Small Enterprises in Russia." *Economics of Transition* 17(2): 351-376.
- La Porta, Rafael, and Andrei Shleifer. 2008. "The Unofficial Economy and Economic Development." Tuck School of Business Working Paper No. 2009-57.
- Mukherjee, Dipa. 2005. "Productivity in the Informal Manufacturing Sector: Regional Patterns and Policy Issues," in *Industrialization, Economic Reforms and Regional Development: Essays in Honor of Professor A.K. Mathur*, edited by Sukhadeo Thorat, Jaya Prakash Pradhan and Vinoj Abraham. Shipra Publications.

The Enterprise Note Series presents short research reports to encourage the exchange of ideas on business environment issues. The notes present evidence on the relationship between government policies and the ability of businesses to create wealth. The notes carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this note are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

