Comparing informal firms in Buenos Aires and Chaco (Short Note)

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This note highlights differences in the structure, conduct and performance of informal businesses in two regions of Argentina, Buenos Aires and Chaco. Firm-efficiency as measured by the average productivity of labor 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 compared with Chaco. 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 the 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, corruption and crime as obstacles to business also differ sharply across the two regions. These findings suggest greater need to design policies towards the informal sector at the local than at the national level.

Recently, the World Bank conducted a survey of informal or unregistered firms in two regions of Argentina (Enterprise Surveys), Buenos Aires and Chaco. 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. Not much is known about the informal economy, either at the national or the sub-national level. Lack of reliable data is one the main reasons for this. This is important given that the informal economy is large. Recent estimates suggest that for the world as a whole, between 22.5 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 and 57 percent (La Porta and Shleifer, 2008).

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 how 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 some of the possible explanations for the observed differences in labor productivity. 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 frame, the survey used in the note is based on a random selection of informal firms. The sample is therefore not necessarily representative of the informal economy at the country or the city level. Hence, the results presented below pertain to the structure of the informal firms surveyed rather than the informal economy per se. Extension of the results discussed below to the broader informal economy requires due caution.

Labor productivity and firm-size

Firm-efficiency as measured by the ratio of total sales (in USD) to employment in a regular month (labor productivity) is almost twice as high in Buenos Aires compared in Chaco. That is, the median value of labor productivity for firms in Buenos Aires equals USD 258 versus a mere USD 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.1

**Figure 1: Higher labor productivity in Buenos Aires cannot be explained away by differences in sample composition**

![Graph showing labor productivity and proportion of firms located in Buenos Aires](image)

Source: Enterprise Surveys

(1) The figure is a partial scatter plot of the relationship labor productivity (logs) against the dummy for Buenos Aires after controlling for 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), sector (manufacturing vs. service). (2) The positive relationship in the figure is statistically significant at the 5 percent level, computed using Huber-White robust standard errors.

**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, and like labor productivity, does not appear to be due to differences in the composition of the sample across the two regions.2 However, looking at monthly sales as the measure of firm-size, the opposite result holds. A median firm in Buenos Aires is 1.7 times 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.3 It is safe to conclude from this that the higher labor productivity observed in Buenos Aires compared with Chaco is due to both, higher sales and lower employment in the former relative to the latter region.

**Use of machinery and other equipments 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 transport 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 sub-samples within each region. For vehicle usage, 17.6 percent of the firms in Buenos Aires compared with 30 percent in Chaco use own vehicle or other means of transportation. The corresponding figures for cell phone usage equal 36.7 and 47 percent, respectively. These differences across the two regions are significant, robust to various differences in sample composition and firm-attributes and they also hold for the various sub-samples shown in figure 2.

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

There are some differences between the two regions in how businesses finance day-to-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 own funds and more likely to borrow from external sources such as banks. In both 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 vs. 75 percent) as well as external funds (18 vs. 5.3 percent), where external funds include credit from suppliers or advances from customers and loans form micro finance institutions, banks and moneylenders. What this suggests is that there is a greater tendency among firms in Chaco than in Buenos Aires to avoid diversify across internal and external funds.

Anecdotal evidence suggests that many informal businesses are seasonal in nature. In the sample under study, the ratio of total sales of firm in the busiest to the slowest month averages 3.1. However, the ratio is significantly higher in Chaco equaling 3.7 compared with 2.9 in Buenos Aires. The higher seasonality in Chaco holds within various sub-samples 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 the relatively less developed Chaco region (figure 3). This difference between the two regions survives accounting for differences between the two regions in various firm characteristics including the ones highlighted in figure 3.

**Figure 3: Use of family labor is more common in Chaco than Buenos Aires**
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 or divorced, 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 highest education level of either of the largest owner’s parent.

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 equal 61 percent in Buenos Aires and a somewhat lower 54 percent in Chaco. For the sample of firms located outside household premises, where the difference is large and significant, the corresponding figures equal 63 and 48 percent, respectively. In contrast, for firms located inside household premises, the pattern is reversed with only 59 percent of firms in Buenos Aires compared with 79 percent in Chaco having owners with secondary education or higher. Similarly, the percentage of firms that have the largest owner with some vocational training is significantly higher in Buenos Aires than Chaco, but only for the sample of manufacturing firms (43 percent vs. 26 percent). The corresponding difference in the full sample (27 vs. 33 percent) and within the sample of service firms (28 vs. 24 percent) is not significant.

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

The survey reports firms’ perception on 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 in perceive corruption as a sever obstacle in Chaco than in Buenos Aires (53 vs. 27 percent). The same holds for crime (62 vs. 38 percent). These differences are large, robust to various checks and also hold within various sub-samples. These findings suggest that the quality of institutions and governance may be much more important to informal firms located in the relatively smaller cities or less developed cities such as Chaco. 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 than in Buenos Aires

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 vs. Buenos Aires is robust to a number of controls and holds within various sub-samples such as manufacturing firms (47 vs. 35 percent), service firms (65 vs. 38 percent), female-owned firms (55 vs. 28 percent), male-owned firms (57 vs. 46 percent), firms that operate from inside (53 vs. 29 percent) and outside (71 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 sub-samples. 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. The higher percentage figure for Chaco vs. Buenos Aires holds within various sub-samples including manufacturing firms (53 vs. 31 percent), service firms (59 vs. 27 percent), female-owned firms (55 vs. 28 percent), male-owned (56 vs. 30 percent) firms, firms that operate from inside (53 vs. 28 percent) and outside (67 vs. 30 percent) household premises, firms with a single employee (52 vs. 28 percent) and firms with more than one employee (61 vs. 36 percent). The higher percentage of firms in Chaco vs. Buenos Aires continues to hold even when differences in the composition of the sample and firm characteristics such as the sector of activity (manufacturing vs. service), education level and gender of the largest owner, age of the firm, number of employees, location of business inside and outside household premises and whether the firm uses machinery and vehicles or not are taken into account (figure 4).

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) than firms in Chaco (only 22 percent) as the main reason for not registering. This difference is robust and holds within various sub-samples.

In contrast to the benefits from registering, various elements of the cost of registering do not show any significant difference between Chaco and Buenos Aires. That is, the percentage of firms that report the following as the reason for not registering is roughly same in the two regions: 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 business need to pay.
Figure 4: Higher proportion of firms in Chaco compared with Buenos Aires perceive various benefits from registering irrespective of differences in firm characteristics across the two cities

There are significant differences between informal firms located in 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.

References
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 significant higher labor productivity in Buenos Aires compared with Chaco also holds within various sub-samples, although in sub-samples (e.g., businesses operating from inside household premises) it is somewhat weak without controlling for whether a firm uses machinery or not.

That is, the difference in employment level is not due to differences across cities in the sector (manufacturing vs. service) to which a firm 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 and the education level of the largest owner.

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 sub-samples such as firms that operate from outside household premises.

This difference between Buenos Aires and Chaco is not statistically significant at the 10 percent level or less.