Measuring Firm Performance in Latin America and the Caribbean[1]

Basic Definitions

Countries surveyed in 2010 and how they are grouped for analysis:

In 2010, Enterprise Surveys (ES) interviewed 12,855 enterprises in 30 Latin American and Caribbean countries. In addition in 2009, 1,802 firms were interviewed in Brazil also following the standard ES global methodology.

For analytical purposes, the 31 countries are categorized into 3 groups:

Small Caribbean countries: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Suriname, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines

Medium-size countries: Bolivia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Uruguay, and Trinidad and Tobago

Large countries: Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Republica Bolivariana de Venezuela.

Two waves of Enterprise Surveys, 2006 and 2010:

Fifteen countries were surveyed in 2006 using the ES global methodology: Argentina, Bolivia, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Republica Bolivariana de Venezuela. In total, 10,930 firms were interviewed in 2006, of which 3,535 were re-interviewed in 2010.

Reference periods of the survey data:

The information collected in the surveys refers to characteristics of the firm at the moment of the survey (2006, 2010 and 2009 for Brazil) or to the last completed fiscal year (2005, 2009, and 2007, respectively). In addition, sales, employment, and labor productivity annual growth rates are calculated comparing data from the last complete fiscal year of each survey and recall data. Consequently, growth rates refer to the period 2002-05 for the 2006 surveys, 2004-07 for the 2009 Brazil survey, and 2007-09 for the 2010 surveys.

The Enterprise Surveys provide a unique data set to estimate firm performance

There are many measures of firm performance: revenue, profitability, stock price, and production efficiency, to name just a few. This note, *Measuring Firm Performance in Latin America and the Caribbean* focuses on two measures. First, real labor productivity growth (the annual rate of growth of real sales per worker) is used as a proxy for how efficiently a firm uses its labor inputs.[2] Second, employment growth is used as a measure of the absorption of labor in the production process. Both measures are expressed as annualized growth rates.[3] Ideally, growth is based on both higher productivity and rising employment, as more resources are put to work productively, but these measures do not always move in tandem.

Several studies have shown that productivity growth is a driver of economic prosperity, and that languishing productivity in manufacturing and services is preventing the LAC region from catching up with the developed world (Pagés 2010). Adding to this trend, evidence suggests that production inputs, such as labor, are not shifting to more productive activities, slowing income and economic growth, potentially stunting gains in productivity (Rodrik 2011).

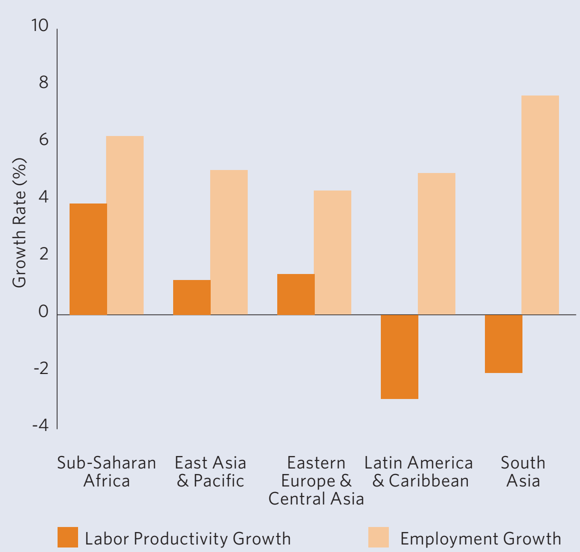
At the same time, the size of a firm can also play a role in its performance. Some studies have shown that larger firms are more productive than smaller ones (Castany et al. 2005; Van Biesebroeck 2005; Pagés 2010) due to factors such as better access to technology, managerial skills, finance, and learning. At the other extreme, the flexible, non-hierarchical structure of small firms can give these firms a productivity advantage. Indeed, several empirical studies have shown a decrease in productivity as size increases (Geroski 1998; Tybout 2000).

While most studies compute performance measures using national accounts information, the firm-level Enterprise Surveys (ES) provide a unique opportunity to estimate performance using comparable, firm-level data across the region. Indeed, the ES show that on average, the annual growth rate in real labor productivity is declining in both the manufacturing and services sectors in LAC. However, both sectors are also adding jobs, reporting positive annual job growth on average. Together, these trends show that the region's businesses are growing their workforce, but gains in revenues are lagging. This trend is stronger in the manufacturing sector than in services.

Manufacturers in Latin America and the Caribbean are experiencing negative productivity growth on average

Growing economies require firms that increase production and allocate resources efficiently. The ES data show that while manufacturing firms in LAC increased employment in 2010, their labor productivity declined. This trend contrasts with that observed in Sub-Saharan Africa, Eastern Europe and Central Asia, and East Asia and Pacific, where growing employment in manufacturing was accompanied by growing labor productivity.[4] In fact, LAC has shown the poorest productivity growth compared with other regions of the world, exhibiting a steep decline, while the employment growth rate was the second lowest after Eastern Europe and Central Asia (Figure 1).

FIGURE 1 **PERFORMANCE IN MANUFACTURING BY REGION**



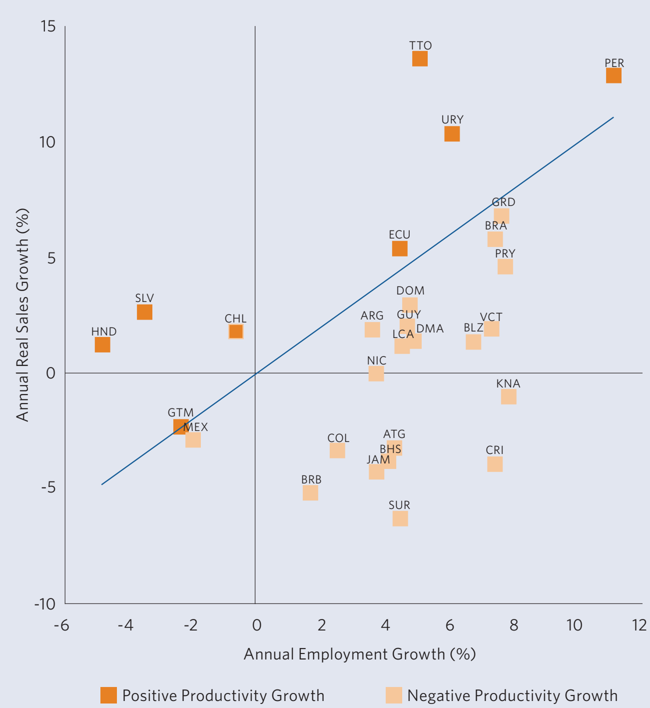
Source: Enterprise Surveys.

Yet labor productivity growth in manufacturing varied considerably across LAC in 2010, rising sharply in some countries, such as Trinidad and Tobago (9 percent), followed closely by Honduras and El Salvador—although in the case of the latter two countries, productivity growth was accompanied by declines in employment growth. By contrast, in some other countries, such as Costa Rica (-11 percent labor productivity growth) and several countries in the Caribbean, such as Suriname, St. Kitts and Nevis, Jamaica, Antigua and Barbuda, and the Bahamas (-7 percent labor productivity growth on average), productivity in manufacturing fell dramatically as firms added jobs and sales contracted (Figure 2).

Manufacturers are adding jobs but sales growth is not keeping pace with job expansion

While on aggregate labor productivity growth in manufacturing is negative, manufacturers are adding jobs. Employment growth among manufacturers was positive

FIGURE 2 **GROWTH IN MANUFACTURING IN 2010**



Source: Enterprise Surveys.

across most countries in LAC in 2010, resulting in an average employment growth rate of 4.6 percent among the region's manufacturers. As Figure 2 shows, only 5 out of 28 countries in the region experienced a reduction in employment in 2010: Honduras, El Salvador, Guatemala, Mexico, and Chile.[5]

Only a handful of the 28 countries covered in this note achieved growth in both employment and productivity in manufacturing: Trinidad and Tobago, Peru, Uruguay, and Ecuador.[6] Peru had the highest employment growth rate (11 percent), but Peruvian manufacturers increased sales at an even faster rate, thus increasing their productivity. Meanwhile, a notable number of countries in LAC, including larger ones such as Brazil and Argentina, saw manufacturing employment increase at a faster rate than sales, resulting in declining labor productivity.

Productivity among manufacturers in the small Caribbean countries is falling at a greater rate than in the rest of the region

In the 11 small Caribbean countries, labor productivity growth in manufacturing fared worse, on average, than in the rest of the region (-6 percent versus -1 percent for large countries and -.1 for medium size countries). In fact, none of the small Caribbean countries included in the report showed positive annual productivity growth in manufacturing. Still, each of these countries increased employment in this sector. Though no small Caribbean country was able to increase manufacturing sales apace with employment growth, Caribbean manufacturers have higher levels of labor productivity (over $38,000 in sales per worker) than the rest of the LAC region (approximately $27,000).

While the productivity growth rate for manufacturers is negative, over time this growth rate has been accelerating slightly while employment growth has been losing speed

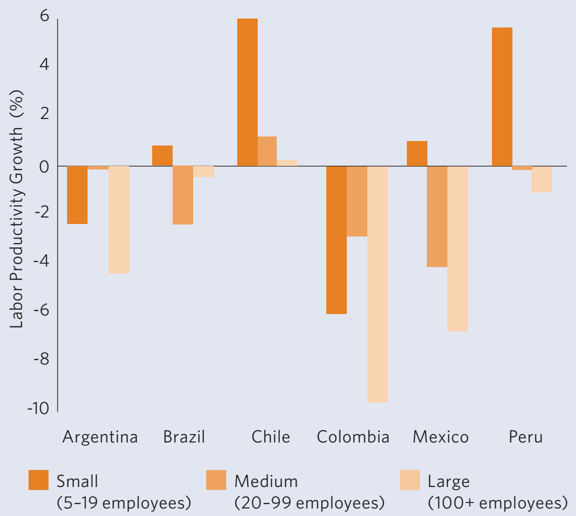
Comparing the results of the 2010 ES survey with the 2006 ES survey, the rate of labor productivity growth picked up for the region's manufacturers, with growth rates accelerating by approximately 2 percentage points, on average, for the 12 countries for which this comparison is possible.[7] In seven of these 12 countries, labor productivity growth rates either accelerated or remained stable. Among the countries that experienced a deceleration in manufacturing labor productivity, the largest deceleration occurred in Colombia and Argentina, both of which had positive 2006 growth rates turn to negative rates by 2010.

Concurrent with these trends in productivity growth, annual employment growth decelerated between 2006 and 2010 for these 12 countries, though remained positive overall. In half of these countries the rate of employment growth decelerated considerably;[8] in two other countries—Peru and Uruguay—employment growth rates remained flat. Only in Chile, Ecuador, Mexico, and Paraguay did the rate of employment growth notably pick up.

Larger firms in LAC have higher labor productivity; however, only small manufacturers outside the Caribbean are experiencing a growth in productivity

Based on the 2010 survey, large manufacturing firms in LAC have higher levels of labor productivity on average: in fact, the average labor productivity of large manufacturing firms ($54,897 per worker) is 47 percent higher than the labor productivity of medium firms ($37,285) and 114% percent higher than that of small firms ($25,659). Yet, the region's large manufacturers are becoming less productive, showing negative labor productivity growth rates of approximately -3 percent, compared to growth rates for medium and small firms of around -2 percent. The overall decline in labor productivity in the LAC region is in part driven by the small Caribbean countries; in fact, excluding the 11 small Caribbean countries, small firms elsewhere in Latin America are increasing their labor productivity (at an annual rate of .3 percent) and medium and large firms more than halved their negative labor productivity. The more dynamic pattern of small firms is emphasized in the six large countries of the region, where small manufacturing firms had the highest labor productivity growth rates (1 percent, though with notable variation) compared to -1 percent and -4 percent growth rates for medium and large manufacturing firms, respectively (Figure 3).

FIGURE 3 LABOR PRODUCTIVITY GROWTH IN LARGE COUNTRIES IN 2010



Source: Enterprise Surveys.

Over time, manufacturing SMEs performed better than large firms

Trends in manufacturing sector activity between 2006 and 2010 showed patterns that varied by firm size. Small firms accelerated their labor productivity growth, moving from an average negative rate in 2006 to a positive rate of growth in 2010—improving by over 3 percentage points. Medium-size manufacturers, meanwhile, moved from a productivity growth rate of -2 percent in 2006 to a slightly less negative rate of just below 0 percent in 2010. Taken together, SMEs went from contracting productivity growth rates in 2006 (-2 percent) to growing productivity rates in 2010 (1 percent annual growth). On the other hand, large firms experienced a notable deceleration in productivity growth rates, moving from positive rates in 2006 to a slightly negative growth rate in real labor productivity in 2010.

For services in LAC, labor productivity is also contracting

Across LAC, labor productivity is contracting in services, with an annual growth rate of -1 percent on average, a drop only slightly lower than the annual -2 percent decline in EAP. All other regions used for comparison experienced an increase in labor productivity on average. Nonetheless, as in manufacturing, employment in the services sector grew at around 5 percent per annum, which while positive, lags behind the rates of employment expansion in other regions (Figure 4).

While services are adding jobs, in several countries sales growth is lagging

The services sector is important in Latin America and the Caribbean, employing nearly 67 percent of the region's labor force. As in manufacturing, services firms are adding jobs; employment growth in LAC averaged nearly 5 percent for services firms, and this rate increases when the small Caribbean countries are excluded (where employment in the sector grew at a lower rate of 4 percent per annum).

Labor productivity growth rates in the services sector show a varied pattern across countries in the LAC region. Outside of the small Caribbean countries, nine countries[9] had positive growth in labor productivity, all while expanding employment; four[10] countries had positive employment and sales growth, but were unable to achieve gains in productivity (Figure 5). Services firms in the remaining four countries,[11] while adding jobs, experienced shrinking sales.

FIGURE 4 PERFORMANCE IN SERVICES BY REGION

Source: Enterprise Surveys.

FIGURE 5 GROWTH IN SERVICES IN 2010

Source: Enterprise Surveys.

Services in the Caribbean are adding jobs, but productivity growth is negative

All small Caribbean countries experienced positive annual employment growth rates in services, yet only three of these countries (Belize, St. Lucia, and St. Vincent and the Grenadines) also had positive labor productivity growth rates. These results indicate that despite relatively robust productivity—on average Caribbean service firms report $42,000 in sales per worker, higher than elsewhere in LAC—the services sector in these small Caribbean countries is slowing down in terms of productivity growth. These indicators nonetheless vary by industry: tourism and wholesale trade were the only two industries that showed positive growth in labor productivity among small Caribbean countries; both industries also had positive employment growth in 2010.

There is some evidence that productivity growth in services is picking up speed in LAC

Comparing labor productivity growth rates over time in services, growth accelerated between 2006 and 2010. In 10 out of the 12 countries covered in both rounds of the survey, labor productivity growth accelerated notably; only in Honduras, Paraguay, and Peru did this rate remain negative after accelerating since 2006.

Only small services firms are increasing labor productivity in LAC

While labor productivity levels in services do not vary significantly by firm size, as they do in manufacturing, the data show that among services firms only small firms experienced a slight increase in labor productivity (growth rate of 0.1 percent) compared to negative rates for medium (-3 percent) and large (-3 percent) firms. As in manufacturing, productivity declines in the small Caribbean countries pull down the LAC-wide averages. Outside the small Caribbean countries, for the average small services firm, labor productivity grew at a rate of 2 percent – notably higher than the average growth rate of medium (-3.9 percent) and large firms (-1.3 percent).

Large services firms are increasing their employment faster than SMEs in services

Employment growth in services is positive across all firm sizes in 2010. Large services firms had the highest employment growth rate at 7.0 percent, compared with the rate of medium-size (5.0 percent) and small firms (4.0 percent). On average, the large countries in the region exhibited similar employment growth (4.8 percent) to medium-size countries (5.4 percent), but greater than in small Caribbean countries (4.1 percent). In all three groups of countries, large services firms experienced the highest rates of employment growth (around 7 percent).

Small services firms are the most dynamic in terms of labor productivity, but large firms rebounded from 2006

Among the 12 countries that had two waves of surveys, 2006 and 2010, labor productivity growth rates for small firms accelerated and was about 6 percentage points higher in 2010 than in 2006. Large firms reported productivity growth rates of -5 percent in 2006 and showed notable improvement by 2010, when their growth rate in labor productivity was just below 0 percent. Medium firms did not experience much change in their labor productivity growth, which remained negative at around -2 percent.

Businesses across all size categories, while adding jobs, are increasing employment at decelerating rates

Employment growth rates have decelerated for all size services firms in the region; between 2006 and 2010 there was positive job creation in each size group, but the rate of growth decreased. Large firms experienced the largest decrease in the employment growth rate between the two waves of the surveys (a deceleration of over 2 percent). This trend, alongside the flat to accelerating productivity growth rates in services, may suggest that in this period, services firms—at least in the 12 countries for which data is available—were able to adapt to maintain productivity gains.

Endnotes

1. Lead authors: David C. Francis, Federica Saliola and Murat Seker, with the collaboration of the LAC report team.
2. In addition to labor productivity, total factor productivity (TFP) was also computed using two different estimation methods. One is a trans-log production function using sales as output, and labor, capital, and raw materials and intermediates as input factors; another one is a Cobb-Douglas production function using sales as output and labor and capital as input factors. Both TFP measures were significantly correlated with labor productivity levels for almost all of the countries. Due to the descriptive nature of the note and space limitations results are excluded. They are available upon request.
3. Enterprise Surveys include recall questions on employment and sales data. Employment and productivity annual growth rates are computed using these data. Employment is measured as the total number of full-time permanent workers.
4. Average growth rates for the region exclude Bolivia, Panama, and Venezuela, because sales recall variables for these countries were only available for fewer than half of the sample due to low response rates. For consistency, these three countries are also excluded from the analysis of employment growth.
5. For a few countries such as Mexico, the graphs show data that differs from the indicators in the country tables because the graph is constructed using only the subset of firms for which labor productivity can be computed. Unlike in the tables, in the graph sales growth and employment growth are restricted to this subset as well.
6. On average, Chilean manufacturers also experienced positive employment growth; however, the subset of firms for which labor productivity growth could be calculated had negative employment growth, as shown in Figure 2
7. Venezuela, Bolivia and Panama are excluded from the 15 countries with two rounds of surveys due to low response rates as explained in note 3.
8. Argentina, Colombia, El Salvador, Guatemala, Honduras, and Nicaragua.
9. Argentina, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Trinidad and Tobago, and Uruguay.
10. Brazil, the Dominican Republic, Paraguay, and Peru.
11. Costa Rica, Honduras, Jamaica, and Nicaragua.

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