Business Dynamics, Business Demography, and Entrepreneurship

12 June 2019
Outline

1. What’s the purpose for building and maintaining data on businesses and entrepreneurship?

2. Data Sources for Business Dynamics, Business Demography and Entrepreneurship

3. Core indicators

4. Challenges and roadmap for the future: enhancing productivity
1. What’s the purpose of building and maintaining data on businesses and entrepreneurship?
Recently, the National Congress approved the Government’s policy roadmap for the next four years: the National Development Plan: *Colombia’s COMPACT: a compact in a search for equity*. The document has a strong emphasis on policies promoting entrepreneurship and dynamism in the business environment, and programs designed for *productivity enhancement* at the firm level. The goal is to improve the access of entrepreneurs and firms to:

- Digital transformation
- Science and Technology
- Innovation
- Global networks
In order to achieve our medium term development plan goals, detailed data on business dynamics (entry and exit of firms), productivity (optimal allocation of resources) and entrepreneurship will be produced by the Colombian NSO-DANE.

- The Colombian National Statistics Department (DANE) has a long history of collecting data on businesses. As such, most of the data that will be used for evaluating the success of policies and programs will be produced by DANE.

- The purpose of building and maintaining data on businesses and entrepreneurship is to perform objective measurements allowing impact evaluation and to provide effective feedback on its effectiveness.
2. Data Sources for Business Dynamics, Business Demography and Entrepreneurship
What are the sources of data?

DANE produces information associated with structural/continuous surveys on:

- **Manufacturing**
  - Annual and monthly, with territorial disaggregation

- **Wholesale/retail**
  - Annual and monthly, with international commerce emphasis

- **Services**
  - Annual and monthly, with disaggregation for each of the subsectors

- **Innovation and technology**
  - Annual survey, with emphasis on manufacturing and services every two years

- **Entrepreneurship / household enterprises**
  - Monthly, as a module attached to the households monthly survey

- The business (partial) registry for each survey is maintained according to information about size (gross output and employment) of the firms. In the case of the services survey, the threshold is defined for each subsector.
- For the innovation survey, the business (partial) registry is a subsample of the manufacturing and services surveys.
More in-depth: the regional analyses and survey redesigns

**Subnational scope:**
- The monthly manufacturing survey was recently redesigned so as to produce sub-nationally disaggregated indicators of gross output, value added and employment. This has been a good instrument for tracking economic performance at the subnational/metropolitan level.

**Redesign of surveys:**
- The monthly services and wholesale/retail surveys will also endure this redesign in order to improve subnational productivity pictures.
- 2020: DANE will produce a Foreign Direct Investment survey according to the 4th OECD Benchmark Definition of Foreign Direct Investment – BMD4 *(FDI relationships, origin of the FDI flows and subnational distribution of investments)*
### What kind of data is produced?

#### Sectoral economic surveys

(manufacturing, wholesale/retail and services)

- Firm size: small, medium and large firms

  - Total revenue disaggregated by product
  - Gross output value disaggregated by product
  - Intermediate consumption
  - Value added
  - Total employment disaggregated by occupational position
  - Total wages disaggregated by occupational position
  - Assets valuation

#### Household surveys

- Firm size: micro (household enterprise)

  - Revenues and incomes
  - Intermediate consumption
  - Total employment disaggregated by occupational position
  - Total wages disaggregated by occupational position
  - Entrepreneurial skills

* This information set will be the source of calculation for business demography, business dynamics and digitalization and globalization of domestic sources
Business Demography: indicators and Administrative Data use

- **Integrated Social Security Contribution Form**
- **PILA** (acronym in Spanish) Ministry of Health

**Administrative data**
- Amount of people employed
- Economic Activity
- Location

- Identification code
- Total pension contributions
- Total health contributions
- Salary

**Statistical unit**
- Enterprise
  - People employed
  - Amount of people employed
  - Economic Activity
  - Location
- Identification code
  - Total pension contributions
  - Total health contributions
  - Salary

- Micro businesses
- Household enterprises

**Longitudinal database**
2008 - 2018

**Indicators**
- Employer Enterprise Births
- Employer Enterprise Deaths
- Gazelles (with growth based on the number of employees)

- Amount of people employed by Economic activity
- Employment by enterprise size
- Employment creation and destruction by enterprise births and deaths

- Employment by economic sector
- Age of businesses
- Survival rate (followed up to five years after birth)
Business Demography: indicators and Administrative Data use

- Construction Longitudinal Data Base
- Construction Query - Reports
- Exploitation and Analysis
- Construction of indicators

- Employment indicators and number of enterprises
- Expansion - Contraction
- Birth and deaths– Gazelles Enterprises

Available information 2008 to 2018

Business Register: Integrated Social Security Contribution Form (PILA – for its acronym in Spanish)

DANE Development
3. Core indicators
Business Dynamics: amount of firms by economic sector
Active enterprises with one or more employees - 2016

This indicators are produced according to OECD standards for reporting business demography and dynamics.

This is a good picture of resources allocation across sectors that gives an idea about the economic sectors that attracts more activity.

By 2016, most of businesses and enterprises were on the wholesale/retail sector, followed by administrative services.
Business Demography: entry of new firms by sector of economic activity
For each year, it is possible to know the number of new businesses

Now, how dynamic are these sectors?

This is a good measure of effective allocation of factors at the sector level. The literature* argues that factor reallocation from less productive to more productive firms is an important signal of productivity enhancement.

It is expected that sectors that have less barriers for entry and exit, are also sectors in which productivity is higher, since there is more competition and more incentives for reallocation of factors from less productive to more productive sectors.

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Business Demography: employment in firms by sector of economic activity

Total number of employees

Accordingly, the allocation of factor within sectors is a good measure of productivity.

It is expected that sectors in which there is more entry and exit of firms, there is also a reallocation of productive factors, such as labor, from less productive firms, to more productive ones.

The total employment by sector can be contrasted with the number of large, medium and small firms.
Business Demography: new firms by sector and employment per firm

A good way to prove what was said about factor reallocation and productivity is shown here: the entry of new firms is concentrated in sectors that have a low relation of employment/number of existing firms, which are sector with low productivity.

There are also sectors with a relatively low relation of employment/number of existing firms as the manufacturing and construction sector, but with fewer new firms. In these sectors reallocation is, apparently, not taking place.
Business Demography: size, output and employment
Annual surveys indicators

- Across all sectors, the proportion of large firms ranges from 4.1 to 29.3 percent of the sample
- However, they are responsible for the bigger share of output and employment

Micro (1 to 10 employees), small (11 to 50 employees), medium (51 to 200 employees), large (more than 200 employees)
Source: DANE EAC-EAS-EAM, 2017
Business Dynamics: the services sector (employment)

With the DANE information, it is possible to identify, in each sector, the share of revenues (or sales or production) and employment generated by large, medium, small and micro firms.

Specifically, as an example, in the services sector most of employment is concentrated in large firms.
## Business Dynamics: the services sector (revenues)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other service activities</td>
<td>10.0</td>
<td>27.3</td>
<td>58.0</td>
<td></td>
</tr>
<tr>
<td>Gambling and betting activities, sports activities and y...</td>
<td>9.8</td>
<td>21.3</td>
<td>68.7</td>
<td></td>
</tr>
<tr>
<td>Human health</td>
<td>4.4</td>
<td>12.2</td>
<td>85.1</td>
<td></td>
</tr>
<tr>
<td>Private higher education</td>
<td>4.1</td>
<td>13.0</td>
<td>95.5</td>
<td></td>
</tr>
<tr>
<td>Administrative and support service activities</td>
<td>4.0</td>
<td>13.0</td>
<td>95.0</td>
<td></td>
</tr>
<tr>
<td>Employment activities, Security and investigation activities, Services to...</td>
<td>4.6</td>
<td>13.0</td>
<td>95.0</td>
<td></td>
</tr>
<tr>
<td>Travel agency</td>
<td>12.3</td>
<td>25.7</td>
<td>61.1</td>
<td>30.6</td>
</tr>
<tr>
<td>Publishing activities</td>
<td>15.4</td>
<td>32.9</td>
<td>52.9</td>
<td></td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>11.6</td>
<td>25.1</td>
<td>40.5</td>
<td>22.3</td>
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<tr>
<td>Real estate activities</td>
<td>7.0</td>
<td>28.5</td>
<td>63.6</td>
<td></td>
</tr>
<tr>
<td>Computer programming, consultancy and related activities</td>
<td>3.5</td>
<td>5.4</td>
<td>90.5</td>
<td></td>
</tr>
<tr>
<td>Telecommunications</td>
<td>7.8</td>
<td>16.9</td>
<td>75.2</td>
<td></td>
</tr>
<tr>
<td>Television programme production</td>
<td>11.1</td>
<td>12.4</td>
<td>74.8</td>
<td></td>
</tr>
<tr>
<td>Motion picture and video programme activities</td>
<td>15.4</td>
<td>19.7</td>
<td>62.6</td>
<td></td>
</tr>
<tr>
<td>Publishing activities</td>
<td>5.9</td>
<td>23.4</td>
<td>70.4</td>
<td></td>
</tr>
<tr>
<td>Restaurants, event catering and Beverage serving activities</td>
<td>18.6</td>
<td>31.8</td>
<td>49.3</td>
<td></td>
</tr>
<tr>
<td>Accommodation</td>
<td>4.6</td>
<td>7.6</td>
<td>88.7</td>
<td>62.2</td>
</tr>
<tr>
<td>Postal and courier activities</td>
<td>8.4</td>
<td>28.4</td>
<td>62.2</td>
<td></td>
</tr>
<tr>
<td>Warehousing and support activities for transportation</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Also, in the services sector, revenues are concentrated in large firms.

Source: DANE EAS, 2017
However, only a few services subsectors have innovative firms, which implies that only a few large firms are being innovative, a problem of productivity and business dynamism.

Source: DANE EDIT, 2018 (information for 2016 and 2017)
When the innovation data is disaggregated by firm size, then it is clear that large firms are the ones that are making innovation efforts. And the data for the Wholesale and retail trade subsector shows that the analysis made before about entry of new firms and employment/number of existing firms was correct: this is a subsector that is less innovative and, arguably, less productive than the whole sector and other economic sectors. Here, large firms are less innovative than the average.
4. CASE: from MSMEs classification by employment to a gross-revenue-based criteria
Manufacturing Firms distribution between gross revenue and employment

Source: DANE EAM, 2016
The new criteria (differentiating for economic activity) will allow productivity and entrepreneurship public policies to target less productive firms = solving the market failure!
4. Challenges and roadmap for the future: enhancing productivity
Challenges: availability of information

The information produced has the higher standards of quality. However, the challenge is being able to:

- Include a higher number of firms in the monthly and annual surveys. Currently the partial business registry is updated with administrative data and information from other public institutions.

- Broaden the scope of economic activities that are surveyed structurally. For example: construction and infrastructure activities.

- Produce regularly official productivity, business dynamics, and business demography indicators.

- Set a standard of measurement for entrepreneurship
The roadmap: coordination and availability of information

Currently, there are some strategies designed to improve data collection and coordination:

- DANE will conduct an Economic Census that will collect exhaustive information about:
  - The number of businesses and entrepreneurs for each sector of economic activity
  - The quality of the business processes within each firm
  - Indicators about resources allocation, use of digital tools, innovation and productivity

These data and indicators will improve the quality of the monthly and annual surveys that collect information about businesses demography and dynamics. However, it will be necessary to:

- For the next wave of innovation surveys, DANE will include new questions about managerial skills, which, according to recent literature*, are important determinants of productivity performance.

- Coordinate the production of information from the early stages, in order to make it functional for productivity tracking. Organizational changes are being made so the DANE structure is able to produce coordinated data and make it available for policy-makers and researchers.

* Backus, M., 2019, Why is Productivity Correlated with Competition?. NBER.