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**Economic policy and electoral outcomes**

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**APPENDIXES A and B On line**

# Appendix A Methodology[[2]](#footnote-2)

**Gross Geographic Product (GGP) of each municipality in 2008**

In order to gauge the gross geographic product of each municipality in 2008, the descending method was adopted, applying coefficients in each municipality to a provincial added value, which permit to establish its participation in the provincial total. Thus, the structure of the gross product of each municipality is obtained for each sector of activity.

For each sector of activity the provincial added value was firstly estimated on the basis of the last officially available data (year 2006) by applying different indexes of growth of the quantities in order to obtain the gross geographic product in each sector of activity (16 in total) for the province of Buenos Aires in 2008. In each sector the growth was considered regarding the products which compose it. The consulted sources of information were, in general, those of the methodological report from the Provincial Department of Statistics for the estimates of the series 1993-2004. Alternative sources of data were obtained at a provincial, regional and national level.

Once the results in each sector of activity were obtained at a provincial level, the provincial total was disaggregated at the level of the 134 municipalities. In some sectors the coefficients which permit to disaggregate the provincial total in each municipality were obtained on the basis of the same aforementioned sources of information, whereas in other cases an alternative source was analyzed[[3]](#footnote-3). Where there was no data at all, the participation of the estimates corresponding to the year 2003 were maintained.

Without drawing up an exhaustive list, in the estimates in each municipality in the year 2008 the information came from the Provincial Department of Statistics (GGP in each municipality, shops included in the National Economic Census 2004/2005, etc.); National Institute of Statistics and Census (Survey on Occupancy Rate, cost indexes, etc.); Ministry of Agriculture, Livestock (agricultural crops, sea catches); National Office of Agri-food Commercial Control (bovine work); Central Bank of the Republic of Argentina (loans and deposits); Ministry of Economy of the Province of Buenos Aires (municipal transfers); and Department of Energy of the Nation (number of users and electrical energy invoiced) , among other sources.

Similarly, the years 2006 and 2009 were analyzed in order to obtain an indicator of municipal economic activity for those years. Then the variable *varae* (economic activity variation) was calculated as the variation of the economic activity of the year 2007(2009) with respect to the year 2005 (2007).

**Estimates of Agri-food chain (AFC)**

In order to determine the importance of the AFC in the province of Buenos Aires and its municipalities, the first step was to define the comprised activities. These are divided into three groups:

MAIN activities: They are activities which give rise to the food complex. This group includes the primary sector (agriculture, livestock and fishing) and the secondary sector where the production is processed in order to obtain food products. According to the National Classification of Economic Activities 1997 (ClaNAE’97) the MAIN activities comprise Agricultural Crops, Stockbreeding, Stock Farming Services, Fishing, and Food and Drink Production.

BACKWARD Activities: They are activities which provide input and machinery to the MAIN activities. This group includes all those activities in which more than a half of their production to the domestic market goes to the MAIN activities of the chain. This group comprises the production of fertilizers, pesticides and chemicals of farming use; medicine of veterinary use; plastic containers, parts and accessories of transmission; tractors, farming machinery and machinery for the food industry.

FORWARD Activities: This group includes those activities, mainly of services, which depend totally or partially to what happens to the MAIN activities. Their demand has its origins in the incomes and expenditures generated by the main activities. The sectors of activity which were incorporated to this group are Wholesale and Retail Trade, Restaurants, Haulage Transport, Building, Electricity, Gas and Water, Financial Intermediation, Association Services, Telecommunications, Property and Domestic Services.

The criteria of assignment to the different municipalities are detailed below:

The main activities were assigned entirely to the municipality where they are produced. On average, this group represents 73% of the value added by the AFC.

For the backward activities the same percentage of the product to the one generated by the main activities was assigned to the AFC. That is to say, if the main activity represents x% of the total product of the municipality, that same x% of the product is assigned to the AFC of the totality of the forward activities. This group of activities provides, on average, 20% of the value added by the AFC.

Each of the backward activities was assigned regarding the participation of that input in the expenditure of the main activities. That proportion was obtained on the basis of the Input Product Matrix 1997, updated to 2007. For instance, the manufacture of agricultural machinery represents x% in the expenditure of the main activities of the chain; therefore, in the municipalities where this activity is developed, this proportion x was assigned to the AFC.

By adding up the three groups of activities, the value of the AFC for each municipality was obtained. The assignment of activities to the AFC can be observed formally in the following equation:

$AFC^{j}=(Ma^{j}+Ma^{j}For^{J}+β\_{j}In^{j})GGP^{j}$ (A.1)

Being:

*AFCh*: added value of the AFC in the municipality j

*Maj*: % of the GGP of the municipality j which is generated in the main activity

*Forj*: % of the GGP of the municipality which is generated in the forward activities

*βi*: participation of the inputs in the expenditure of the main activities (it is the same in all municipalities)

*Inj*: % of the GGP of the municipality j which is generated in the input- producing activities.

*GGPj*: gross geographic product of the municipality j

**Net consumer and net producer municipalities**

In order to characterise a particular municipality as a net consumer (NC) or a net producer (NP) of the AFC, the percentage of food consumed in each municipality was estimated. The data from the National Survey of Home Expenses 2005 were consulted. To differentiate between Greater Buenos Aires and interior, the proportions from the National Survey of Home Expenses 1995/1996 were used. Thus, the weight of each municipality in the food consumption of the province was obtained. That percentage, in comparison with the production of the AFC, determines the condition of NP or NC.

**Price Index of municipalities production**

 The producer price index (PPI) in each municipality is a weighted average of prices of soybeans, wheat, corn, sunflower, meat, and other manufactured products.

The weighting used was the participation of each of these productions in the gross geographic product (GGP) of each municipality. Sources: Ministry of Agriculture, Livestock and Fisheries of the Nation and the National Institute of Statistics and Censuses (INDEC).

# Appendix B. Statistics

**Table B.1. Percentage of votes obtained by the Frente para la Victoria (FPV) in 2007 and 2009 and weight of the Agri-food chain (AFC) in the municipalities of the province of Buenos Aires**







Note: NP: net producer; NC: net consumer.

Source: see methological appendix.

**Figure 1. Taxes on agro-manufacturing sector exports as % of total revenues and GDP**

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Source: Foro de la Cadena Agroindustrial Argentina (2009).

**Figure 2. Contribution of agri-food chain by groups of municipalities in 2008 (% of GGP)**



Source: see methodological appendix.

**Figure 3. Relation between weight of the AFC and votes for the FPV**

**A. 2007 elections.**



**B. 2009 elections**



**C. Difference between 2007 and 2009 elections**



**Figure 4. Evolution of capital expenditures in the municipalities of the province of Buenos Aires (in pesos per capita and percentage of total municipal expenditures)**

Source: own elaboration based on data of municipal budgets

**Figure 5. 2007 and 2009 elections according to groups of municipalities of the province of Buenos Aires (in percentage from the total of positive votes)**



Source: Secretaría Electoral de la Provincia de Buenos Aires

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2. For more details see Lodola, Brigo and Morra (2010). [↑](#footnote-ref-2)
3. For instance, for the agricultural sector the estimates at the level of the provincial total as well as each municipality were made on the basis of the information available at the Ministry of Agriculture, Livestock and Fishing of the Nation (ex Office of Agriculture, Livestock, Fishing and Food) about implanted surface, harvest and tons produced by administrative area in the different agricultural campaigns. Alternative sources were used, for instance, in the case of telecommunications, the provincial added value can be obtained from the information provided by the service supplier companies in their balances or accountant states; whereas for the geographic deduction it can be obtained from the population, number of lines in each administrative area, etc. [↑](#footnote-ref-3)