Data file

The data is contained in the .cvs file,

<center>datos_accesos_municipios_variables_economicas.csv</center>

This file contains 1,250 observations (each observation is a municipality or "municipio" in Mexico) and 18 variables. The variables are described as follows,

(Column 1) Year: Year

(Column 2) Municipality code: A unique numerical code for each municipality

(Column 3) Number of internet access points: Total number of internet access points ("accesos") in each municipality. The source for this information is the *Instituto Federal de Telecomunicaciones* (Federal Telecommunications Institute) in Mexico.

(Columns 4-14) Market shares: Market shares for Mexican ISP (internet service provider) firms. In the empirical application we focus on the four largest firms. These are:

- AMX (our incumbent).- Market share included in column 5 on the data file.
- Three potential entrants.- TELEVISA (column 7), MEGACABLE (column 9), TOTALPLAY (column 11).

the source for market shares is the *Instituto Federal de Telecomunicaciones*.

(column 15) Number of economic units: Number of economic units (economic establishments) in each municipality. Source: INEGI.

(column 16) Total manufacturing production: Manufacturing production in each municipality. Source: INEGI.

(column 17) Total population: Total population in each municipality. Source: INEGI.

(column 18) Population density: Population density in each municipality. Source: INEGI.

Code

The program code is written in **GAUSS**, and it requires the **optmum** (optimization) GAUSS library. The program was executed in GAUSS 22, but it can run in older versions of GAUSS. The program is included in the file,

<div align="center">

`estimation_entry_game_incumbent.gss`

</div>

The code contains everything used in the estimation and counterfactual analysis of the paper's empirical section. The program begins by loading the data and organizing the variables in a clear way. Once the variables are loaded, the program includes a series of procedures involved in:

- Estimation and inference.

- Computing Bayesian-Nash equilibrium (BNE) in each market (municipality).

- Counterfactual analysis

The outputs from these procedures are used and combined to obtain our estimation and counterfactual results. Each procedure and each portion of the program is preceded by a brief description of what it accomplishes. The code is written according to the parameterization and description of the model given in the empirical section of the paper. Please note that any change to one procedure (for example, a re-parameterization, or a change in the number of players) would require manually changing other procedures accordingly. The code has been written so that the necessary changes are easy to identify. **The results that are called in Tables 3,4,5 and 6 of the paper are carefully indicated in the code (starting in line 2714).**