

# Economic Census in Mexico

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## **Background**

According to the Law of the National System for Statistical and Geographical Information, the National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, INEGI) is responsible of carrying out the economic census in Mexico. Since 78 years ago, the economic census is conducted every five years. The first one was the Industrial Census in 1930. The latest is the 2009 Economic Census. Data collected in 2009 strictly refer to activities carried out between January 1<sup>st</sup> and December 31<sup>st</sup>, 2008.

The objective of the census is to obtain updated and reliable basic statistical data on establishments which manufacture goods, trade merchandise and render services, in order to generate economic indicators for Mexico at a very detailed level (geographic, sector, thematic). The whole national territory –either by means of census or sampling– is the work area of the personnel which participates in the 2009 Economic Census. Data is collected on the active economic units during the census collection period. The census covers almost all of the economic activities that take place in Mexico, except for primary activities, of which only fishing and aquaculture are part of this census.<sup>1</sup> Other activities not considered for the census because of exceptional situations were diplomatic and other extra-territorial services (such as embassies, consulates, military units), international organizations, taxis, political parties and other political organizations (leagues, coalitions, etc.).

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<sup>1</sup> The study of activities carried out by the economy's primary sector belongs to the Agricultural Census; only fishing and aquaculture are part of the 2009 Economic Census.

The classification used for the census is the North American Industry Classification System (NAICS) 2007, the official economic activities classification in INEGI since 1997.

### ***Uses of the economic census data***

National Economic Census in Mexico is the most complete source of economic information about the Mexican economy in a given moment. The valuable information obtained through the economic census, about every economic unit in Mexico, is the main source of economic data for the National System of Statistical and Geographical Information, and gives the basis for the development of many other economic measures: economic surveys, GDP, Input Output tables, among other. Census data allow planning public economic policies, doing marketing research, academic research, etc., but mainly provides data for every level of geographic disaggregation, for each one of the more than 950 NAICS activities, and for a great number of items included in the questionnaires.

### ***Observation units***

Observation unit refers to the statistical unit for which data is collected. In most economic activities the constant economic unit used is the establishment, even though in some cases it can be the enterprise.

It includes fixed, partly fixed and household establishments, and excludes informal trade and those persons who work by their own account without a physical location.

To cover the different ways observation units work, it was necessary to represent them at different levels.

For manufacturing, commerce and service activities we used the establishment as the observation unit. This implies that the information is referred to the address where the economical activity is carried out, so the presentation of the results has the advantage that the data correspond to the geographical place that is shown in the rows of the table.

For fishing, mining and aquaculture we use observation units different from the establishment (fishing or aquaculture unit, mining unit), these units share the same advantage with the others.

Other observation units were used in the remaining sectors of the economy since their own characteristics do not allow us to use the establishment as observation unit. The use of other units has disadvantages because data can not be referred to the geographical place where the actual economical activity is carried out.

In the case of the enterprise as the observation unit, we obtain data of the activities developed in all its branches across the country.

When a table by state shows the activities of any of the sectors of Construction, Transportation (except post offices and warehousing) and Financial and insurance services, data is referred to one state, and we must understand that data does not have relation only with this state, but it is also linked with all the places that are involved with the enterprise. For example, if a table on financial services by entity indicates that the occupied personnel in Jalisco is 1000 persons, we must understand that the financial enterprises headquarters located in Jalisco have 1000 persons occupied as a whole, but not all these persons work in this entity, but they are distributed all around the country where the enterprises have branches.

We use the same understanding for the table by municipality or another geographical level.

In a table by entity on the generation, transmission and supply of electricity or postal services (activities for which the observation unit is the enterprise of the entity), the assigned data for each state correspond to each entity, but when the table is by municipality, we must understand that the data is linked to all the establishments of the enterprises distributed in all the entity and that the data is referred to some municipalities only, because the controlling offices of the establishment's group of this enterprises are located in those places.

**Observation Units used in the 2009 Economic Census**

NAICS Activities	Observation units for which their data is referred to the place where the economic activity is performed	Observation units for which their data is referred to the place where are located the headquarters, but in fact inform the economical activity that is developed in a larger geographical area (all the country or a state)
31-33 Manufacturing Industries 43, Wholesale trade 46, Retail trade 492, Messenger and courier services 493, Warehouse and storage services 51, Information in the media. Except telephone and telegraphy 53, Real estate and renting services 54, Professional, scientific and technical services 55, Head Offices 56, Bussiness support services 61, Educational services 62, Health care services and social assistance 71, Cultural, sports and other recreational services 72, Temporary accomodation services and food and beverage preparation 81, Other services except government activities 93, Legislative, government and justice international institutions activities All the related services with the activities of the sectors 11,21,23,48-49 and 52	Establishment	
11, Fishing and aquaculture	Fishing and aquaculture unit	
21, Mining. Except the services related with the activities of this sector, which observation unit es the establishment	Mining unit	
222210, Gas by ducte supply 23, Construction. Except the services related with the activities of this sectir, which observation unit is the establishment 481-487, Transports 517111, Wireless telecommunication, except by telephone 52, Financial and assurance services		Enterprise
22, Electricity and water 488111, Aerial Navigation services 491, Postal services 517111, Wireless telecommunication, except by telegraphy 527210, Wireless telecommunication, except satellital services		Entity enterprise (for the generation and transmission activities of electical energy, airial navigation services, post services, telegraphy and wire communications, and celular telephone)  Operator institution ( for the capture, treatment and supply of water)

### ***Geographical coverage for each economic sector***

*Manufacturing, commercial activities and services.* All establishments in urban areas are included in the census, and a probabilistic sample of the rural areas is taken (in order to complete the global vision) and all the establishments in those specific rural areas are covered. Large establishments are all covered, even if they are located out of the urban areas.

*Rest of sectors (fishing, mining, electricity and water, building activities, transportation, and financial services).* All establishments are covered, even if they are located out of the urban areas.

### ***General collection method***

Two main phases on the field operations for data collection can be distinguished:

- In 2008 every large establishment was visited to verify data about its name, address, economic activity performed, person who could give the information for the census questionnaires, mean to return the questionnaires (Internet, questionnaire in paper, questionnaire in Excel), and other general data. A draft version of the questionnaire was delivered to each establishment in that moment, allowing them to prepare its data since then. With that information a directory was prepared, containing all those establishments; it was called the SEG Directory. The same was done for building (construction) and transportation sectors, and the final result was also a directory; the TC Directory. Another directory was prepared for fishing and mining sectors; the PM Directory.
- In 2009 the census phase is taking place (and also the data processing work has begun). This second phase, the census phase is related in a more detailed way below:

Five field working groups were created for data collection, in order to complete the work in all economic sectors; four of those groups are decentralized, making good use of the offices that INEGI has in each state (Mexico is divided into 32 states), and the fifth one is centralized.

**PYMES Group.** From March 1<sup>st</sup> to May 15<sup>th</sup> this group made a census, going block by block and asking in all the external doors. They applied a unique questionnaire in all the establishments in the urban zone, except those which belong to the SEG group.

Approximately 14000 people (called “censors”) were contracted for 3 months in order to apply the questionnaires. They received training during 2 weeks. A supervisor was contracted for every 5 censors.

We also applied this questionnaire in households where there existed some economical activity. We used a PDA with digitalized cartography, in some exceptions where is a dangerous zone we use a printed questionnaire instead of using the PDA. We also offered the option that the informant answer the questionnaire via Internet.

During the route, we updated the cartography and we counted the homes (input for the population census).

We already have the results of the questionnaires in the main database and we proceed with the validation.

In the rural zone we make a sample in order to have the economical weight of the rural localities.

**SEG Group.** In this moment, this group is collecting the information of all those economic units in the SEG Directory prepared in 2008. They are also collecting data of those establishments which, considering its size, were transferred to them from the PYMES Group (those which was not considered in the SEG Directory). Unlike the PYMES Group, SEG Group is not working with a PDA, but with paper questionnaires (one different questionnaire for each sector), questionnaires in Excel or offers the establishments the option to answer by Internet.

**TC Group.** In this moment, also this group is collecting the information of all those economic units in the TC Directory prepared in 2008. They are also collecting data of those establishments which, considering its activity (if it is transportation or construction), were transferred to them from the PYMES Group (and was not considered in the original TC Directory). They work with paper questionnaires (one different questionnaire for each sector) and also offering the establishments the option to answer by Internet.

**PM Group.** This group collected the data from all economic units which main activity is fishing or mining, or water transportation, making use of the PM Directory prepared in 2008, and also making use of the establishments transferred from the PYMES Group. In the case of fishing units the original directory was completed with other strategies, like covering all places denominated *arriving points* of boats and fishermen, along all seaboards. They applied paper questionnaires and, like the other groups, offered the option to answer by Internet.

**Central offices Group.** Through agreements with some specific institutions and enterprises, the central area of INEGI, who is responsible of the whole economic census development, gets data from those institutions so large or complicated that decentralized offices can't take the responsibility of collecting their data. This is the case of electric industry or financial firms, for example.

### ***Data processing, reviews and analysis***

In order to generate results of high quality, INEGI increased the use of computing equipment in the census.

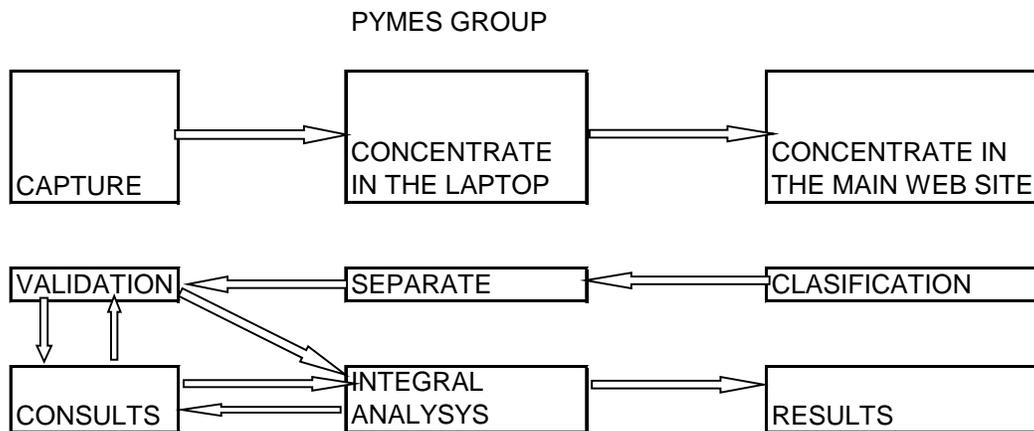
The data processing of the 2009 Economical Census takes place in the 10 regional offices, in the states and also in the central offices. Data transference through INEGI's net is important in order to know the figures that show the census progress by entity and at the national level, to control the operative and to guarantee the coverage.

When the collection stage of the census is finished, we verify that the information is complete and coherent with the guidance established in the validation system. After the capture and validation processes are finished, we carry out the national integration of all the files and we verify that there are no duplicates. We consult again with the respondents when the data is not clear or does not meet the validation criteria.

The last phase before we release the data base is to process the data by the diagnostic tables systems, which make a last review of the data.

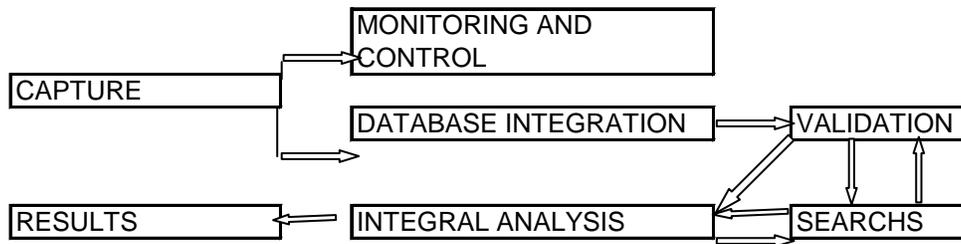
When we release all the data bases, we elaborate all the products with the results of the 2009 Economic Census.

To assure the best quality of the data (besides the PDA's use), we have systematized the data review process, which is summarized in the following charts.



System/ module	Who uses it?	When?
<b>COLLECTION</b>		
PDA CAPTURE	CENSUS REPRESENTATIVES	MARCH-MAY
INTERNET CAPTURE	RESPONDENTS (WEB)	
<b>CONCENTRATES IN LAPTOP</b>		
ENTERS DATA INTO PDA		
DOWNLOADS DATA IN PDA		
DELIVERIES AND REPORTS	ZONE HEADQUARTERS	MARCH-MAY
ADMINISTRATIVE SIA		
HOUSEHOLDS COUNTING		
<b>CONCENTRATES IN CENTRAL WEB</b>		
DATA RECEPTION	CENTRAL OFFICES	MARCH-JUNE
INTEGRATION		
REPORTS (BILLBOARDS)		
DATA BASE CONSULTATION	ALL	
<b>CLASSIFICATION</b>		
SEPARATES	CENTRAL OFFICES	MARCH-JUNE
<b>VALIDATION</b>		
MINIMUM DATA		
ARITHMETIC CONSISTENCY	CENTRAL OFFICES	APRIL-JUNE
LOGIC CONSISTENCY		
RECONSULT	CENTRAL OFFICES / STATE COORDINATIONS	
<b>INTEGRAL ANALYSIS</b>		
MULTIVARIATE, CONDITIONAL	CENTRAL OFFICES	JUNE 2009 / APRIL 2010
RECONSULT	CENTRAL OFFICES / STATE COORDINATIONS	
<b>RECONSULT</b>		
GENERATION OF TABLES	CENTRAL OFFICES	
PUBLICATION	CENTRALES OFFICES	MAY-JUNE 2010

## Fishing-Mining, Transports-Construction Groups



System/ module	Who uses it?	When?
<b>COLLECTION</b>		
INTERNET CAPTURE	RESPONDENT	
INTERNET CAPTURE	GROUP HEAD	MARCH-AUGUST
EXCEL INTEGRATION	RESPONDENT/ GROUP HEAD	
<b>FOLLOW-UP AND CONTROL</b>		
DIRECTORY CONTROL	CENTRAL OFFICES / STATE COORDINATIONS	
PROGRESS REPORTS	ALL	MAY - AUGUST
<b>DATA BASE INTEGRATION</b>		
INTEGRATION		
CONSULTATION	CENTRAL OFFICES	MAY - AUGUST
<b>VALIDATION</b>		
MINIMUM DATA		
ARITHMETIC CONSISTENCY		
LOGIC CONSISTENCY	CENTRAL OFFICES	
REVIEW OF APPENDIX		MAY - SEPTEMBER
RECONSULT	CENTRAL OFFICES / STATE COORDINATIONS	
<b>INTEGRAL ANALYSIS</b>		
MULTIVARIATE, CONDITIONAL	CENTRAL OFFICES	
RECONSULT	CENTRAL OFFICES / STATE COORDINATIONS	OCTOBER 2009 - APRIL 2010
<b>RESULTS</b>		
GENERATION OF TABLES	CENTRAL OFFICES	
PUBLICATION	CENTRAL OFFICES / STATE COORDINATIONS	MAY - JUNE 2010

### *Economical Census Innovations 2009*

The Economical Census Innovations 2009 consist mainly in the PDA's use, digitalized cartography use, simplification of the classification's process, the strategy in order to increase the trust of the informant and the anticipate delivery of the sample questionnaires to the SEG's group.

**PDA.** PDA's use is made by PyMES's group during the collection of the information, and that means great advantages comparing with previous

economical census: it makes possible the use of digitalized cartography, it makes possible the homogeneity of the interview development; it makes possible to incorporate a system that is able to check the consistency of the important data; it avoids the capture by paper and the manual validation; and it avoids that we make reconsults.

This implies big savings in terms of time and money.

***Digitalized cartography.*** Using digitalized cartography allowed updating the cartography, and the automatic assignation of reference codes and the street's names; we can see the streets that are the limits with the blocks and see the street's direction.

***Simplification of the classification.*** The way the economical units have been classified in this census has been a change respecting the way we classified them in the past.

In the past the censuses made the classification of each establishment with the support of a printed paper with the classifications: a book with more than 1000 categories of classification. In this census, we use the PDA, and the censor chose an option from a list with the most common activities and an automate system assigned the clues of the activity classification.

For the rest of the economical units, when the classification is more difficult, a specialized group of the Central Offices made the classification.

***Strategy to increase the informants' trust.*** We made an exhaustive massive promotion of the Economical Census, we also gave the chance that the informants could provide data by Internet, we gave uniforms, an identification and an official letter to the censuses. INEGI offered a telephone number in order that the informant could verify the identity of the censor. The informant could also verify the identity of the censor by checking in Internet the censor's photo and identification data.

***Anticipated delivery of the sample questionnaires.*** In 2008 we delivered to the manufacture, commerce and services large establishments, "sample" questionnaires, for them to know the type of data we were going to ask in 2009 as a part of the awareness campaign of the census project.

### ***Media planning***

In order to let know the 2009 Economic Census to the population, we used the following media:

- Presentation meetings.
- National and State press conferences.
- Radio and television advertisements.
- Movie announcements.
- Leaflets, posters, pocket calendars, desk calendars, flyers and folders.
- National and State bulletins.
- Press notes and advertorials.
- Web site.
- Banners.
- Exposition for conferences and commercial trade shows.
- Advertisements in the metro (subway) and mobile publicity.
- Stamps in official vehicles.

The promotional work has four stages: awareness, informative, reinforcement and appreciation.

### ***Publication of results***

The results of the 2009 Economic Census are going to be announced in July 2010. The census products are the following:

- Results tables in INEGI's official web site.
- SAIC, which is a computing application designed to consult the Economic Census results, this application allows to build tables with more than 300 economical variables, with the geographical and economical activity levels required by the user.

- Printed publications.
- Computing binders.
- Monographs.
- Census calculators with general results.
- Special requirements. We can provide to the user each variable found in the census questionnaires at a detailed level with its corresponding geographical and sector cut (in concordance with the Law of the National System of Statistical and Geographical Information). Data is provided either in Excel format or database.

### ***Next Economic Census***

The next economic census will take place in 2014.