Communication mechanisms, accessibility and transparency of the data used in price indices in Mexico

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1. Abstract:

INEGI procure the transparency in the information used for price indexes, and for that, we use different communication strategies to give accessibility to data. Some of them are analysis and visualization tools, other are the open exposition for the quoted prices used for the price index calculation for each month. Some of the tools for visualization are as follows: map of prices and Kaleidoscope. With the Dynamic graphics, you can observe the time behavior for basic group of products. An interesting tool for the users is the 'Personal Inflation Simulator', that is used to show the consume pattern for a person or a group; this tool help to answer: Why do inflation is different for me?. Finally, the users should know the prices to calculate the price variations, for each basic group of products , geographical areas, and other questions. This strategy helps to give answers. We have the Inflation Calculator as an easy way to calculate the inflation between periods. Besides, the most important tool is the monthly average quotations used to calculate the price index which socialize data and give transparency to data and price indices.

2. Background and Issues

Often, price index and inflation websites are characterized by screening little understandable information to a non- expert person in issues related with prices. If your Internet researcher is not expert in prices or inflation and reaches your price page, casual or planned, will face difficult data to understand and use for ordinary or medium complexity applications.

A user without culture in the use and management of price indices have no idea of the applications that can give this information, such as: data to interact with their standard of living, make the depreciation or appreciation of assets, calculate the loss of purchasing power, to know whether the increase in household expenses or other services are proper, or whether they can get correct salary raise. There may be multiple applications, including some simple as how it has just change the cost of your favorite dish.

The big challenge is to understand these users and involve yourself with them in the national statistical institutes, providing awareness on this subject. We need to do the data mining work for those non expert users and our job must be focused for that. These tasks rise to help and build informed citizens for a better understand of their economic and financial life.

Help us to understand, help us to analyze, help us for better life!

3. GOAL:

Meet and understand the information needs of different types of data users, and easily lead the utility price data for their economical life.

Our groups of users are:

1. Low use of information and casual visitors,

2. Medium or heavy users but focused in the same information (needs refreshed data time to time) and/or focused on specific use of topics.

3. Expert users and using large databases of prices, and deepen scientific research or applicative with such data may be interested in historical series and / or micro indices.

INEGI as the price INDICES producers in Mexico need to differentiate these three types of users to understand their needs; this is the purpose of our mission as NSI, but non experts group is our challenge.

4. CURRENT APPROACH (2011-2015)

Among the major improvements by the INEGI to strengthen the dissemination of information for experts and non-experts are:

1. Micro-data Publication, average prices used for INPC calculating, is a friendly application with full details of the products and with options to export the information to different formats.
2. For the development and publication of non-expert user tools that enable them to understand the evolution of inflation in Mexico, we use visual tools as: kaleidoscope, an histogram or a map of the country.
3. Inflation calculator online, as many other calculators is aimed at showing inflation for a time period.
4. Inflation simulator: Is a tool that allows anyone to understand their own inflation by their own life style, most of the use expenses according to their consumption patterns to calculate personal inflation and compared against average consumption pattern in Mexico.

5. Dynamical Graphics: Provide a tool to monitor changes related using a graphically tool to understand products relationship, including their behavior with respect to overall GDP.

5. Assessed tools

The tools are designed to satisfy our users needs but we continue developing and redesigning those, this is an activity that should not be over. Forward, we'll talk about the main tools to socialize the price data, indices, variations, weights, baskets, and open data for experts and non-expert users.

How we do to understand how easy and usable are the price indices tools?. The first step was to assess them, with expert and non-expert users, housewives, students, researchers in the universities and economical analysts. The assessed tools are: Online Inquiry; Price Quotations; Kaleidoscope; Map of Prices; Dynamic Graphics; Personal Price Simulator and monthly average price data (quotations) used for calculate indices.

ONLINE INQUIRY

What is it?
It is a tool to display tabular information fortnightly and monthly CPI and PPI, only monthly Variations (22 figures) and indices (123 figures) for the last three periods with different types of available classification.

For what is it used?
To view changes and indices CPI and PPI , display figures of the time series and export information and selected different formats such as HTML , XLS , IQY , CSV and XML period.

To whom is it for?
Anyone interested in meeting and export inflation rates and PPI INDICES or variations. This tool focused mainly for experts.
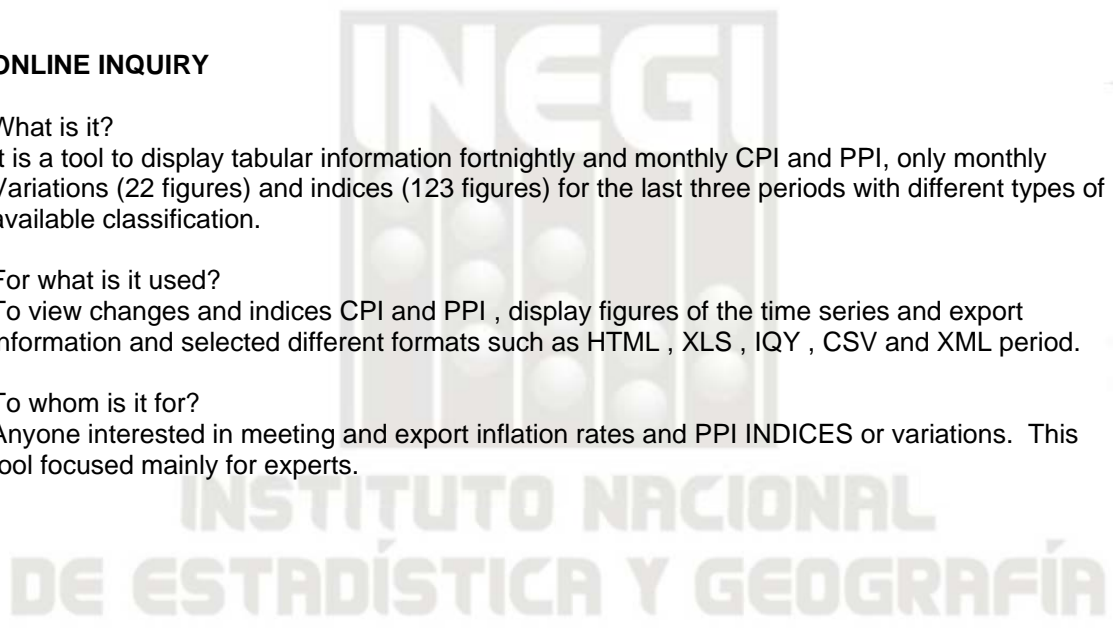
MICRO-DATA. PRICE QUOTATIONS

What is it?
It is a tool to view and download by different data formats, weekly or fortnight average quotations used to calculate the CPI.

For what is it used?
To make available to users the means prices, used for calculate the CPI available only from January 2011 to date, giving them options to select periods, product and cities of interest, is easy to export as HTML , XLS , IQY , CSV and XML formats. These datasets are used for studies on the evolution and behavior of prices (real values).

To whom is it for?
Anyone interested in deeply knowing the average prices (quotations) used to calculate the CPI. The tool is for any person but it has been used so far by expert analysts.

KALEIDOSCOPE

What is it?
It is a tool that shows the way in which consumers, on average, allocate their spending by generic groups, eight main areas, and within subgroups of generics (thirty six). Each slice and group segments (area) represent the weight for each in shaping inside the INPC.

For what is it used?
To show the evolution of price changes over a specific period of time or at a particular time (month and year) and the Impacts of variation and the weighting of each subgroup.

To whom is it for?
For anyone interested in the evolution of price changes CPI and the weights of the groups and subgroups of generics. Light use data, beginners. The tool is focused for students, housewives, and non expert users.
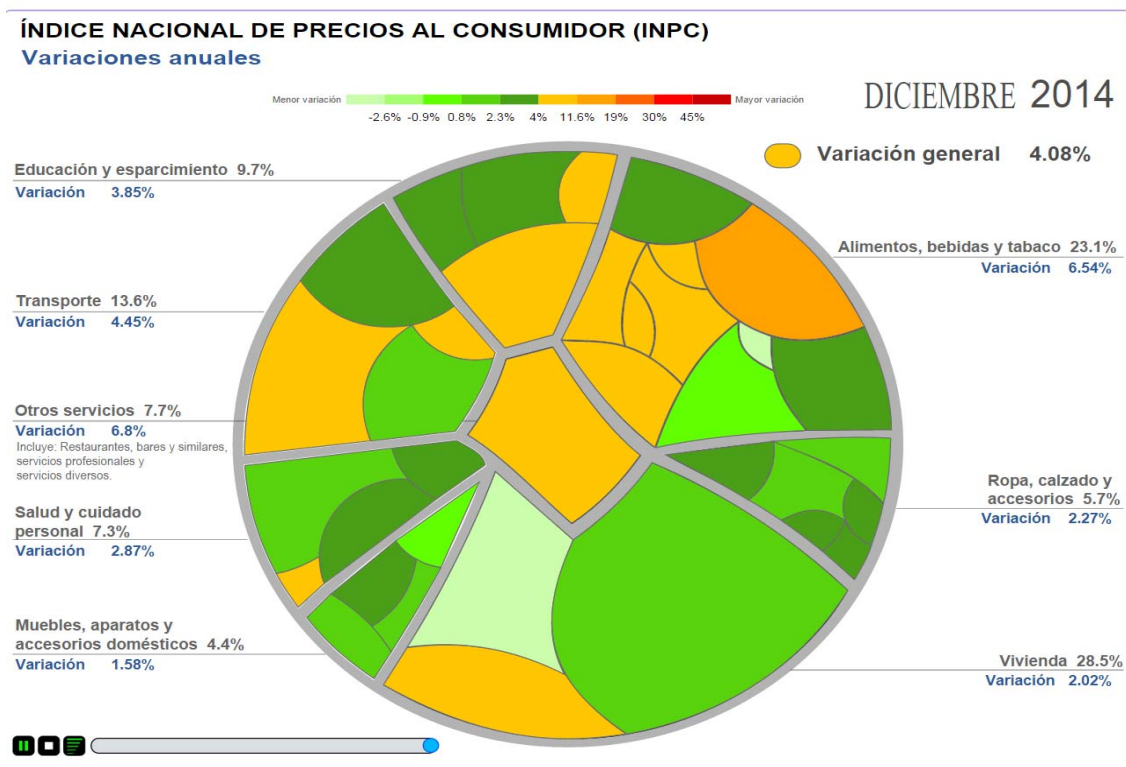
PRICES INDICES MAP

What is it?
It is a tool that dynamically presents annualized price variations city and region, as well as participation or weight it have these in the CPI (weights add up to 100 %).

For what is it used?
To show the evolution of price changes over a specific period of time or at a particular time (month and year) and the Impacts of variation and the weighting of each city and region in the overall index.

To whom is it for?
For anyone interested in the evolution of price changes CPI city and region, as well as their weights. The tool is focused for students, housewives, and non expert users.
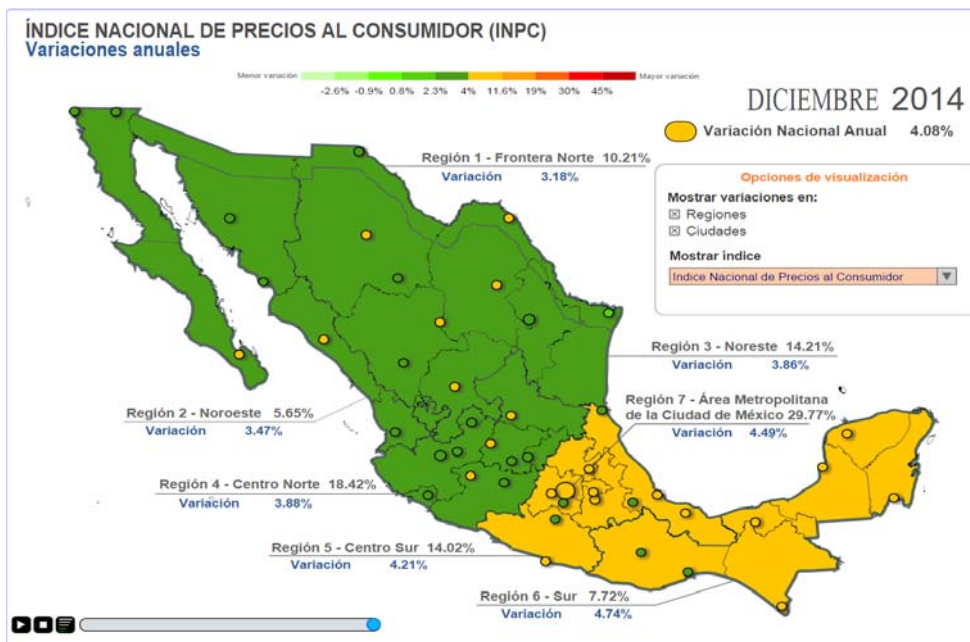
DYNAMIC GRAPHICS

What is it?
It is a dynamic bubble chart that identifies changes in prices over time; and identifies the volatility of changes in commodity prices for CPI and PPI.

For what is it used?
We use these graphics to explain the behavior between product variations and for comparative analysis, with CPI or PPI products in a period of time.

To whom is it for?
An specialized analysis between generic variations or index, used for those interested in studying the evolution of price changes over time, with a level of detail that can reach generics, both CPI and PPI.   We use Gap Minder tool for it.   Used for expert user.

PERSONAL PRICE SIMULATOR

What is it?
It is a tool that allows any user to input their average monthly expenditure for a simulation of inflation according to their way of life and consumption pattern, raise comparability against the national average consumption pattern.

For what is it used?
The users can understand their consumption and analyze how their consumption habits affects the inflation that they live, a person or family, and understand why the average inflation differs from their experience.

For whom is it for?
The tool helps to understand why they perceive price changes different than other groups in the population. Low income groups or unions or specialized workers can compare their average expenditure with the national average. The tool is just used for medium expertise users.

14th Meeting of Ottawa Group

INTERNATIONAL COMPARISION PROGRAM
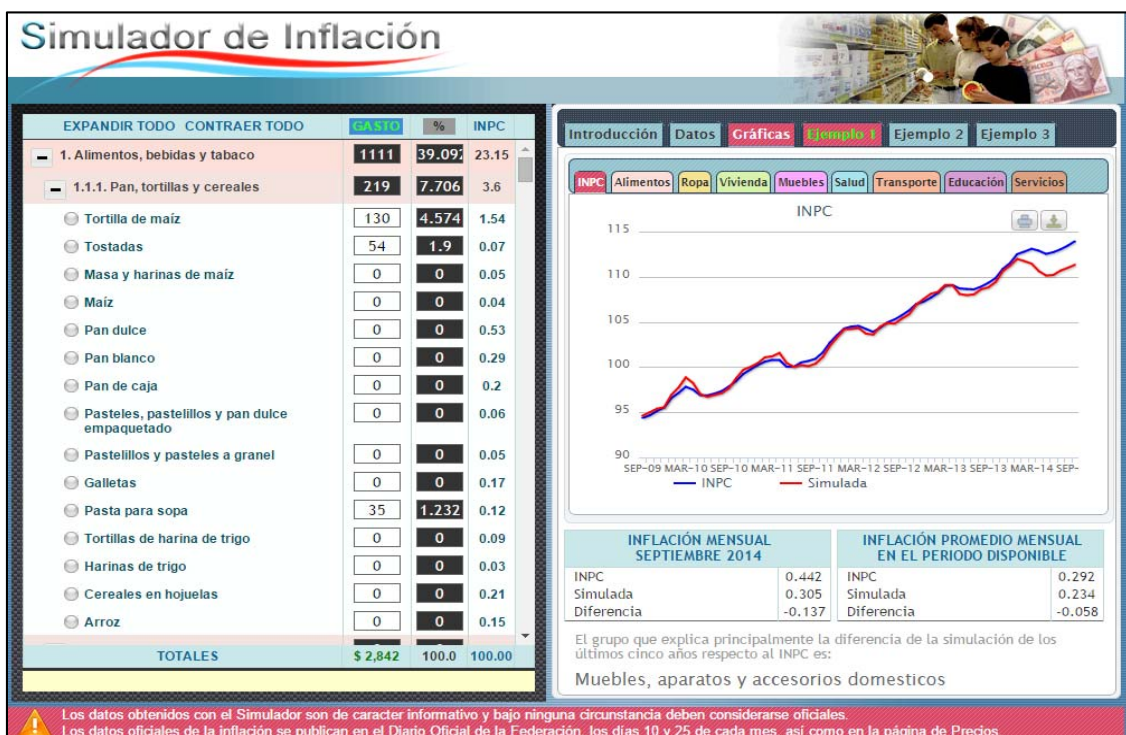
What is it?
It's a tool that displays the results of the 2011 round of the international comparison program on a world map.

For what is it used?
We can use to make comparisons between countries using different indicators of spatial and analytical categories from the program.

To whom is it for?
Anyone interested in knowing the position which keeps a country that participates in the PCI and compare the size of their economy or living standards or any other available spatial indicator.
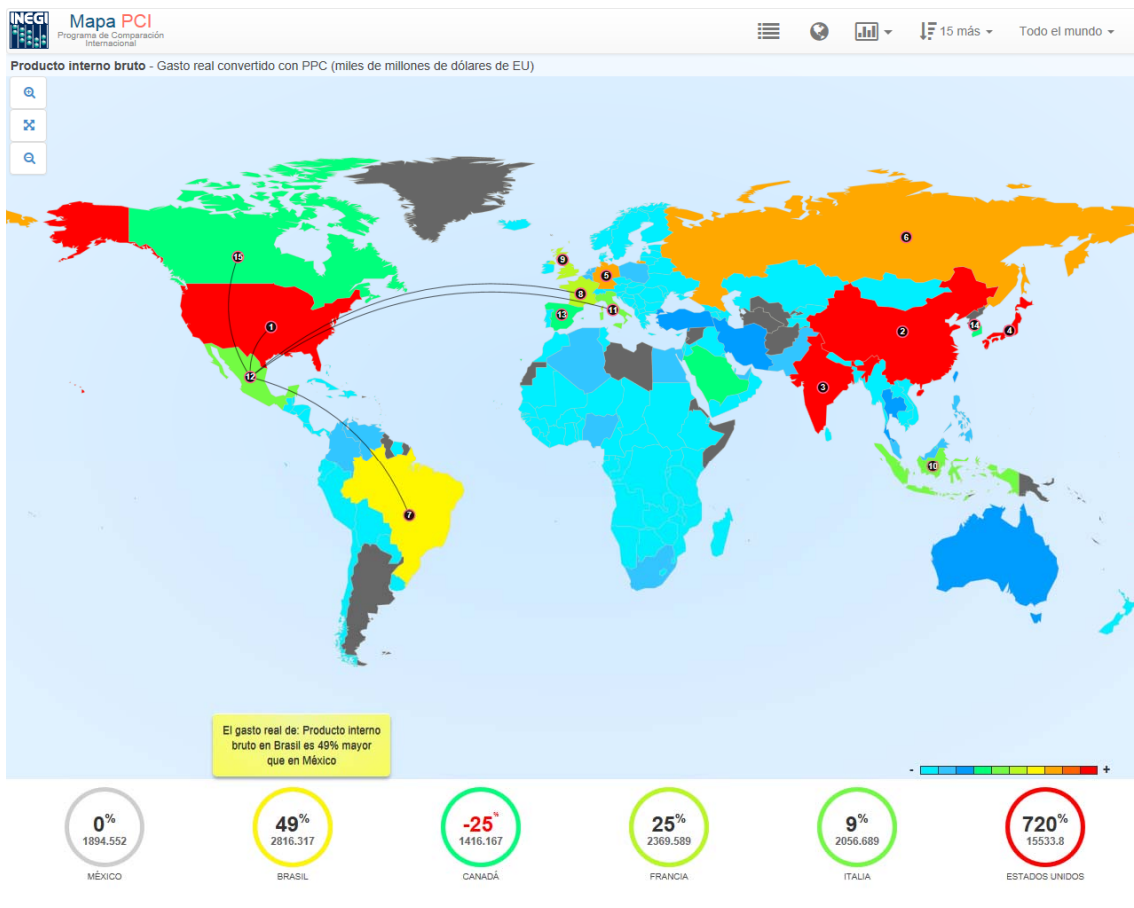
6. Qualitative Research

For all the people, these tools must be useful; some users are experts and other don't have idea about the topic, but all of them are awareness about inflation, they don't have experience but they understand the information lightly. The challenge for the statistical institutions is to make more understandable the inflation concept, but more than this is the usefulness of this concept for inexpert people, but they have hard questions about the concept: How to understand the inflation data and what is it? How can they use the inflation data for their financial or economical daily life?

For assessing the tools and the information we can focus groups, making five sessions per level: Non experts / low use and knowledge, experts: medium and high.

Assessed topics

Through the evaluated variables, the following are met: effectiveness with which the exercises were resolved; number of steps to found the topic and time spent in performing the task; facility of management tools; satisfaction with the tools; general view of the tools, perception of content, design and improvements.   Socio-demographical data which help us to know more about caught our users.

The topics assessed were:

Users opinions about tools and web page and general concepts.

- Recommendation of the service
- Repetition of the consultation of this Web service
- Competition: navigation
- Competition: design
- Competition: content
- Consultation of the competition
- Pleasure vs. displeasure of the use of the tools of the INP
- Training for the use of the tools
- The interpretation of the information of the tools
- Search for information for performing exercises
- Time resolution of exercises
- Opinion about the proposed exercises
- This page was interesting
- It has consulted previously tools to analyze the INP
- Prior knowledge of the section of the national index of prices
- Opinion of the process for access to evaluated tools
- The use of colors
- If it is friendly the way to compare information
- If the information is understandable
- If The displacement of the data with the time bar is useful
- If it is clear how to select the information
- If the information is usefully
- If it is friendly the way to export information
- The graphics presented are clear and understandable
- The examples, are clear and understandable
- Are understandable the colors as expression of the index of variation
- The topics are understandable
- Usefulness of the animation through the time
- The usefulness of the tutorial

Profile of the population interviewed

The profile of the surveyed population is consisted of 52 men and 48 women, from 15 to 60 years with primarily undergraduate studies (economics, business administration, international business, science communication, computer, psychology, public accountant, political and administrative sciences, marketing, trade and international relations); and graduate (economics, trade and international markets, international business).

They belong, mainly, to the academic and social sector, occupation strata and students, housewives, and educational services. Specialists work as professors, directors, coordinators, managers, and others labor responsibility status. Level socioeconomic outlined: B, C and C +.

All the participants use and have access to computer equipment and have navigated the internet, but only 68% known the site of INEGI and 80% are attached to social networks, mainly Facebook.

7. Assessed dissemination tools

Let's go to know the findings in the research when the users assessed the concepts, information and tools, even how much light can give us the market research to make the next steps for design new tools and information for the non-expert users.

To develop tools for expert and non-expert users is not an easy task, less than when we want that non-experts can use them and the tool be easy to use, learn to use and apply. It is therefore desirable to propose and evaluate the usability and handling.

Our target is to have information that contributes to take decisions regarding the usefulness and promoting some alternatives designed to promote statistical and financial literacy in the population. For that, we need to assess the tools and the price indices information published.

The assessment was qualitative in nature and performed by user in sample. The research was conducted making observations in different ways of use for each tool and explaining the performance of understandability and usability of the web use expertise and experience with the price index site. We assess three groups:

> Experts: Persons who, for their professional activities, frequently economical information, used and well handling of computer applications.

> Non experts: advanced semesters students in economics or financial, administrative, or accounting bachelors, even professionals with low use of the indicators but have knowledge about the concepts.

> Non-experts /low use: Housewives and students, in care of their own children and total management of the family budget. The interviews were to housewives and childs studying high school or university.

Users assessed: understanding, use and competitions about the information and tools.

The research findings were:

> Average rating for the tools and data: 8.3 / 10.0

> Strengths of the tools:
> - Medium-High usability

- Usefulness of the information sought.
- High Graphical information.
- Structured and organized data adding comprehensible structure of data and tools.

Opportunity areas:
- High demand for tutorials.
- Interpretation of information. Frames to help to understand data.
- More expose for the tools and make friendly the location of them.

Aware that, there are different types of users seeking for information, INEGI is starting to adapt the contents of their Web site in accordance with the Bill Inmon classification of types of user:

Tourist: Not particularly skilled in any field, but is familiar with a wide variety of fields. The tourist is someone who knows how to find things and use the Internet, directories, and metadata as tools, even those non experts or without experience with the inflation concept.

Farmer: A business analyst where there is a lot of repetition to work. The farmer is a person looking for the same type of data repeatedly. In short, Farmer analytical activities are very predictable.

Mining: Mining is someone who takes a subject and widely deepens it. In many cases the mining examines the data to prove or reject a hypothesis. The mining typically examines data over a long period of time. The mining uses statistical techniques and may have a long academic training. This group, begin processing data with a hypothesis or a goal.

We understand that our information give coverage, as a big tent, to the Farmers and Miners but we are not doing enough activities for the tourist group, for that reason we have projects to take and hold these kind of users and give pretty good usefully information for the non-expert group, Tourists.

8. Conclusions:

Our target must be the 'tourist group' and to attend them we need develop understandable data and tools for different audiences and help to be aware of the inflation and how to apply it for the real life, focused at non expert groups: students, entrepreneurs, employees, shareholders, advisors, and others; the same target for the PPI information. Experts as: researchers, financial or economical profile, banks, are attended with our current applications and data.

For now, we are involved in continues research to develop tools and enhance web micro site to give at the users other scope and make easy the use of the data. Some of them are:

a. Comparing the price of recipes or menus between months, focus in housewives and students or other interested people,
b. Showing a Carrousel of specifics (products) and founding the basic aggregation products of interest and look the picture of the product or service and picking the icon they have historical data about the behavior of the prices.
c. Comparing relative prices between products, the target and substitutes.
d. Tutorials for use the price indices tools.
e. Tutorials and games focused to learn the main concepts and uses of the inflation.
f. Micro-data used to calculate the indices.

For the expert group, as the analysts and researchers, some analysis tools as data cubes and special facilities for us the micro-data laboratory.

Annex 1. PUBLISHED INFORMATION STATISTICS

CPI

Concept	Total
Fortnightly tabulated summary (variations)	11
Monthly tabulated summary (variations)	11
Fortnightly time series summary (variations)	61
Monthly time series summary	62
Total	**145**

Concept	Total
Forthnightly time series Published	50,000
Monthly time series Published	25,000
Total time series published	**75,000**

PPI

Concepto	Total
Monthly tabulated summary (variations)	4
Monthly time series summary	13
Total	**17**

Concepto	Total
Published monthly time series	20.000