INSTITUTO NACIONAL DE ESTADÍSTICA Y GEOGRAFÍA

SOURCES OF WEIGHTING DATA AND QUALITY MANAGEMENT SYSTEM IN MEXICAN CPI

May the 30th, 2012
Population: 112.3 million.
Extension: 1.9 million km².
32 States.
Mexico City metropolitan area: more than 20 million.
## MEXICAN CPI CHARACTERISTICS

<table>
<thead>
<tr>
<th>Concept</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basket</td>
<td>Goods and Services consumed by families</td>
</tr>
<tr>
<td>Number of Generics</td>
<td>283</td>
</tr>
<tr>
<td>Number of Specifics</td>
<td>2,370</td>
</tr>
<tr>
<td>Collected Prices</td>
<td>117,500 every two weeks</td>
</tr>
<tr>
<td>Information Sources</td>
<td>20,500</td>
</tr>
<tr>
<td>Periodicity</td>
<td>Every two weeks</td>
</tr>
<tr>
<td>Weights</td>
<td>Household Income and Expenditure National Survey (HIENS) 2008</td>
</tr>
<tr>
<td>Reference Period</td>
<td>Second week December 2010</td>
</tr>
<tr>
<td>Prices</td>
<td>Observed in the market as consumers</td>
</tr>
</tbody>
</table>
PURPOSES OF CPI

- National inflation Index
- International compare
- Bring up to date pensions and salaries
- As deflector
- Governmental financial uses
- Fiscal uses

Use
### LEGAL CPI REQUIREMENTS

<table>
<thead>
<tr>
<th>FEDERAL FISCAL CODE</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum issues</td>
<td></td>
</tr>
<tr>
<td>Collect prices at least in 30 cities</td>
<td>Collect prices in 46 cities</td>
</tr>
<tr>
<td>Located on at least 20 states</td>
<td>Located on 32 states</td>
</tr>
<tr>
<td>We should include the 10 most populated cities</td>
<td>There are included the 10 most populated cities in the country</td>
</tr>
<tr>
<td>Collect prices of 1,000 specific products (goods and services)</td>
<td>We collect prices of 2,370 specific products</td>
</tr>
<tr>
<td>In 250 consume concepts</td>
<td>We collect prices for 283 generics</td>
</tr>
</tbody>
</table>
## Legal CPI Requirements

<table>
<thead>
<tr>
<th>Federation Fiscal Code</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 35 branches from agricultural, livestock, industrial and services sectors</td>
<td>48 branches</td>
</tr>
<tr>
<td>Food collection should be at least 3 times monthly, other products at least one time</td>
<td>We collect food 4 times PER month, OTHERS at least two.</td>
</tr>
<tr>
<td>Should be published at the Federation Official Diary (DOF)</td>
<td>We publish every 15 days at DOF</td>
</tr>
</tbody>
</table>

- **Weekly**
- **Every two weeks**
CPI MAIN COMPONENTS

- Prices
  - Points of sale
  - Informant Companies

- Basket and Groups
- Calculation
  - Publications: Index, Variations, Graphs, Tools, etc.

- Products

- Weights
  - HIENS
  - Other information sources
PRODUCTS, GOODS AND SERVICES

Specific Products

- Milpa Real, corn tortillas, 500 gr. Package
- Bimbo, wheat flour bread, (500 gr. Package)
- Golden Hills, macaroni, 200 gr. pkg
- La Moderna, noodles, 220 gr. package
- Bonafont, natural, 1.5 lt bottle.

Generic Products

The Basket is integrated by 283

- Corn Tortilla
- White bread
- Pasta
- Bottled water
Basket Weights were calculated upon the base of House Income and Expenditure National Survey (HIENS) information.

- From 717 expenditure concepts that (HIENS) produces, we obtained 283 generic concepts, to be aggregated in 8 expenditure levels of CPI.
Quality Management System (QMS) is based on an international standard: ISO 9001:2008, where index processes documentation has been structured according this international standard, allowing: field work, calculation and diffusion activities, (developed under standards and time table).
QUALITY MANAGEMENT SYSTEM

To improve efficiency in the production of price indices and strengthen trust customer, economic operators and society in general, the Directorate General Deputy of Price Indices (DGAIP) implemented the Quality Management System (QMS). This system defines and puts quality and technical practice and operating activities used to systematically meet customer's requirements. To do so, it establishes homogeneous work instructions to be followed during the development of price indices.
Quality Management System’s documents

<table>
<thead>
<tr>
<th>DOCUMENT</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuals</td>
<td>5</td>
</tr>
<tr>
<td>Plans</td>
<td>4</td>
</tr>
<tr>
<td>Procedures</td>
<td>12</td>
</tr>
<tr>
<td>Work instructions</td>
<td>19</td>
</tr>
<tr>
<td>Registers</td>
<td>159</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>199</strong></td>
</tr>
</tbody>
</table>
QUALITY MANAGEMENT SYSTEM

➢ Quality Manual:
The Quality Management System manual explains how to operate QMS of the Directorate General Deputy of Price Indices and sets out the policy, objectives and commitments to quality.

➢ Quality Plans:
To determine the criteria and methods needed to ensure that the operation and control of processes and system are effective.
QUALITY MANAGEMENT SYSTEM

Procedures and Work Instructions:
Documents in a detailed and sequential form, defining how to run an activity or process, specifying the staff activities and formats required.

For example, we have Collector’s Work Instruction which objective is: Establish the instructions necessary to quote, analyze, investigate, capture, and send the prices of goods and services that make up the Consumer Price Index Basket.
QUALITY MANAGEMENT SYSTEM

- Quality audits, to follow QMS process by an annual Program. We audit every of 46 cities, once per year.

- Direction’s review: to take QMS decisions.

- Quality Committee: Integrated by body of Directors, we meet every 15 days or before if necessary.

- Continuous improvement proposals: from everybody in the organization.
QUALITY MANAGEMENT SYSTEM

ISO 9001:2008 benefits elaborating CPI:

- Homogeneous practices and processes
- CPI elaboration according to documented procedures and toward continuous improvement
- Mistakes prevention
- Deviation detection
- Efficiency improvement in calculation process
QUALITY MANAGEMENT SYSTEM

ISO 9001:2008 Certificate

This certificate covers elaboration of National CPI and PPI. These activities begin with field work, then calculation and finish with diffusion work.
Federation Fiscal Code, Article 20 establishes that CPI must be published at Federation Official Diary (DOF). Index publication dates are:

- Each day 10\textsuperscript{th} or previous work day: (Data corresponding to the second Half and month) second two weeks and monthly for last month.

- Each day 25\textsuperscript{th} or previous work day: data corresponding to the first half.

- If the day is not working day, it publishes the work day before.

INEGI publishes in the Web Site one day before the previous dates.
Time series will be kept monthly and every two weeks.

We publish:

1. Every two weeks (2): 49,078 series
2. Monthly: 24,666 series

Grand Total: 73,744 series
The National Institute of Geography and Statistics (INEGI), by law has exclusive faculty for elaborating CPI.

CPI calculated by Laspeyres index requires weights and prices of a goods and services basket.

Considering that weight for each product is the percentage from urban family's average expenditures, in every good and service, is necessary to know those expenditures that families make. For Every good or service.

The natural source for such expenditures is the Household Income and Expenditure National Survey (HIENS).
HIENS: OBJECTIVE

➢ To obtain information about household national or international income (amount, origin and distribution). It also includes information about the occupational and demographic characteristics of household’s members; and infrastructure characteristics of house and house equipment.
HIENS : LIMITATIONS

- We have to say that between HIENS objectives there is no calculation of weights for CPI.

- Because of this HIENS does not exactly fulfill requirements for CPI in terms of geographic coverage and products and services of the basket.

- Another inconvenient of HEINS is that the collecting period is every two years between August and November and some seasonal products, could be under or over represented and therefore require additional adjustment.
GENERIC’S WEIGHTS

- It is necessary that the ratio:

\[
\frac{\text{Families expenditure in good or service “i”}}{\text{Total families expenditure}} \geq 0.01\%
\]

is at least 0.01 %, for a Generic to be included in the basket; so this is the formula to calculate Generic’s Weights.
Food, drink and tobacco, 23.29%

Clothing, 5.04%

Housing, 28.18%

Transportation, 14.64%

Furnishings, household equipment, 4.10%

Education and recreation, 9.16%

Health care, 7.82%

Other services, 7.76%
<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Food and non-alcoholic beverages</td>
<td>18.92%</td>
</tr>
<tr>
<td>02 Alcoholic beverages and tobacco</td>
<td>2.51%</td>
</tr>
<tr>
<td>03 Clothing and footwear</td>
<td>4.88%</td>
</tr>
<tr>
<td>04 Housing, water, electricity, gas and other fuels</td>
<td>23.83%</td>
</tr>
<tr>
<td>05 Furnishing, household equipment and routine maintenance of the house</td>
<td>4.80%</td>
</tr>
<tr>
<td>06 Health</td>
<td>3.33%</td>
</tr>
<tr>
<td>07 Transport</td>
<td>14.03%</td>
</tr>
<tr>
<td>08 Communication</td>
<td>3.62%</td>
</tr>
<tr>
<td>09 Recreation and culture</td>
<td>3.77%</td>
</tr>
<tr>
<td>10 Education</td>
<td>5.13%</td>
</tr>
<tr>
<td>11 Restaurants and hotels</td>
<td>9.54%</td>
</tr>
<tr>
<td>12 Miscellaneous goods and services</td>
<td>5.64%</td>
</tr>
</tbody>
</table>
¡Thank you very much!