

**Methodology**

**Producers Prices Index for the Manufacturing Industries Sector – 2011**

**Table of Contents**

|  |  |
| --- | --- |
| Background on the Producers Prices Index for the Manufacturing Industries Sector  | 3 |
| Target Population and Survey Sample Frame |  **4** |
| Survey Sample  | **5** |
| Stages of the Survey | **6** |
| Main Documents of the Survey | **7** |
| Survey Staff | **10** |
| Fieldwork Phase | **12** |
| Data Processing Phase | **14** |
| Main Definitions | **15** |
| Improvement Plans | **16** |

**First: Background on the Producers Prices Index for the Manufacturing Industries Sector**

**1.1 Introduction:**

Dubai Statistics Center keens on providing social, economic, and demographic statistical data for decision makers, policy makers, and those interested in studies of various forms. DSC also seeks to keep up with the rapid and ongoing evolution in the field of studies through developing its technical and technological potential to reach a high level in this field to match the statistical services in many developed countries.

The Producers Prices Index is an important indicator that is linked to the performance of the economy since it reflects the national products capability to compete bases on the commercial capacity of the domestic economy, the greater competitiveness of local products result in better trade balance. The producer’s price index is used as an important tool in preparing estimates of the national accounts at fixed prices. It is also used as a tool for checking consumer prices with regard to the locally produced commodities.

At the beginning of the project, the sample frame and data collection process done by using International Standard Industrial Classification of Economic Activities Revision 3.1 (ISIC 3.1), as the new update is published and used on the DSC projects. Therefore, the group works on connecting the two revisions and continuing the projects according to International Standard Industrial Classification of Economic Activities Revision 4 (ISIC 4). The Producers Prices Index for the Manufacturing Industries Sector were prepared and it is a preliminary steps for the preparation of a producer price index that is more comprehensive, and to be an input in the preparation of the industrial production index in the future.

**1.2 Objectives of the Survey:**

The producer price index is used to monitor changes in the prices of domestic commodities that are used in markets, as well as the consequent identification of the prices trends, market conditions, and cost of living.

Producer prices index number is one of the important tools used in preparing national accounts by ridding the national gross income from the impact of prices changes. Producer price index is an important indicator that reflects the extent of progress and development that occurs to the local productive sector in a period compared to another period. The index of industrial production examines changes in the production prices. Therefore, it is typically used as an important indicator that reflects the extent of progress and development that occurs to the local production sector.

**Second: Target Population and Survey Sample Frame**

**2.1 Target Community:**

The survey focus on all industrial establishment operating in the Emirate of Dubai and mainly in the manufacturing industries sector, as stipulated by International Standard Industrial Classification of Economic Activities ISIC 4, in a way that ensures coverage of all selected items in index calculation of produce prices according to its economic activities. The key requirements of the selected establishment can be summarized into the following:

* To be engaged in industrial activities.
* Continuity in production activity.
* Open the establishment to the public (the prices collections will not include establishment that serves or sell only to a particular category of individuals or require membership or limited to certain persons or authorities).
* The establishment operating within the manufacturing section includes: manufacturing industries (division: 10, ......, 33).

Based on this categorization the statistical reports, will be categorized and issued according to the same details of sections and division mentioned above. It is worth mentioning that the survey currently covers only the manufacturing sections as shown in the title, and later we would be working on covering all the other sections.

**2.2 Survey Sample Frame:**

The establishment frame of the survey was choosen from the bussiness register – that has been provided by the statistical Frame section. The number of industrial establishment were 8,892 based on class level.

**Third: Survey Sample**

**3.1 Sample Size:**

The survey sample is selected to cover all industrial activities at the national level, as the goal is to calculate the producer price index in comprehensive manner covering all economic activities, therefore the group use the avialable frame (Business Register) that were provided by the statistical frame section. The number of establishment in the frame were 8,892, so the sample size will be determined within the same activity by covering 3% of the operating establishement.

**3.2 Sampling Units:**

The industrial establishment is selected according to the following rules:

* Comprehensive census of all establishments engaged with activities are not available in other establishment
* A Number of 3 establishment in each industrial activity
* The use of sampling techniques based on the number of establishments within the same activity, if the number of establishment per activity were more than three
* Establishment is choosen according to No. of employess, which represents 50% of the total employment in the activity.

**3.3 Sample Coverage:**

* The number of selected establishment is 146 and it will be visited in monthly basis.
* The number of commodities and services that are collected monthly is 787.

**Fourth: Stages of the Survey**

The survey phases included a series of overlapping and integrated operations carried out by the team, depending on the methodology of the governance and management of statistical operations phases to prepare the action plan and timetable for its implementation to ensure completion of the work within the highest quality standards. It included the following:

**4.1 Design Phase**

This phase included the preparation and review and approval of preliminary statistical form includes sample design and its methodology, preparation of description variables and the design and adopt the validation, auditing and reviewing rules, the methodologies of data processing and reports for the statistical systems.

**4.2 Building Phase**

This phase includes design, preparation and adoption of statistical form, and develop systems for input and calculation of the producer prices index. As well as, the design and build reports for the statistical systems.

**4.3 Field Data collection Phase**

This phase includes collection of data from the field and it is consider as the important and largest phase of the survey. As it includes the preparation phase where the frame is define and the sample units selected and known. Moreover, it includes developing field data collection methodology, training programs and coordination with target sources. Also, it includes the field work that involve collection of data from the field and progression report, verification of filling the form, and numbering of the forms and data entry and archive paper forms.

**4.4 Data Processing Phase**

This phase includes processing of data, which includes the classification and variables coding, implementation of auditing rules, auditing data, adopt raw data, editing missing values, as well it includes linking variable from different sources, weight calculation, calculate results of division and approved pre final database.

**4.5 Analysis Phase**

This phase includes calculating preliminary results and initial indicator calculation, Auditing overall results, comparison of pervious statistics data analysis, review result and its privacy level, approve results after revision, and in this phase, the general methodology and the approved working methods will be documented.

**4.6 Dissemination Phase**

In this phase, the dissemination process will start by ensuring the results of all reports and its dissemination liability, coordination with concerned statistician to agree on the dissemination level. In addition, the dissemination level should be defined, reviewed and determined, publish data on the statistical systems. As well as the electronic publication, Press releases on media, manage the DSC social networking channels, Handle CRM Request and respond to our customers inquiries.

**Fifth: Main Documents of the Survey:**

The survey documents included all of the forms and instruction manuals for survey data collection, calculation of the index numbers, as well as data editing process and rules. Below is a brief overview of these key documents:

**5.1 Survey Form:**

To achieve the objectives of the survey, a special form designed, developed, tested, reviewed, finalized, and translated.

**The form contains the following main sections:**

1. **Cover Page**
* Establishment Serial No.
* Establishment Commercial Name
* License Number
* Surveyor Name
* Telephone Number
* E-mail Address
* Fax
1. **The letter**
2. **Identification Information**
* Establishment Commercial Name
* Community Name & Number
* Block Number
* Neighborhood Number
* Parcel ID
* License Number
* Licensing Date
* Date of Starting Business
* Main Economic Activity code
* Main Economic Activity
* Number of Employees
* Establishment Address
* Telephone
* Fax
* Web Site
* E-Mail
* P.O. Box
1. **Information of Respondent**
* Name of Respondent
* Telephone Number
* Mobile Number
* E. mail Address
* Name of other respondent
* Telephone Number
* Mobile Number
* E. mail Address
1. **Method of communication in the future to obtain data**
* Fax
* Business Telephone
* E-mail Address
* Personal Visit
1. **Production Quantity Page**
* Serial
* Commodity
* Unit
* Quantity produced each month
1. **Products Prices Page**
* Serial
* Commodity
* Unit
* Price produced each month
1. **Follow-up and monitoring Sheet**
* Name of Respondent
* Telephone Number
* Mobile Number
* E. mail Address
* Date
* For Any Inquiry please call
* Date of receiving the form
1. **Follow-ups process**

* Field Review
* Office Review
* Data Entry
* Data Entry Auditing (PC)
1. **Stamp and Signature**

**5.2 Instructions Manual:**

The Instructions Manual contains all definitions and concepts used in the survey and detailed instructions for field staff at supervisory and executive levels. The Manual also includes data auditing process and rules that must be use by staff at various levels, with a focus on completion of the form and the integrity of prices.

**5.3 Coding Manuals:**

These manuals include the following coding manuals:

* International Standard Industrial Classification of All Economic Activities (ISIC 4)

**Sixth: Survey Staff**

**6.1 Functional Structure of Survey Staff:**

The survey staff who participated in technical, administrative, and fieldwork organized as follows:

Technical and Administrative Supervisors Tasks:

Technical Tasks:

* The distribution of work between field staff and ensuring that they are committed to the implementation of the fieldwork plan.
* Data editing by verifying the integrity of the method the staff member used to fill in the data before entering data and making sure staff member are committed to the required specifications of commodities and services. Clarity of the numbers in the form, making sure the forms include all the data needed to be collected, and making sure the workflow and survey time plan are going as scheduled.
* Field visits to the production establishment by taking random samples of the forms of every field staff member.
* Accompanying the field member on field visits periodically to ensure the quality of his/her way in conducting the interview with the data provider and how the data is collected.
* Supervising and training the staff and auditors.
* Control the receipt and delivery of forms.
* Commitment of wearing identity card during field trips.

**Administrative Tasks:**

* Preparing administrative reports for producer prices index.
* Continuous meetings and providing guidance to field staff, responding to inquiries or obstacles that might confront them, following up the field visits, evaluating their performance, and addressing non-response cases, if any.
* Providing work requirements (forms, maps, and devices).
* Preparing reports on workflow of the field work on the workflow to management.
* Reviewing the forms and the data entry process.

**Field Staff Tasks:**

* Receipt and delivery of the form.
* Commitment to updating all the forms and ensuring their comprehensiveness (prices, specifications, codes, etc.) as contained in the Manual for each item before leaving the establishment.
* Commitment to the survey time plan.
* Notifying the supervisor of the difficulties and obstacles confronting the field staff in the field and helping solve such problems.
* Commitment to wearing identity card during fieldwork.
* Commitment to data confidentiality, disclosed, and using it only for statistical purposes.

**Data Auditor Tasks:**

* Receipt of forms and data files sent by the establishment and ensuring they are entered into the system.
* Notifying the supervisor when noting any errors or technical problems that hinder smooth of the workflow.
* Printing reports after data entry process and discussing them with the supervisor to verify the correction of data entered.
* Commitment to the time plan for the data entry process.

**6.2 Training Staff:**

Since the surveyor, working in the survey is from the section, nine members selected to work in the survey at supervisory and executive levels according to several bases, including prior experience. The survey staff-training plan was developed and the staff trained before beginning collecting data from field, including defining the survey, its objectives, the data to be collected, and collection mechanism. They are also trained practically on the entry program. A user manual was prepared for the staff as a reference for work.

**Seventh: The Fieldwork Phase:**

This section includes a brief overview of the phases of fieldwork that included field workflow procedures office auditing**.**

**7.1 Organizing Fieldwork:**

The phase of field preparation and implementation must get the comprehensive care for all details. To ensure the highest possible level of data accuracy and quality, a plan for fieldwork developed to organize the workflow and ensure survey implementation as per the time plan.

**7.2 Data Collection Method:**

A special form designed for each establishment, were data collected directly by the field staff who trained for this purpose. Fieldwork of the survey carried out according to the following steps:

* Before beginning of the fieldwork, the supervisor will assigns the surveyor with the establishment list and their locations. The supervisor works on the following:
	+ Providing staff members with the list of establishment to be visited.
	+ Providing staff members with the necessary forms for each establishment.
* Staff members visit the establishment and fill the form directly.
* Staff members deliver the completed forms to the supervisor immediately.
* The forms reviewed and audited by the supervisor.
* Data entered after completion of audit processes and coding.

**7.3 Field Audit**

A series of field and administrative procedures provided to achieve a high level of accuracy, through:

* Studying reports from the field and responding to inquiries directly.
* Holding regular meetings with field staff to discuss the survey development.
* Continuous monitoring of the performance of field staff.
* Comparisons and matches for prices of commodities that are randomly selected to test the performance of field staff.
* Field Checks of the Frame
* Supervisory field checks, including:
	+ Establishment visit.
	+ Examining data.
	+ Examination using a random sample.
* Controlling the movement of forms.
* Receipt of all the forms.

**Eighth: Data Processing Phase**

**8.1 Office Processing**

After data is collected from field, staff members process the data. Office audits can be summarized through making sure of the following:

* The prices represent the desired month.
* The prices are in the required currency.
* The prices are the ones required.
* The prices are collected from all establishment.
* Quick review of the logical analysis of the prices.
* Not to make a change to the commodities description or the measurement unit without informing the technical supervisors.
* Not to make a change of the establishment without the notice of the supervisors.
* Receipt of all data from all establishment.

**8.2 Electronic Processing:**

Reports of data entry are extracted and will be used to correct the errors that have occurred during the collection and entry of prices. Below is a detailed explanation of the data editing process, data editing aims at the following:

* Ensuring data entry of all commodities prices
* Comparison of item’s prices for the same source in two consecutive months and giving a notice in case of price difference ± 5% (and specifying the percentage).

The most significant notes that must be focused on during the data validation are:

* Unreasonable changes to an item price compared to the price of the same item for the previous month.
* Disappearance of an item's price.
* Large variation in prices for the same item.
* Following the emergence and disappearance of items.

**8.3 Dissemination of Results:**

The results will be Disseminate through the smart statistical system of DSC available as well as through a specialized bulletin that reviews the major findings of the survey, as well as a detailed analytical report for the final survey results that includes all the manufacturing industries sector activities. Those inputs are disseminated in several ways:

1. Electronically, on DSC’s websites.
2. DSC’s Smart System.
3. Periodical press news that highlight the survey results.

**Ninth: Main Definitions**

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| **Data Collection establishment** | Commodities and services, which are produced. |
| **Price Index** | The average proportional changes in the prices of a certain category of commodities and services between two time periods. |
| **Laspeyres formula:** | The mathematical equation (developed by Statistician Laspeyres) which calculates the index by using the price levels weighted by the base quantities (weights). |
| **Producer Price:** | The producers' prices are defined as the prices received by the producer from the buyer for a unit of a commodity or service, from which the value-added tax is deducted, or any tax that are added to the buyer’s invoice, non-inclusive of any transport costs. |
| **Manufacturing Industry:** | Physical and chemical transformation of materials, items, or ingredients to form new products and materials. The transferred materials are mostly raw materials from agriculture, mining, quarrying or products of other manufacturing industries, specialized maintenance of industrial and commercial machinery and equipment. Repairing such is within the manufacturing industry, but the repair of computers and personal and household commodities is not considered within the manufacturing industry. Assembling parts resulted by manufacturing industries is considered a manufacturing industry. |
| **Base Period:** | The time period that is compared to the current period. |
| **Weights:** | It represents the relative distribution of manufacturing industries values within the country according to the main categories, sections, and groups that are components of commodities according to the International Standard Industrial Classification of All Economic Activities, Rev.4. The weights used in calculations that use the Laspeyres Equation. |
| **Base Prices:** | The prices of commodity in a specific period of time to which the current prices are compared. |
| **Commodities Frame:** | The category of commodities that are part of the producer’s prices system classified according to the International Standard Industrial Classification of All Economic Activities, Rev.4. |
| **International Standard Industrial Classification of All Economic Activities (ISIC)** | ISIC is the international reference classification of productive activities. Its main purpose is to provide a set of activity categories that can be utilized for collecting and classifying statistics according to such activities in a form designed for economic analysis purposes. ISIC consists of a coherent and consistent structure for the economic activities based on the internationally accepted set of concepts, definitions, principles, and classification rules. |

**Tenth: Improvement Plans:**

* Updating the list of commodities and services in the industrial production basket.
* Continuous update of the internationally accredited methodologies and classifications.