



مركز الإحصاء  
STATISTICS CENTRE

# Building Materials Prices Statistics Methodology

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## Overview

Statistics Centre – Abu Dhabi (SCAD) is the official source of statistical data in the Emirate of Abu Dhabi. The Centre has assumed this responsibility since 2009. And continues collecting monthly prices, which allows conducting monthly and annual statistics for each item included in the building materials' basket.

Building materials prices provide estimates of monthly average prices. The monthly retail prices for the materials/ services included in the building materials basket are the theoretical basis for the building materials prices used in the Emirate of Abu Dhabi.

That is to say, the indicator reflects the actual retail average monthly prices for the materials in the Emirate of Abu Dhabi, where the retail prices are collected for each material or service in the basket, after which the average prices of the same shall be determined for calculation of monthly prices in this Report.

In addition, the price levels and building time aggregates (which represent the simple arithmetic mean proportional to materials' prices separately, such as certain months of the year, for instance) are being calculated . We should not be confused with the weighted price indices.

According to the theoretical basis of these statistics, the prices presented do not represent wholesale prices, nor do they represent production costs. As such, the wholesale price data may exhibit different trends than those presented through the statistics of building materials prices, which represent retail prices only, since the prices are collected directly from the seller.

Furthermore, price statistics representing production costs can show different trends. For example, if building materials are available on the Abu Dhabi market in the short term, the price in building materials statistics is likely to decline significantly, as traders in the construction market compete by lowering their prices compared with competitors. The low prices collected by the Centre in these cases apply only to new purchases made in the current period. Accordingly, there may be no fall in prices when measuring "building materials costs" for the same period, as construction costs remain constant for the same period (e.g. due to existing supply contracts). In other things, i.e. the costs do not reflect current prices except for purchases made in the same period.

## Importance

The prices of building materials are important economic indicators and inputs in planning and research in various urban and economic fields, taking into consideration the continuous urban development and growth in the construction sector in Abu Dhabi.

Therefore, it is considered as an analytical tool of use in monitoring prices trends and forecasting changes in building materials prices. This indicator assists decision and policy makers, planners and researchers to make appropriate decisions supporting the construction and associated sectors. In addition, it is a tool used by companies specialized in construction and building materials.

## Objectives

- For internal use to calculate other statistical indicators (short-term economic indicators and GDP at constant prices).
- Used internally in the calculation of other price indices within the Income and Prices Section (Construction Cost Index).
- Used by companies specialized in construction and building materials to follow up material prices and services related to construction and building.
- Used in settling legal disputes arising in connection with construction contracts.

## Concepts and Definitions

**Average Price:** Sum of the material prices that are collected from more than one source divided by the number of sources of that material.

**Monthly / Quarterly Relative Price Change:** The percentage increase or decrease in the average price of the current month or quarter compared to the average price of the previous month or quarter or the same month / quarter of the previous year.

**Price relative:** the ratio resulting from the dividing the price of the item/service in the current month on the earlier price of the same item/service (e.g. in the previous month, the previous quarter or the same month of the previous year).

**Geometric mean:** similar to the arithmetic mean, the geometric mean is calculated using the following formula:

$$\text{Geomean } (a_1, a_2, a_3 \dots \dots a_n) = \sqrt[n]{(a_1 * a_2 * a_3 \dots \dots a_n)}$$

## Geographical Coverage

The Building Materials Statistics report represents the average prices in the Emirate of Abu Dhabi. The current scope is collection of prices from Abu Dhabi region as representative.

## Frequency

The report is issued on a monthly basis.

## Classifications

Building materials statistics use a local Classification created by experts from SCAD's Income and Prices Section, in collaboration with the UAE Contractors' Association, according to the nature of construction sector in the Emirate of Abu Dhabi.

Building materials are classified into 21 main groups containing 343 materials and services. It provides sufficient details by material/service in the price information collected for these materials. The use of detailed specifications of a material or service is enough to ensure pricing of the same item every time.

**Table (1): The main groups in the classification used for building materials statistics in Statistics Centre – Abu Dhabi:**

No.	Building Material Group
1	Cement
2	Gravel and Sand
3	Concrete
4	Iron
5	Wood
6	Blocks
7	Roofing Materials
8	Waterproofing Products
9	Waterproofing Bituminous Membranes
10	Natural Stone
11	Tiles and Marble
12	Sanitary ware
13	False Ceilings
14	Paints
15	Glass
16	Pipes
16.1	PVC Pipes
16.2	UPVC Pipes
17	Wires
17.1	Wires for Buildings
17.2	Wires for Apartments
17.3	Wires for Residential Towers
18	Electrical Cables
19	Transportation Tools
20	Workforce / Hour
21	Diesel

Source: Statistics Center – Abu Dhabi

## Main Data Sources

Data is collected from the monthly field survey, conducted by the Prices and Income Section department, to prepare the building materials statistics. In addition, data related to diesel are collected from administrative records sourced from (ADNOC Companies).

## Data Collection Forms

The survey questionnaires are designed to collect the prices of goods and services with each commodity group in a separate form that includes all the goods and services within the group.

## Sample Design

Due to the lack of basic and comprehensive data surveys to evaluate the volume of trade in building materials, the Statistics of Building Materials Prices use “the Target Sample Selection Methodology” to identify the sources of prices. Targeted sources are selected to represent the sale of building materials in the retail market in Abu Dhabi region and the volume of trading was recorded through field visits carried out by the of Income and Prices Section.

The team selected 30 sources of sale representing the retail trade of building materials in the Emirate of Abu Dhabi. In addition, there the sources of data, are continually reviewed as the interviewers assigned to follow-up on those sources submit regular reports in the event of closure or relocation of any source, to ensure complete coverage of the data required for the preparation of building materials statistics.

For certain materials, there are only one or two sources in Abu Dhabi. For instance, diesel prices are collected from ADNOC only.

Experts in the field provide advice on the selection of price sources when there are multiple choices. A broader group of the sources are chosen for materials showing rapid price fluctuations and items that regularly runs out. The Statistics Centre – Abu Dhabi protects the confidentiality of all building materials price sources, as well the confidentiality of the number of sources, to ensure that no specific companies have been identified in cases where certain materials are sold only by a limited number of companies.

The building materials basket used in building materials statistics was selected in collaboration with the UAE Contractors’ Association. To ensure best coverage of all materials affecting the construction sector, the basket is regularly updated with addition new items in the market and removal of materials no longer in the market.

## Data Collection

A number of options are offered to facilitate data collection for both the enumerator/interviewer and the person responsible at the sales outlet, including field visits of the source, telephone interviewing or online collection of data. In addition, the prices of some of the main groups (e.g. the hourly rates of construction workforce) are received by email.

## Data Editing

Data collection forms designed in such manner that facilitates initial auditing of data. Application of editing rules proved its effectiveness in producing highly accurate data files, ensuring the completion of all required data, to help in verify prices that falls beyond the range assigned individually for each item, based on “typical” and non-typical changes in the item prices. This is determined according to analysis of previous years’ data, and in the event verification of the data is required the enumerator shall communicate with the data providers in order to ensure accuracy of their inputs, noting any clarifications

they may have. In addition to control on data collection from the field, and independent reviews, random inquiries are carried out after collection for further assurance of high-quality data.

Subsequent to entry of data into the system, ensuring readiness of data, the “desk editing” process commences, with a particular focus on the consistency of data with and correct calculation of variables. The second phase includes comparison of current average prices with previous average prices according to available time series to minimize error as much as possible.

## Indicators Calculation

The rate of change in monthly, quarterly or annual prices is calculated as follows:

- Retail prices are collected monthly for each material or service, after which the average price is calculated for each item to determine the monthly price.
- Simple price relatives are calculated for the basket materials and services, which means the price of each item divided by corresponding previous price (previous month, quarter or the same month of the previous year).

$$RP = \frac{p_1}{p_0}$$

**P = Simple Price Relative**

**P1 = Current Price of the Materials / Service**

**P0 = Previous Price of the Material / Service**

- The geometric mean of the prices relatives for the items within each group are calculated to obtain the price relative for the group.
- The geometric mean of the prices relatives for the items, groups for the months of the year and quarter is calculated, providing estimates for annual and quarterly changes in building material prices.

**The rate of change in prices is calculated on the level of the material or group as per the following equation:**

$$RC = RP * 100 - 100$$

**RC = Monthly, quarterly or annual rate of change**

**RP = Price relative of the Item / group**

In the event the price of an item within a certain group is missing an estimated price is calculated by multiplying the relative change in the prices of items for which prices have been collected for the current month by the price of the missing item for the previous month.

## **Timeliness**

The report shall be monthly issued, no later than (30) working days from the end of the reference month.

## **Dissemination**

Building Materials Statistics Prices shall be published monthly on the website of Statistics Centre – Abu Dhabi.





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