**Methodology of Building Materials Prices Series**

# Introduction

A Building Materials Prices (BMP) Series has been produced by the Statistics Centre – Abu Dhabi (SCAD) since 2008.

This paper describes the current methodology for the: conceptual basis; construction of the representative ‘basket’ of items; data collection; validation and processing procedures; and construction of monthly averages.

# Background

The collection and compilation of a price series for building materials was started in 1988 by the Department for Planning (DP). The basket and the price sources were determined by the DP’s technical staff. In 1997, the basket was updated by DP, and when SCAD took over responsibility in 2008, the basket was reviewed again.

Group indices, i.e. averaged prices of groups of materials, was produced from the BMP Series until the middle of 2010, when it was discontinued on technical grounds[[1]](#footnote-1).

SCAD continues to compile the BMP Series monthly, quarterly and annually, ensuring that prices are widely available to the public. Prices are released in monthly, quarterly and annual bulletins. The Price Series are available for all users in the public and private sectors, universities and other institutes.

# The purpose of Price Series

Price Series are used to show the variation in prices for a representative basket of items in a particular market or context.

The BMP Series shows the prices as they change month-by-month in the retail construction market in Abu Dhabi Emirate. By comparison the Consumers Price Index measures the change in prices relating to the household sector.

A Price Series is a statistical representation of a ‘basket’ of items. The items priced are a sample of the total range of commodities traded. The items represent the range of items traded but do

not include all the items traded in a particular market. Over time, the item prices will fluctuate above and/or below the true path for the total range of items they represent, as the retail market changes for the particular items being priced.

# Methodology for the BMP Series

The BMP Series is published as simple monthly, quarterly and annual prices for each item specified within a series of groups of items. (A full list of the current 21 groups is in Appendix A.) The Series is designed to reflect prices of building materials in the retail construction market in Abu Dhabi Emirate.

Generally, the price data are collected weekly by enumerators. Prices are then subjected to validation and processing procedures to produce simple item-by-item monthly averages.

## Conceptual basis and scope of the BMP Series

The conceptual basis for the BMP Series is the monthly retail market prices of a representative ‘basket’ of building materials used in the Abu Dhabi Emirate construction industry. This means that the prices reflect the average retail prices for the items as they are sold in Abu Dhabi and Al Ain each month[[2]](#footnote-2). Retail prices are collected weekly and monthly as appropriate for the items specified, and then averaged item-by-item to produce the monthly item prices in the series.

SCAD is not currently producing an index of price change from the BMP Series, and consequently the Series is not relative to a base year. However, price relatives can be constructed.

This conceptual basis means that the BMP Series does not represent wholesale prices, and does not represent the costs of production. Data representing wholesale prices might show different trends to those displayed by the BMP Series, which represents retail data. Series representing costs of production are also likely to show different trends. For example, if a commodity is over-supplied in the Abu Dhabi market in the short-term, the BMP Series is likely to reflect a decrease in price as traders compete for business by under-cutting competitors’ prices. In comparison, a ‘Costs’ series might show no decrease for the same time period because the traders’ costs might remain fixed for that period.

## The ‘basket’ of items in the BMP Series

The specifications for the items in the BMP Series have been determined ‘purposively’ by a variety of technical experts. The original items in the representative ‘basket’ were determined

by technical experts at DP. Over the years, these items have been added to by technical experts from the ADM and from Construction Contract companies. This methodology for deciding the specifications of items is an accepted purposive sampling method, for use when baseline surveys have not been conducted.

The ‘basket’ of items in the BMP Series is currently reviewed at the start of each calendar year. This annual review is limited to evaluating whether the current items are still available in the market. If items have not been stocked by Abu Dhabi or Al Ain merchants for three months or longer they are retired from the Series.

Other wider reviews have been conducted during the development of the ‘basket’ since its inception in 1988. The following diagram shows this development.

**1988**
DP starts the BMP Series with a small ‘basket‘ of common items

**1997**
DP reviews the BMP Series ‘basket’ to increase the number of items.

## Specifications for items

**Current BPM Series consists of 195 items in 21 groups (see Appendix A)**

Selection of sources for item prices

Sources for item prices need to be selected to ensure the sample is representative of the conceptual basis and scope of the Price Series, i.e. building materials for sale in the retail construction market in Abu Dhabi and Al Ain. This means the sources must be selected to represent the industry within a geographical region and by proportion of trade. When no thorough baseline survey has been conducted to evaluate the proportions of trade, price sources can be selected purposively by industry experts. The BMP Series uses this purposive sample selection methodology to determine its price sources.

For some items there are only one or two sources for prices in Abu Dhabi and Al Ain. Other items are sold by several or many businesses. Industry experts provide advice on the selection of price sources when there is a range of options. A wider range of sources are selected for items that have displayed price volatility in the previous Series, or for items that are more regularly out of stock.

The price sources for each item remain confidential to SCAD and the number of sources for each item is also confidential to ensure individual companies are not identified when only a small number sell particular items.

## Data collection

Data collection must be consistent and occur at the same point in time each month. The price data is collected using a variety of methods, depending on the item. For some groups of items, such as Equipment Hire, prices are collected by an enumerator who visits each source company to collect monthly prices for each item. For other groups of items, prices are collected by telephone and fax. If no response is received, an enumerator will follow-up with a personal visit.

Enumerators collect prices weekly, and when items are not in stock (for example an Equipment Hire company has rented out all of its D6 Bulldozers this week) no price is recorded for that source that week.

## Data processing and validation procedures

The process of validating prices is carried out in two stages. The first stage involves checking by a prices expert. The second stage involves a comparison between the current prices and the previous month’s prices. The BMP Series raw data are input into monthly spreadsheets, which are coded with parameters that trigger automatic validation requests if price movement is detected outside defined ranges. The parameters are set individually for each item, according to ‘usual’ and ‘unusual’ price changes, determined by analysis of previous years’ collections of data. When a validation request is triggered, an enumerator contacts the data source to check

the input data and record a justification. When a price is not available from a particular source at weekly or monthly collection, the input cell is left blank. No imputation procedures are used.

After prices are entered and checked, the average item prices are calculated, first on a monthly and then on an annual basis.

## Dissemination and publication

Data on the annual prices of building materials is tabulated at the beginning of the fourth month of each year. The statistics are made available in the form of a booklet and can be provided to users in Excel form via email or on CDs. BMP Series are also tabulated monthly and quarterly and emailed to all members of the public who request it. The monthly BMP Series is currently emailed to about 110 customers in both the Government and private sectors.

## Review processes

The BMP Series has been reviewed and adjusted several times since its inception in 1988. An annual review is conducted to ensure that all the current items in the ‘basket’ are relevant and available for sale in the market. There are no current plans for wider reviews of the ‘basket’ as it is important to maintain continuity for the existing items.

# Methodology of item groups

The methodology of all item groups reflects retail prices in the Abu Dhabi and Al Ain construction markets. They do not reflect the costs of production or the total trade in the construction industry in Abu Dhabi and Al Ain.

## Construction Labour

The Construction Labour Price Series reflects the hourly rates of labour leased from construction labour hire companies in Abu Dhabi and Al Ain. Hourly rates for a representative series of labour categories are collected from a representative selection of source companies that hire out labour to construction companies. As a result the Construction Labour Price Series reflects all fluctuations in current market prices. This means that when there is a short-term over-supply of labour in the market, the Price Series will reflect any competitive price under-cutting between labour hire companies that could result in a price decrease.

## Equipment Hire

The Equipment Hire Price Series reflects the monthly rates of hiring construction equipment from equipment and machinery hire companies in Abu Dhabi and Al Ain. The cost of renting

each specified item of equipment per month is collected monthly by enumerator from a representative sample of equipment hire companies who hire to the construction industry.

## Other commodities

 Prices for all other commodities are collected from a variety of source companies who supply the construction industry in Abu Dhabi and Al Ain. All the prices are for items that are sold in these two cities. The items may be imported from outside the Emirate, or produced locally.

# Potential sources of error

While all care is taken in the compilation of Official Statistics, there remains a number of potential sources of error with any statistical outputs. Some of these potential sources of error in the production of a Price Series are detailed below:

## Poor quality information from respondents

The Series is based on information from respondents. Accurate information can in some instances be difficult to obtain. SCAD’s policy is not to impute when respondents are unable to provide prices.

## Sampling Errors

The Series is based on a purposive sample of commodities, which have been selected to reflect the prices for the particular commodity or industry measured. Due to this purposive sampling methodology sample errors cannot be calculated.

## Non-sampling errors

Non-sampling errors in the survey data may result from errors in the sample frame, respondent error, and mistakes made during processing of the survey results. SCAD adopts procedures to detect and minimise these types of errors, but they may still occur, and are not quantifiable.

# Liability

While all care and diligence has been taken with the compilation of Official Statistics, for the reasons detailed above, SCAD gives no warranty that the information, data or statistics, supplied are free of errors.  SCAD shall not be liable for any loss or damage suffered by the user following the direct or indirect use of the statistics supplied in good faith by SCAD.  Users of Official Statistics are responsible for determining when and how to use the statistics for specific purposes.

# Appendix A – The BMP groups of items

The full list of item groups for which prices are being collected for in the current BMP is as follows:

1. Cement
2. Aggregates & sand
3. Concrete (ready mix)
4. Steel
5. Wood
6. Block
7. Roofing
8. Waterproofing products (Bitumen)
9. Waterproofing Bitumenous Membrane
10. Tiles & marble
11. Sanitary ware
12. False ceilings
13. Paints
14. Glass
15. Water and sewage pipes
16. Electrical wire
17. Diesel
18. Power cable as a proxy for copper
19. UPVC pipes
20. Transport equipment
21. Construction labour.
1. Work has started on development of a new series of building materials prices indices, but is currently on hold due to budgetary reasons. [↑](#footnote-ref-1)
2. Plans to expand this coverage to represent the whole Emirate are currently on hold. [↑](#footnote-ref-2)