



مركز الإحصاء
STATISTICS CENTRE

Education Price Index Methodology

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Overview

The education sector in the Emirate of Abu Dhabi is one of the sectors that contribute to the preparation of a promising educated generation that contributes to the service of the nation and society.

Department of Education and Knowledge, in the Emirate of Abu Dhabi oversees the government schools, private schools and higher education to uplift the quality of education to the highest international standards, as well as securing opportunities for all residents to obtain high quality education to achieve the objectives of Abu Dhabi 2030, as well as objectives of Abu Dhabi Plan.

The Statistics Centre – Abu Dhabi (SCAD) has been working on the Education Price Index project within the Emirate, which makes SCAD one of the first statistical centers that works on the preparation of a price index for education.

Importance

The objective of building this Index came as a result of repeated demands by the educational institutions in the Emirate of Abu Dhabi for increase in school fees as a result of the high costs of producing the educational service. The Department of Education and Knowledge, in cooperation with the Statistics Centre - Abu Dhabi, has worked to lay the foundations and sound standards to respond to requests for increasing fees for educational institutions upon request for increase. The educational institution evaluation item has been included in the annual increase in school fees. The introduction of this indicator aims to regulate the process of increasing tuition fees in private schools in the Emirate of Abu Dhabi based on the relevant international best practices and through the creation of a balanced system linking the increase in tuition fees to the quality of the educational institution. It also takes into account inflation rates in a way that preserves the rights of all concerned parties, and is considered an analytical tool for estimating the society's ability to bear the costs of education. The education price index is also included in the calculation of other indices such as the consumer price index (**CPI**).

Objectives

The Education Price Index measures changes in the prices of school and university fees for the various curricula followed in the Emirate of Abu Dhabi during different periods of time. The key objectives of the index are summarized in the following:

- The Education Price Index is an analytical tool for informing decision and policy makers about price trends and for predicting any price changes in the prices of private and government school fees as well as higher education.
- It is used by the National Accounts Section as a deflator in the process of calculating GDP at constant prices.
- It is used as an input in calculating the consumer price index for the education group.
- It is used by specialized agencies in the education sector.

Concepts and Definitions

Weight (relative importance): is the relative importance of any product or service in the basket of the Education Price Index that expresses its importance compared with all other products in the basket. It is calculated by dividing the expenditure of all households on this item/service compared with the expenditure of all households on all goods and services in the education group.

Price: the market value of educational services, which could be defined as the value paid by the individual or the family in return for the education received by the individual in the educational institution, with the exclusion of any government subsidies.

Average Price: total prices of the commodity or service gathered from several sources divided by the number of resources of such commodity or service.

Relative Change in Price: the increase or decrease in the current average price compared with previous average price.

Education Price Index: an indicator measures the education prices during two periods, base period and comparison period for selected group of schools using different curricula (British, American, Hindi, Shweifaf, and Ministry of Education).

Collection Period: the period agreed on for receiving data from the Department of Education and Knowledge.

Laspeyres Equation: a mathematical equation developed by the statistician (Laspeyres) to calculate the price index by dividing the prices of comparison period by the prices of base period.

Percentage Change in the Price Index: a measure of change in the price index calculated by dividing the price index of the comparison period by the price index of the base period multiplied by one hundred followed by deduction of one hundred.

Comparison Period: the "current" or most recent period for which the index was calculated. However, the term is used to refer to any period that is being compared with the base period.

Base period: the year in which the agricultural producer price index equals 100. The base period serves as a benchmark for future periods, allowing economists to judge rates of increase and decrease in prices compared to that year.

Geographical Coverage

The Price Index of Education are gathered from three areas of the Emirate of Abu Dhabi (Abu Dhabi, Al Ain and Al Dhafra), where all government and private schools are covered, which use (American Curriculum, British Curriculum, Indian Curriculum, Shweifaf Curriculum and Ministry of Education Curriculum) in addition to the Higher Education.

Frequency

The (SCAD) issues the Bulletin of Education Price Index on yearly basis.

Classifications

The classification used in Education Price Index is the Classification of Individual Consumption According to Purpose (**COICOP**). The following table illustrates the main groups forming the Education Price Index and their weights:

COICOP	Group	Weight
10	Education	100.0
10.1	Primary and Pre-Primary	54.1
10.2	Secondary Education	16.5
10.3	Post-Secondary Education – Non-tertiary	3.2
10.4	Tertiary Education	25.0
10.5	Education not defined by level	1.2

Main Data Sources

Data and prices used in calculation of this Index are administrative data issued by Department of Education and Knowledge and provided to (SCAD) for processing, editing and use for the compilation of the index.

Data Collection Forms

Prices are provided to us in (Excel) file format via email. Education statistics rely on the data received from the Department of Education and Knowledge.

Sample Design

A targeted sample was taken from the schools and higher education institutions from the files received from the records of the Department of Education and Knowledge represented the areas of the Emirate of Abu Dhabi (Abu Dhabi Area, Al Ain Area and Al Dhafra Area), which covered all curricula taught in the Emirate of Abu Dhabi. Work is in progress for the inclusion of all schools and higher education institutions in the Education Price Index in the next report.

Data Collection

Data of school fees in the private schools and higher education are collected from the Department of Education and Knowledge via email. The Department of Education and Knowledge gather the data and updating them directly for all schools and higher education institutions in the Emirate. The fees remain firm throughout the school year. As such, prices are taken once only during the academic year, in the month of November of each year.

Data Editing

Data is checked for the following:

- Consistency of prices between the stages of study in the same school and comparison with the prices of previous years.
- Consistency of prices between schools by curriculum, stage, years, and prices for previous years.
- The rates of increase in school fees issued by the Department of Education and Knowledge and compared with the data received on tuition fees.
- Data on higher (tertiary) education institutions are edited in a similar manner.

Indicators Calculation

Inputs of Price Index

The following are the main inputs used in the compilation of the Education Price Index:

1. Relative importance of index basket commodities (weights)
2. Base period prices
3. Comparison period prices

The calculation of this Index uses the weights and prices of the year 2016 as the the base period.

Calculation of the Price Index

The index is calculated by using (Laspeyres Equation) and the weights of the base year (2016) as follows:

$$EPI_L = \sum \frac{P_{ti}}{P_{0i}} \times W_{0i}$$

EPI : Education Price Index

P_t : Current Price.

P₀ : Base Year Price.

W₀ : Base Year Weight.

The calculation of Price Index on the elementary aggregates level is carried out by using the following equation:

$$P_D = \frac{\frac{1}{n} \sum_{i=1}^n P_{ti}}{\frac{1}{n} \sum_{i=1}^n P_{0i}}, \quad i=1,2,\dots,n$$

P_D : Dutot Index

P_t : Comparison Period Price.

P₀ : Base Year Price.

$i = 1, 2, 3, \dots, n$

n : Number of commodities in elementary aggregate

To aggregate upwards in the calculation of the Education Price Index, Dutot index is multiplied by the commodity weigh. The weights are then aggregated first at the level of sub-groups, then at and the level of the main groups. The index is then calculated by dividing the new weight by the base period weigh and multiple by hundred.

Calculation of Percentage Change

Percentage change in the index number for the current year compared with the previous year is calculated according to following equation:

$$RC = \frac{EPI_c}{EPI_p} * 100 - 100$$

RC : Percentage Biannual / Annual Rate of Change.

EPI_c : Current Price Index

EPI_p : Price Index of the current half year / Index for the same period of the previous year

Outputs

The main output (Education Price Index) is compiled an annually private and public schools and higher education in the Emirate of Abu Dhabi.

- Primary and Pre-Primary Education Price Index
- Secondary Education Price Index
- Post-secondary non-tertiary education price index
- Tertiary Higher Education Price Index
- The price index for education not defined by level

Timeliness

The Report is issued one year after the lapse of the reference year.

Dissemination

The Educational Price Index is published annually on the website of Statistics Center – Abu Dhabi.



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