

# INTERNATIONAL STANDARD

# ISO 9230

Second edition  
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## **Information and documentation — Determination of price indexes for print and electronic media purchased by libraries**

*Information et documentation — Détermination des indices de prix pour  
les documents imprimés et électroniques acquis par les bibliothèques*



Reference number  
ISO 9230:2007(E)

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# Contents

Page

Foreword.....	iv
Introduction .....	v
<b>1 Scope .....</b>	<b>1</b>
<b>2 Terms and definitions.....</b>	<b>1</b>
<b>3 Presentation .....</b>	<b>5</b>
<b>3.1 General.....</b>	<b>5</b>
<b>3.2 Preferred presentation .....</b>	<b>6</b>
<b>3.3 Geographical coverage .....</b>	<b>6</b>
<b>4 Structure of price .....</b>	<b>6</b>
<b>4.1 General.....</b>	<b>6</b>
<b>4.2 Price differences .....</b>	<b>6</b>
<b>4.3 Prices for books .....</b>	<b>7</b>
<b>4.4 Prices for serials .....</b>	<b>7</b>
<b>4.5 Prices for databases.....</b>	<b>8</b>
<b>5 Price indexes for books .....</b>	<b>9</b>
<b>5.1 General.....</b>	<b>9</b>
<b>5.2 Books not included in the index .....</b>	<b>9</b>
<b>5.3 Categories for the index.....</b>	<b>10</b>
<b>5.4 Sources for collection of prices .....</b>	<b>10</b>
<b>5.5 Methods of compilation.....</b>	<b>10</b>
<b>5.6 Reporting of indexes .....</b>	<b>11</b>
<b>6 Price indexes for serials .....</b>	<b>11</b>
<b>6.1 General.....</b>	<b>11</b>
<b>6.2 Serials included in the index .....</b>	<b>11</b>
<b>6.3 Serials not included in the index.....</b>	<b>12</b>
<b>6.4 Sources for the collection of prices.....</b>	<b>12</b>
<b>6.5 Methods of compilation.....</b>	<b>12</b>
<b>6.6 Reporting of indexes .....</b>	<b>13</b>
<b>7 Price indexes for databases .....</b>	<b>13</b>
<b>7.1 General.....</b>	<b>13</b>
<b>7.2 Databases included in the index .....</b>	<b>13</b>
<b>7.3 Databases not included in the index .....</b>	<b>14</b>
<b>7.4 Sources for the collection of prices.....</b>	<b>14</b>
<b>7.5 Methods of compilation.....</b>	<b>14</b>
<b>7.6 Reporting of indexes .....</b>	<b>15</b>
<b>Annex A (informative) Subject classification .....</b>	<b>16</b>
<b>Annex B (informative) Guidelines for local cost indexes.....</b>	<b>19</b>
<b>Annex C (normative) List of equivalent terms.....</b>	<b>21</b>
<b>Bibliography .....</b>	<b>22</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 9230 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 8, *Quality — Statistics and performance evaluation*.

This second edition cancels and replaces the first edition (ISO 9230:1991), which has been technically revised.

## Introduction

The intention of this International Standard is to provide the international library community with a methodology for establishing national price indexes for the documents they acquire. This second edition has been expanded to cover electronic as well as printed books and serials, and electronic databases.

A problem well known to libraries is the difficulty of controlling the amount of funding made available annually for acquisitions.

If libraries generally acquired documents, in one physical medium, solely from national sources, and had stable budgets, the problems of budget control for library documents would be simple. This is, however, not the situation. Libraries now have to cope with information of a greater variety than before, and from international sources. These developments in the information world are accompanied by general economic developments that seem to create reductions and instability in library budgets.

Under such circumstances the demand for effective library management grows, and with it the demand for tools for library management. Use of price indexes is, of course, only one element in library management practice, but one which is nevertheless necessary for relevant budget control. National price indexes are not only needed for funding but also for negotiation with vendors and publishers.

Price indexes do not relate only to national production, but to materials of both national and international origin used by libraries. It is not intended that price indexes constructed according to this methodology should in any way replace general consumer price indexes or specific indexes set up by the trade. However, indexes can normally be regarded as accurate only within a specific environment. The experience that led to the preparation of this International Standard was the difficulty in applying indexes of non-library origin to library management.

It is easy to understand the difficulties of reporting prices when one takes into consideration the international background of most library and information work, which can involve many countries and currencies.

This International Standard is intended to be, therefore, an accepted tool for library management.

It has been necessary to apply certain limitations to this International Standard.

Though libraries in most countries still spend the majority of their financial resources on print media (books and journals), there is a growing collection of electronic documents that can be more important for use. The priority between these groups can differ from library to library, but they are dealt with together in this International Standard. Increasingly, libraries are acquiring large electronic collections, and one of the key reasons for revision of this International Standard was to incorporate methodologies appropriate to a range of digital documents. This International Standard therefore covers books and serials in both print and electronic forms, and databases. It was decided to continue to exclude from this International Standard criteria which could be used for price indexes for other types of physical media. This International Standard does not ignore the need to deal with these other physical media. They have, however, been excluded in order to bring this work to a conclusion.

In the future, when more experience is gained, any revision of, or addition to, this International Standard could include other physical media.

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# Information and documentation — Determination of price indexes for print and electronic media purchased by libraries

## 1 Scope

This International Standard specifies a method for the determination of price indexes relating to the prices of print and electronic media acquired by libraries. It is not meant for calculating a price index of the national media production. The media included are restricted to books, serials and databases.

NOTE Further details are given in 2.2 and 3.1.

It is intended primarily for use by the library community, although it is accepted that other organizations may also find it useful. It focuses on compiling price indexes on the base of national and international sources, relevant to one country or region and different types of libraries. Different indexes will be appropriate to different types of library, according to the types of material in their collections. This International Standard presents a methodology allowing for a general index which could be calculated from subsets of data, and could be weighted according to local needs. It introduces sampling methods for the selection of materials on which to base calculations.

Note that this International Standard describes indexes of prices, not of costs. Local cost indexes can be compiled instead of price indexes where there is insufficient uniformity of pricing structures to permit the calculation of price indexes, or as an additional tool for libraries. Guidelines for the calculation of local cost indexes are given in Annex B.

## 2 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

NOTE The equivalent English or French terms, as appropriate, have been given in Annex C.

### 2.1

#### **access rights**

rights for reaching or using the library collection

NOTE For the electronic collection, this implies that the library has secured permanent or temporary access for its users by law, license or other contractual and/or cooperative agreement.

[ISO 2789:2006, definition 3.2.2]

### 2.2

#### **audiovisual document**

document in which sound and/or pictures are predominant and which requires the use of special equipment to be seen and/or heard

NOTE This includes audio documents such as records, tapes, cassettes, audio compact discs, files of digital audio recordings; visual documents such as slides, transparencies, and combined audiovisual documents such as motion pictures, video recordings, etc. Microforms are excluded.

[ISO 2789:2006, definition 3.2.4]

**2.3**

**average price**

total of the prices of all documents of a given category for a stated period, divided by the number of items

**2.4**

**book**

non-serial printed document in codex form

[ISO 2789:2006, definition 3.2.5]

**2.5**

**book price**

specified or recommended price of a book to the public by the publisher without discounts

**2.6**

**bundle**

collection of databases, electronic serials or digital documents from a single publisher, on a single subject, or for a special interest group, sold for a combined price

**2.7**

**compact disc read-only memory**

**CD-ROM**

computer-based information storage and retrieval medium based on laser technology that contains data in text and/or multimedia formats

NOTE CD-ROMs are counted according to their contents as database, digital document, electronic serial, audiovisual document, or electronic patent.

[ISO 2789:2006, definition 3.2.7]

**2.8**

**database**

collection of electronically stored data or unit records (facts, bibliographic data, texts) with a common user interface and software for the retrieval and manipulation of the data

NOTE 1 The data or records are usually collected with a particular intent and are related to a defined topic. A database can be issued on CD-ROM, diskette, or other direct access method, or as a computer file accessed via dial-up methods or via the Internet.

NOTE 2 Licensed databases are counted separately even if access to several licensed database products is effected through the same interface.

NOTE 3 Adapted from ISO 2789:2006, definition 3.2.10.

**2.9**

**digital document**

information unit with a defined content that has been digitized by the library or acquired in digital form as part of the library collection

NOTE 1 This includes eBooks, electronic patents, networked audiovisual documents and other digital documents, e.g. reports, cartographic and music documents, preprints etc. Databases and electronic serials are excluded.

NOTE 2 Items incorporated in databases are covered by 2.8.

NOTE 3 A digital document can be structured into one or more files.

[ISO 2789:2006, definition 3.2.12]



## 2.10 document

recorded information which can be treated as a unit in a documentation process, regardless of its physical form and characteristics

NOTE 1 Documents can differ in their physical form and characteristics.

NOTE 2 Adapted from ISO 2789:2006, definition 3.2.13.

## 2.11 electronic book eBook

digital document, licensed or not, where searchable text is prevalent, and which can be seen in analogy to a print book (monograph)

NOTE 1 The use of eBooks is, in many cases, dependent on a dedicated device and/or a special reader or viewing software.

NOTE 2 eBooks can be lent to users either on portable devices (eBook readers) or by transmitting the contents to the user's PC for a limited time period.

[ISO 2789:2006, definition 3.2.15]

## 2.12 electronic collection

all resources in electronic form in the library collection

NOTE The electronic collection includes databases, electronic serials, digital documents and computer files. Free Internet resources, even those which have been catalogued by the library in its online catalogue or a database, are excluded.

[ISO 2789:2006, definition 3.2.16]

## 2.13 electronic serial

serial published in electronic form only or in both electronic and another format

NOTE Comprises serials held locally and remote resources for which access rights have been acquired, at least for a certain period of time.

[ISO 2789:2006, definition 3.2.17]

## 2.14 library collection

all documents provided by a library for its users

NOTE 1 Comprises documents held locally and remote resources for which permanent or temporary access rights have been acquired.

NOTE 2 Access rights can be acquired by the library itself, by a consortium and/or through external funding.

NOTE 3 Acquisition is to be understood as deliberately selecting a document, securing access rights and including it in the online catalogue or other databases of the library. Interlibrary lending and document delivery are excluded.

NOTE 4 Does not include links to Internet resources for which the library has not secured access rights by legal agreements (e. g. legal deposit right), license or other contractual and/or cooperative agreement. Free Internet resources, even those which have been catalogued by the library in its online catalogue or a database, are excluded.

[ISO 2789:2006, definition 3.2.22]

## ISO 9230:2007(E)

### 2.15

#### **monograph**

publication in print or non-print form, either complete in one volume or complete, or intended to be completed, in a finite number of volumes

[ISO 2789:2006, definition 3.2.25]

### 2.16

#### **monographic series**

number of monographs related to other monographs through the addition of a collective title

[ISO 2789:2006, definition 3.2.26]

### 2.17

#### **newspaper**

serial which contains news on current events of special or general interest, the individual parts of which are listed chronologically or numerically and appear usually at least once a week

NOTE Electronic newspapers are included.

[ISO 2789:2006, definition 3.2.28]

### 2.18

#### **paperback**

book issued by a publisher in a paper cover trimmed flush with the leaves

[BSI DD 247:1998]

### 2.19

#### **periodical**

serial under the same title published at regular or irregular intervals, over an indefinite period

NOTE 1 Individual issues in the series being numbered consecutively or each issue being dated.

NOTE 2 Series of reports, transactions of institutions, series of regular conference proceedings and annuals are included, while newspapers and monographic series are excluded.

NOTE 3 Electronic periodicals are included.

NOTE 4 Adapted from ISO 2789:2006, definition 3.2.33.

### 2.20

#### **physical unit**

physically coherent document unit inclusive of any protective devices, freely movable against other document units

NOTE 1 Coherence can be achieved, for example, by binding or encasement.

NOTE 2 For printed documents, the term "volume" is used for the physical unit.

[ISO 2789:2006, definition 3.2.34]

cf. **volume** (2.25).

### 2.21

#### **price index**

index showing the relative change in the average price over an interval of time

NOTE 1 Adapted from ANSI/NISO Z39.20:1999.

NOTE 2 A price index has a base period of one or more years, and the average price in the base period is assigned the index value of 100; the average prices in succeeding years are divided by the base period average price and multiplied by 100 to give the price index for each year.

## 2.22

### serial

publication in print or in non-print form, issued in successive parts, usually having numerical or chronological designations, and intended to be continued indefinitely, whatever its periodicity

[ISO 5127:2001, definition 2.4.06]

NOTE 1 For the purpose of this International Standard, serials are subdivided into newspapers and periodicals, each of these by format into electronic and non-electronic serials.

NOTE 2 Monographic series are excluded and are counted as books.

## 2.23

### serial price

publisher's domestic institutional price for an annual subscription to a serial

NOTE When different delivery schemes exist, the price for the subscription with domestic surface delivery is chosen. Prices, including discounts, multi-year subscription rates, etc., are not chosen.

## 2.24

### title

words at the head of a document thus identifying it and normally distinguishing it from others

[ISO 5127:2001, definition 4.2.1.4.01]

NOTE For measuring purposes, "title" describes a document which forms a separate item with a distinctive title, whether issued in one or several physical units, and disregarding the number of copies of the document held by the library. See ISO 11620:1998, 3.23.

## 2.25

### volume

physical unit for a printed document assembling a certain number of leaves under one cover to form a whole or part of a set

[ISO 2789:2006, definition 3.2.39]

## 3 Presentation

### 3.1 General

To prevent confusion the following overall presentation should be used. In this presentation, monographic series are included in the definition of monographs (2.15), and series of regular conference proceedings, yearbooks and annuals are included in the definition of periodicals (2.19). This is in line with the definitions given in ISO 2789.

If other presentations are given the actual choice should be stated.

### 3.2 Preferred presentation

The preferred presentation is as follows:

- a) monograph/book index (including monographic series):
  - 1) in print form;
  - 2) in electronic form (eBooks);
- b) serials index:
  - 1) newspapers:
    - i) in print form;
    - ii) in electronic form;
  - 2) periodicals (including series for regular conference proceedings and annuals):
    - i) in print form;
    - ii) in electronic form;
- c) databases index.

### 3.3 Geographical coverage

Price indexes relate to documents (books, serials or databases) published in a single country of origin, and should be initially calculated in the currency units of that country. Libraries acquiring material from more than one country may aggregate the separate indexes for those countries into a single index for local use using appropriate weighting factors and currency exchange rates.

Titles published in more than one country shall be included in the indexes for each country in which they are published. Titles sold worldwide from a single published source shall be included in the index only for the country of publication.

## 4 Structure of price

### 4.1 General

The price index deals with prices requested by publishers, not the payment made by customers. Payment made by the customer can be identical with the price requested by the publisher, but can differ because of special agreements (e.g. deduction within large scale purchases), special offers (e.g. for members of a society, for students), or different prices for different methods of ordering and payment.

NOTE The costs of acquiring materials, e.g. postage, payment fees, are excluded.

### 4.2 Price differences

The same title can be offered in different countries with different prices (e.g. US books, journals, or databases may be offered at a higher price in Europe than in USA). For a national price index, the local price should be calculated.

Prices (level and development) can vary according to subject or category. Publishers often classify their publications into these groups.

Prices for online access to digital material for libraries, educational institutions, etc. may differ according to the size and type of the institution (e.g. number of students and / or researchers).

### 4.3 Prices for books

#### 4.3.1 Print or microform books

The same title of a printed book can have different prices according to format:

- hardcover edition;
- paperback (soft cover) edition;
- microform;
- book club edition.

Books can be printed for stock or can be printed on demand.

Books can be offered as part of a subscription or within a membership of a book club.

#### 4.3.2 eBooks

An eBook title may be offered in various formats for different readers. Prices may or may not vary according to formats.

eBooks can be sold as single titles or as bundles (collections for education or professional interest, e.g. law collection). The prices of bundles are dealt with under prices of databases.

eBooks can be offered as part of a subscription or within a membership of a book club.

For libraries, eBooks can be licensed with an agreement on special arrangement (e.g. pay-per-view for a certain time period, permission to offer a certain number of time limited accesses, permission to offer a certain number of concurrent users). Formats can be either online access or download to readers.

### 4.4 Prices for serials

#### 4.4.1 General

Serials are published in paper, microform, and/or digital format.

Prices may vary according to use, i.e. either personal bona fide use or library use. For personal use there may be a price differentiation for different groups (e.g. students).

Subscription prices (postage and handling excluded) are often lower than buying the single issues one by one.

The most common price offers are:

- print edition only;
- print edition with online access rights;
- online only.

#### 4.4.2 Licensing prices

eJournals are often licensed, not bought, and online access to a licensed issue expires if the license is not renewed. Permanent access to eJournals depends on the license as follows.

- Customers may receive rough data and store the eJournal on their own server but without the search interface of the publisher.
- Customers may use the licensed material on the publisher's server paying a small additional fee.
- For personal use the customer may also print the licensed journal and thus keep the content, but in another format and without the services of the online edition.

Access to eJournals is licensed for a well-defined group of authorised users (e.g. defined by IP-addresses), and license prices may differ depending on the size and status of the group.

#### 4.4.3 Bundling of titles — Consortia prices

eJournals can be offered in bundles (all serials of one publisher, subjects). Prices of such bundles can differ for single libraries or for national, regional or other consortia. The price of a bundle will in most cases be lower than the sum of the list prices of the licensed journals. Consortia can also bargain for cross access (access to journals subscribed to by members of the consortium) or additional access (access to journals not subscribed to by consortia members). For the libraries the outcome of consortia bargains will be important in relation to their costs.

Regular bundles offered by publishers are dealt with under prices of databases.

#### 4.4.4 Open access journals

Some eJournals are financed by author fees and can be accessed as open access journals. Even if universities or libraries pay the author fees, such journals shall be seen as unpriced serials and are not included in price indexes.

#### 4.4.5 Newspapers

Printed and online newspapers are offered as subscriptions for various time periods. New subscribers may get price reductions. Printed newspapers are also offered for single copy sale. Prices per copy vary according to the buying option.

Many newspapers offer access to online news. A subscription to a newspaper may include access to the newspaper's digital archive.

Microform formats are published parallel to print or online editions for archiving. Prices may be related to print subscriptions.

### 4.5 Prices for databases

#### 4.5.1 General

Prices may vary according to use: personal bona fide use or library use. For personal use there may be a price differentiation for different groups (e.g. students).

For some full text databases, online access requires the purchase of the print edition of the title.

#### 4.5.2 Licensing

Databases are often licensed, not bought, and online access expires if the license is not renewed.

Permanent (perpetual) access to databases depends on the license as follows.

- Customers may receive rough data and store the database on their own server but without the search interface of the publisher.
- Customers may use the licensed material on the publisher's server paying a small access fee.
- For personal use the customer may also print an article from the licensed database and thus keep the content, but in another format and without the services of the online edition.

Access to databases is licensed for a well-defined group of authorised users (e.g. defined by IP-addresses), and license prices may differ depending on the size and status of the group.

#### 4.5.3 Consortia prices

Prices for databases in libraries can differ for single libraries or for national, regional or other consortia. The costs for each library will in most cases be lower than the list prices of the databases concerned. For the libraries the outcome of consortia bargains will be important in relation to their costs.

### 5 Price indexes for books

#### 5.1 General

The price index should be based on publishers' prices or on price information from vendors. This is applicable to books published with a stated or recommended price. Both hardcover books and paperbacks (soft cover editions) shall be included. Electronic books (eBooks) are included and should be reported separately. Books in monographic series are included.

NOTE In certain cases, in accordance with national requirements, it can be found useful to calculate separate indexes for paperbacks and hardcover books.

#### 5.2 Books not included in the index

The following books that are not included in the index:

- a) books published in microform;
- b) books published for advertising purposes and/or of a transitory character (e.g. sales catalogues, timetables, programmes of entertainment and exhibitions);
- c) documents which are not text-based [e.g. printed music documents (scores and sheets), graphic documents, cartographic documents (maps and charts)];
- d) unpriced books;
- e) government documents [document published at government expense or as required by law or by an international agency (e.g. United Nations, European Union, UNESCO)].

### 5.3 Categories for the index

To provide subject categories for price indexes, a classification shall be used which is based in part on the two uppermost hierarchical levels of the Dewey decimal classification (DDC), as a minimum standard (see Annex A). Certain types of books may be indexed separately without any subject breakdown, for example:

- school textbooks;
- children's books;
- electronic books.

### 5.4 Sources for collection of prices

The prices shall preferably be taken from national bibliographic sources but may be collected from trade sources or calculated from direct observations (e.g. consumer price index observations). As a last resort, where price information is not available, the purchase cost of materials may be used as a surrogate.

Joint publication of monographs in two or more countries shall be dealt with by treating the separate documents as books which will appear in each country with a local ISBN and create an entry in a specific national bibliography. The prices used should be the basic recommended publishers' price, excluding any discounts or service charges.

The preferred method is to include every book published during the year. When it is not practical to collect data on all books published in a given period, sampling methods may be used. Care shall be taken that samples are representative of the range of titles published, and a consistent method for drawing the sample should be used from year to year.

Where statistics have been compiled by sample survey rather than from a full count, the method used should be indicated. It also needs to be understood that, even when samples are fully representative, the procedure produces estimates that are subject to some error, mainly dependent on the sample size. Where appropriate, the error limits should be included with the published data.

### 5.5 Methods of compilation

The price index may be presented by subject categories (see 5.3). Separate indexes should be calculated for print and electronic books.

The total price (see 5.4) of all, or of a sample of, priced items in each category published in the period covered shall be divided by the number of priced items included in that category. This gives the average annual price per item. The period covered shall be one year.

Items included in an index shall be identified by year of imprint, or alternatively, by the calendar year of appearance in a national bibliography or similar source.

The index figure,  $I_p$ , shall be calculated using Equation (1):

$$I_p = \frac{\bar{x}_p}{\bar{x}_{p,by}} \times 100 \quad (1)$$

where

$\bar{x}_p$  is the average price;

$\bar{x}_{p,by}$  is the average price in the base year.



The base year for the calculation should be chosen according to local requirements. This means that the base year has to correspond to the base year of other indexes of relevance to library management, e.g. government budget indexes and consumer price indexes.

## 5.6 Reporting of indexes

All price indexes based upon this International Standard shall refer to it, and also state any variation from this International Standard. Sources for prices and index figures shall be stated. The base year shall be explicitly defined.

It shall always be stated whether tax (e.g. sales tax, value added tax) applies to the items in the index; whether this tax is included; and how it is calculated.

When using sampling techniques, compilers shall state:

- a) total size of sample and total estimated size of population;
- b) criteria used for selection of sample;
- c) publishers excluded because the compiler was unable to obtain titles.

Taxes, if included, shall be consistently reported each year e.g. "The average price,  $\bar{x}_p$ , includes tax of  $y$  %."

Other inclusions or exclusions shall be stated whenever possible, e.g. percentage of unpriced documents.

## 6 Price indexes for serials

### 6.1 General

Since serials have a different nature from books (e.g. they are sometimes considered as being more international in character), serial prices will be reported separately from those of books and shall be based upon publishers' prices or upon price information from vendors (e.g. subscription agencies).

Given the complexity of today's publishing and spreading models, following aspects should be taken into account when building price indexes for serials.

- a) According to ISO 2789, serials are divided into newspapers and periodicals and subdivided by form, electronic and non-electronic; for the purpose of this International Standard, such a categorization applies.
- b) While there is a published price for the vast majority of serials difficulties remain in determining a unique public price for some. In such cases, the sources for the collection of prices should be the libraries themselves.
- c) Collecting price data in total being generally impossible, sampling should be preferred; sampling shall also be used to estimate price variations for a unique product bought by different libraries during the referring period.

### 6.2 Serials included in the index

It is essential that a serials index includes periodicals and newspapers. Monographic series are excluded and treated as books. Yearbooks and annuals are included with periodicals. Either one overall index may be calculated or several separate indexes, two of which shall be indexes of periodicals, as follows:

- a) periodicals (printed and electronic);
- b) newspapers (printed and electronic).

Where possible, periodicals shall be classified in accordance with the classification described in Annex A.

### 6.3 Serials not included in the index

The following serials are not included in the index:

- a) media other than printed and electronic materials;
- b) unpriced serials;
- c) government documents;
- d) serials available only on a pay-per-view subscription basis.

### 6.4 Sources for the collection of prices

The preferred source of price data is the vendors' or publishers' published price lists. Libraries may be the source of serial price data if independent sources are not available. The prices used should be the basic recommended publishers' price, excluding any discounts or service charges. Special prices offered to consortia, or for bundles of serial titles, should not be used for the calculation. Documents from international organizations may be included if allocated to a specific country or separate indexes may be compiled for them.

Indexes at a national level should be defined by national agencies.

### 6.5 Methods of compilation

The price data shall either be collected in total or calculated through a sample.

The preferred method is to include every serial title published during the year. When it is not practical to collect data on all titles published in a given period, sampling methods may be used. A sample should be selected each year, to give an unbiased estimate of the average serial price for all serials available during the year. Care shall be taken that samples are representative of the range of titles published, and a consistent method for drawing the sample should be used from year to year.

Where statistics have been compiled by sample survey rather than from a full count, the method used should be indicated. It also needs to be understood that, even when samples are fully representative, the procedure produces estimates that are subject to some error, mainly dependent on the sample size. Where appropriate, the error limits should be included with the published data.

In each category in an index, the total annual price of all priced serials in any one category shall be divided by the number of priced serial titles in that category. This gives the average annual price per title for each category. If required, the overall average annual price per title shall be calculated in the same way.

The index figure (overall or for each category),  $I_o$ , shall be calculated using Equation (2):

$$I_o = \frac{\bar{x}_p}{\bar{x}_{p,by}} \times 100 \quad (2)$$

where

$\bar{x}_p$  is the average price;

$\bar{x}_{p,by}$  is the average price in the base year.

The base year for the calculation should be chosen according to local requirements. This means that the base year has to correspond to the base year of other indexes of relevance to library management, e.g. government budget indexes and consumer price indexes.

## 6.6 Reporting of indexes

When calculating a custom general index, detailed values of sub-indexes and the respective weight of each one in the general index should be stated.

All price indexes based upon this International Standard shall refer to it, and also state any variation from this International Standard. Sources for prices and index figures shall be stated. The base year shall be explicitly defined.

It shall always be stated whether tax (e.g. sales tax, value added tax) applies to the items in the index; whether this tax is included; and how it is calculated.

When using sampling techniques, compilers shall state:

- a) total size of sample and total estimated size of population;
- b) criteria used for selection of sample;
- c) publishers excluded because the compiler was unable to obtain titles.

Taxes, if included, shall be consistently reported each year e.g. "The average price,  $\bar{x}_p$ , includes tax of  $y$  %."

Other inclusions or exclusions shall be stated whenever possible, e.g. percentage of unpriced documents.

## 7 Price indexes for databases

### 7.1 General

As for serials, vendors develop several pricing models for databases (password access, number of potential users, total number of computers on a site, etc.). The following aspects should therefore be taken into account when building price indexes for databases.

- a) The prices used for the calculation should be the vendors' base price wherever possible; as a last resort, cost may be used as a surrogate.
- b) Special prices may be offered to library consortia, or for bundles of databases. These prices should not be used for the calculation of the price index.
- c) Collecting price data in total being generally impossible, sampling should be preferred; sampling shall also be used to estimate price variations for a unique product bought by different libraries during the referring period. The number of databases is not as great as the number of serials; care should therefore be taken that any sample covers everything subscribed to by libraries.

### 7.2 Databases included in the index

The index should include all types of database subscribed to by libraries, including databases comprising packages of journals and/or eBooks.

Only those databases licensed by subscription are included.

### 7.3 Databases not included in the index

The following databases are not included in the index:

- a) unpriced databases, and those priced on a pay-per-view basis;
- b) government databases;
- c) one-time purchases and their additions;
- d) databases containing information of a transitory nature, e.g. directories, timetables, price lists.

### 7.4 Sources for the collection of prices

The preferred source of price data is the vendors' or publishers' published price lists. However, the difficulty in determining a unique published price for many databases implies that the source for the collection of price data should be the libraries themselves. Libraries should name the vendor price which applies to their institution, excluding any discounts or service charges.

Documents from international organizations may be included if allocated to a specific country or separate indexes may be compiled for them.

Indexes at a national level should be defined by national agencies.

### 7.5 Methods of compilation

The price data shall either be collected in total or calculated through a sample.

The preferred method is to include every database title published during the year. When it is not practical to collect data on all titles, sampling methods may be used. A sample should be selected each year, to give an unbiased estimate of the average price for all databases available during the year. Care shall be taken that samples are representative of the range of titles published, and a consistent method for drawing the sample should be used from year to year.

Where statistics have been compiled by sample survey rather than from a full count, the method used should be indicated. It also needs to be understood that, even when samples are fully representative, the procedure produces estimates that are subject to some error, mainly dependent on the sample size. Where appropriate, the error limits should be included with the published data.

In each category in an index, the total annual price of all priced databases in any one category shall be divided by the number of priced database titles in that category. This gives the average annual price per title for each category. If required, the overall average annual price per title shall be calculated in the same way.

The index figure (overall or for each category),  $I_o$ , shall be calculated using Equation (3)

$$I_o = \frac{\bar{x}_p}{\bar{x}_{p,by}} \times 100 \quad (3)$$

where

$\bar{x}_p$  is the average price;

$\bar{x}_{p,by}$  is the average price in the base year.

The base year for the calculation should be chosen according to local requirements. This means that the base year has to correspond to the base year of other indexes of relevance to library management, e.g. government budget indexes and consumer price indexes.

## 7.6 Reporting of indexes

When calculating a custom general index, detailed values of sub-indexes and the respective weight of each one in the general index should be stated.

All price indexes based upon this International Standard shall refer to it, and also state any variation from this International Standard. Sources for prices and index figures shall be stated. The base year shall be explicitly defined.

It shall always be stated whether tax (e.g. sales tax, value added tax) applies to the items in the index; whether this tax is included; and how it is calculated.

When using sampling techniques, compilers shall state:

- a) total size of sample and total estimated size of population;
- b) criteria used for selection of sample;
- c) publishers excluded because the compiler was unable to obtain titles.

Taxes, if included, shall be consistently reported each year, e.g. "The average price,  $\bar{x}_p$ , includes tax of  $y$  %."

Other inclusions or exclusions shall be stated whenever possible, e.g. percentage of unpriced documents.

## Annex A (informative)

### Subject classification

To make this International Standard relevant to libraries with varying profiles, according to subject specialization, the subject classification given in Table A.1 is recommended. This is based in part on the two uppermost hierarchical levels of the Dewey decimal classification (DDC). Where other classification systems are used, it is recommended that corresponding references are made.

Certain types of books may be categorized by the subject groups given in Table A.1, but may also be shown separately in the following groups:

- a) school textbooks;
- b) children's books;
- c) fiction.

**Table A.1 — Subject classification**

Subject group content	Corresponding DDC number
<b>Generalities, computers, information</b>	<b>0</b>
Generalities	000 to 003
Computer science; internet	004 to 006
Bibliography, library and information sciences	010, 020
Encyclopaedic works	030
Organizations and museology	060
News media, journalism, publishing	070
General collections	080
<b>Philosophy, psychology</b>	<b>1</b>
Philosophy	100 to 120, 140, 160 to 190
Parapsychology, occultism	130
Psychology	150
<b>Religion</b>	<b>2</b>
Religion, philosophy and theory of religion	200, 210
Bible	220
Theology, Christianity	230 to 280
Other religions	290
<b>Social sciences</b>	<b>3</b>
Social sciences, sociology	300
Statistics	310
Political science, economics	320, 330

Table 1 (continued)

Subject group content	Corresponding DDC number
Law, public administration	340, 350 to 354
Military science	355 to 359
Social problems and services	360
Education	370
Commerce, communication, transportation	380
Ethnography, cultural anthropology (customs, folklore, mores, tradition)	390
<b>Language</b>	<b>4</b>
Philology, languages, linguistics <sup>a</sup>	400 to 490
<b>Science and mathematics</b>	<b>5</b>
Science	500
Mathematics	510
Astronomy, cartography	520
Physics	530
Chemistry	540
Earth sciences, geology	550
Palaeontology	560
Life sciences, biology	570
Botany	580
Zoology	590
<b>Technology, medicine, applied sciences</b>	<b>6</b>
Technology	600
Medicine, health	610
Engineering	620
Agriculture, veterinary medicine	630
Home and family management	640
Management, administration and organization	650
Chemical engineering	660
Manufacturing	670, 680
Building and construction	690
<b>Arts and recreation</b>	<b>7</b>
Arts	700
Physical planning, town and country planning, architecture	710 to 720
Plastic and graphic arts, photography	730 to 770
Music, performing arts, theatre, film and cinema	780 to 792
Games and sports	793 to 799

Table 1 (continued)

Subject group content	Corresponding DDC number
<b>Literature</b>	<b>8</b>
Literature, rhetoric and criticism	800
Literary texts <sup>a</sup>	810 to 890
<b>Geographic and History</b>	<b>9</b>
History	900, 930 to 990
Geography and travel	910
Biography, genealogy, heraldry	920
<b>TOTAL</b>	<b>0 to 9</b>
<sup>a</sup> Optionally, this may be divided according to native and foreign languages.	



## Annex B (informative)

### Guidelines for local cost indexes

The profile of a library's acquisitions does not usually correspond to that of a national bibliography or to that of a trade list owing to the fact that libraries make selections according to their specific local objectives. Therefore, many libraries will wish to use this International Standard as a guideline for calculating local cost indexes. This annex draws a distinction between "prices" reported nationally and "costs" (price less discount, price plus service charge, etc.) reported locally.

The primary purpose of this International Standard is for use in calculating national indexes covering the prices of published documents purchased by libraries. The same methodology can be used for local cost indexes. However, certain variables may be accounted for. They are:

- a) discounts;
- b) taxes;
- c) library binding costs;
- d) customs fees;
- e) foreign currency differences;
- f) country of origin;
- g) postage charges;
- h) service charges;
- i) institutional member rates;
- j) multi-year subscription rates.

Local indexes may be calculated for one library or a group of libraries according to administrative units, geography or subject.

A local price index,  $I_1$ , may be relevant to a single library, or to a group of libraries of a similar type. When basing a local price index on a selection of subject categories from a national index, the average prices for each category should first be weighted according to local expenditure, to calculate a local average price. This is then divided by the local average price in the base year to give an index value:

$$I_1 = \frac{\bar{x}_p}{\bar{x}_{p,by}} \times 100 \quad (\text{A.1})$$

where

$\bar{x}_p$  is the local average price;

$\bar{x}_{p,by}$  is the local average price in the base year.

A local cost index will follow the same basic methodology as a price index; however, the local elements should be separately identified and the local methodology should be stated.

## ISO 9230:2007(E)

Local cost figures will normally be derived from purchase prices, excluding binding costs. Wherever possible, taxes and discounts should be identified, whether they apply locally or internationally. If costs include discounts and binding costs, this should be stated. Local indexes would normally include all items purchased by a library, whether from national or international vendors.

Depending on local needs, local indexes may have additional breakdowns according to country of origin or currency of payment. A local index is calculated on a one-year basis (calendar or fiscal) from either invoice date or date of acquisition. If there are extended calculations for local reasons (such as discounts, customs charges, and exchange rates), then this should be stated.

It should always be stated whether purchase tax (e.g. sales tax, value added tax) applies to items in the index, whether the tax is included and how it is calculated.

When compiling local serial indexes, there are other factors which have to be considered. National serial price indexes should be based upon publishers' prices and the local serials cost indexes should be based upon charges from the vendors. The source of local information always has to be the invoice. As noted above for books, local cost indexes should normally exclude binding costs and, where possible, identify separate discounts and taxes. For serials, such local variables as multi-year subscription rates, service charges, and institutional membership rates should be used.

## Annex C (normative)

### List of equivalent terms

	<b>English</b>	<b>French</b>
2.1	access rights	droits d'accès
2.2	audiovisual document	document audiovisuel
2.3	average price	prix moyen
2.4	book	livre
2.5	book price	prix du livre
2.6	bundle	bouquet
2.7	compact disc read-only memory (CD-ROM)	disque compact non inscriptible (cédérom)
2.8	database	base de données
2.9	digital document	document numérique
2.10	document	document
2.11	electronic book (eBook)	livre électronique
2.12	electronic collection	collection électronique
2.13	electronic serial	périodique électronique
2.14	library collection	collection
2.15	monograph	monographie
2.16	monographic series	collection de monographies
2.17	newspaper	journal
2.18	paperback	livre broché
2.19	periodical	périodique
2.20	physical unit	unité matérielle
2.21	price index	indice de prix
2.22	serial	publication en série
2.23	serial price	prix d'une publication en série
2.24	title	titre
2.25	volume	volume

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- [4] ISO 11620:1998, *Information and documentation — Library performance indicators*
- [5] ANSI/NISO<sup>1)</sup> Z39.20:1999, *Criteria for price indexes for printed library materials*
- [6] BSI DD<sup>2)</sup> 247:1998, *Documentation — Vocabulary*

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- 1) NISO = National Information Standards Organization.
  - 2) BSI DD = British Standards Institute Draft for Development.

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