

## Single Integrated Metadata Structure (SIMS v2.0)

**Country:** Greece

**Compiling agency:** ELSTAT

**Domain name:** Turnover Indices for Specific Activities of the Services Sector

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1. Contact		<a href="#">Top</a>
1.1 Contact organisation	Hellenic Statistical Authority (ELSTAT)	
1.2 Contact organisation unit	Economic and Short-Term Indices Division (G7) Retail Prices and Price Indices Section (G70)	
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1.4 Contact person function	a. Head of Retail Prices and Price Indices Section b. Employee of Retail Prices and Price Indices Section	
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<b>2. Metadata update</b> <a href="#">Top</a>	
<b>2.1 Metadata last certified</b>	15/03/2017
<b>2.2 Metadata last posted</b>	15/03/2017
<b>2.3 Metadata last update</b>	15/03/2017

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<b>3.1 Data description</b>	
<p>The Turnover Indices for Specific Activities of the Services Sector refer to the whole country and they cover the divisions <b>H53, J58, J61, J62, J63, M69, M70.2, M71, M73, M74, N78, N80, N81, N81.2 and N82</b> of economic activity according to <b>NACE Rev.2</b> (Statistical Classification of Economic Activities in the European Community).</p> <p>No geographical breakdown is performed for the above data, which are collected quarterly, and presented as indices and percentage changes. The indices are compiled for each division quarterly, working-day adjusted (actual number of working days) and reported as follows:</p> <ul style="list-style-type: none"> <li>◆ indices with base year 2010=100.0;</li> <li>◆ percentage changes (rates) of quarter compared with the previous quarter;</li> <li>◆ percentage changes (rates) of quarter compared with the same quarter of previous year.</li> </ul>	
<b>3.2 Classification system</b>	
<p>The statistical classification of economic activities NACE Rev.2 is applied, in accordance with Regulation (EC) 1893/2006 of the Council and the European Parliament.</p>	
<b>3.3 Sector coverage</b>	
<p>The Turnover Indices for Specific Activities of the Services Sector are compiled as individual indices, and in accordance with the new NACE Rev.2 classification they cover the following divisions and the specific activities for each division:</p> <ul style="list-style-type: none"> <li>◆ <b>Postal and courier activities (Section H Division 53)</b> include: postal activities under universal service obligation and other postal and courier activities.</li> <li>◆ <b>Publishing activities (Section J Division 58)</b> include: publishing of books, directories, mailing lists, newspapers, journals, periodicals and any other type of directories and other publishing activities; publishing of computer games and other software.</li> <li>◆ <b>Telecommunications (Section J Division 61)</b> include: wired telecommunications activities, wireless telecommunications activities, satellite telecommunications activities and other telecommunications activities.</li> <li>◆ <b>Computer programming, consultancy and related activities (Section J Division 62)</b> include: computer programming activities, computer consultancy activities, computer facilities management activities and other information technology and computer service activities.</li> <li>◆ <b>Data processing and information activities (Section J Division 63)</b> include: data processing, hosting and related activities, web portals, news agency activities and other information service activities.</li> <li>◆ <b>Legal and accounting activities (Section M Division 69)</b> include: legal activities, accounting, bookkeeping, auditing activities and tax consultancy.</li> <li>◆ <b>Management consultancy activities (Section M Division 70.2)</b> include: public relations, communication activities; business and other management consultancy activities.</li> <li>◆ <b>Architectural and engineering activities and related technical consultancy activities (Section M Division 71)</b> include: architectural activities; engineering activities and related technical consultancy; technical testing and analysis.</li> </ul>	

- ◆ **Advertising, market research and public opinion polling activities (Section M Division 73)** include: advertising agencies, media representation, market research and public opinion polling.
- ◆ **Other professional, scientific and technical activities (Section M Division 74)** include: specialized design activities (including the activities of graphic designers, decorators fashion and exhibition stand designers), photographic activities (including aerial photography), translation and interpretation activities; other professional, scientific and technical activities (n.e.c. including business brokerage, and appraisal activities [excluding real estate brokers and appraisal services for insurance], the activities of artistic agents, the activities of consultants [excluding technical consultants and engineers] weather forecasting, placement of books services, etc.).
- ◆ **Employment activities (Section N Division 78)** include: activities of employment placement agencies (including artist employment agencies), temporary employment agency activities and other human resources provision and management.
- ◆ **Security and investigation activities (Section N Division 80)** include: private security activities, security systems service activities and investigation activities.
- ◆ **Services to buildings and landscape activities (Section N Division 81)** include the provision of a number of general support services, such as the provision of a combination of support services within a client's facilities, the interior and exterior cleaning of buildings of all types, cleaning of industrial machinery, cleaning of trains, buses, planes, etc., cleaning of the inside of road and sea tankers, disinfecting and exterminating activities for buildings, ships, trains, etc., bottle cleaning, street sweeping, snow and ice removal, provision of landscape care and maintenance services and provision of these services along with the design of landscape plans and/or the construction (i.e. installation) of walkways, retaining walls, decks, fences, ponds, and similar structures.
- ◆ **Cleaning activities (Section N Division 81.2)** include: general cleaning of buildings, other building and industrial cleaning activities and other cleaning activities.
- ◆ **Office administrative, office support and other business support activities (Section N Division 82)** include: combined office administrative service activities, photocopying, document preparation and other specialized office support activities, activities of call centers, organizations of conventions and trade shows, activities of collection agencies and credit bureaus, packaging activities and other business support service activities n.e.c.

### 3.4 Statistical concepts and definitions

The Turnover Indices for Specific Activities of the Services Sector are indices of the enterprise's economic cycle showing the evolution of the services market. Their purpose is to measure the activity of the services sectors in value terms. Turnover is calculated without VAT and includes the total amounts invoiced by the enterprise during the reference period (quarter). The following definitions are used, in accordance with Commission Regulation (EC) No 588/2001 on the implementation of Council Regulation (EC) No 1165/98 "concerning short-term statistics":

*Turnover comprises the totals invoiced by the observation unit during the reference period, which correspond to sales of goods or services supplied to third parties. It also includes any other charges (transport, packaging, etc.) charged to the customer, even if these expenses are listed separately in the invoice.*

*Turnover does not include VAT and other similar deductible taxes directly linked to turnover, as well as all duties and taxes on the services invoiced by the enterprise. Price reductions and discounts, as well as the value of returned packaging must be deducted. Price reductions, rebates and bonuses conceded later to clients, for example at the end of the year, are not taken into account. Income classified as other operating income, financial income and extraordinary income in company accounts are excluded from turnover.*

*According to this definition, the following items are mainly included:*

- ◆ *sales of manufactured products;*
- ◆ *sales of products manufactured by subcontractors;*
- ◆ *sales of goods purchased for resale in the same condition as received;*
- ◆ *invoiced services provided;*
- ◆ *sales of by-products;*
- ◆ *invoiced charges for packaging and transport;*
- ◆ *hours worked invoiced to third parties for labour-only subcontracting;*
- ◆ *invoiced mounting, installation and repair services;*
- ◆ *invoiced instalments (stage payments);*
- ◆ *invoiced software development and software licenses;*

- ◆ sales of supplied electric power, gas, heat, steam and water;
- ◆ sales of waste and scrap materials;
- ◆ subsidies on products.

Depending on the treatment of the income classified as 'other operating income, financial income and extraordinary income' in the company accounts, the following items are generally not included:

- ◆ VAT and other similar deductible taxes directly linked to turnover, as well as all duties and taxes on the goods or services invoiced by the unit;
- ◆ commissions;
- ◆ leases and rentals;
- ◆ leases for own production units and machines if used by third parties;
- ◆ leases of company-owned buildings;
- ◆ income from license fees;
- ◆ income from staff facilities (for example from a factory canteen);
- ◆ the supply of products and services within the observation unit;
- ◆ sales of own land and fixed assets;
- ◆ sales or leases of own properties;
- ◆ sales of shares;
- ◆ income from interest and dividends;
- ◆ other extraordinary income.

The above items can be included if they generate turnover for the observation unit's main field of activity.

### 3.5 Statistical unit

The reporting unit is the enterprise.

### 3.6 Statistical population

Concerning the survey of the Turnover Indices for Specific Activities of the Services Sector for the abovementioned divisions of the NACE Rev. 2, the population of enterprises with an annual turnover of not less than 100,000 euro (according to the Business Register of the Ministry of Economy and Finance for the year 2010) amounted to 12,159 units. Because of the large number of the population, a representative sample of 589 enterprises was selected.

### 3.7 Reference area

The indices cover all of Greece. Data are collected by enterprises established in Regions of Attica, Central Makedonia and 10 more administrative regions all over Greece. There is not information to distinguish turnover from any activities produced outside the country and included in the data of the business.

### 3.8 Time coverage

The time series of the Turnover Indices for Specific Activities of the Services Sector (2010=100.0) are published quarterly, covering the period from 2000 onwards.

### 3.9 Base period

Base year: 2010=100.0.

## 4. Unit of measure

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Indices, quarter and annual rates of change (%).

## 5. Reference period

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Reference period is quarter.

## 6. Institutional mandate

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### 6.1 Legal acts and other agreements

The legal framework concerning the organization and operation of ELSTAT is as follows:

- **Law 3832/2010** (Government Gazette No 38, Issue A): "Hellenic Statistical System Establishment of the Hellenic Statistical Authority (ELSTAT) as an Independent Authority", as amended and in force

- **Regulation on the Operation and Administration of the Hellenic Statistical Authority** (ELSTAT), 2012, (Government Gazette No 2390, Issue B, 28-8-2012)
- **Regulation (EC) No 223/2009 of the European Parliament and of the Council**, on the European statistics (Official Journal of the European Union L 87/164).
- **Article 14 of the Law 3470/2006** (Government Gazette No 132, Issue A): *“National Export Council, tax regulations and other provisions”*.
- **Article 3, paragraph 1c, of the Law 3448/2006** (Government Gazette No 57, Issue A): *“For the further use of information coming from the public sector and the settlement of matters falling within the responsibility of the Ministry of Interior, Public Administration and Decentralization”*.
- **European Statistics Code of Practice**, adopted by the Statistical Programme Committee on 24 February 2005 and promulgated in the Commission Recommendation of 25 May 2005 on the independence, integrity and accountability of the national and Community statistical Authorities, after its revision, which was adopted on 28 September 2011 by the European Statistical System Committee.
- **Presidential Decree 226/2000** (Government Gazette No 195, Issue A): *“Organization of the General Secretariat of the National Statistical Service of Greece”*.
- **Articles 4, 12, 13, 14, 15 and 16 of the Law 2392/1996** (Government Gazette No 60, Issue A): *“Access of the General Secretariat of the National Statistical Service of Greece to administrative sources and administrative files, Statistical Confidentiality Committee, settlement of matters concerning the conduct of censuses and statistical works, as well as of matters of the General Secretariat of the National Statistical Service of Greece”*.

The Legal Framework is detailed in the link: <http://www.statistics.gr/en/legal-framework>.

#### **Eurostat legislation:**

The legal basis for the STS indices is Council Regulation No 1165/98 of 19 May 1998 concerning short-term statistics (STS-R) amended by the [Regulation No 1158/2005 of 6 July 2005](#) of the European Parliament and of the Council of 6 July 2005 concerning short-term statistics and by [Regulation \(EC\) No 1893/2006 of 20 December 2006](#) of the European Parliament and of the council of 20 December 2006 establishing the statistical classification of economic activities NACE Rev.2.

The definitions of short-term statistics variables are laid down in [Commission Regulation No1503/2006](#), of September 2006 implementing and amending Council Regulation No 1165/98 of 19 May 1998, concerning short-term statistics.

#### **6.2 Data sharing**

None.

## **7. Confidentiality**

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### **7.1 Confidentiality - policy**

The issues concerning the observance of statistical confidentiality by the Hellenic Statistical Authority (ELSTAT) are arranged by articles 7, 8 and 9 of the Law 3832/2010 as in force, by Articles 8, 10 and 11(2) of the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System and by Articles 10 and 15 of the Regulation on the Operation and Administration of ELSTAT.

Furthermore, ELSTAT disseminates the statistics in compliance with the statistical principles of the European Statistics Code of Practice and in particular with the principle of statistical confidentiality. More details in the following link: <http://www.statistics.gr/en/statistical-confidentiality?inheritRedirect=true%20>.

### **7.2 Confidentiality - data treatment**

ELSTAT protects and does not disseminate data that it has obtained or it has access to, which enable the direct or indirect identification of the statistical units that have provided them by the disclosure of individual information directly received for statistical purposes or indirectly supplied from administrative or other sources. ELSTAT takes all

appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by ELSTAT if and only if:

- a. these data have been treated, as it is specifically set out in the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System (ELSS), in such a way that their dissemination does not prejudice statistical confidentiality or
- b. the statistical unit has given its consent, without any reservations, for the disclosure of data.

The confidential data that are transmitted by ELSS agencies to ELSTAT are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task and appointed by an act of the President of ELSTAT.

ELSTAT may grant researchers conducting statistical analyses for scientific purposes access to data that enable the indirect identification of the statistical units concerned. The access is granted provided the following conditions are satisfied:

- a. an appropriate request together with a detailed research proposal in conformity with current scientific standards have been submitted;
- b. the research proposal indicates in sufficient detail the set of data to be accessed, the methods of analyzing them, and the time needed for the research;
- c. a contract specifying the conditions for access, the obligations of the researchers, the measures for respecting the confidentiality of statistical data and the sanctions in case of breach of these obligations has been signed by the individual researcher, by his/her institution, or by the organization commissioning the research, as the case may be, and by ELSTAT.

Issues referring to the observance of statistical confidentiality are examined by the Statistical Confidentiality Committee (SCC) operating in ELSTAT. The responsibilities of this Committee are to recommend on:

- ◆ the level of detail at which statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible;
- ◆ the anonymization criteria for the microdata provided to users;
- ◆ the granting to researchers access to confidential data for scientific purposes.

The staffs of ELSTAT, under any employment status, as well as the temporary survey researchers who are employed for the collection of statistical data in statistical surveys conducted by ELSTAT, who acquire access by any means to confidential data, are bound by the principle of confidentiality and must use these data exclusively for the statistical purposes of ELSTAT. After the termination of their term of office, they are not allowed to use these data for any purpose. Violation of data confidentiality and/or statistical confidentiality by any civil servant or employee of ELSTAT constitutes the disciplinary offence of violation of duty and may be punished with the penalty of final dismissal.

ELSTAT, by its decision, may impose a penalty amounting from ten thousand (10,000) up to two hundred thousand (200,000) euro to anyone who violates the confidentiality of data and/or statistical confidentiality. The penalty is always imposed after the hearing of the defense of the person liable for the breach, depending on the gravity and the repercussions of the violation. Any relapse constitutes an aggravating factor for the assessment of the administrative sanction.

**Confidentiality:** If the data are actually confidential according to article 20 of the Law (EC) No 223/2009 arranged by the European Parliament and by the qualified Council on the 11<sup>th</sup> of March on 2009 (data which allow the exact determination of some statistical units, either directly or indirectly), they should be noted as confidential and consequently they will not be published by Eurostat.

## 8. Release policy

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### 8.1 Release calendar

At the beginning of September of each year, ELSTAT publishes a release calendar with the precise release dates for the following year.

### 8.2 Release calendar access

The release calendar is distributed to the press and is available free of charge to all interested parties. The calendar is also available on the official website of ELSTAT under the item "Releases Calendar" (<http://www.statistics.gr/en/calendar#32017>).

### 8.3 User access

In compliance with the Community's legal framework and the "The European Statistics Code of Practice", ELSTAT disseminates national statistics on its website, with respect to the professional independence, with objectivity, professionalism and transparency, where all users are treated equitably. In this content, data are released simultaneously to all interested parties and users through the Press Release on the Turnover Indices for Specific Activities of the Services Sector, which is posted on the website of ELSTAT (<http://www.statistics.gr/en/statistics/-/publication/DKT54/->), according to the release calendar. The Press Release is also available by fax or e-mail to all interested parties. In addition, data are transmitted to Eurostat on a predefined date, concomitantly with their national publication. Neither users, nor the government have access to the data prior to their publication in any way.

## 9. Frequency of dissemination

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Turnover Indices for Specific Activities of the Services Sector are produced and disseminated quarterly.

## 10. Accessibility and clarity

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### 10.1 News release

Turnover Indices for Specific Activities of the Services Sector are released on a quarterly basis in a standardized press release, within specified deadlines, 75 days after the end of the data reference quarter at 12:00. The Press Release presents the recently calculated indices available in both Greek and English language. The Press Release can be sent, mainly by e-mail, to the press and any other users or parties interested in the indices free of charge. It can be reached easily by the website of ELSTAT: <http://www.statistics.gr/en/statistics/-/publication/DKT54/->.

On Press Release, the Turnover Indices for Specific Activities of the Services Sector are reported as follows:

- ◆ indices with base year 2010=100.0;
- ◆ percentage changes (rates) of quarter compared with the previous quarter and
- ◆ percentage changes (rates) of quarter compared with the same quarter of previous year.

### 10.2 Publications

The Turnover Indices for Specific Activities of the Services Sector, except of the quarterly Press Release, are also included in publication of "Greek Economy", with quarterly and annual average indices in two-digit level of the economic activity of Nace Rev.2, available in the link: <http://www.statistics.gr/en/the-greek-economy>.

### 10.3 On-line database

There is no on-line database for the Turnover Indices for Specific Activities of the Services Sector.

#### 10.3.1 Data tables - consultations

During the year 2015, users' consultations, as regards the Turnover Indices for Specific Activities of the Services Sector, amounted to 3,908 webpage hits. It is not possible to distinguish between data consultations and metadata consultations.

### 10.4 Micro-data access

No access to microdata is granted to users.

### 10.5 Other

Users can have access to previously released publications by ELSTAT, relevant to variant statistical surveys posted on the on-line library service, through the link: <http://dlib.statistics.gr/portal/page/portal/ESYE/>, as well as Eurostat publications through the link: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database).

There is always the possibility to provide data or statistical analysis by fax or e-mail to users, only upon request. The request must be submitted to the link <http://www.statistics.gr/el/statistical-data-request>, in which users should describe the field that they are interested in.

Also the users can address the Economic and Short-Term Indicators Division, Department of Retail Prices and Prices Indices. The relevant e-mail addresses are the following:

- a. [m.glenis@statistics.gr](mailto:m.glenis@statistics.gr)
- b. [a.koutelas@statistics.gr](mailto:a.koutelas@statistics.gr)
- c. [data.dissem@statistics.gr](mailto:data.dissem@statistics.gr)
- d. [data.supply@statistics.gr](mailto:data.supply@statistics.gr)

### **10.5.1 Metadata – consultations**

During the year 2015, users' consultations, as regards the Turnover Indices for Specific Activities of the Services Sector, amounted to 3,908 webpage hits. It is not possible to distinguish between data consultations and metadata consultations.

## **10.6 Documentation on methodology**

The methodology of the indices compilation is laid down by ELSTAT, taking into account international practices and more specific instructions, guidelines and standards of Eurostat. The methodological manual "[\*Methodology of Short-term Business Statistics, Interpretation and guidelines, 2006\*](#)" contains a comprehensive set of recommendations on the compilation of the STS statistics. Moreover, a special methodological paper is available on link: <http://www.statistics.gr/en/statistics/-/publication/DKT54/>, containing detailed information on the sources and the methodology used.

### **10.6.1 Metadata completeness – rate**

Metadata for the compilation of Turnover Indices for Specific Activities of the Services Sector are available on the website of ELSTAT (<http://www.statistics.gr/en/home/>). Therefore, metadata completeness rates amounts to 100%.

## **10.7 Quality documentation**

A concise oriented for users quality report is available on the website: <http://www.statistics.gr/en/statistics/-/publication/DKT54/>.

# **11. Quality management**

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## **11.1 Quality assurance**

The Hellenic Statistical Authority (ELSTAT) aims to assure and improve the quality of any produced statistics and maintain the confidence of users to them. This can be achieved by the application of "Quality Policy of ELSTAT", which is available on the link <http://www.statistics.gr/en/policies>. Quality control and data validation are carried out throughout the whole process of the indices compilation, specifically from data collection to the final calculation of the indices.

First of all, efficiently trained and experienced staff is utilized in all stages of the indices compilation, such as data collection, which includes communication with companies, initial checks, data entry and the final verification, which is conducted after the calculation of the indices. This practice offers to personnel the opportunity for a comprehensive and enduring image of the companies under their responsibility.

Data are validated either before, or after their admission, using logical checks. Data processing includes proper research in order to identify possible errors and eventually correct them. After the identification of possible errors, further investigation is conducted in collaboration with the enterprise, in order to be confirmed that it is a true error or an unusual price, while data are checked for completeness, accuracy and consistency of the correlating variables.

For the needs of indices calculation, specialized software is necessary, demonstrating automated procedures ("routines") for all necessary calculations, eliminating any errors to the final results. Nevertheless, even during this stage, consistency checks are carried out to the final results, mainly by comparing the change rates of each index.

## **11.2 Quality assessment**

Turnover Indices for Specific Activities of the Services Sector are considered to be reliable and sufficiently accurate indices, as:

- a. the concepts, definitions, and methodology applied in compilation of Turnover Indices follow European and international standards and guidelines,



- b. the accuracy of data used is accomplished by quality controls for their validation and
- c. the indices are compiled since the year 2006 and therefore experience and know-how to deal with enterprises data has been acquired.

## 12. Relevance

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### 12.1 User needs

The Turnover Indices for Specific Activities of the Services Sector meet national needs, as well as needs of European and other users. The main national users are the government, other public agencies, the Central Bank of Greece, other Hellenic banks, Hellenic Confederation of Trade and Enterprise (ESSE) several financial institutions, economic analysts, media and public, while at the international level, the main user is Eurostat and other international organisations (ECB, IMF, OECD etc).

The Turnover Indices for Specific Activities of the Services Sector cover a wide range of user' needs. As far as the domestic market is concerned, Turnover Indices are used as a tool of information in respect of economic activity, competition and productivity of enterprises, in order to establish the economic policy of the Government and to facilitate the initiative from enterprises or other institutions. Moreover, at European level, there is a need for absolutely comparable statistics, in order for a European economic policy to be determined.

### 12.2 User satisfaction

Users' needs are monitored on a regular basis by the Department of Retail Prices and Price Indices, in order to secure the satisfaction level. In general, there is a smooth cooperation and rapid response to the users' request and comments made by users are positive. Moreover, ELSTAT conducts a survey in order to monitor the satisfaction of each user every six months. Comments made by media are positive too. Further information concerning the results of Users' Satisfaction Survey is available at the following link: <http://www.statistics.gr/user-satisfaction-survey>.

Furthermore, the Hellenic Statistical Authority operates a Users Conference annually, in which representatives from institutions of private and public sector, as well as representatives from educational and research institutions take part in. These conferences provide to ELSTAT the opportunity to collect comments and further suggestions from users relative to the dissemination and the accessibility of statistical information and the gaps in the production of statistics. More information about conference is available at the link <http://www.statistics.gr/en/user-conference>.

### 12.3 Data completeness

The compilation of the Turnover Indices for Specific Activities of the Services Sector is in full compliance with the relevant European Regulations.

## 13. Accuracy and reliability

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### 13.1 Overall accuracy

The accuracy of indices is influenced by: a) sampling errors and b) non-sampling errors. Sampling errors occur due to the fact that during the indices compilation, the whole target population of enterprises is not investigated, but a sample of them is used instead. Non-sampling errors of indices refer mainly to data errors and non-response errors of the sample enterprises. Measurement errors during data collection are identified by quality checks and then they are corrected. Regarding non-response errors, every effort is made so as the companies not responded to provide the requested data.

The accuracy of Turnover Indices for Specific Activities of the Services Sector is considered high, because the sampling error (coefficient of variance) is <5%, while non sampling errors are traced and corrected. The survey is conducted on enterprises with an annual turnover higher than 100,000 euro, which cover at least 67%-70% of the whole turnover, according to the assigned sampling framework. The fact that the survey is conducted on a sample and not on the total population of enterprises creates bias in the estimation of the amount of business done in a current period. However, during compilation of the Turnover Indices, the prices of the current period are compared with the corresponding prices of the previous period, therefore the appearance of bias is annulated during this comparison.

### 13.2 Sampling error

The method of single-stage stratified random sampling was used for the selection of the enterprises to be included in the sample. Sampling errors are <5%.

### **13.3 Non-sampling error**

Non-sampling errors are possible to appear as described analytically below. However, every effort is focused on detection and correction of errors, as well as with the revision of data where necessary.

#### **a. Unit non – response**

The non-response of enterprises is treated with telephone contacting, reminders via fax or e-mail and personal visits to businesses in order to achieve the collection of the requested information or the best estimation when data are not possible. The cases, in which the companies have not responded despite all efforts, are dealt with estimations based on previous year data and taking into account the evolution of the enterprise or market division of economic activity.

#### **b. Item non - response**

Non response to an item or an extreme or unusual value is treated with telephone or email communication. Administrative data are also taken into account.

### **13.3.1 Coverage error**

No coverage errors are observed in the Business Register of ELSTAT, on the basis of which the survey on the compilation of the index was designed.

#### **13.3.1.1 Over-coverage – rate**

No over-coverage errors are observed in the Business Register of ELSTAT, on the basis of which the survey of the index compilation was designed.

#### **13.3.1.2 Common units – proportion**

The Index is compiled on the basis of a common sample of enterprises used for every quarter, which is updated when the Index is revised with a new base year, therefore the common enterprises of sample in-between months amount to 100%.

### **13.3.2 Measurement error**

Some measurement errors are observed, such as errors in reported data by enterprises surveyed. These errors are usually traced easily by making crosschecks with reported data in the previous periods and are corrected after telephone or e-mail contacting.

### **13.3.3 Processing error**

After the collection of data, the processing is made using a specific software program, which ensures the data correctness in a high level in various stages of processing, from data entry to the compilation of the Turnover Indices. Additionally, the conduction of logical controls and the comparison of the corresponding annual changes ensure tracking and correction of every error of this kind.

### **13.3.4 Model assumption error**

No model is used for the compilation of the index.

## **14. Timeliness and punctuality**

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### **14.1 Timeliness**

The Turnover Indices for Specific Activities of the Services Sector are published through a press release 75 days after the end of the reference quarter.

### **14.2 Punctuality**

The Turnover Indices for Specific Activities of the Services Sector are published on the pre-announced release dates.

## 15. Coherence and comparability

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### 15.1 Comparability - geographical

The STS Regulation and the STS methodological guidelines are applied for the compilation of the Indices. This fact ensures a good comparability with the European and national indices, taking into account the special conditions that apply to each country which may dictate minor methodological deviations.

#### 15.1.1 Assymetry for mirror flows statistics – coefficient

Non applicable.

### 15.2 Comparability over time

The time series of the revised Turnover Indices for Specific Activities of the Services Sector (2010=100.0) include backcasted indices of the previous time series (January 2000 - December 2014). The indices from January 2015 onwards, are compiled on the basis of the new price data of the surveyed products and on the new weighting coefficients.

### 15.3 Coherence cross-domain

Regular crosschecks are made with information from other surveys. The indices are compared with the available results of the Annual Structural Survey on enterprises, having as result the correlation coefficient of annual changes of respective surveys greater than 0.3 for all sectors and half of them more than 0.5. The differences observed are due to the fact that the quarterly survey of the Turnover Indices for Specific Activities of the Services Sector assumes the population of the base year as constant in the samples conversion, while the Annual Structural Survey on enterprises every year uses a different population and furthermore, STS and SBS use a slightly different definition of turnover. In addition, the STS is a quarterly survey and the results are announced no later than 75 days after the end of the surveyed quarter while the SBS is annual and the results are announced no later than 18 months after the end of the reference year; as a result, the SBS is conducted at a time later than that of STS.

#### 15.3.1 Coherence – sub annual and annual statistics

Non applicable.

#### 15.3.2 Coherence – National Accounts

The Turnover Indices for Specific Activities of the Services Sector are available to the Division of National Accounts for their annual temporary estimations and the compilation of the quarterly National Accounts.

### 15.4 Coherence - internal

Non applicable.

## 16. Cost and burden

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There are no available figures in respect of the time burden of the surveyed enterprises. Moreover, the production cost of the Turnover Indices in Services Sector is not calculated.

## 17. Data revision

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### 17.1 Revision policy

The general revision policy adopted by ELSTAT, which is also applied to the The Turnover Indices for Specific Activities of the Services, is available at the link: <http://www.statistics.gr/en/policies>. In accordance with the requirements of article 11 of the Council Regulation (EC) No 1165/98 concerning short-term statistics, short-term indices are revised every five (5) years, particularly in calendar years ending in 0 or 5. The purpose of the revision of the Turnover Indices for Specific Activities of the Services Sector is the adaptation to structural changes, by renewing the sample of enterprises that are surveyed, as well as the extrapolation factors weighing which are used (implementation of new weighting scheme). In general, the data transmitted to Eurostat follow the same revision policy with the data released in national level, for consistency reasons.

### 17.2 Revision practice

Data are provisional when first released and become final as soon as all data collected become definite. More specifically, the data released for the most recent quarter is provisional and they are published along with revised data of the previous quarter. Quarterly correction is made due to late reporting of respondents.

## 18. Statistical processing

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### 18.1 Source data

The survey for the compilation of the Turnover Indices for Specific Activities of the Services Sector for the abovementioned divisions of the NACE Rev. 2 has as population 12,159 enterprises with annual turnover equal to or higher than 100,000 euro, according to the Business Register of ELSTAT for year 2010. As the collection of the necessary statistical data from such a large number of enterprises is not considered feasible, a representative sample of 589 enterprises throughout the country was selected instead.

Single-stage stratified random sampling was used for the selection of the sample's enterprises. For each of two-digit economic activity divisions, the enterprises included in the survey were stratified in 6 size classes, based on their turnover during 2010 as following tables:

#### Strata of annual turnover for the Divisions J63, M70.2, M74, N81

Size Class	Turnover in euro
1	100,000 – 299,999
2	300,000 – 599,999
3	600,000 – 1,299,999
4	1,300,000 – 2,699,999
5	2,700,000 – 5,299,999
6	5,300,000 – 9,999,999
7	10,000,000 – 19,999,999
8	20,000,000 and more

#### Strata of annual turnover for the Divisions J58, J62, J73, N80, N82

Size Class	Turnover in euro
1	300,000 – 599,999
2	600,000 – 1,299,999
3	1,300,000 – 2,699,999
4	2,700,000 – 5,299,999
5	5,300,333 – 9,999,999
6	10,000,000 – 19,999,999
7	20,000,000 and more

As far as divisions H53 and J61 of Nace Rev.2 are concerned, there is only one stratum, with turnover bigger than 20 million and 200 million respectively. The enterprises of divisions M69 and M71 were stratified to 7 strata, with the first stratum starting from 100,000 – 299,000 and for division N78, the enterprises were stratified to 6 strata, with the first stratum from 300,000 – 599,000 euro.

In each stratum, which is defined by the division of the economic activity of the sector and the class order of the Turnover, the units of the sample size are selected by the method of single-stage stratified random sampling. The sample's size distribution, for the two-digit (or three-digit) economic activity divisions is shown in the table at the following page:

NACE Rev.2 Code	Number of enterprises	Sample of enterprises by 2-digit economic activity
H 53	8	8
J 58	549	56
J 61	13	13
J 62	508	58
J 63	230	29
M 69	1,792	68
M 70.2	1,743	61
M 71	5,083	78
M 73	648	51
M 74	414	44
N 78	32	17
N 80	122	29
N 81*	688	39
N 82	329	38
<b>Total</b>	<b>12,159</b>	<b>589</b>

\* Including division 81.2 of Nace Rev.2.

## 18.2 Frequency of data collection

Data are collected on a quarter basis.

## 18.3 Data collection

Data are collected through a specific questionnaire, designed with the objective to collect data for turnover of the referent quarter. The questionnaire also includes information on the purpose of the survey, the definitions and also guidelines for the completion of the required data. It can be sent by e-mail, fax or post and their collection is achieved with the same ways.

In case of non-response, the questionnaire is requested by telephone contacts, e-mail, fax and personal visits of interviewers.

## 18.4 Data validation

At national level, the data processing includes check of the data collected by enterprises in order to identify and correct errors. Given the difficulty to identify all the errors, the objective is to identify those with significant impact on the results and to achieve great improvement in their resolution. Irregular prices are identified by rules, and further investigation is carried out in the case of error or outlier.

While data processing, along with the completeness, it is checked if data are within a certain range of values, as well as if the relevant variables are logically consistent. The data processing can be performed on data acquisition time, during data entry or even afterwards. The data are compared with information of previous quarters and where large variations are identified (outside a predetermined range), there is a need for further investigation. The process can be designed so as the highest priority to be given to outliers with the greatest need for treatment, in order the reliability of the overall results to be ensured.

Eurostat also carries out validation checks on national indices that receives and makes contacts with the country, when necessary, in order to confirm the correctness of outliers.

## 18.5 Data compilation

### Estimation of the turnover value

The first step for compilation of each index is to estimate, from the records of the sample's enterprises, turnover value  $\hat{Y}_q$ , for the current quarter  $q$ , which will then be compared with the corresponding estimate for the previous quarter  $\hat{Y}_{q-1}$  (moving-base index).

The turnover estimate for the current quarter is calculated by reduction from the entire set of relevant data provided

by the enterprises in the sample. This is achieved by multiplying the quarterly turnover value of each enterprise by an appropriate reduction factor and then calculating the total of the partial products. This reduction factor for each turnover stratum h (cross-linking of the division and turnover magnitude for each enterprise) is defined as the quotient obtained by dividing the total number of enterprises  $N_h$ , by the number of enterprises in the sample  $n_h$ .

The reduction factor  $a_h$  for each enterprise in the stratum h is given by the formula:

$$\alpha_h = \frac{N_h}{n_h}$$

where:

$N_h$  is the total number of enterprises in stratum h

$n_h$  is the number of enterprises in stratum h included in the sample.

The estimate  $\hat{Y}_q$  of the turnover value  $Y_q$  for the current quarter q, in any two-digit division of economic activity, is given by the formula:

$$\hat{Y}_q = \sum_{h=1}^6 \sum_{i=1}^{n_h} \alpha_h * y_{qhi}$$

where  $y_{qhi}$  is the turnover value for the current quarter q of the  $i^{\text{th}}$  enterprise in stratum h.

#### Reduction of turnover values to a typical quarter

The first turnover value estimates for the two-digit divisions refers to quarters which do not all have the same number of working days, thus, the compiled indices are not comparable. The quarterly indices for the two-digit divisions are made comparable by appropriate adjustment of the indices to equal duration indices. To this end, the turnover value estimates are multiplied by a special correction factor, which is different for each quarter of the year.

The correction factor is calculated by dividing the mean quarterly number of working days in the year t by the number of full working days in the reference quarter q of the year t, as follows:

$$c = \frac{\bar{x}_t}{x_{tq}}$$

where  $\bar{x}_t$  is the mean quarterly number of working days in the year t

$$\bar{x}_t = \frac{\sum_{q=1}^4 x_{tq}}{4}$$

and  $x_{tq}$  is the number of full working days in quarter q of the year t.

The index is reduced to a typical quarter by multiplying the turnover value estimates for the current quarter by the appropriate correction factor.

#### Index Calculation

Each Turnover Index for Specific Activities in the Services Sector is calculated according to the chaining method. First, the moving-base index is calculated by comparing the 'estimated' turnover value for the current quarter with the corresponding value for the previous quarter. The fixed-base index for each two-digit division of economic activity for the current quarter q, where  $q \geq 2$ , is calculated by multiplying the moving-base index by the fixed-base index for the previous quarter.

The following formulas are used:

$$I_{Y_q} = I_{q,q-1} * I_{Y_{q-1}}$$

and

$$I_{q,q-1} = \frac{\hat{Y}_q}{\hat{Y}_{q-1}}$$

where:

$I_{q,q-1}$  is the moving-base index for the current quarter q, in relation with the previous quarter q-1,

$I_{Y_q}$  is the fixed-base index for the current quarter q,

$I_{Y_{q-1}}$  is the fixed-base index for the previous quarter q-1, and

$\hat{Y}_q, \hat{Y}_{q-1}$  are the corresponding turnover estimates for the current and previous quarters.

It should be noted that for the calculation of the first fixed-base index of the base year, i.e the index for the first quarter of 2005 (q=1), the following formula is used:

$$I_{Y_1} = \frac{\hat{Y}_1}{\hat{Y}_0} * 100$$

where:

$\hat{Y}_1$  is the turnover estimate for the first quarter of 2010

$\hat{Y}_0$  is the mean quarterly turnover estimate for the year 2010.

That is to say:

$$\hat{Y}_0 = \frac{\sum_{q=1}^4 \hat{Y}_q}{4},$$

where:

$\hat{Y}_q$  is the turnover estimate for quarter q of the year 2010.

If we compare the fixed-base index of the reference quarter with the fixed-base index for the corresponding quarter of the previous year, the percentage changes (+ or -) can be calculated and we thus have:

$$\left[ \frac{I_{Y_q}^t}{I_{Y_q}^{t-1}} - 1 \right] * 100$$

where:

$I_{Y_q}^t, I_{Y_q}^{t-1}$  are the fixed-base indices for quarter q of current year t and previous year t-1, respectively.

### **18.5.1 Imputation – rate**

The procedure followed for the treatment of missing values due to non-response of surveyed enterprises is their estimation, taking into account their performance in the previous years, as well as the evolution of the enterprise or the whole division of the sector. The percentage of these estimated values in the described way is assessed to be smaller than 5% of the whole sample.

## 18.6 Adjustment

The Turnover Indices for Specific Activities of the Services Sector are adjusted according to the working days of the months of each quarter.

### 18.6.1 Seasonal adjustment

No seasonal adjustment method is applied to the collected data.

## 19. Comment

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None.