

IV quarter 2018

TURNOVER IN SERVICES

- The Turnover in services index measures the quarterly evolution of sales by service sector enterprises at current prices. Since first quarter 2018 indices are calculated with reference to the base year 2015 using the Ateco 2007 classification (Italian edition of NACE Rev.2).
- In the fourth quarter of 2018 the seasonally adjusted Services turnover index increased by 0.4% compared to the previous quarter. The index increased for every sector of activities, in particular: Administrative and support service activities (+0.9%), Transportation and storage (+0.6%), Professional, scientific and technical activities and Accommodation and food service activities (+0.5%), Wholesale trade, trade and repair of motor vehicles and motorcycles (+0.3%) and in Information and communication (+0.1%).
- In the fourth quarter of 2018 the Services turnover index increased by 1.6% compared to the fourth quarter of 2017. In particular, the index increased by 2.8% for Accommodation and food service activities, by 2.5% for Administrative and support service activities, by 1.8% for Transportation and storage, by 1.5% for Professional, scientific and technical activities and by 1.4% for Wholesale trade, trade and repair of motor vehicles and motorcycles. The Information and communication activities decreased by 0.1%.

CHART 1. TURNOVER IN SERVICES, SEASONALLY ADJUSTED INDEX

Q1 2005 – Q4 2018 (index, 2015=100)

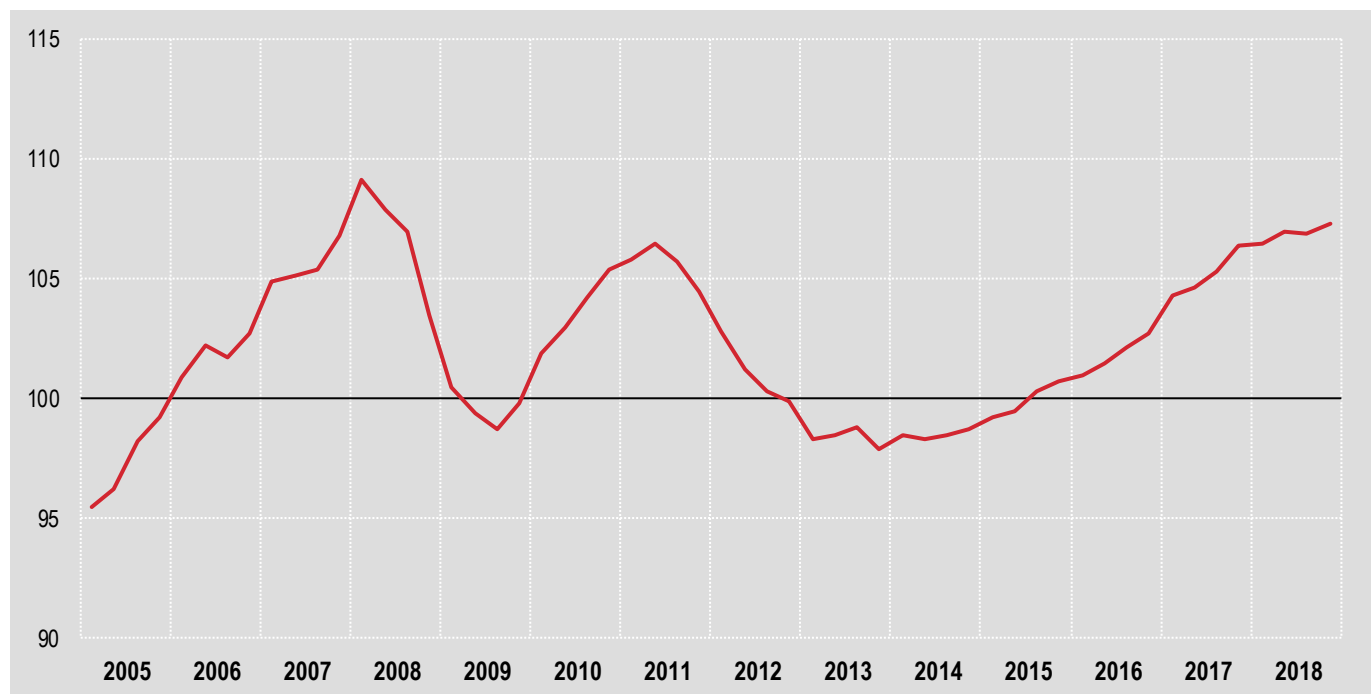


CHART 2. TURNOVER IN SERVICES, QUARTER ON PREVIOUS QUARTER AND ON SAME QUARTER A YEAR AGO PERCENT CHANGES

Q1 2010 – Q4 2018 (index, 2015=100)

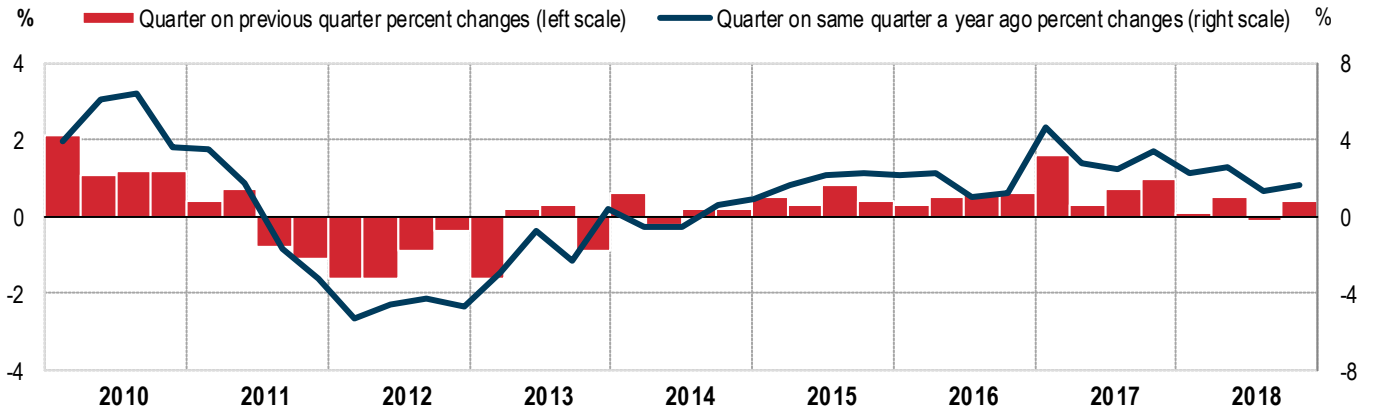
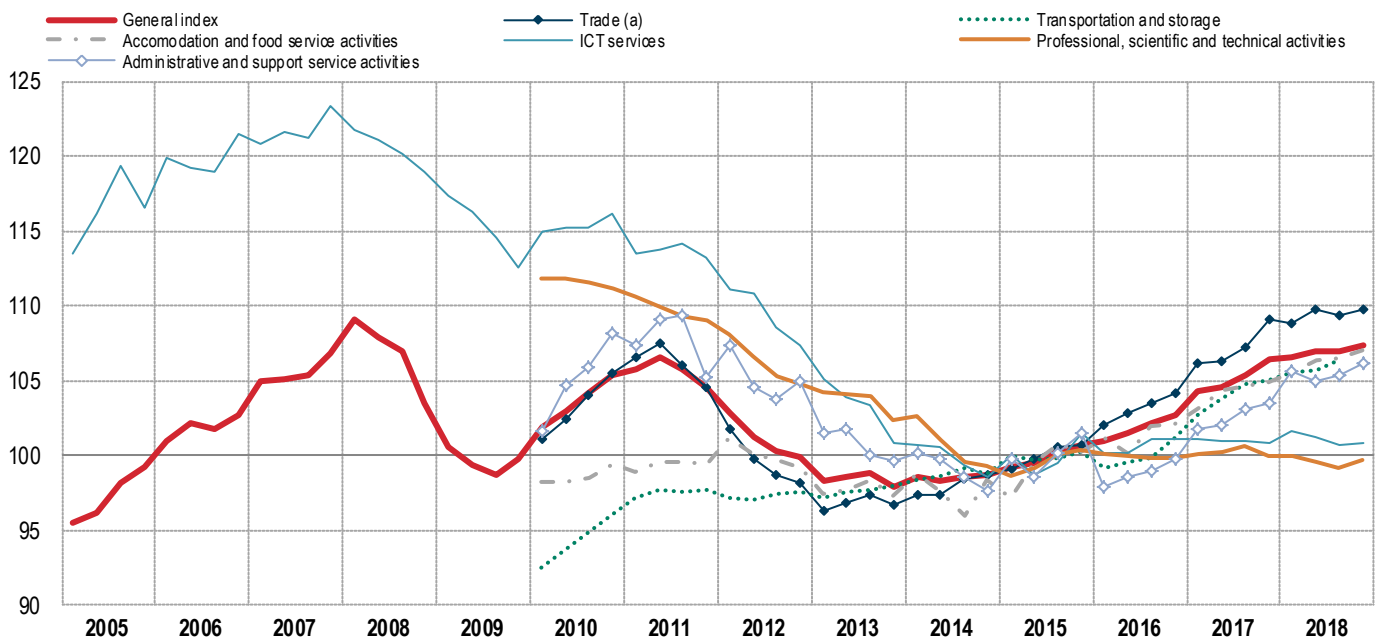


CHART 3. TURNOVER IN SERVICES BY ECONOMIC ACTIVITY

Q1 2005 – Q4 2018, seasonally adjusted (index, 2015=100)



(a) Includes Wholesale trade, trade and repair of motor vehicles and motorcycles. Retail trade (NACE sector G.47) is not included.

CHART 4. TURNOVER OF SERVICES, YEAR-ON-YEAR GROWTH RATE BY ECONOMIC ACTIVITIES

Q4 2018, Quarter on same quarter a year ago percent changes, unadjusted (index, 2015=100)

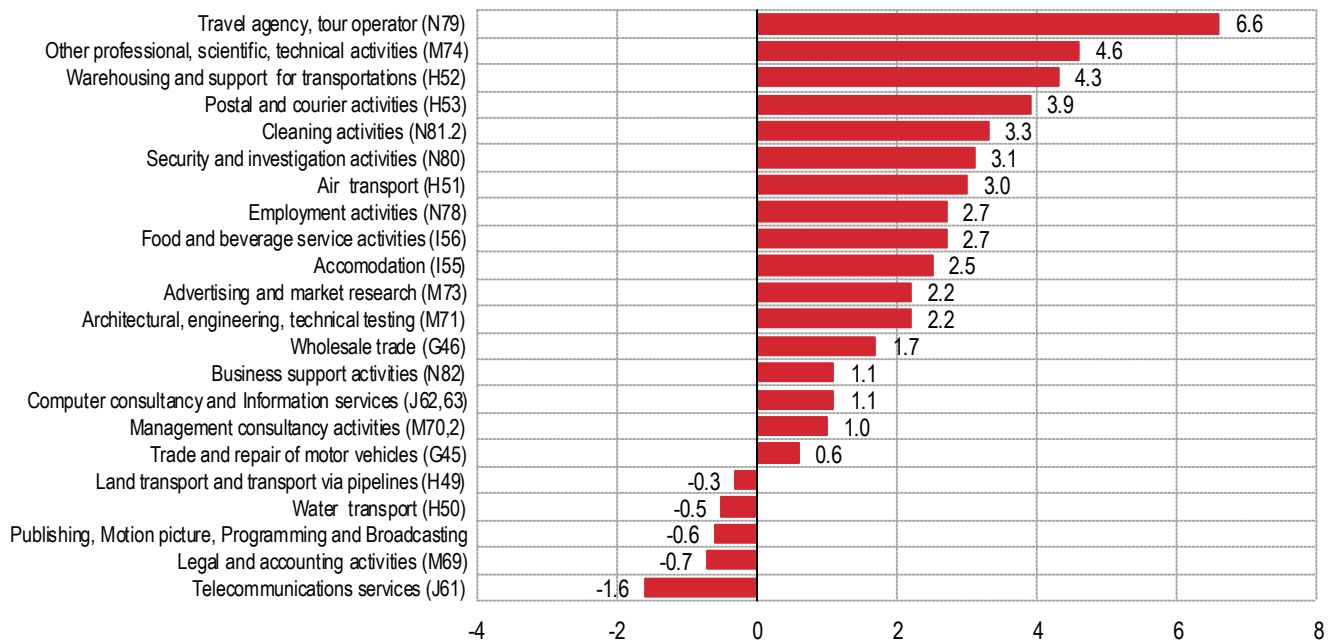


CHART 5. TURNOVER IN WHOLESALE TRADE, TRADE AND REPAIR OF MOTOR VEHICLES AND MOTORCYCLES

Q1 2005 – Q4 2018, seasonally adjusted (index, 2015=100)

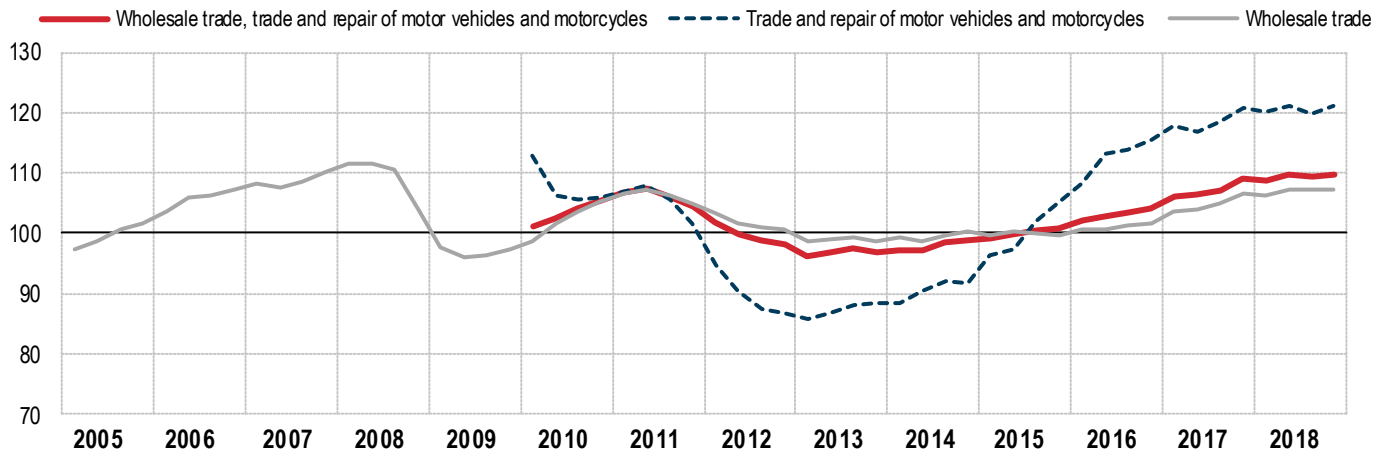


CHART 6. TURNOVER IN TRANSPORT, STORAGE, POSTAL AND COURIER SERVICES

Q1 2010 – Q4 2018, seasonally adjusted (index, 2015=100)

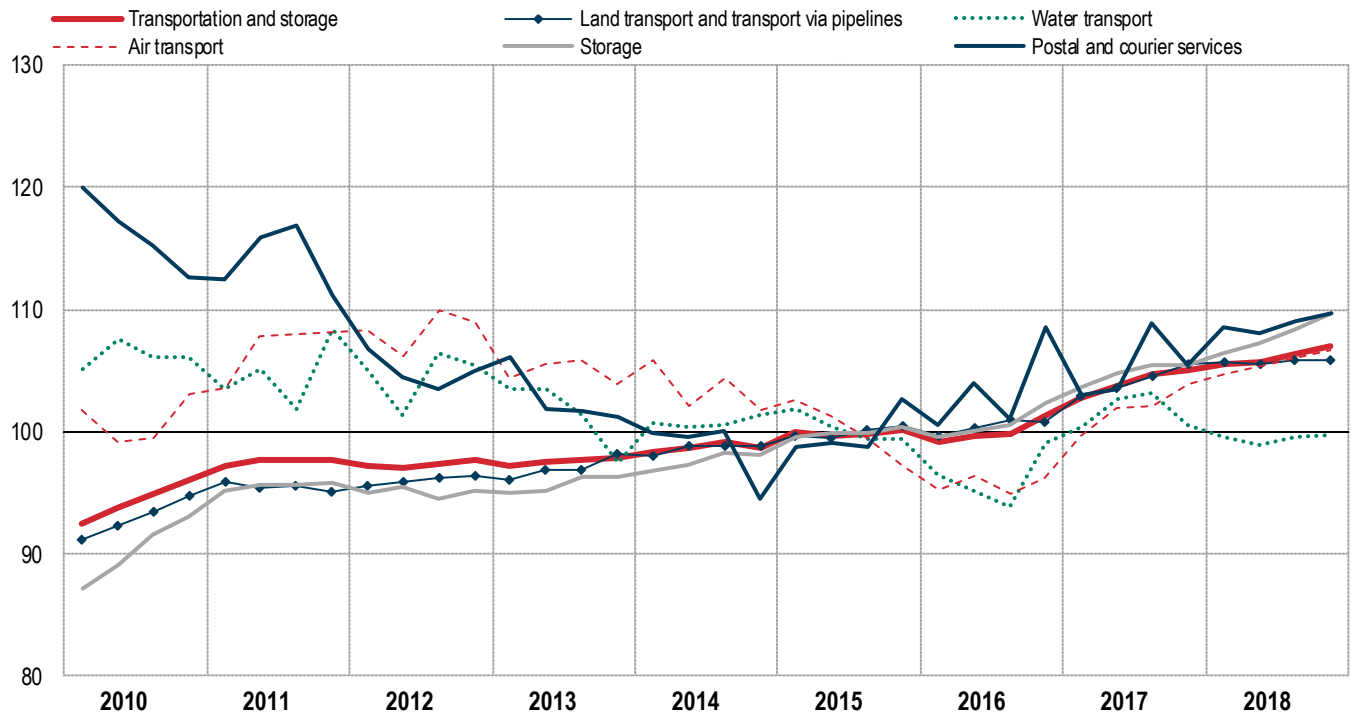


TABLE 1. TURNOVER IN SERVICES BY ECONOMIC ACTIVITY, QUARTER ON PREVIOUS QUARTER AND ON SAME QUARTER A YEAR AGO PERCENT CHANGES

Q4 2018 (a)

ECONOMIC ACTIVITIES (NACE Rev. 2)	Quarter on previous quarter percent changes	Quarter on same quarter a year ago percent changes
	Q IV 2018 Q III 2018	Q IV 2018 Q IV 2017
G. Wholesale trade, trade and repair of motor vehicles and motorcycles *	+0.3	+1.4
G 45 Trade and repair of motor vehicles and motorcycles	+1.1	+0.6
G 45.1 Sale of motor vehicles	+1.3	+0.4
G 45.2 Maintenance and repair of motor vehicles	+1.3	+2.3
G 45.3 Sale of motor vehicle parts and accessories	-0.1	+0.1
G 45.4 Sale. maintenance and repair of motorcycles. related parts and accessories	+1.2	+5.0
G 46 Wholesale trade. except of motor vehicles and motorcycles	0.0	+1.7
H. Transportation and storage	+0.6	+1.8
H 49 Land transport and transport via pipelines	+0.1	-0.3
H 50 Water transport	+0.2	-0.5
H 51 Air transport	+0.7	+3.0
H 52 Warehousing and support activities for transportations	+1.2	+4.3
H 53 Postal and courier activities	+0.5	+3.9
I. Accommodation and food service activities	+0.5	+2.8
I 55 Accommodation	-	+2.5
I 56 Food and beverage service activities	-	+2.7
J. Information and communication	+0.1	-0.1
J (58. 59. 60) Publishing. Motion picture. Programming and Broadcasting	-	-0.6
J (61) Telecommunications services	-	-1.6
J (62. 63) Computer consultancy and Information services	-	+1.1
M. Professional. scientific and technical activities	+0.5	+1.5
M 69 Legal and accounting activities	-	-0.7
M 70.2 Management consultancy activities	-	+1.0
M 71 Architectural and engineering activities; technical testing and analysis	-	+2.2
M 73 Advertising and market research	-	+2.2
M 74 Other professional. scientific and technical activities	-	+4.6
N. Administrative and support service activities	+0.9	+2.5
N 78 Employment activities	-	+2.7
N 79 Travel agency. tour operator and other reservation service and related activities	-	+6.6
N 80 Security and investigation activities	-	+3.1
N 81.2 Cleaning activities	-	+3.3
N 82 Office administrative. office support and other business support activities	-	+1.1
Services Turnover Index	+0.4	+1.6

(a) Data are provisional and subject to revisions.

* Except G 47 Retail trade

Table 2 shows revisions obtained as differences (in percentage points) between first publication and the latest estimates concerning the same reference period. Quarter on same quarter a year ago changes are calculated each quarter. Besides being subject to a routine revision (determined by adding new observations), quarter on previous quarter changes are also subject to an additional quarterly revision for seasonally adjusted data which occurs as new observations can change the seasonal factors that are applied to the whole time series. For details, please see methodological note.

TABLE 2. TURNOVER IN SERVICES. PERCENTAGE CHANGES REVISIONS

Q3 2018 - Percentage changes (index, 2015=100)

ECONOMIC ACTIVITIES (NACE Rev. 2)	Quarter on previous quarter change (a)	Quarter on same quarter a year ago change (b)
G Wholesale trade, trade and repair of motor vehicles and motorcycles (c)	-0.3	-0.2
H Transport, Warehousing and support activities	+0.2	+0.3
I Accommodation and food service activities	+0.1	-0.2
J Information and communication	-0.2	-0.4
M Professional, scientific and technical activities	+0.2	-0.3
N Administrative and support service activities	+0.3	+0.2
Services Turnover Index	-0.1	-0.1

- (a) Figures are calculated on seasonally adjusted data
 (b) Figures are calculated on non-adjusted data
 (c) Except G 47 Retail trade

Calendar adjusted data: working day adjusted data refer to the correction for calendar effect in a reference period (month or quarter) that may vary from year to year. The calendar effect is the variation caused by the changing number of particular week days or holidays in different months or other time periods (quarters, years). Calendar adjustment is mainly used in the calculation of short-term statistics (STS), for converting gross (unadjusted) figures or indices into their calendar adjusted equivalent. In order to adjust a figure or an index, the calendar nature of a given month or quarter is taken into account and calendar effects are removed, whatever their nature. The calendar effect may for example depend on i) the timing of certain public holidays (Easter can fall in March or in April, depending on the year); ii) the possible overlap of certain public holidays and non-working days (1 May can fall on a Sunday); iii) the occurrence of a leap year.

Economic activity sectors: economic activity sectors defined according to the Ateco 2007 Italian classification of economic activities derived by the NACE Rev.2 classification.

Seasonally adjusted data: seasonally adjusted data refer to the statistical technique designed to remove fluctuations related to seasonal factors (such as weather conditions, administrative measures, etc....) and calendar effects when relevant. Seasonal adjustment provides a clearer view for a trend analysis of a short-term index.

Services turnover index: services turnover index measures the quarterly changes of services sales at current prices.

Short term growth rate: percentage change of the index compared to the previous period (month or quarter).

Year-on-year growth rate: percentage change of the index compared to the same period (month or quarter) of the previous year.

Introduction and regulatory framework

The quarterly services turnover survey is aimed at producing short-term indicators useful for measuring the performance of the value of goods and services sold by businesses belonging to the services economic activity sectors. These indicators provide, for the sectors they refer to, information about the dynamic of the value of the sales, which incorporates the variations both in volumes and prices. The methodology, the breakdown and the frequency of releases are defined by European Regulation on Short-Term Statistics ([Regulation No. 1158/05 of the European Parliament and of the Council](#)).

The survey is included in the Italian National Statistical Programme. It is a sample survey, the unit of observation is the enterprise, variables of interest are turnover and average number of persons employed by the economic unit in the reference quarter. The definition adopted for the turnover is shown in the [Commission Regulation \(EC\) No 1503/2006](#) and is consistent with the legislation on the drafting of financial statements in Italy. The list of the economic units belonging to the population of reference used for selecting the sample, is represented by the Business Register (Statistical register of active enterprises - Asia).

Indicators and weighting structures

Istat produces and disseminates the quarterly turnover indicators on services sector as index numbers having 2015 as base year. These indices are aggregated according to the Laspeyres formula, using a weighting structure based on the distribution of the turnover in the services sector. The general services turnover index, according to the Regulation, does not include retail sales (but it includes retail sales of vehicles and motorcycles).

Table 1 reports the complete framework of the economic activity sectors required by the Regulation and the relative weighting system (base year 2015).

TABLE 1. WEIGHTING STRUCTURE BY ECONOMIC ACTIVITY FOR SERVICES TURNOVER INDICES - YEAR 2015

NACE Rev. 2	Economic activity	Weights Year 2015
45*	Wholesale and retail trade and repair of motor vehicles and motorcycles	8.792
- G 45.2	Maintenance and repair of motor vehicles	1.168
G 46	Wholesale trade, except of motor vehicles and motorcycles	46.292
H 49	Land transport and transport via pipelines	5.735
H 50	Water transport	1.049
H 51	Air transport	0.911
H 52	Warehousing and support activities for transportation	4.752
H 53	Postal and courier activities	0.509
I 55	Accommodation	1.977
I 56	Food service activities	4.704
J **	Information and communication	9.237
M 69	Legal and accounting activities	2.853
M 70.2	Management consultancy activities	1.240
M 71	Architectural and engineering activities, technical testing and analysis	2.097
M 73	Advertising and market research	1.112
M 74	Other professional, scientific and technical activities	1.304
N 78	Employment activities	0.771
N 79	Travel agency, tour operator and other reservation service and related activities	0.992
N 80	Security and investigation activities	0.325
N 81.2	Cleaning activities	1.150
N 82	Office administrative, office support and other business support activities	3.030
Total		100.000

* Group 45.2 is not included

** Section J includes divisions 58 to 63

On the occasion of the release of 27 May 2015, the series of the general index of service turnover starting from the first quarter of 2001 was reconstructed, allowing the dissemination of the seasonally adjusted index of service turnover.

Table 2 reports the weighting structure of the economic activity groups that allows calculation of the index for the wholesale sector, and Table 3 reports the weighting structure used to calculate the index of section J (Information and communications services).

TABLE 2. WEIGHTING STRUCTURE FOR TURNOVER IN THE SECTOR OF WHOLESALE TRADE INDICES – YEAR 2015

NACE Rev. 2	Economic activity	Weights Year 2015
G 46.1	Wholesale on a fee or contract basis	5.003
G 46.2	Wholesale of agricultural raw materials and live animals	3.889
G 46.3	Wholesale of food, beverages and tobacco	20.474
G 46.4	Wholesale of household goods	24.382
G 46.5	Wholesale of information and communication equipment	5.071
G 46.6	Wholesale of other machinery, equipment and supplies	6.218
G 46.7	Other specialised wholesale	31.454
G 46.9	Non-specialised wholesale trade	3.509
G 46	Wholesale trade, except of motor vehicles and motorcycles	100.000

TABLE 3. WEIGHTING STRUCTURE FOR TURNOVER IN THE SECTOR OF INFORMATION AND COMMUNICATION – YEAR 2015

NACE Rev. 2	Economic activity	Weights Year 2015
J (58, 59, 60)	Publishing, audiovisual and broadcasting activities	20.487
58	Publishing activities	8.099
59	Motion picture, video and television programme production, sound recording and music publishing activities	4.040
60	Programming and broadcasting activities	8.348
J (61)	Telecommunications	35.494
61	Telecommunications	35.494
J (62, 63)	Computer programming, consultancy and related activities, information service activities	44.019
62	Computer programming, consultancy and related activities	34.541
63	Information service activities	9.478
J	Information and communication	100.000

Starting from the press release of 25 November 2016, in order to complete the coverage of the services sector, the seasonally adjusted indices of the following sectors are also calculated and disseminated: *Sale of motor vehicles (G 451). Sale of motor vehicle parts and accessories (G 453). Sale, maintenance and repair of motorcycles and related parts and accessories (G 454). Sale and repair of motor vehicles (G 45). Wholesale and retail trade repair of motor vehicles and motorcycles (G). Land transport and transport via pipelines (H 49). Warehousing and support activities for transportation (H 52). transportation and storage (H). Accommodation and food service activities (I). Professional, scientific and technical activities (M). Administrative and support service activities (N).*

Sampling design

The calculation of the turnover indices is based on the information collected through a quarterly survey which involves a representative sample of enterprises belonging to the services economic activity sectors.

Stratification

The sampled economic units are selected from the most recent available Business Register (usually updated at year t-2) and are provided with an information letter.

Sampling units are selected according to two different approaches. For the economic activity sectors with a high number of businesses, stratified simple random sampling designs are preferred. In sectors in which few large businesses determine the market dynamic (50 - Maritime and water transport, 51 - Air transport, 53 - Postal services and courier activities, 61 - Telecommunications and 78 - Research, selection and supply of personnel), *cut-off* type sampling schemes of unit selection are adopted. The largest businesses in terms of number of persons employed and turnover are selected, up to covering a sufficiently high amount (usually greater than 80%) of the total turnover of the sector. For the remaining sectors, appropriate thresholds are detected based on number of persons employed and then enterprises are selected from the subpopulations identified.

In general, a threshold of 2 persons employed is defined. The exceptions are represented by the economic activity sectors characterised by a greater prevalence of medium-large businesses (45.1 - Vehicle sales, 49.1 - Railway passenger transport, 49.2 - Railway freight transport, 52 - Storage and transport support activity), for which the threshold value is fixed at 5 persons employed, and the group of Sales agents (46.1) for which no threshold is used. For the sectors distinguished by the presence of medium-small companies, a stratified simple random sampling design is chosen using, as stratification variables, the economic activity (at group level, 3 digits of the NACE Rev.2 classification) and business size (in terms of persons employed: from 2 to 5, from 5 to 20 and from 20 to 100 persons employed, excluding the right limit for each size class). The businesses with a number of persons employed equal to or greater than 100 represent the self-representative stratum.

For the sectors of Professional, scientific and technical activities (section M) and of Tourism agencies and business support services (section N), the rules followed are different. For the sectors characterised by a considerable number of small-sized businesses (69 - Legal and accounting activities, 70.2 - Management consulting activity, 71 - Architecture and engineering study activities; inspections and technical analyses, 74 - Other professional, scientific and technical activities) no threshold is provided for the number of employees. The sample units are selected by the sub-population of enterprises with annual turnover exceeding 50.000 Euros. For the activities of services of tourism agencies, tour operators and booking services and connected activities (division 79) the value of the threshold is 2 persons employed, for Advertising and market research (division 73) the value is 5 persons employed, and for Vigilance and investigation services (division 80) that value is 20 persons employed. In general, the persons employed size classes are defined as follows: from 1 to 2 persons employed, from 2 to 5, from 5 to 10, from 20 to 50, from 50 to 100 persons employed excluding the right limit for each size class. For Cleaning and extermination activities (group 81.2) a further size class has been used, from 100 to 250 persons employed, and the businesses with a number of persons employed equal to or greater than 250 constitute the auto-representative stratum. For the remaining sectors, the auto-representative stratum is that with a number of persons employed equal to or greater than 100.

Estimation domains

The stratification criteria adopted, in addition to defining homogeneity within each stratum, allow a better definition of the estimation domains.

Estimation domains are defined, for the majority of the sectors, according to the economic activity groups. For the Professional, scientific and technical activities sectors (section M) and Travel agencies and business support services (section N) the estimation domains correspond to the two digits of the NACE Rev.2 classification. Since their characteristics, an extension to 4 digits was considered for the classes 49.31 (Road passenger transport in urban and suburban areas), 49.41 (Road freight transport), 52.21 (Services connected with ground transports) and 52.29 (Other support activities connected with transports). For the Air transport, a single domain is defined, and the sample businesses cover approximately 95% of the total turnover of the sector.

The sample allocation within each stratum was carried out using the Mauss-R software which incorporates a

generalized procedure developed at Istat. based on the Neyman allocation method for the multivariate case. following a generalization proposed by Bethel (1989)¹. The sample size for year 2018 survey is reported in table 4.

TABLE 4. SAMPLE SIZE BY ECONOMIC ACTIVITY SECTOR (YEAR 2018)

NACE Rev. 2	Economic activity	Sample size
G 45	Wholesale and retail trade and repair of motor vehicles and motorcycles	1.627
G 46	Wholesale trade. except of motor vehicles and motorcycles	4.827
H 49	Land transport and transport via pipelines	1.196
H 50	Water transport	128
H 51	Air transport	94
H 52	Warehousing and support activities for transportation	1.441
H 53	Postal and courier activities	55
I 55	Accommodation	790
I 56	Food service activities	943
J *	Information and communication	1.547
M 69	Legal and accounting activities	582
M 70.2	Management consultancy activities	317
M 71	Architectural and engineering activities. technical testing and analysis	451
M 73	Advertising and market research	290
M 74	Other professional. scientific and technical activities	558
N 78	Employment activities	106
N 79	Travel agency. tour operator and other reservation service and related activities	396
N 80	Security and investigation activities	160
N 81.2	Cleaning activities	385
N 82	Office administrative. office support and other business support activities	941
Total		16.834

*Section J includes divisions 58 to 63.

Estimation methodology

The estimation of the indices at domains of interest level follows two methodological approaches: for some economic activity sectors. indices are obtained as the result of the variation of the turnover of the economic units respondent both to the reference quarter and to the same quarter of the previous year. For remaining sectors. estimation of the quarterly turnover levels is obtained through the calibration estimators² approach and then indices are calculated as the result of the variation of the turnover. In particular. the latter approach is used for the Commercial divisions and vehicle and motorcycle repair. Land transport and transport via pipeline. Storage and transport support activities. Hospitality and restaurant services activities and for the section of Professional. scientific and technical activities and Travel agencies. company support services (with the exception of the division of Research. selection and supply of personnel activities). The initial sampling weights are obtained for each stratum as the ratio between the number economic units of the reference population (Business Register) and the number of the sampled economic units.

In order to take into account the effect of unit non-responses. the calibration estimators methodology was used ([ReGenesees](#) software - *R Evolved Generalized Software for Sampling Estimates and Errors in Surveys*). The calibration method exploits the information provided by auxiliary variables (turnover and/or employees of the most recent Business Register) highly correlated with the variable of interest.

The indices calculated at the single domain level are then aggregated through a weighting system (referring to base year 2015) derived from the estimates of turnover obtained in the context of the statistics on "[The economic performances of Italian enterprises](#)" up to the level of the economic class (fourth digit of the NACE Rev.2 classification).

¹ Bethel, J., 1989. Sample Allocation in Multivariate Surveys. *Survey Methodology*, 15, 47-57

² Deville, J.C., Särndal, C.E., 1992. Calibration Estimators in Survey Sampling. *Journal of the American Statistical Association*, 87 (418), 376-382.

Reconstruction of the general index

On the occasion of the release of 27 May 2015, the seasonally adjusted series of the general services turnover index was disseminated. In particular, the indices of the groups of Sale of motor vehicles, Sale of motor vehicle parts and accessories, Sale, maintenance and repair of motorcycles and related parts and accessories and of the divisions of Land transport and transport via pipelines, Warehousing and support activities for transportation, Accommodation and food service activities are issued starting from the press release of 30 May 2012, while the indices for the divisions of the sections of Professional, scientific and technical activities and Administrative and support services activities were disseminated starting from the press release of 5 June 2014.

The reconstruction of the time series was carried out using the information coming from the quarterly production at current prices of the National Accounts at different levels of aggregation of the product classification (CPA) and the economic activities (NACE Rev.2). In particular, the indices before 2010 were calculated using the year on year dynamic of the series of the National Accounts. In this way it was possible to have series starting from the first quarter of 2001 for aggregations of classes/divisions of economic activities listed in Table 5.

TABLE 5. RECONSTRUCTION OF SERIES OF SERVICES TURNOVER INDICES

NACE Rev. 2
Sale of motor vehicles (G 45.1), Sale of motor vehicle parts and accessories (G 45.3), Sale, maintenance and repair of motorcycles and related parts and accessories (G 45.4)
Land transport and transport via pipelines (H 49)
Warehousing and support activities for transportation (H 52)
Accommodation and food service activities (I)
Publishing, audiovisual and broadcasting activities (J58, J59, J60)
Legal and accounting activities (M 69), Management consultancy activities (M 70.2) e Architectural and engineering activities, technical testing and analysis (M 71)
Advertising and market research (M 73), Other professional, scientific and technical activities (M 74)
Administrative and support service activities (N)

Using the fixed weights structure, which reflects the sector distribution of the service turnover in 2010, it was, therefore, possible to calculate both the series of the indices for the divisions of economic activity and the series of the general services turnover index.

The seasonally adjusted series and revisions

Starting from the release of 25 November 2016, the dissemination of the seasonally adjusted indices was extended in order to complete the coverage of the general index of services turnover (FAS). For this purpose, the level of detail defined by the previously disseminated series has been taken into account: *Vehicle maintenance and repair (G452)*, *Wholesale trade (G46)*, *Maritime and waterway freight transport (50)*, *Air Transport (H51)*, *Postal services and courier activities (H53)*, *Information and communications services (J)*. The aggregated series in which the elementary indices are available in seasonally adjusted form starting from the second quarter of 2016 (Trade and repair of vehicles and motorcycles - G45, *Wholesale and retail trade and repair of motor vehicles and motorcycles - G*, *Transportation and storage - H*, *Turnover in services - FAS*), were seasonally adjusted with the indirect method, that is aggregating the seasonally adjusted elementary series with the weights shown in the table 6.

TABLE 6. WEIGHTING STRUCTURE OF INDIRECTLY SEASONALLY ADJUSTED INDICES

NACE Rev. 2	Economic activity	Weights Year 2015
G*	Wholesale and retail trade repair of motor vehicles and motorcycles **	56.251
G 45*	Wholesale and retail trade and repair of motor vehicles and motorcycles	17.705
- G 45.1	Sale of motor vehicles	70.687
- G 45.2	Maintenance and repair of motor vehicles	11.725
- G 45.3	Sale of motor vehicle parts and accessories	14.809
- G 45.4	Sale. maintenance and repair of motorcycles and related parts and accessories	2.779
G 46	Wholesale trade. except of motor vehicles and motorcycles	82.295
H*	Transportation and storage	12.958
H 49	Land transport and transport via pipelines	44.262
H 50	Water transport	8.099
H 51	Air transport	7.034
H 52	Warehousing and support activities for transportation	36.674
H 53	Postal and courier activities	3.931
I	Accommodation and food service activities	6.680
J	Information and communication	9.237
M	Professional. scientific and technical activities	8.606
N	Administrative and support service activities	6.268
FAS*		100.000

* Seasonally adjusted index obtained using the indirect approach.

** Division G 47 is not included.

The seasonally adjusted elementary indices are obtained through the TRAMO-SEATS+ procedure. Like other seasonal adjustment procedures, TRAMO-SEATS+ is based on the hypothesis that a quarterly time series can be represented as a combination of different components that are not directly observable (trend-cycles, seasonal trends, irregular components). In particular, TRAMO-SEATS+ identifies a representative statistical model of the time series (*model-based* approach), thanks to which it is possible to identify and eliminate the seasonal component. Since the addition of new quarterly information allows a better evaluation of the different components of the series, each quarter the previously published data concerning the most recent years is subject to revision.

To allow users to analyse the seasonally adjusted time series, the specifications adopted by Istat in the context of the TRAMO-SEATS+ procedure are available upon request.

Geographical breakdown

The data are available at a national level.

Timeliness and dissemination

The dissemination of the quarterly services turnover indices is made via a press release, in a provisional version which is released within 60 days from the end of the reference quarter. Final data are provided within 150 days by the end of the reference quarter.

The press releases are available on the [Istat web site](#).

The indicators are also available on [I.Stat](#), the Istat data warehouse, within the section Services→Turnover→ Index of turnover in other services. The most recent monthly series relating to the turnover in services indices are available on the web page of the press release, in the excel file “time series”.