

# Consumer prices indices. Basket, weight structure and survey updates

Year 2018

As every year, Istat reviews the list of items included in the consumer price index basket, and updates as well the survey techniques and the weights of each item to compile inflation..

In 2018 the most important news is the introduction of the use of scanner data to calculate of All-item index in Italy with reference to grocery products (processed food, products for house maintenance and personal care) sold in hypermarkets and supermarkets. The availability of this new data source is the result of the collaboration with the large retail chains and with the Association of Modern Distribution.

The 2018 basket for the Italian consumer price indices for the whole nation (NIC) and for blue and white-collar households (FOI) is made up of 1,489 elementary products (1,481 in 2017), which are grouped into 920 products and 404 product aggregates.

The 2018 basket for the Italian harmonized index of consumer prices (HICP) is made up of 1,506 elementary products (1,498 in 2017), grouped into 923 products and 408 product aggregates.

The review of the basket of products takes into account the changes in the household spending patterns and enriches, in some cases, the range of products which represent consolidated consumption.

In 2018, Avocado, Mango, Liqueur wines, Wash dryer and Robot vacuum cleaner are brought in. On the other hand, Public telephone service, RAI fee and Mp4 player are removed from the basket.

In total more than 4,500,000 price quotations are collected each month, from different sources: 461,000 of them are collected locally by the Municipal Offices of Statistics (MOS); 153,000 are collected directly by Istat and about 3,840,000 come from scanner data. About 63,700 quotes are collected from automotive fuels prices database of the Ministry of Economic Development.

Data coming from 79 municipalities are processed to estimate monthly inflation; the survey territorial coverage, with reference to provincial population, is equal to 83.2%.

An additional group of 17 municipalities participate in the territorial survey with regard to a subset of products (local tariffs and some services). Their weight of this subset on the NIC basket is 6.1% and the territorial coverage is 92.5%.

In the municipalities, prices are collected in about 42,400 statistical units (including outlets, enterprises and institutions) and rents are collected for about 8,000 dwellings.

The central survey carried out by Istat concerns a subset of products, whose weight on the NIC basket is 23.9%.

Price quotes collected through scanner data come from a sample of 1,781 hypermarkets and supermarkets, which are representative of the whole Italian national territory and 16 large retail chains.

The consumer prices of automotive/motor fuels (petrol, gas oil, LPG and methane) for the whole national territory are collected through the data base of the Ministry of Economic Development. Istat uses information provided by 13,240 petrol stations (65.9% of those which are active and present in the data base).

With regard to expenditure divisions in the updated 2018 NIC basket, the weight for *Transport* and *Restaurants and hotels* grows, while that for *Education* decreases. The highest weight continues to be the *Food and non-alcoholic beverages* division (16.51%), followed by *Transport* (14.67%), *Restaurants and hotels* (11.74%) and *Housing, water, electricity, gas and other fuels* (10.80%).

## The update of the basket of goods and services for 2018

The 2018 basket for the Italian consumer price index for the whole nation (NIC) and for blue and white-collar households (FOI) is made up of 1,489 elementary products, which are grouped into 920 products and into 404 product aggregates (they were 1,481 in 2017, grouped into 920 products and 405 product aggregates).

The 2018 basket for the Italian harmonized index of consumer prices (HICP) is made up of 1,506 elementary products, which are grouped into 923 products and then into 408 product aggregates (they were 1,498 in 2017, grouped into 923 products and 409 product aggregates)<sup>1</sup>.

TABLE 1. CLASSIFICATION STRUCTURE FOR NIC AND FOI INDICES. YEAR 2018

# **Y**ear 2018

12 expenditure divisions

43 product groups

102 product classes

230 product sub-classes

303 consumption segments

404 product aggregates

920 products

1,489 elementary products

As usual, the revisions made to the basket in 2018 are different in nature and designed to capture the evolution of the consumer spending habits, considering that the basket of consumer prices is by now so complete and detailed that the number of products entering and leaving the price collection each year is really limited.

As far as products representing the evolution in spending habits are concerned, in 2018 the following new products are brought in the basket (Table 2):

- Avocado and Mango, that expand the range of products in the aggregate product Exotic fruits.
- Washer dryer, that completes the consumption segment Washing machines, dryers and dishwashers and permits to reduce the time in daily household activities.
- Robot vacuum cleaner, which enriches the aggregate Household cleaning appliances.

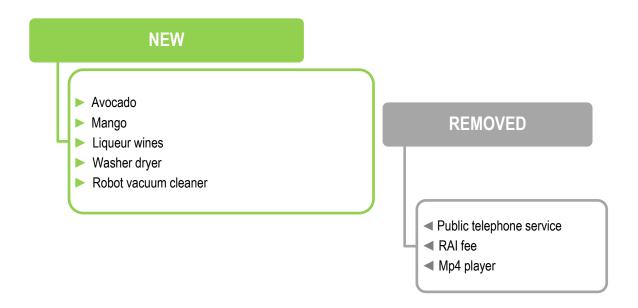
Besides, thanks to scanner data, *Liqueur wines* have been included again in in the basket, in the product class *Wines*, covering the corresponding ECOICOP product sub-class (that has still a low weight), without burden for the data collection in the field.

Public telephone service, RAI fee and Mp4 player are dropped from the basket 2018.

In the update of the basket, revisions of product denomination and of short and long descriptions are included. The revisions are carried out in order to adapt them to the changes in the characteristics of the products or to better guide data collection activity. For 2018 short and/or long descriptions of 21 elementary products have been changed.

<sup>&</sup>lt;sup>1</sup> The difference between the two baskets is due to two elements: on one hand in the HICP basket (but not in the NIC/FOI one), contributions to the NHS for pharmaceutical products, specialist practices and services of medical analysis (six items) are included; on the other hand in the NIC/FOI basket (but not in the HICP one), Games of chance are included.

TABLE 2. CONSUMER PRICE INDICES BASKET 2018: NEW AND REMOVED PRODUCTS



# The weighting structure

The weighting coefficients of indices are determined on the basis of the values of the household final consumption expenditure and of the household final monetary consumption expenditure (for HICP), as derived from National Accounts. Additional information used to define weights is originated from the Household Budget Survey, from other Istat surveys and from external sources, which have an auxiliary function<sup>2</sup>, such as Ac Nielsen and GfK Italia S.r.l.

National Accounts data, used for 2018 weight structure estimates, are classified according to the European system of national and regional accounts (ESA 2010) whereas HBS data (based on the new survey) take into account the new ECOICOP.

Price changes of goods and services included in the basket contribute to the calculation of the All-item index with their own weight in terms of the expenditure share sustained by households to purchase them. However, in order to measure the expenditure shares with reference to the value of the computation base period of indices (December 2017), household final consumption data, referred to the year 2016, are price-updated using the price changes measured between the year 2016 and December 2017.

Table 3 shows the 2018 weighting structures by expenditure division of NIC, HICP and FOI indices and their differences. Ordering expenditure divisions according to their relative weights, the three indices, with the exception of *Health*, show relatively small differences. For all the indices the expenditure divisions with a comparatively higher weight are those of *Food and non-alcoholic beverages, Transport, Restaurants and hotels* and *Housing, water, electricity gas and other fuels*<sup>3</sup>.

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<sup>&</sup>lt;sup>2</sup> It should be noted that, due to the unavailability of sufficiently robust estimates of provincial consumption, in the first stage of indices aggregation the consumer price indices, chief towns of provinces contribute to the calculation of regional indices taking into account the relative importance of the province in the region in terms of population. For the calculation of this set of weights, which are based on provincial population data, in 2018, data coming from demographic balance - resident population of 2016, December, 31, have been used

<sup>&</sup>lt;sup>3</sup> It is pointed out that, in Italy, as in Europe, items in the division *Housing, water, electricity, gas and other fuels* exclude dwelling purchase, as it is an investment and not a consumer item, while they consider actual rentals for housing, regarding about 16.5% of Italian households according to 2011 Census data (the remaining 83.5% of households own their dwellings, or occupy them as usufructuary or free of charge).

TABLE 3. WEIGHTS USED TO CALCULATE CONSUMER PRICE INDICES BY EXPENDITURE DIVISION 2018, percentage values

| EVERNETURE DIVIDIONS   | WEIGHTS  |          |          |  |  |
|--|----------|----------|----------|--|--|
| EXPENDITURE DIVISIONS -  | NIC      | HICP     | FOI      |  |  |
| Food and non-alcoholic beverages                                   | 16.5103  | 17.5418  | 14.8281  |  |  |
| Alcoholic beverages. tobacco                                       | 3.0965   | 3.2861   | 3.1584   |  |  |
| Clothing and footwear  | 7.2048   | 8.3493   | 7.9521   |  |  |
| Housing, water, electricity, gas and other fuels                   | 10.7989  | 11.4604  | 10.864   |  |  |
| Furnishings, household equipment and routine household maintenance | 7.139    | 7.5998   | 6.7262   |  |  |
| Health   | 8.4906   | 4.2429   | 6.8458   |  |  |
| Transport  | 14.6713  | 15.5569  | 16.6073  |  |  |
| Communication  | 2.5318   | 2.6871   | 2.9177   |  |  |
| Recreation and culture   | 7.7042   | 6.0523   | 7.9473   |  |  |
| Education  | 0.9793   | 1.0397   | 1.2228   |  |  |
| Restaurants and hotels   | 11.7391  | 12.4574  | 11.8177  |  |  |
| Miscellaneous goods and services                                   | 9.1342   | 9.7263   | 9.1126   |  |  |
| ALL ITEMS  | 100.0000 | 100.0000 | 100.0000 |  |  |

The differences among the weighting structures of NIC, FOI and HICP indices are largely due to the different definition of the reference economic aggregate for the three indices. This issue has relevant consequences for determining the weight of the expenditure division *Health* and in particular the weight of pharmaceutical products. The NIC and FOI indices include expenditure incurred by public administration for the household consumption of pharmaceutical products and health services, whereas it is excluded from the calculation of the HICP. Therefore the weight of *Health* in the basket of the harmonised index of consumer prices (4.24%) is significantly lower than the weight calculated for the national indices.

With regard to changes in the weighting structure of the NIC index between 2017 and 2018 the highest increase in absolute terms concerns the expenditure division *Transport* (+0.7382 percentage points). This increase has been determined by both the "expenditure effect" on this group of products and the "revaluation effect" by which the expenditure in 2016 is reported to the index computation base period (December 2017). In the same period the expenditure division *Restaurants and hotels* increases as well (+0.2527 percentage points) because of the relative importance of only "expenditure effect" on this group of products. Lower increases are registered for the following expenditure divisions: *Housing, water, electricity, gas and other fuels* and *Food and non-alcoholic beverages*, entirely determined by the "revaluation effect" (Table 4).

TABLE 4. NIC INDEX: WEIGHTING STRUCTURE BY EXPENDITURE DIVISION

2017 and 2018, percentage values and absolute differences

| EXPENDITURE DIVISIONS  | 2017     | 2018     | Absolute difference | Spending effect | Revaluation effect |
|--|----------|----------|---------------------|-----------------|--------------------|
| Food and non-alcoholic beverages                                   | 16.4968  | 16.5103  | 0.0135              | -0.369          | 0.0501             |
| Alcoholic beverages, tobacco                                       | 3.2019   | 3.0965   | -0.1054             | -0.391          | -0.0663            |
| Clothing and footwear  | 7.362    | 7.2048   | -0.1572             | -0.616          | -0.0956            |
| Housing, water, electricity, gas and other fuels                   | 10.728   | 10.7989  | 0.0709              | -2.335          | 0.3042             |
| Furnishings, household equipment and routine household maintenance | 7.2371   | 7.139    | -0.0981             | -0.135          | -0.0846            |
| Health   | 8.687    | 8.4906   | -0.1964             | -0.666          | -0.1299            |
| Transport  | 13.9331  | 14.6713  | 0.7382              | 2.615           | 0.4774             |
| Communication  | 2.6125   | 2.5318   | -0.0807             | -0.161          | -0.0623            |
| Recreation and culture   | 7.8409   | 7.7042   | -0.1367             | -0.722          | -0.0644            |
| Education  | 1.2119   | 0.9793   | -0.2326             | -0.516          | -0.181             |
| Restaurants and hotels   | 11.4864  | 11.7391  | 0.2527              | 3.364           | -0.0837            |
| Miscellaneous goods and services                                   | 9.2024   | 9.1342   | -0.0682             | -0.046          | -0.0638            |
| ALL ITEMS  | 100.0000 | 100.0000 |                     |                 |                    |

Looking at the divisions with reduced weight, in the 2018 NIC basket the largest decrease concerns the weight of *Education* (-0.2326 percentage points) and it is due to the decline of both expenditure and revaluation effect. Lower decreases are registered for *Health* (-0.1964 percentage points), *Clothing and footwear* (-0.1572 percentage points), *Recreation and culture* (-0.1367 percentage points), *Alcoholic beverages, tobacco* (-0.1054 percentage points), *Furnishings, household equipment and routine household maintenance* (-0.0981 percentage points) and *Communication* (-0.0807 percentage points).

Considering the weighting structure by type of product, in 2018 the weight of *Goods* increases slightly (+0.3747 percentage points) to 53.98% from 53.61%, while the weight of *Services* decreased to 46.28% from 46.39% (Table 5).

Concerning goods, in 2018 the weight of *Energy* increases to 8.87% (from 8.45% in 2017), because of both *Regulated* and *Non-regulated energy products* on which the "revaluation effect" had an impact. The weight of *Food including alcohol* is substantially stable (17.53% from 17.52% in 2017) while that one of *Tobacco* (2.08% from 2.17% of the previous year) decreases because of both expenditure and revaluation effect. The increase of *Non-energy industrial goods* (from 25.46% in 2017 to 25.50% in 2018) is mainly due to the growth of weights of *Durable goods* (which include cars).

Concerning services, the largest weight increases are registered for *Services related to recreation, including repair and personal care* (from 17.68% to 17.81%) and *Services related to transport* (from 7.61% in 2017 to 7.70% in 2018) because of the increase of the prices registered in the last year. The largest decrease regards *Services—miscellaneous* (11.11% from 11.46%) and *Services related to housing* (7.48% from 7.70%).

In 2018 the weight of All items index excluding energy and unprocessed food (Core inflation) registers a slight decrease (-0.3909 percentage points).

TABLE 5. NIC INDEX: WEIGHTING STRUCTURE BY TYPE OF PRODUCT

2017 and 2018, percentage values and absolute differences

| SPECIAL AGGREGATES   | 2017     | 2018     | Absolute difference | Spending effect | Revaluation effect |
|--|----------|----------|---------------------|-----------------|--------------------|
| Food including alcohol:  | 17.5273  | 17.5233  | -0.004              | -0.0438         | 0.0398             |
| Processed food including alcohol                                   | 10.5071  | 10.5414  | 0.0343              | 0.0575          | -0.0232            |
| Unprocessed food   | 7.0202   | 6.9819   | -0.0383             | -0.1013         | 0.063              |
| Energy:  | 8.4456   | 8.8748   | 0.4292              | -0.3453         | 0.7745             |
| Regulated energy products  | 4.1439   | 4.3394   | 0.1955              | -0.1675         | 0.363              |
| Non-regulated energy products                                      | 4.3017   | 4.5354   | 0.2337              | -0.1778         | 0.4115             |
| Tobacco  | 2.1714   | 2.0835   | -0.0879             | -0.0322         | -0.0557            |
| Non energy industrial goods:                                       | 25.4637  | 25.5011  | 0.0374              | 0.3953          | -0.3579            |
| Durable goods  | 8.4846   | 8.8207   | 0.3361              | 0.4843          | -0.1482            |
| Non-durable goods  | 6.6173   | 6.4568   | -0.1605             | -0.0758         | -0.0847            |
| Semi-durable goods   | 10.3618  | 10.2236  | -0.1382             | -0.0132         | -0.125             |
| Goods  | 53.608   | 53.9827  | 0.3747              | -0.026          | 0.4007             |
| Services related to housing  | 7.7003   | 7.4769   | -0.2234             | -0.1342         | -0.0892            |
| Services related to communication                                  | 1.9445   | 1.9222   | -0.0223             | -0.0174         | -0.0049            |
| Services related to recreation, including repair and personal care | 17.6824  | 17.8091  | 0.1267              | 0.2664          | -0.1397            |
| Services related to transport                                      | 7.6089   | 7.7036   | 0.0947              | -0.0178         | 0.1125             |
| Services – miscellaneous   | 11.4559  | 11.1055  | -0.3504             | -0.071          | -0.2794            |
| Services   | 46.392   | 46.2802  | -0.3747             | 0.026           | -0.4007            |
| ALL ITEMS  | 100.0000 | 100.0000 |                     |                 |                    |
| All items excluding energy and unprocessed food (Core inflation)   | 84.5342  | 84.1433  | -0.3909             | 0.4466          | -0.8375            |
| All items excluding energy, food, alcohol and tobacco              | 71.8557  | 71.5184  | -0.3373             | 0.4213          | -0.7586            |
| All items excluding energy   | 91.5544  | 91.1252  | -0.4292             | 0.3453          | -0.7745            |
| Grocery and unprocessed food                                       | 19.8287  | 19.7832  | -0.0455             | -0.066          | 0.0205             |

With regard to regulated and non-regulated products, the weight of *Regulated goods* increases slightly (from 6.54% to 6.63%); on the other hand the weight of *Regulated services* decreases (-0.1201 percentage points) (Table 6).

TABLE 6. NIC INDEX: WEIGHTING STRUCTURE BY REGULATED AND NON-REGULATED PRODUCTS 2017 and 2018, percentage values and absolute differences

| REGULATED AND NON-REGULATED PRODUCTS | 2017     | 2018     | Absolute difference |
|--------------------------------------|----------|----------|---------------------|
| Non-regulated goods                  | 47.0727  | 47.354   | 0.2813              |
| Regulated goods                      | 6.5353   | 6.6287   | 0.0934              |
| Goods                                | 53.608   | 53.9827  | 0.3747              |
| Non-regulated services               | 39.8825  | 39.6279  | -0.2546             |
| Regulated services                   | 6.5095   | 6.3894   | -0.1201             |
| Services                             | 46.392   | 46.0173  | -0.3747             |
| ALL ITEMS                            | 100.0000 | 100.0000 |                     |

Finally, concerning products by purchase frequency (Table 7) the weight of *Medium-frequency purchases* decreases (-0.4593 percentage points), while that one of *High-frequency purchases* (+0.1094 percentage points) and *Low-frequency* (+0.3499 percentage points) increases.

TABLE 7. NIC INDEX: WEIGHTING STRUCTURE BY PURCHASE FREQUENCY

2017 and 2018, percentage values and absolute differences

| PURCHASE FREQUENCY         | 2017     | 2018     | Absolute difference |
|----------------------------|----------|----------|---------------------|
| High-frequency purchases   | 39.9662  | 40.0756  | 0.1094              |
| Medium-frequency purchases | 42.5927  | 42.1334  | -0.4593             |
| Low-frequency purchases    | 17.4411  | 17.7910  | 0.3499              |
| ALL ITEMS                  | 100.0000 | 100.0000 |                     |

# Geographical basis and coverage rate

In 2018 the geographical basis of the survey is made up of 79 municipalities which contribute to the indices calculation of all the product aggregates included in the basket - and of other 17 municipalities<sup>4</sup> participating in the survey for a subset of products which includes local tariffs (water supply, solid waste, sewerage collection, gas for domestic use, urban transport, taxi, car transfer ownership, canteens in schools, public day nursery, etc.) and some local services (sport events, cinemas, theatre shows, secondary school education, canteens in universities, etc.).

For the whole basket, the coverage of the index in terms of resident population in the provinces whose chief towns take part in the survey is 83.2%. The participation of provincial chief towns is total for six regions (Valle D'Aosta, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Emilia-Romagna and Umbria) but it is still incomplete for the others, in particular in Puglia (40.8%), Abruzzo (47.7%) and Sardegna (56.0%). Campobasso, regional chief town of Molise, since December 2017 has extended the survey to the whole basket, allowing to return to a coverage of the survey extended to all Italian regions.

At the macro-area level, coverage is total in the North-East; it is equal to 89.4% in the North-West, 83.3% in the Centre, 65.7% in the South and 75.3% in the Islands.

Concerning the basket subset including local tariffs and some local services - whose weight on the NIC basket is equal to 6.1% - with the participation of the other 17 municipalities the coverage of the survey. measured in terms of provincial resident population rises to 92.5%. The participation becomes total for 13 regions and it is stable in the remaining regions.

## Price survey methods

Data contributing to the calculation of monthly consumer price indices are traditionally collected using different sources: the *local survey*, carried out by municipal statistics offices, under Istat supervision and coordination; the *central survey* carried out directly by Istat or through different data providers; the *scanner data*; the *administrative sources*.

In 2018 the weight of the products exclusively collected by the local survey is equal to 60.7% despite of those products which are collected by central survey, whose weight is 23.9%. In addition to these two ways the acquisition of scanner data with regard to the distribution channel of hypermarkets and supermarkets (for 55.4%), and local survey with regard to other types of points of sale (for the remaining 44.6% of grocery) is used for grocery products.

Finally, an administrative source is used: the database of fuel prices of Ministry of Economic Development whose weight is equal to 3.9%.

## Local survey

In the 96 municipalities (79 for the full basket and 17 for a subset of products) taking part in the 2018 survey, prices are collected in more than 42,400 statistical units (including outlets, enterprises and institutions) and

<sup>&</sup>lt;sup>4</sup> They are Asti, Chieti, Fermo, Foggia, Frosinone, Isernia, L'Aquila, Matera, Monza, Prato, Ragusa, Salerno, Savona, Termoli, Vasto, Verbania and Vibo Valentia.

rents are collected for about 8,000 dwellings. 461,000 quotes are sent on a monthly basis to Istat by Municipal Offices of Statistics each month (493,000 in 2017).

Following the annual update of the municipal survey plans, 18.2% of the current price quotes are new (4.8% in 2017): of these, 0.3% are price quotes of new products, while the remaining 17.9% refer to the product already in 2017 basket. The highest percentage of new quotes is due to the introduction of scanner data which has led to relevant changes in the organization of price data collection in the field, focusing the attention on the retail trade channels different from hypermarkets and supermarkets.

#### Central survey

In 2018 prices/quotes collected each month directly by Istat are more than 153,000, of which:

- ✓ 152,7000 via web, also using *web scraping techniques*, or collecting data from different providers. The main data providers for the central price data collection are the following:
- Italian Customs Agency, for Tobacco products and games of chance;
- Italian Association of Concessionaries Highways and Tunnels (Aiscat), for motorway tolls;
- Farmadati, for pharmaceutical products;
- ltalian Association of Publishers (AIE), for prices of school books:
- Specialized magazine "Quattroruote" for prices quotes of cars and second hand cars;
- Sanguinetti Editore, for prices of cars, motorcycles and motorbikes, caravans and motorhomes;
- ▶ GfK Italia S.r.I., for information on a large sub-set of technical consumer goods;
- ✓ about 400 quotes directly provided by insurance companies which refer to protection against most risks connected to property, such as fire, theft and other damages and are used for the Housing insurance services price index compilation.

The percentage of products observed directly by Istat calculated according to the weight assigned to each product within the NIC is 23.9% in 2018 (23.6% in the previous year).

Changes in the central price collection activities upon the occasion of the 2018 changing base regard - as usual - the revision of the samples in their composition. numbers and weighting structure as well as the introduction of methodological improvements. The main changes in 2018 concern the survey design for national rail transport and passenger transport by air price collection and the use of a new data source for the index compilation of a large sub-set of technical consumer goods (the new data base, supplied by GfK Italia S.r.l., with price data which refer to more than a million of purchases made on both e-commerce sites and physical stores, per month).

### Scanner data

Starting from January 2018 Istat introduces scanner data of grocery products (excluding fresh food) in the production process of estimation of inflation.

This innovation concerns 79 indices of aggregate of products belonging to 5 ECOICOP Divisions (01, 02, 05, 09, 12).

In agreement with retail trade chains (RTCs) and with the collaboration of the Association of modern distribution and Nielsen, scanner data for 1,781 outlets (510 hypermarkets and 1,271 supermarkets) of the main 16 RTCs covering the entire national territory are monthly collected by Istat on a weekly basis at item code level.

For the selection of the sample of outlets a probabilistic design was implemented. Outlets were stratified according to provinces (107), chains (16) and outlet-types (hypermarket, supermarket) in 888 strata. Probabilities of selection were assigned to each outlet based on the corresponding turnover value.

Concerning the selection of the sample of items, a static approach that mimics traditional price collection method has been adopted. Specifically, a cut off sample of barcodes (GTINs) has been selected within each outlet/aggregate of products (covering 40% of turnover but selecting no more than the first 30 GTINs in terms of turnover). The products selected in December are kept fixed during the following year. A "tank" of potentially replacing outlets (258) and GTINs (until a coverage of 60% of turnover within each outlet/aggregate) has been detected in order to better manage the possible replacements during 2018.

About 1,370,000 price quotes are collected each week to estimate inflation. For each GTIN, prices are calculated taking into account turnover and quantities (weekly price=weekly turnover/weekly quantities). Monthly prices are calculated with arithmetic mean of weekly prices weighted with quantities.

Scanner data (SD) indices of aggregate of products are calculated at outlet level as unweighted Jevons index (geometric mean) of GTINs elementary indices. Provincial SD indices of aggregate of products are calculated with weighted arithmetic mean of outlet indices using sampling weights. Finally, for each aggregate of products, SD indices and indices referred to other channels of retail trade distribution are aggregated with weighted arithmetic mean using expenditure weights.

#### Administrative sources

In 2018 automotive fuels price indices (the weight on the basket is 3.9%) are calculated using the data base supplied by the Ministry of Economic Development that collects prices for these products. More than 63,000 price quotes are monthly used to estimate inflation and they come from about 13,240 fuel stations on the territory, that is 65.9% of the ones active and present in Ministry database.

The 13,240 fuel stations cover the entire national territory and they are located in the different geographical areas as it follows: 3,500 in the North-West; 3,100 in the North-East; 2,900 in the Centre; almost 2,400 in the South and about 1,300 in the Islands.

## For more details please refer to the Italian version

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