Inflation measures by population subgroups
Methodological note

The consumer price indices by population subgroups are "satellite" indices of the Harmonized index of consumer price (HICP): they are computed starting from the same basic information used for the HICP (i.e. the same basket of products and the same price elementary data) by modifying the system of weights used for their calculation.

Five subgroups have been identified by sorting households on the basis of the amount of equivalent expenditure (that is calculated taking into account the size of each household) and then dividing them in 5 subgroups of the same size so that in the first group there are the households with the lowest level of expenditure and in the last group those with the highest level of expenditure. For each of the previous groups, different weighting schemes were estimated.

The indices of five subgroups share the set of basic information (basket of products and price elementary data) and the methodology of Italian HICP but they differ with one another for the system of weights used for their calculation. Specifically, the estimates of the system of weights for the five subgroups are based on the data derived from Household Budget Survey (HBS), which involved about 28.000 households every year.

For each subgroup, the weights are estimated by modifying the HICP weight at the level of classification corresponding to consumption segments[1], on the basis of the share of the expenditure devoted by the target group of households to the purchase of the products in each consumption segment, with respect to the whole population.

For that purpose, it has been necessary to define a link between the HBS data and the basket of products used for the calculation of the HICP. The link between the HBS elementary expenditure data and HICP consumption segments was in some cases straightforward (for example, for food items). In other cases it was necessary to make a link at a more aggregated level of expenditure data (as for durable goods, assistance, education) in order to maintain the significance of estimates related to each subgroup. As a result, the HBS elementary expenditure data were merged into about 90 expenditure groups and then linked to the HICP consumption segments. In more details, for approximately half of these groups the link was one-to-one (about 30% of cases) or one-to-two (around the 21% of cases); in approximately 28% of cases it was necessary to make a link with five or more consumption segments.

The all-items consumer price indices by population subgroups, as well as the indices of the special aggregates, were calculated from January 2005, with reference base year 2005 = 100, consistently with the HICP. The dissemination of these indicators, twice a year, enlarge the statistical information on the temporal dynamics of consumer prices allowing an evaluation of the effects of inflation on specific subgroups of population, identified according the total expenditure level of the households.

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[1] In Italian HICP classification scheme, consumption segments are 323.

Regarding weights, figure 1 shows that the share of expenditure for food and energy goods is inversely correlated with the level of total expenditure. In more details, with reference to the households of the first group of the distribution (i.e. the 20% of those with the lowest equivalent expenditure), the weights of food and energy goods are significantly higher than the corresponding weights in the Italian HICP and almost double as compared to the weights estimated for the households of the last group (the 20% of population with the highest equivalent expenditure).

At the opposite, the incidence on the households' expenditure of Non-energy industrial goods, Services related to transport, Services miscellaneous and, to a lesser extent, the incidence of the Services related to recreation, culture and personal care increase together with the increase of the level of total expenditure.

FIGURE 1 – HARMONIZED INDICES OF CONSUMER PRICES. WEIGHTS OF THE SPECIAL AGGREGATES INDICES BY POPULATION SUBGROUPS (per million)
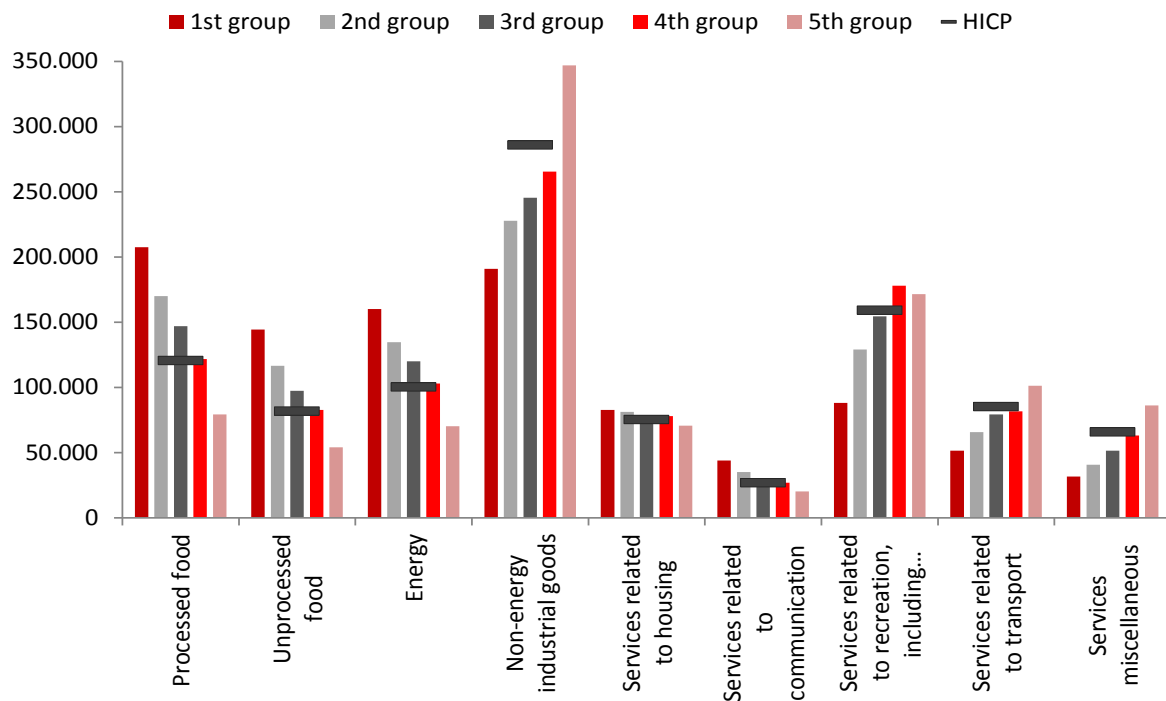Year 2013

Table 1 shows the index of dissimilarity between the weights structures of the five subgroups and the one of the HICP, for year 2013. Notably, the weights structure of the fourth fifth proved to be the closest one to the structure of the HICP.

Table 1. Dissimilarity index concerning the distribution of HICP weights by subgroups
Year 2013

	1st group	2nd group	3rd group	4th group	5th group	HICP
1st **group**	0,00					
2nd group	0,13	0,00				
3rd group	0,20	0,08	0,00			
4th group	0,28	0,16	0,08	0,00		
5th group	0,44	0,33	0,25	0,18	0,00	
HICP	0,29	0,18	0,10	0,05	0,15	0,00