

## Italy 1993: Survey Information

### Summary table

<b>Generic information</b>	
Name of survey	Survey on Household Income and Wealth – SHIW ( <i>Indagine sui Bilanci delle Famiglie Italiane</i> )
Institution responsible	Bank of Italy
Frequency	Every two years
Survey year / Wave	1993
Collection period	May to July 1994
Survey structure	Cross-sectional and panel
Coverage	Private households in the whole territory
Geographic information	20 administrative regions (more detailed info on provinces is not available for external users)
Files delivered	Two sets of files, one for the historical database and one for the annual database, each of which comprising several files at different levels (household, individual, pensions, transfers, employment activities, real estates, etc.).
<b>Sample size</b>	
Households	8,089 households
Individuals	24,013 individuals (of which 14,395 income earners and 20,488 aged over 15)
<b>Sampling</b>	
Sampling design	<i>Initial sample (1987)</i> : two-stage stratified sampling, with the stratification of the PSUs (municipalities) by region and demographic size. <i>Subsequent samples</i> : households residing in panel municipalities that had signaled an availability to re-interview in the preceding survey were all included in the sample; the non-panel households were selected randomly from municipal registers in both panel and non-panel municipalities.
Sampling frame	Municipal registry office records.
<b>Questionnaires</b>	
	Paper-based questionnaire with a modular structure: general part addressing aspects relevant to all households and a series of annexes with questions relevant to specific subsets of households.
<b>Standard classifications</b>	
Education	8 categories (only 6 available in historical database)
Occupation	6 categories for employees, and 6 for self-employed, used as labour force status and not occupation
Industry	10 sectors
<b>Income</b>	
Reference period	Income in the preceding calendar year (which coincides with the fiscal year)
Unit of collection	Mostly at the individual level, except for property income (household level)
Period of collection	Mostly monthly income with number of months, some annual.
Gross/net	All variables are recorded net of taxes and contributions.
<b>Data editing / processing</b>	
Consistency checks	Standard post-survey consistency checking procedure.
Weighting	Survey data can be grossed up to aggregate values thanks to appropriate weights assigned to each household according to its probability to be included in the survey.
Imputation	All the elementary variables that make up the aggregates are imputed; regression models are used to estimate the values to assign to the missing answers on the basis of other available information that is correlated with the missing data.

This document draws extensively upon the methodological Annex to the “I bilanci delle famiglie italiane nell’anno 1993”, *Supplementi al Bollettino Statistico – Note metodologiche e informazioni statistiche*, Bank of Italy, Year V, No. 9, February 1995 (see

[http://www.bancaditalia.it/statistiche/ibf/statistiche/ibf/pubblicazioni/boll\\_stat/supplemento\\_famiglie\\_1993\\_n.9\\_95.pdf](http://www.bancaditalia.it/statistiche/ibf/statistiche/ibf/pubblicazioni/boll_stat/supplemento_famiglie_1993_n.9_95.pdf)).

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### **A. General characteristics**

Official name of the survey/data source:

Survey on Household Income and Wealth – SHIW (*Indagine sui Bilanci delle Famiglie Italiane*)

Administrative Unit responsible for the survey:

Bank of Italy Research Department Divisione Rilevazioni e Metodi Statistici - R.M.S. Address: Via Nazionale 91, 00184 ROMA. WWW: <a href="http://www.bancaditalia.it">http://www.bancaditalia.it</a> e-mail: <a href="mailto:studi.indagini@insedia.interbusiness.it">studi.indagini@insedia.interbusiness.it</a>
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The Survey on Household Income and Wealth (SHIW) began in the 1960s within the Research Department of the Bank of Italy with the aim of gathering data on the incomes and savings of Italian households. Over the years, the scope of the survey has grown and now includes wealth and other aspects of households' economic and financial behaviour such as, for example, which payment methods are used.

Until 1987 the Bank of Italy's survey of Italian household budgets was conducted with time-independent samples of households. In order to facilitate analysis of changes in the phenomena being investigated, since 1989 part of the sample has comprised households that were interviewed in previous surveys (panel households). The sample used in the most recent surveys (carried out generally every other year) comprises about 8,000 households (24,000 individuals), distributed over about 300 Italian municipalities and it is representative of the whole Italian population.

The survey results are regularly published in the Bank's Supplements to the Statistical Bulletin. The data on the households is freely available, in an anonymous form, for further elaboration and research. Other than the annual datasets, a historical database has been put together comprising a slightly restricted selection of variables available in the normal annual files but consistent over all the years since 1977.

## **B. Population, sampling size and sampling methods**

### Coverage

The sample is representative of the whole Italian population.

### Sample size

Table 1a shows the sample size used between 1987 and 2000, indicating the number of households interviewed in more than one survey. For example, of the 8,089 households that made up the sample in this survey, 173 had participated since 1987, 877 since 1989 and 2,420 since 1991. The remaining 4,619 were being interviewed for the first time.

**Table 1a**

### **Households interviewed in the 1987-2000 surveys**

Year of first interview	Year of survey						
	1987	1989	1991	1993	1995	1998	2000
1987	8,027	1,206	350	173	126	85	61
1989		7,068	1,837	877	701	459	343
1991			6,001	2,420	1,752	1,169	832
1993				4,619	1,066	583	399
1995					4,490	373	245
1998						4,478	1,993
2000							4,128
<b>Sample size</b>	<b>8,027</b>	<b>8,274</b>	<b>8,188</b>	<b>8,089</b>	<b>8,135</b>	<b>7,147</b>	<b>8,001</b>

The overall size of the sample for the 1993 survey was 8,089 households. The proportion of panel households was 42.9 per cent, registering a very high increase with respect to the previous survey (26.7 per cent in 1991).

### Sampling design

The sample was drawn in two stages (municipalities and households), with the stratification of the primary sampling units (municipalities) by region and demographic size. Within each stratum, the municipalities in which interviews would be conducted were selected by including all municipalities with a population of more than 40,000 and randomly selecting smaller towns. The individual households to be interviewed were then selected randomly.

In order to form the panel, the municipalities were selected from among those already sampled in the 1991 survey (panel municipalities); panel-households were selected in these municipalities among those who had signaled an availability to re-interview in the preceding survey. The non-panel households were selected randomly from municipal registers in both panel and non-panel municipalities. Households were interviewed in 310 municipalities of which 277 were panel households and 33 non-panel households (Table 2a).<sup>1</sup>

**Table 2a**  
**Survey municipalities**

Geographical area	Panel	Non-panel	Total
North	117	12	129
Centre	54	12	66
South and Islands	106	9	115
<b>Total</b>	<b>277</b>	<b>33</b>	<b>310</b>

### C. Data collection and acquisition

#### Data collection

The interviews for the sample survey of Italian household budgets in 1993 were conducted between May and July 1994.

Interviews were conducted by a specialized company using professional interviewers. The interview stage was preceded by a series of meetings at which Bank of Italy officials and representatives of the company gave instructions directly to the interviewers. The households contacted for interviews, who are guaranteed complete anonymity, receive a booklet describing the purpose of the survey and giving a number of examples of the ways in which the data are used. The participating households may request a copy of the results of a previous survey.

Interviewers contacted 15,759 households, of which about one half (51.3 per cent) agreed to be interviewed (Table 3a).<sup>2</sup> The sample was therefore composed of 8,089 households, of which 3,470 were panel households and 4,619 non-panel households. The participation rate was higher for panel households (64.3 per cent, compared with 44.6 per cent for non-panel households). This difference is due to the fact that panel households were selected among those that, in the previous survey, had signaled their availability to be again interviewed.

<sup>1</sup> Panel households that had changed their residence were, as far as possible, interviewed at their new address even if this was in a different municipality, as long as it was in Italy. This ultimately expanded the number of municipalities in which interviews were conducted to 326.

<sup>2</sup> The higher effort in the contact phase has permitted to increase the participation rate from 32.4 in the previous survey to 51.3 per cent in this survey.

**Table 3a**  
**Households contacted and reason for non-participation (percentages)**

	Panel	Non-panel	Total
Households:			
Interviewed	64.3	44.6	51.3
not interviewed	35.7	55.4	48.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Reasons for non-interview:			
refusals	41.7	39.0	41.1
not contacted	32.2	37.4	36.0
Other	26.1	23.6	22.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

The most common reason for non-participation was the unwillingness of the household (41.1 per cent; Table 3a). In 36.0 per cent of cases, the household could not be contacted at the moment of the interview; more specifically, in 6.9 per cent of the cases, the persons were constantly absent at the indicated address, while in the 29.1 per cent of the cases it was not possible to contact the household by telephone or during the three visits paid by interviewers on different days and at different times. In the remaining 22.98 per cent of the cases, it was not possible to obtain the interview for other reasons, among which there are names inexistent at the given address (10.1 per cent), persons who moved (6.9 per cent) and deceased persons (3.4 per cent).

#### The questionnaire

The questionnaire, which was based on that used in the previous survey, was subjected to the usual pretesting before the start of the general survey. The test survey, which involved about 100 households from around Italy provided information that was helpful in reformulating certain questions more clearly.

The questionnaire used in the survey has a modular structure. It is composed of a general part addressing aspects relevant to all households and a series of annexes with questions relevant to specific subsets.

Interview duration (on average 64 minutes) varied considerably variability within the sample, with a positive correlation with income, wealth and number of household members.

The questionnaire for panel households reported also some information given by the same family in the previous interview, in order to help the interviewer to track and remedy, in presence of the household, inconsistencies in the responses as emerging from two different surveys.

#### **D. Definition of the survey units**

##### Household

The basic survey unit is the household, which is defined as “a group of individual linked by ties of blood, marriage or affection, sharing the same dwelling and pooling all or part of their incomes”. Are to be included in the household all persons that normally lived in the dwelling at 31 December 1993 who contributed at least part of their income to the household; this includes any members temporarily absent (e.g. on vacation, temporarily away for study, etc) and any non-relatives that lived stably in the household at 31 December 1993.

### Head of household

The head of the household is defined at the survey stage as the person who says he/she has “the most responsibility for family finances”, which satisfies the need to determine the best informed person.

## **E. Contents**

The survey contains information about:

- demographic characteristics of the household members (including education) and the parents of the head and spouse;
- employment status of the household members aged 15 or over (incl. employment opportunities and lifetime work experience);
- questions on working times (only for workers) and on future working perspectives for workers and job searchers (rotation section);
- incomes from payroll employment, self-employment, pensions, other transfers for all adult members of the household;
- payment instruments and forms of savings of the household;
- principal residence and other property of the household;
- consumption and other family expenditures;
- forms of insurance of the household (life insurances, private pensions and annuities, health insurances, accident insurances);
- information to be provided by the interviewer.

## **F. Quality of data**

### Quality of estimates

#### *1. Non-participation*

Households that could not be interviewed were replaced by others selected randomly in the same municipality. Obviously, this technique does not eliminate the risk of obtaining samples in which the less-cooperative segments of the population are underrepresented, thus generating biased estimates (*selection bias*). One indication of the extent of the phenomena is provided by the number of contacts needed to obtain an interview. In order to conduct the 8,089 interviews, interviewers made a total of 12,614 contact attempts, including 11,388 personal visits and 1,226 telephone calls (the latter were made solely to fix an

appointment).<sup>3</sup> The difficulty of obtaining an interview increased with income, wealth and the educational qualification of the head of household. It was less difficult to obtain interviews in smaller municipalities, with households of small size and where the head of household was retired or female. In spite of the fact that the post stratification on the basis of certain individual characteristics of the interviewees makes it possible to take into account some of these factors, it cannot be excluded that the various segments of the population are not mis-represented within the sample; studies of the data from the 1989 survey have nevertheless suggested that the bias of the estimates due to non-participation is small, thanks in part to the measures taken.<sup>4</sup>

## *2. Response reliability*

An additional aspect that can influence the quality of estimates is the reluctance of households to report their sources of income or the real or financial assets they hold.<sup>5</sup> Although participation in the survey is voluntary and the content of the survey is known to the interviewee before the start, it is possible that respondents are not entirely truthful in their responses to the more “sensitive” questions, such as those regarding income or wealth. In order to assess the extent of such phenomena, which by their very nature are difficult to investigate, interviewers were asked to express a summary evaluation of the presumed reliability of the responses immediately following the interview, basing their judgment on the correspondence between the information provided and objective evidence available to them (zone and type of dwelling occupied by the household, standard of living implied by quality of furnishings, etc.).<sup>6</sup> Although the reliability level was satisfactory on average, it was not homogeneous across the sample. The highest ratings were given to households with heads who were young, had a high educational qualification, were employees and resided in small municipalities and in the North. Slightly lower ratings were given to households with heads who were elderly, had a low educational qualification, were self-employed or retired and resided in the South or the Islands. Reliability increased as the income and wealth reported in the survey increased.

## Checking data and imputing missing data

The questionnaires are checked first of all to verify that no annexes are missing, no questions have been skipped and that there are no editing errors. In this phase the codification of open-answer fields is carried out (i.e. the answer “other – please specify”). Data are subsequently entered into magnetic support and automatic checks are carried out to verify the consistency of single fields or correlated fields.<sup>7</sup>

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<sup>3</sup> A total of 11,945 contact attempts were made for the 7,850 households that were not interviewed.

<sup>4</sup> See L. Cannari and G. D’Alessio, *Mancate interviste e distorsione degli stimatori*, Temi di Discussione del Servizio Studi, no. 172, Banca d’Italia, Rome, June 1992. With reference to the 1989 survey, the authors estimate that household income was understated by 5 per cent owing to non-participation.

<sup>5</sup> Moreover, it is not unreasonable to believe that certain sorts of liability might be deliberately understated by interviewees.

<sup>6</sup> The interviewers’ evaluations were expressed on a scale from 1 (completely unreliable) to 10 (completely reliable).

<sup>7</sup> In presence of inconsistencies or anomalies, households were contacted telephonically to verify those information and eventually correct them.

Once the checks were completed, work began on imputing missing answers, which could have been due to reticence on the part of the interviewee or difficulties that respondents had in replying to the question.<sup>8</sup> It is necessary to impute answers for all the elementary variables that make up the aggregate, since the absence of even one component would prevent calculation of the aggregate (for example, it is necessary to impute fringe benefits such as lunch coupons in order to calculate income from salaried employment).

Regression models are used to estimate the values to assign to the missing answers on the basis of other available information that is correlated with the missing data. In order to avoid an excessive concentration around average values, a random component is added, extracted from a normal variable, with a mean of zero and a variance equal to that of the residuals in the regression model. This preserves the mean and variance of the data actually measured.

### Weighting: the sample estimates

The estimation procedure, which is similar to that used in the last survey, consists of three stages:

#### *a) Calculation of the sampling weights for households*

Each member of the household is assigned an initial weight defined as the inverse of his/her probability of inclusion in the sample. Given the sample design, the coefficient is constant at the municipality level and is equal to:

$$(1) w_{hi} = \begin{cases} \frac{P_h}{\sum P_{hi}} \frac{P_{hi}}{n_{hi}} \\ \frac{1}{m_h} \frac{P_h}{n_{hi}} \end{cases}$$

respectively for municipalities with more than 40,000 inhabitants and for municipalities with up to 40,000 inhabitants, where  $P_h$ ,  $\sum P_{hi}$  and  $m_h$  are respectively the resident population, that of the municipalities in the survey and the number of sample municipalities in the  $h^{\text{th}}$  stratum, and  $P_{hi}$  and  $n_{hi}$  are respectively the population and the number of respondents in the  $i^{\text{th}}$  municipality of the  $h^{\text{th}}$  stratum.

#### *b) Post-stratification of the panel households*

The socio-demographic characteristics of the panel households may differ somewhat from those of the entire sample in 1991, mainly owing to missing interviews. In order to correct for this possible source of distortion in the estimates, the panel section of the sample is post-stratified on the basis of a number of characteristics of the previous survey (geographical area, income classes, professional status of head of household) so as to modify the initial weight of this subset of households.

#### *c) Estimation of aggregates*

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<sup>8</sup> Nevertheless, while not answering was possible for some questions, the failure to indicate sources of income or the most significant components of wealth resulted in the invalidation of the interview.



An unbiased estimator of the mean of variable  $x$  is given by the Horwitz-Thompson estimator:

$$(2) \quad \bar{x} = \frac{\sum x_j w_j}{\sum w_j} \quad j = 1, \dots, N$$

However, if the values of variable  $x$  measured on two successive waves are correlated, an optimal estimator of the mean is given by:

$$(3) \quad \bar{x}_t^* = \mathbf{a}\bar{x}_t^q + (1-\mathbf{a})\bar{x}_t^p + (1-\mathbf{a})\mathbf{r}(\bar{x}_{t-1} - \bar{x}_{t-1}^p)$$

$$(4) \quad \text{with } \mathbf{a} = \frac{Q(1-r^2Q)}{1-r^2Q^2}$$

where  $\bar{x}_t$  and  $\bar{x}_{t-1}$  are respectively the means of variable  $x$  at time  $t$  and time  $t-1$ ,  $\bar{x}_t^p$  and  $\bar{x}_t^q$  are the means of variable  $x$  at time  $t$  for the panel and non-panel parts of the sample respectively,  $\mathbf{r}$  is the correlation coefficient between  $\bar{x}_t$  and  $\bar{x}_{t-1}$  and  $Q$  is the share of non-panel households.

The estimator (3) is not a simple weighted average of the values measured at time  $t$ , since, in addition to the correlation coefficient, it refers to the values of  $x$  from the previous survey for the panel and the total sample. However, following the post-stratification described above, the main variables approximately satisfy:

$$(5) \quad \bar{x}_{t-1} = \bar{x}_{t-1}^p$$

and the last term of (3) disappears. In addition, given that the correlation coefficients for the main variables examined are between 0.6 and 0.7, giving  $\mathbf{r}$  the intermediate value  $\tilde{\mathbf{r}} = 0.65$ , it is possible to approximate the estimator (3) by way of:

$$(6) \quad \bar{x}_t^+ = \mathbf{a}\bar{x}_t^q + (1-\mathbf{a})\bar{x}_t^p$$

which is obtained as the mean of the data measured at time  $t$ , weighted with coefficients equal to:

$$(7) \quad w_{hij}^* = \begin{cases} w_{hij} \frac{1-\mathbf{a}}{1-Q} & \text{respectively for panel households} \\ w_{hij} \frac{\mathbf{a}}{Q} & \text{and for non-panel} \end{cases}$$

households. This estimator differs from (2) since, being based on the positive correlation between the data gathered from the same households in successive surveys, it gives a higher relative weight to the panel segment of the sample than the share of panel

interviews actually conducted (48.1 per cent compared with 42.9 per cent), with a corresponding reduction in the weight assigned to the non-panel households. Since this reweighing could change the structure of the sample, the final sample is modified to assume the same characteristics as the population with regard to sex, age group, geographic area and size of municipality of residence.

Standard errors

The standard errors of the means of the main variables, calculated taking the sampling design into account, are shown in Table 4a.

**Table 4a**  
**Standard errors in the estimation of the means for the main variables**  
*(thousands of lire, percentages)*

Variables	Standard error	
	Absolute value	% of estimate
Household income	646	1.64
Household consumption	436	1.47
Household net wealth	8,155	3.99

**G. Uses of the survey**

## Publications

The results are regularly published in the Supplements to the Statistical Bulletin of the Bank of Italy. A whole bibliography of the research carried out using data from the SHIW is available (in Italian) from the Bank of Italy web-site (<http://www.bancaditalia.it/statistiche/ibf/statistiche/ibf/pubblicazioni/altre/biblio.pdf>). A list of the Economic Research Papers of the Bank of Italy concerning the SHIW is reported here:

E. Battistin, R. Miniaci and G. Weber (2003), What do we learn from recall consumption data?, Bank of Italy, *Temi di Discussione*, N. 466.

Giovanni D'Alessio and Ivan Faiella (2002), Non-response behaviour in the Bank of Italy's Survey of Household Income and Wealth, Bank of Italy, *Temi di Discussione*, N. 462.

Silvia Magri (2002), Italian households' debt: determinants of demand and supply, Bank of Italy, *Temi di Discussione*, N. 454.

Guido de Blasio and Sabrina Di Addario (2002), Labor market pooling: evidence from Italian industrial districts, Bank of Italy, *Temi di Discussione*, N. 453.

A. Brandolini, P. Cipollone and P. Sestito (2001), Earnings dispersion, low pay and household poverty in Italy, 1977-1998, Bank of Italy, *Temi di Discussione*, N. 427.

Andrea Brandolini and Piero Cipollone (2001), Multifactor Productivity and Labour Quality in Italy, 1981-2000, Bank of Italy, *Temi di Discussione*, N. 422.

Piero Cipollone (2001), Is the Italian Labour Market Segmented?, Bank of Italy, *Temi di Discussione*, N. 400.

G. D'Alessio e L. F. Signorini (2000), Disuguaglianza dei redditi individuali e ruolo della famiglia in Italia, Bank of Italy, *Temi di Discussione*, N. 390.

Andrea Brandolini (1999), The Distribution of Personal Income in Post-War Italy: Source Description, Data Quality, and the Time Pattern of Income Inequality, Bank of Italy, *Temi di Discussione*, N. 350.

## Poverty and income distribution

According to the publication "I bilanci delle famiglie italiane nell'anno 1993", *Supplementi al Bollettino Statistico – Note metodologiche e informazioni statistiche*, Bank of Italy, Year V, No. 9, February 1995, the Gini coefficient of concentration is 0.366 for the distribution of household income; when calculating the index on the basis of

the new definition of self-employment income as used from the 1995 survey onwards (i.e. imputed rents relative to real estate properties used for self-employment activities were excluded), the Gini index amounts to 0.363.

The high increase of the Gini index with respect to the previous survey (0.325) seems to point that the recession has produced a substantial change in the income distribution.