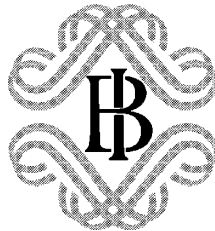# BANCA D'ITALIA

Temi di discussione
del Servizio Studi

**The Distribution of Personal Income in Post-War Italy:
Source Description, Data Quality, and the Time Pattern
of Income Inequality**

by Andrea Brandolini

Number 350 - April 1999

The purpose of the "Temi di discussione" series is to promote the circulation of working papers prepared within the Bank of Italy or presented in Bank seminars by outside economists with the aim of stimulating comments and suggestions.

The views expressed in the articles are those of the authors and do not involve the responsibility of the Bank.

THE DISTRIBUTION OF PERSONAL INCOME IN POST-WAR ITALY: SOURCE DESCRIPTION, DATA QUALITY, AND THE TIME PATTERN OF INCOME INEQUALITY

by Andrea Brandolini[*]

Abstract

The paper describes the sample surveys on the personal distribution of incomes conducted in post-war Italy: the first survey carried out by Istituto Doxa in 1947-48; the sample survey of household income and wealth conducted by the Bank of Italy since the late 1960s; the expenditure survey, and the European Community Household Panel conducted by the Italian Central Statistical Office, which gather income data since 1980 and 1993, respectively. The quality of the information is assessed by collecting the available evidence on differential response rates and mis-reporting, and by comparing grossed-up survey results with aggregate figures from the labour force survey and the national accounts. The evidence from income sample surveys is tentatively used to identify the main episodes in the post-war evolution of income inequality.

[*] Bank of Italy, Research Department.

Contents

1. Introduction[1]

Under the stimulus of Pareto's analysis of the revenue curve, the debate on the shape of income distribution was quite lively in Italian academic circles in the first half of 20th century. Very little was known, however, about the actual distribution of incomes in the country. In June 1947, Luigi Einaudi, a leading economist then serving as Minister of the Budget, made this point quite clearly in front of the Assemblea costituente, the body elected to draft the new Italian constitution:

> I would like to present to the Assembly a report corresponding to the English White Book, describing the standard of living of Italian citizens, their incomes, the social categories into which they are divided; how many earn an income between 0 and 100,000 lire, how many between 100,000 and 500,000, and so forth. We have to realise, alas, ... that in spite of the efforts of Italian scholars to advance in this direction, we are far from being able to produce such a report (quoted by Luzzatto Fegiz, 1950, p. 341).

The issue was soon taken over by Pierpaolo Luzzatto Fegiz, professor of statistics at the University of Trieste, who submitted to Einaudi himself, Gustavo Del Vecchio, another prominent Italian economist then serving as Treasury Minister, and Giuseppe Pella, Finance Minister, the project of a sample survey "... aiming at ascertaining the shape of the revenue curve, and providing a sound basis for public economic and, especially, taxation policies" (Luzzatto Fegiz, 1950, p. 341). The project was approved and Istituto Doxa, a private agency for the analysis of public opinion founded and directed by Luzzatto Fegiz, was granted 16 million lire to conduct what turned out to be the first Italian sample survey of household income. Further surveys were subsequently carried out by Doxa in 1955 and 1958-59.

It was not until 1963-64 that the Italian Central Statistical Office (Istat) produced the first official statistics on the distribution of income. The survey was occasioned by a project of the European Economic Community on the structure of household budgets and was mainly concerned with the expenditure side; its information content was further limited by the exclusion from the sample of single-member households. The exercise was not repeated, and only in 1980 did Istat start to publish yearly estimates of the distribution of income on a regular basis. These estimates are based on the data collected in a special section added to the expenditure survey and have some critical weaknesses that will be examined later.

In the post-war period, the gap in the statistics on income distribution has been filled by the sample survey conducted yearly by the Bank of Italy from 1965 to 1987 (except for 1985) and every two years since then. This survey greatly differs from that of Istat in scope, design and size, and still represents the best source on income distribution in Italy. The situation might change in the next years, when novel data will be provided by an improved income section in the Istat's expenditure survey, and by the release of the results of Eurostat's European Community Household Panel.

The last sample survey considered here is the one that Isco (a public agency for the study of economic trends, now merged into the new Institute for Economic Research and Analysis) has conducted monthly since 1980 to compute the indicator of households' confidence. Since 1982 this survey contains two income questions, on the household's actual income, and on the income necessary for a household like the one of the respondent to achieve a decent standard of living. These data have never been exploited for distributive analysis, even though, notwithstanding their deficiencies, they would naturally lend themselves to constructing high-frequency indicators of income inequality and poverty.

The aim of this paper is threefold. First, the various sample surveys are described in some detail by drawing from official sources[2] as well as unpublished material and personal communications. Second, the quality of the data is assessed, especially from the perspective

---

[2]   The official sources and the corresponding acronyms used throughout the paper are listed in Appendix A, while summary tables on income distribution in Italy from 1948 to 1996 are reported in Appendix B.

of temporal comparisons.[3] Third, retrospective statistics on income inequality in post-war Italy are presented and their consistency is briefly discussed. Some remarks conclude the paper.

2. The Doxa sample surveys

The Doxa survey comprised eight distinct sub-samples and was carried out over a period of a year, from November 1947 to December 1948. About 1 household every 1,000 was interviewed: the total sample size amounted to 10,940 questionnaires, of which 10,755 were utilised and the rest discarded as unreliable; the response rate was reported to be over 90 per cent. Apart from time-period and size, the eight sub-samples differed by reference population and structure of the questionnaire. Two sub-samples were drawn from among the Italian urban households with at least two members, and details on households' overall budgets were collected and used to estimate income. In another sub-sample the focus was on rural households, and the household income was directly estimated as the farm's gross market product net of production expenses, plus any other household revenue. In the remaining sub-samples – one referring to urban middle and upper-middle class households and four to all Italian households – several questions were put to the interviewees but the main target was to determine total household income. This was achieved in an indirect way, by means of two questions inserted at different stages of the questionnaire: in the first, respondents were asked to estimate the average monthly expenditure allowing a household like their own (in terms of size, social condition and town of residence) to achieve a decent standard of living; in the second, they were asked how much their monthly household income fell short of this level. The great majority – the exact proportion was not provided – declared a positive amount in response to the second question: their household income was then estimated by deducting such amount from that declared in the first question. For the other households, income was assumed to be equal to or slightly higher than the amount given in response to the first question. In one sub-sample, income was mainly determined on

---

[3] Descriptive and evaluative material on sample surveys on household income in Italy can also be found in the proceedings of the 3rd Conference on National Accounts held in 1974 (Istituto per la contabilità nazionale, 1976; see especially the articles by Biggeri and Muttarini) and of the conference on Sample Surveys on Italian Household Budgets held in 1985 (Banca d'Italia, 1986). Cannari and Sestito (1995) provided a joint assessment of three household surveys: Bank of Italy's income survey, and Istat's labour force and expenditure surveys.

the basis of interviewers' assessment. The results were regarded as unsatisfactory because of the apparent overestimation of the incomes of wealthy households,[4] but the data were merged into the general sample to compensate for effects of the opposite sign in other sub-samples. Monthly incomes were eventually transformed into annual values by multiplying by 13 to account for under-reporting of irregular revenues.[5] The resulting figures were interpreted as estimates of the normal monetary income, or, in Luzzatto Fegiz's terminology, of the "psychological instantaneous monetary income".

The organisation of the survey suffered from the lack of updated figures on the structure of the population, which had to be extrapolated from the data of the 1931 and 1936 Censuses. The lack of a general list of Italian households was obviated by using a two-stage sampling by quotas. In the first stage, 36 strata were determined on the basis of geographical characteristics. No information was provided about the criterion used to select first-stage units, but it was likely to depend largely on the territorial distribution of Doxa's interviewers. In the second stage, interviewers were assigned a certain number of questionnaires (10 on average) and their own planned distribution of respondents by sex, age and social condition. Adult individuals (sometimes aged 18 and over, sometimes 21 and over) were chosen by interviewers "randomly", except for the need to comply as closely as possible with the sampling plan. The higher selection probability of households with a larger number of adults may have led to overestimation of the average household income.

Data were clustered in 104 strata, by 13 regional groups (excluding Venezia Giulia) and 8 occupations of the household's head. Raw data were weighted by the ratio of (estimated) total households to interviewed households in each stratum to make the sample representative of the (estimated) Italian population. The distribution of income by income range was derived using the central value of each range, except for the first, where the value

---

[4] For instance, the share of households with monthly income higher than 650,000 lire was estimated to be 43 per cent from interviewers' assessments (November 1948; sub-sample of 1,883 households) against 24 per cent from respondents' answers (December 1948; sub-sample of 1,298 households) (see Luzzatto Fegiz, 1949, p. 118, Table 15.22). Part of the discrepancy may have been due to a difference in the selection criterion: persons aged 21 and over in the former sub-sample, persons aged 18 and over in the latter.

[5] Italy experienced in 1947 a few months of very high inflation – the cost of living index rising by 46.5 per cent between January and September – but prices remained fairly stable in the last quarter of 1947 and during 1948 when the survey was conducted. Incomes estimated at different time periods were therefore sufficiently homogeneous in terms of purchasing power.

was arbitrarily set equal to 100,000 lire, and the last, where it was the actual average income deduced from the questionnaires.

The indirect way of estimating income, the lack of updated information on the demographic structure of the Italian population and the sampling procedure made the results of the 1948 survey very imprecise. In the first report, Luzzatto Fegiz (1949, p. 7) remarked that "despite the caveats, the curves may be confidently used as an approximate synthesis of the economic and social structure of the country", but he later stressed that the survey was overall a useful experiment for future work (Luzzatto Fegiz, 1950, p. 346). He was inclined to believe that the average income of poor households had been underestimated as account had not been taken of non-monetary incomes, especially important for rural households; he regarded the number of households in upper-middle classes as overstated, since "in general interviewers tend to approach, in each category, individuals who are by education and income above rather than below the average" (Luzzatto Fegiz, 1949, p. 7), though very rich households were probably under-represented. In spite of its many shortcomings, the 1948 Doxa survey has a particular relevance for being the first national sample survey on household income in Italy, and for its international use. Its summary statistics, both national and regional, were extensively studied by Kuznets (1963); they were later drawn from this source by Paukert (1973), whence they eventually crept into some of the databases recently assembled to study the impact of initial income inequality on economic growth.[6]

Two further income surveys were conducted by Doxa in the 1950s. In 1955, a random sample of 1,235 adults was interviewed about their incomes and standard of living in 1938 and 1955. The monthly household income was explicitly asked; non-responses amounted to 10 per cent and appeared to be more frequent among upper classes. The other survey was conducted in 1958-59. Two distinct sub-samples, for a total of about 5,500 households, were drawn randomly in three stages (municipalities, local areas, and households); the Electoral Register was used in the last two stages. Monthly household income was ascertained by asking the respondent – as a rule, the housewife – to indicate the income bracket from among a few predetermined classes, 4 in the first sub-sample and 6 in the other. The two sub-

---

[6] See Alesina and Perotti (1996), Alesina and Rodrik (1992), Perotti (1994, 1996), Persson and Tabellini (1992, 1994). Clarke (1995), another article in this strand of literature, used instead the data from the Bank of Italy's survey as reported in United Nations (1981).

samples gave similar results for the upper tail of the distribution, but not for the remaining part: when faced with the choice among 3 classes instead of 2, fewer people appeared to indicate the bottom class.

3. The Istat sample surveys on households' income

3.1 The sample survey of household budgets of 1963-64

Information on the distribution of income was first gathered by Istat in a survey of household budgets conducted in 1963-64 as part of a project of the statistical office of the European Community.[7] The sample unit was the household defined in a broad sense as a group of individuals related to each other by links of blood, marriage or affection, living together and pooling (part of) their incomes (servants living with the household were also included). The survey was restricted to households with at least two members, for the reason that one-person households "... generally show a distinctive behaviour, especially with regard to consumption" (Istat, 1968, p. 8). The sample was derived in two stages from the sample of the labour force survey for 1962, by random selection of municipalities (stratified into 12 clusters by region and demographic size) and households (divided into 90 strata by composition and head of household's occupation and social condition). Around 1,000 households were interviewed every month from March 1963 to February 1964, for a total of 13,235 households out of a population of 12 millions. Non-responding units were replaced with ones with similar characteristics.

A section of the questionnaire was devoted to incomes earned by all members of the household in the twelve months preceding the interview. Annual after-tax incomes were collected by type and earner and then aggregated to give an estimate of total household income. Payments in kind and consumption from own-production were included, but no reference was made to imputed rents for owner-occupied dwellings. In very few cases the income section was completed by the interviewer. Controls were implemented to eliminate coding and processing errors, but no correction procedure was applied when the figures on income and expenditure turned out to be inconsistent. In 37.7 per cent of the questionnaires

---

[7] Interviewer-based estimates of household incomes were collected by Istat also in 1953-54 in a survey of the budgets of non-rural households (Istat, 1960), but the figures for incomes were never released.

receipts fell short of disbursements, and overall the mean expenditure turned out to be 6.6 per cent higher than the mean income.

From the viewpoint of this paper, the use of this survey is limited. The negative mean discrepancy between income and expenditure might signal a rather serious under-reporting of income, while the exclusion of single-member households precludes or restricts comparisons with national accounts and other surveys. Moreover, published figures are relatively scarce. The distributions for a few household characteristics were published by De Meo (1967) together with the Gini indices of concentration for income and expenditure (29.6 and 30.4 per cent, respectively), but neither decile or quintile shares were provided, nor was the detailed information on the distribution of different sources of income explored.

3.2 The Survey of Household Budgets

Statistics on income distribution started to be collected regularly in 1979,[8] when Istat extended the coverage of its long-established expenditure survey (SHB) to income and saving, in order to comply with harmonising criteria set by EEC directives. The statistical office abstained, however, from gathering detailed information, and devised a minimal extension consisting of one additional question on the household's monthly income, and two additional questions on its annual saving. The survey so modified was carried out yearly from 1979 with characteristics largely unchanged until 1997, when major innovations were introduced; the following refers to the survey as it was before these innovations.[9]

3.2.1 The survey unit

Until 1987, the survey unit was the household as defined at registry offices (henceforth called "legal" family). Because these registrations had, for a series of reasons, little

---

[8]   The income data relative to 1979 were not released because unreliable. The collection of information on household incomes had been experimented in a survey on housing in 1977 (with 4 income ranges) and in a survey on health and labour conditions in 1978 (with 7 income ranges).

[9]   A substantial revision of the SHB was urged by a panel of experts that, in the early 1990s, gave an overall assessment of the survey in a research project known as CON.PRI.; many suggestions were later incorporated in the blueprint by Innocenzi (1994). Official documentation of the modifications actually implemented is not yet available; however, the detailed recording of incomes by source and individual suggested by Innocenzi (1994) was definitely not introduced.

relationship with the concept of household as an economic unit, and because of the difficulty of separating the legal family out from a group of people living together, since 1988 the reference unit has been the household. This is defined as a group of resident individuals, linked by ties of blood, marriage or affection, living together and pooling all or part of their incomes; persons looking after children and servants are included. Institutional population is not covered.

3.2.2 The sampling design

Sampling is in two stages. In the first stage, municipalities are divided into two groups: all provincial capitals and other municipalities with more than 50,000 inhabitants (about 150) are included in the sample, while the remaining ones are grouped according to their physical and economic characteristics into 135 strata; 3 municipalities are selected from each stratum and participate in the survey for one calendar quarter. As a result, the annual sample comprises about 550 municipalities. In general, one third of municipalities in the second group is replaced every year. In the second stage, around 39,000 households are sampled (23,000 since 1996): until June 1991, they were randomly selected from the list prepared for the quarterly labour force survey, but they have been independently drawn directly from the registry office records since then. With a sampling rate of 0.2 per cent, the SHB was until 1996 one of the largest expenditure surveys conducted in European countries (Innocenzi, 1992, p. 28, Table 12; Zaidi and de Vos, 1998, p. 6, Table 1).

3.2.3 The realisation of the survey and the response rate

The field survey is carried out by municipalities, under Istat supervision. Statistical offices or general managers of municipalities are in charge of the operation at the local level: they select and train the interviewers,[10] perform a first manual check of the questionnaires,

---

[10] Interviewers are often selected among the municipality's employees: in June 1991 they accounted for 58 per cent of the total number of interviewers recorded in Istat's database (Istat, 1992a, p. 8, Table 3). Most interviewers have no specific training in interviewing techniques, and a substantial proportion of them have a low level of education (in June 1991, the share that had not gone beyond secondary school was 28 per cent in the total, and 36 per cent among those employed by municipalities. Istat, 1992a, p. 10, Table 7). The quality of interviewers has been a recurrent matter of criticism of the SHB (e.g. Fabbris *et al.*, 1986, pp. 17-19; Lucev, 1992b, p. 20).

and finally send them to Istat. The little control that Istat has of this phase is a critical aspect of the SHB.

Every month one twelfth of the households participate in the survey either through a personal interview or by filling the questionnaire and mailing it to Istat (between 1980 and 1982, only 5 per cent chose this option. *SBMS*, 1983, No. 25, p. 18). After a high and fixed number of questions on personal characteristics, purchases of consumer goods and possession of durables, households are asked to indicate among 16 brackets the ones corresponding to their own total monthly income and annual saving. In order to enhance confidentiality, respondents may choose to do this on a separate sheet, which is then sealed and handed to the interviewer, or mailed to the Istat regional office. An independent assessment of the income and saving classes is also made by the interviewer. Income ranges are periodically updated.

Non-responses may be due to first-stage units (municipalities), and second-stage units (households). Non-responding municipalities, which also include those failing to meet the deadline, are not substituted. By contrast, non-responding households are replaced with others of "similar characteristics" – in practice, this boils down to area of residence and household size (Coccia, Grassi and Sanzo, 1995, pp. 120-21). Available data do not allow us to discriminate exactly between the two types of non-response. However, by assuming that all non-responding households are actually replaced, first-stage non-responses may be approximated by the difference between planned and returned questionnaires, while second-stage non-responses may be measured by the number of replaced units (Table 1).

The pattern of non-responses is rather stable over time: between 1985 and 1995 around 11 per cent of the planned questionnaires were not returned to Istat by non-responding municipalities, while in 1990 and 1995, the only two years for which figures are available, non-responses imputable to households accounted for about 8 per cent of the total contacts, as approximated by the sum of returned questionnaires and replaced households. Coccia, Grassi and Sanzo (1995, p. 119) reported that about a third of the replacements in 1990 were caused by the household's refusal to co-operate, while the rest were due to other reasons (e.g. death, emigration, temporary absence, etc.). For both sampling stages, Lucev (1992a) and Coccia, Grassi and Sanzo (1995) found evidence of regional patterns in non-responses, but neither estimated the likely bias of the results.

3.2.4 The processing of the results

A first set of manual and automatic controls corrects coding errors, imputes missing values, drops incomplete or inconsistent questionnaires, examines and possibly eliminates questionnaires containing outliers.[11] About 98 per cent of questionnaires in the 1980s, and 94 per cent in the 1990s survived this selection (Table 1).

Table 1

RESPONSE AND CORRECTION RATES. SHB, 1980-1996
(units and per cent)

Year	Planned question- naires	Returned question- naires	1st stage response rate (a)	Replaced households	2nd stage response rate (b)	Utilised question- naires	Utilisation rate (c)	Corrected question- naires (d)	Correction rate (e)
1980		32,778				32,252	98.4	14,176	44.0
1981		32,670				32,096	98.2	12,721	39.6
1982		32,976				32,236	97.8	13,143	40.8
1983									
1984									
1985	38,500	33,495	87.0			32,725	97.7		
1986	38,646	34,008	88.0			33,622	98.9		
1987	38,862	35,361	91.0			34,758	98.3		
1988	38,988	35,028	89.8			34,501	98.5		
1989	38,988	34,692	89.0			33,668	97.0		33
1990	39,024	34,764	89.1	2,848	92.4	33,172	95.4		
1991	39,168	34,302	87.6			32,148	93.7		
1992	39,168	34,197	87.3			31,915	93.3		
1993	39,168	36,363	92.8			34,273	94.3		
1994	39,168	33,928	86.6						
1995	39,168	34,403	87.8	3,002	92.0				
1996	22,740								

Sources and notes: Istat, *SBMS*, *CI* and *I*, various issues. The information was integrated with unpublished figures provided by Gianfranco Innocenzi of Istat. The number of replaced households in 1995 was drawn from Coccia, Grassi and Sanzo (1995, p. 126, Table 1); the correction rate for 1989 from Innocenzi (1992, p. 18). – (a) Ratio of returned to planned questionnaires. – (b) Ratio of returned questionnaires to the sum of returned questionnaires and replaced households. Replacement includes all cases of non-response (head of household unknown, dead, ill, emigrated, or repeatedly absent, and refusing to co-operate). – (c) Ratio of utilised to returned questionnaires. – (d) Correction here refers only to replacements of declared income by the sum of current expenditure and saving. – (e) Ratio of corrected to utilised questionnaires.

---

[11] With regards to the income question, Innocenzi (1992, p. 20, Table 4) reported that 810 of the 2,154 questionnaires collected in October 1990 had been examined, and that in 3 cases out of 4 this had led to a correction. The extent and nature of the manual revisions were also studied by Lucev (1992b).

A second validating procedure is designed only for the income question. It checks declared income against the sum of consumption expenditure and monthly saving, and replaces the latter for the former whenever the discrepancy is deemed unacceptable. The presumption is that the great detail of the expenditure questions makes it less likely for households to answer incorrectly, while the underestimation of saving is less severe than that of income (*SBMS*, 1983, No. 25, p. 25).[12] More precisely, the consistency correction is implemented by computing, for each household, the current expenditure as $CE \equiv TE - IR - \frac{23}{24} DE$, where *TE*, *IR* and *DE* are the total expenditure, the imputed rent of the owner-occupied house and the expenditure for durable goods, respectively. The corrected income *CY* is then obtained as follows:[13]

$$(1) \qquad CY \equiv \begin{cases} DY + IR & \text{if } CE \leq MY \\ CE + DS + IR & \text{if } CE > MY \end{cases}$$

where *DY* and *MY* are the central value and the upper limit, respectively, of the income class indicated by the household (values for bottom and top intervals are calculated on the basis of the distribution of the expenditure), and *DS* is equal to 1/12 of the central value of the saving class. The effect of the correction is to reduce measured inequality appreciably, for both its likelihood and extent are inversely related to the declared income (Table 2; data are available only for 1980-82).

The final step in processing the data is a double procedure of post-stratification which aims at re-establishing the reference population in each stratum, and the distribution by household size within a region (as obtained in the labour force survey). Post-stratification partly corrects for the effects of non-responses. The reference population is periodically updated to incorporate census data and other evidence on changes in the universe. Revisions took place in 1983, 1986, 1990 and 1993: in all cases, it was suggested that, unlike the levels, no significant alterations had occurred to the "structural information" (e.g. Istat, *CI*, 1990, No. 7, p. 10).

---

[12] The opposite position – i.e. that saving figures are less reliable than income figures – was argued in recent publications (e.g. *CI*, 1990, No. 7, p. 10), but the correction procedure remained unchanged.

[13] Unlike the second line in (1), the definition given in *SBMS* (1983, No. 25, p. 28) and repeated in Moriani (1986, p. 71) includes a fourth term equal to one instalment of the expenditure for consumer durables. That formulation would, however, contradict the explicit assumption that durables pay for themselves in two years, because current expenditure already contains 1/24 of the expenditure for durables.

Table 2

EXTENT AND EFFECTS OF THE CONSISTENCY CORRECTION. SHB, 1980-82
(per cent)

Declared income range (thousands of lire)	Share of corrected questionnaires			Mean income increase			Pre-correction distribution			Post-correction distribution		
	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982
below 400	53.7	45.0	41.7	67.6	71.6	107.4	25.1	17.3	9.9	12.3	8.6	5.9
400-600	48.4	46.2	47.1	39.1	40.7	40.5	28.4	17.9	15.9	20.4	13.2	7.7
600-800	43.4	44.1	48.8	30.8	33.2	37.5	18.9	24.3	21.7	17.7	16.7	14.4
800-1,000	37.0	40.3	45.6	24.2	26.4	32.6	12.7	14.9	17.5	15.3	14.3	13.4
1,000-1,200	31.1	33.2	39.8	19.1	20.8	25.8	7.3	10.0	10.7	11.7	12.6	12.8
1,200-1,500	24.7	26.7	31.0	13.3	16.7	19.5	4.5	8.8	12.0	10.6	14.6	16.3
1,500-2,000	15.7	17.3	20.4	11.0	11.7	12.9	1.6	4.6	8.1	7.3	11.7	16.2
2,000-2,500	10.6	15.6	16.4	4.7	8.5	9.8	0.5	1.2	2.5	2.4	4.4	6.7
2,500-3,000	16.4	15.4	13.5	9.5	8.3	7.4	0.2	0.4	0.8	1.1	1.9	3.0
over 3,000	0.0	2.4	9.6	0.0	2.7	6.7	0.8	0.6	1.1	1.2	1.8	3.5
Total	44.0	39.6	40.8	29.3	26.7	26.6	100.0	100.0	100.0	100.0	100.0	100.0

Sources and notes: Author's elaboration on data from *SBMS* (1983, No. 25, p. 29, Table 3; p. 31, Table 4; p. 32, Table 5).

3.2.5 The definition of income

Respondents provide an estimate of the household's total monthly disposable income. The question specifies that this should include all household members' wages and salaries, income from self-employment, rents, pensions, transfers, etc. net of taxes and social security contributions. No reference is made to interest, dividends and other financial income, or to interest payments for mortgages. Payments in kind and consumption from own production are registered in the expenditure section, but they are not explicitly mentioned in the income section. While the former should be included according to the SHB instructions (Istat, 1990, p. 36), official publications are somewhat contradictory about the latter: consumption from own production was first claimed to be excluded (e.g. *SBMS*, 1985, No. 2, p. 9), then to be included, though households might fail to do so (e.g. *CI*, 1990, No. 7, pp. 9-10). Imputed rents of owner-occupied dwellings are ascertained with a separate question and then added to declared income. As the income questions makes no reference to a specific time period, people are expected to provide an estimate close to 1/12 of their annual income, which is seen as a measure of their monthly "normal" income (e.g. *SBMS*, 1983, No. 25, p. 17).

3.2.6 Some remarks about the SHB income data

There is some consensus that the SHB provides rather poor evidence on the distribution of household income in Italy. Thus, for instance, the official poverty statistics are based on the SHB data on expenditure rather than income (Commissione di indagine sulla povertà e sull'emarginazione, 1996a, 1996b; Istat, 1997a). Two main factors lend some support to this critical judgement: the simplistic formulation of the income question; and the nature and extent of the consistency correction of declared incomes.

The simplicity of the income question aims at making people less reticent and enabling them to provide more detailed information. However, as pointed out by Fabbris *et al.* (1986, pp. 16-17), focusing on the monthly income without qualifications is likely to lead them to overlook additional monthly salary (*tredicesima*, paid once a year in December), bonuses and other extra (possibly seasonal) remuneration, as well as receipts such as dividends and interest on financial assets, which are typically paid once or twice a year. This shortcoming is recognised by Istat and used to justify (part of) the discrepancy between the survey-based estimate of household income and the estimate computed from national accounts (e.g. *SBMS*, 1985, No. 2, p. 9). Along with the underestimation of mean income, measures of inequality are likely to be biased, although it is difficult to ascertain in which direction.

On the other hand, the appropriateness of correcting declared incomes on the basis of current expenditure can be disputed on several grounds. First, the assumption that consumer durables pay for themselves in only two years tends to overinflate current expenditure. National accounts estimates of the aggregate stock of consumer durables generally assume much longer service lives: for instance, the values used by the U.S. Bureau of Economic Analysis range from 3 years for tires and tubes to 14 years for furniture, but most durable goods have service lives of 9 to 10 years (Katz and Herman, 1997, p. 72, Table A. Similar values were used for Italy by Manfroni, 1976, and Pagliano and Rossi, 1992). With these values, the fraction of durables expenditure to include in the current expenditure would be substantially lower, and the correction of declared income would be less likely.

Second, the impact of the consistency correction hinges critically on the interaction between under-reporting and expenditure at different income levels. Roughly speaking, the ratio of current expenditure to true income is generally above or close to 1 for the poorest

households and then falls as income rises. Whenever the proportion of undeclared revenues to true income is roughly constant, or diminishes more slowly than the expenditure ratio, the consistency requirement is more easily satisfied in the upper tail than in the lower tail of the true income distribution. As a result, the likely effect of the correction is to bias measures of income inequality downwards (see also Targetti Lenti, 1984, p. 133). On the basis of data for 1980-82, the issue is clearly of some importance, since about 40 per cent of the questionnaires used were then adjusted, with an upward revision of the average income by some 27-29 per cent (Table 2).

Lastly, the theoretical basis of the correction is rather shaky. We need not subscribe to the permanent income theory to recognise that consumers' spending decisions depend not only on their current incomes, but also on their expected future revenues, personal wealth and credit access. For some households, borrowing constraints may be severe enough to hamper expenditure in excess of available resources; but even in the presence of imperfect capital markets, there are several formal and informal ways to finance current expenses, from interpersonal loans to consumer credit. That such behaviour is not sustainable over time can hardly be inferred from observing the expenses incurred in a period as short as one month for non-durables and three months for durables. In brief, we may reasonably expect a much looser relationship between current income and expenditure than the one implied by the SHB consistency correction.

3.3 The European Community Household Panel

In 1994, Istat initiated a new survey which supplies the Italian data in the European Community Household Panel (ECHP). The ECHP is a multidimensional longitudinal household survey that collects information on personal income and living standards in the European Union. Data are gathered in national surveys that share "... a standardised design and common technical and implementation procedures, with centralised support and co-ordination ... by Eurostat" (Eurostat, 1996, p. 8). The original microdata are merged in a single database by Eurostat. Some data on income distribution and poverty were recently released by Eurostat (1997; 1998a, 1998b), but official documentation is still relatively

scarce. The information reported below was drawn from Eurostat (1996) and Regoli (1996).[14]

Most features of the sampling design and fieldwork organisation of the Italian ECHP are similar to those of the SHB. The main departures stem from the longitudinal nature of the survey. After the selection of households in the first wave, strict rules are set to follow, in subsequent waves, all persons included in the initial sample still alive and living in a country of the European Union, and the children born to sample persons. Longitudinal weights are computed yearly to adjust for the attrition of the sample and the changes in the population. In waves 1 and 2, the response rates, gross and net of ineligible units, were about 90 per cent (Table 3). For a number of important income components, in 1993 missing values were imputed by a random hotdeck technique; non-responses were below 5 per cent for these items, except rental income, which was missing in 44.3 per cent of the cases (Eurostat, 1996, p. 38, Table 11).

Table 3

RESPONSE RATES. ECHP, 1993-94
(units and per cent)

Year	Wave	Selected households	Responses	Refusals (a)	Absent units	Ineligible units	Gross response rate (b)	Net response rate (c)
1993	Wave 1	7,989	7,115	196	482	196	89.1	91.3
1994	Wave 2	7,844	7,128	291	363	62	90.9	91.6
	- completed at wave 1	7,087	6,697	163	201	26	94.5	94.8
	- non-contacts at wave 1	462	187	119	140	16	40.5	41.9
	- new households	295	244	9	22	20	82.7	88.7

Sources and notes: Based on data drawn from Regoli (1996, Tables 3 and 4). – (a) Including physical incapacity (8 units in 1993 and 20 in 1994) and, in 1993, 79 units for which the reason for non-response was not indicated. – (b) Ratio of responses to contacted households. – (c) Ratio of responses to contacted households net of ineligible units.

---

[14] See Callan and Nolan (1997) for a preliminary assessment of the evidence on income distribution in wave 1 of the ECHP. This paper was commissioned by Eurostat as part of a project to evaluate the quality of the ECHP. Revised wave 1 data were subsequently prepared by Eurostat.

As in the SHB, the household is defined as a group of individuals sharing the same dwelling and common living arrangements, including persons temporarily absent and domestic staff. The questionnaire includes many questions on personal and household characteristics, ranging from health, education, migrations and labour market status to housing conditions and deprivation indicators.

With regard to income, most items are recorded separately for each adult (aged 16 and over) member of the household. Earnings from main employment are separated into standard monthly wages (pre- and post-tax, inclusive of payments in kind) and other net extra payments. Earnings from self-employment are defined as before-tax operating profits, and are attributed to only one person in the household when more members take part in the activity (there may be some ambiguity about whether profits are defined net or gross of consumption of fixed capital). Other labour incomes are separately recorded net of taxes. Post-tax transfers are distinguished according to their nature (labour market subsidies, private and public pensions, maternity and household allowances, scholarships, etc.). The last two sources of individual income are economic support from friends and relatives, and a single figure for all (financial) investment incomes.

Data for rents from real estates, social assistance payments received, and lottery winnings and inheritances exceeding 4 million lire are obtained at the household level, along with an estimate of the household's average total post-tax monthly income. The estimated rent on owner-occupied dwellings is not asked for,[15] and the information collected on mortgage repayments does not allow interest to be separated from principal. The only information on consumption from own production is whether it is worth more than 2 million lire. The household's after-tax income is obtained by adding all components for all adult members; this operation requires modelling the tax and social security deductions for self-employment incomes.

---

[15] However, the information on the characteristics of the dwelling where the household lives and on the actual rents paid by tenant households in the sample should allow the estimate of the imputed rent.

4. The Bank of Italy Survey of Households' Income and Wealth

After a series of pilot surveys carried out in 1961-62 jointly with Isco, in 1966 the Bank of Italy started to publish and comment on a regular basis the results of the Survey of Households' Income and Wealth (SHIW). Twenty-six surveys have been conducted since then, yearly until 1987 (except for 1985) and every two years thereafter (the reference is to the year *for* which, not *in* which, the survey is conducted). The interviews for the twenty-seventh survey, relative to incomes earned in 1998, are scheduled for early 1999.

4.1 The survey unit

The basic survey unit is the household, which is defined as a group of individuals linked by ties of blood, marriage or affection, sharing the same dwelling and pooling all or part of their incomes. Institutional population is not included. On the basis of this definition, individuals who live together solely for economic reasons are not considered members of the same household, while only one unit is recorded where two or more interrelated legal families live together. This is the main reason why the survey-based estimates of average household size tend to exceed the Census estimates based on the registry office definition (Table 4). The same pattern emerged from the Survey on Household Structure and Behaviour (SHSB) carried out by Istat in 1983, according to which the average number of members in each unit rose from 3.0 to 3.2 when the household was substituted for the legal family as the survey unit (Istat, 1985, Appendix A). Using the broader definition, the number of single-member units fell from 16 to 13 per cent of the total, with a most significant change among the elderly population. While 21 per cent of persons aged 65 to 74 and 32 per cent of persons older than 75 appeared to live alone according to the registry office definition, the actual proportions were 16 and 25 per cent, respectively; the differences were even larger in municipalities with more than 100,000 inhabitants.

4.2 The sampling design

The sampling design remained essentially unchanged until the survey for 1983, after which major modifications were introduced. Sampling is carried out in two stages: municipalities are selected in the first, households in the second.

AVERAGE HOUSEHOLD SIZE. SELECTED YEARS
(members per household)

Year	SHIW	SHB	Census	SHSB	
				Legal families	Households
1971	3.6		3.3		
1981	3.3	3.2	3.0		
1983	3.3	3.0		3.0	3.2
1991	3.0	2.7	2.8		

Sources and notes: *SHIW*: Banca d'Italia, *BS* and *SBS*, various issues. *SHB*: Istat, *SBMS* and *CI*, various issues; computed as the ratio of household to per capita income. *Census*: Istat (1992b, p. 7, Table 8). *SHSB*: Istat (1985, p. 386, Table 1).

Municipalities were divided into 50 strata until 1980 and 85 strata (5 of which were empty) between 1981 and 1984, according to geographical and demographic characteristics (derived from the list of television subscribers); they were then selected on the basis of criteria of convenience in the collection of data. This had the undesirable effect that some backward areas of the country were probably under-represented, owing to the absence of professional interviewers in those areas; moreover, the first-stage sample was not random, preventing researchers from computing actual sampling errors (Fabbris *et al.*, 1986, p. 21). To obviate these problems, the sample design was entirely revised in 1986 on the basis of the design of Istat labour force survey. Municipalities were divided into 51 strata, defined by 17 regions and 3 classes of population size: over 40,000, 20,000 to 40,000, under 20,000 inhabitants. All municipalities in the first class were included, while the others were randomly selected with probability proportional to their demographic size, after further stratification of the third class by altitude and by predominant economic activity of the population. Since 1989 the selection process has been further modified for the municipalities in the second and third classes: they are now randomly selected with constant probability and their rotation from one survey to the other has been substantially limited by the introduction of a panel section.

Since access to registry office records is restricted, until 1983 the choice of households was based on the Electoral Register, from which a number of names equal to twice the desired sample size was drawn. This was likely to bias incomes upwards, because

households with more adults, and hence a potentially higher income, were more likely to be selected.[16] Since 1984 the collaboration of Istat and of the municipalities involved has made it possible to select units from the registry office records, thus eliminating the bias. The sample size was initially set at 3,000 on the basis of considerations regarding the desired sampling error and confidence levels. It was raised to 4,000 in 1981 to increase the accuracy of estimates for regional sub-samples (published, however, only for 1981-83), and to 8,000 in 1986.

Frequent modifications have affected the proportionality between the sample size in each stratum and the reference population. Proportional samples were drawn from 1965 to 1970, from 1976 to 1980, and then again in 1986. In 1971 and 1972 households resident in Southern Italy were over-sampled, whereas in 1973, 1974 and 1975 the attention focused on high-income households.[17] Non-proportional sampling was re-introduced in 1981 to improve the quality of information at the regional level: one of three different sample sizes (200, 250 and 300) was assigned to each region depending on the desired sampling error, and in each region the number of planned interviews per stratum depended on the income variability within the stratum. In 1987 households headed by senior white-collar employees and self-employed businessmen and professionals were over-sampled to increase the frequency of high-income units.

In order to allow for better comparisons over time, since 1989 part of the sample consists of households already interviewed in the previous survey. The proportion rose from 15 per cent in 1989 to 45 per cent in 1995; some were interviewed in all last four surveys. The households included in the panel are selected with criteria similar to those described above, except that, in 1991 and 1993, they were chosen among those that had previously

---

[16] After re-weighting the data for 1983 on the basis of the household structure of the 1984 sample, the mean annual household income turned out to be 4 per cent lower.

[17] The total samples were obtained merging ordinary sub-samples of 2,500 households with special sub-samples of 500 high-income households. The latter were households that the interviewers chose in certain areas among those having presumed income higher than 8 million lire, and that turned out to have an income of at least 5.5 million lire. These thresholds were maintained unchanged despite the rapid rise of *nominal* incomes, which led the share of households with income over 5.5 million lire to increase from 12 to 26 per cent between 1973 and 1975. The effect was to dilute the effectiveness of over-sampling. See *BS* (1977, No. 1, pp. 24-28) for a discussion, and D'Apice (1977, pp. 35-37) for very critical remarks.

expressed their willingness to being re-interviewed. Since 1995, new units formed by persons leaving a household included in the panel are also included.[18]

4.3 *Performance of the survey and the response rate*

The actual performance of the survey is contracted out to a private company, which provides professionally trained interviewers. Data are collected in personal interviews, generally in the first half of the year, and refer to household budgets in the previous calendar year, which in Italy coincides with the fiscal year. Questions concerning the whole household are answered by the head of household or by the person most knowledgeable about its finances; questions about individual incomes are answered by each member, unless he/she is absent. Each schedule is completed by the interviewers, who are given special training. Meetings are organised to discuss the aims of the survey, the variables investigated and the structure of the questionnaire; after the first few interviews the entire data acquisition procedure is re-examined and possible systematic errors – due, for instance, to the misunderstanding of a question – are corrected so as to avoid their recurring in the remaining interviews.

For both responding and non-responding households interviewers are required to complete a section of the questionnaire on the household's characteristics such as the sex and age of the head of household, the number of members and the quality and location of the home. Because of the modular structure of the questionnaire, the number of questions per interview depends on the household's status and is highly variable; in 1995, the interview lasted, on average, 56 minutes. Non-responding households are replaced with pre-selected units from the same stratum.

The gross response rate was slightly above 50 per cent in the early 1970s and fluctuated around 60 per cent until 1987; it dropped to only 37 per cent in 1989 and 32 per

---

[18] For a comparison between the panel section and whole sample in the SHIW for 1989 and 1991 as regards income and socio-demographic variables, see Quintano, Castellano and Romano (1996, pp. 11-57).

cent in 1991;[19] thanks to a special effort, it was raised again to just over 50 per cent in the last two surveys (Table 5). The picture is only marginally better for the net response rate, which is computed after excluding the households of the persons who turn out to be unknown, dead or emigrated (ineligible units).[20] A large proportion of non-responses is due to the explicit refusal to co-operate (three out of ten households contacted in 1995), despite the devices adopted to overcome distrust.[21] It is worth mentioning that, unlike Istat surveys, participation in the SHIW is voluntary.

On the basis of the characteristics specified by the interviewers for all the households contacted, it seems likely that the response rate is inversely correlated with household income and wealth, leading to a probable underestimation of the mean and of the dispersion of incomes. In a recent analysis, Cannari and D'Alessio (1992) used the panel section of the 1989 survey to study the response rate and the reasons for non-responses in relation to household characteristics and income as reported in the 1987 survey. They found that the response rate fell from 26 per cent for the low- and middle-income households, to about 20 per cent for the upper-middle income ones, and to 14 per cent for the wealthiest (Cannari and D'Alessio, 1992, p. 17, Table 1). As a result, the average income of responding households was about 5 per cent lower than the average income computed across all households approached for the panel.

---

[19]   There are no obvious reasons to account for this sudden fall, except for the fact that, for the first time, interviewers were also paid for information provided for each non-responding unit. The decline could thus be explained either by the under-reporting of non-responding units in previous surveys, or by an opposite tendency to inflate non-responses in 1989 and 1991, or by a combination of the two. The first hypothesis is the most worrying, since it implies that the actual response rates were lower in the past than those officially recorded.

[20]   In the panel section, after the particularly low figures of 1989 – which could reflect the fact that households had not been advised in advance – the gross and net response rates gradually increased to 75 and 78 per cent, respectively. Battipaglia (1995) examined the attrition in the panel, and the variability across three different waves of the responses on the size and the year of construction of the dwelling.

[21]   Shortly before the interviews are scheduled every household is sent a letter explaining the aims of the survey and assuring that all the information collected will be treated anonymously; households are provided on request with a copy of Bank of Italy publications containing the reports of previous surveys. Interviewers carry special identification cards and letters of introduction. Finally, respondents are not asked to show pay-slips or other documents.

Table 5

RESPONSE AND UTILISATION RATES. SHIW, 1965-1995

(units and per cent)

Year	Selected households	Responses	Refusals	Absent units	Ineligible units (a)	Gross response rate (b)	Net response rate (c)	Utilised ques- tionnaires	Utilisation rate (d)
1965								3,343	
1966	4,487	2,995				66.7			
1967	5,741	3,349				58.3			
1968	6,135	3,478				56.7			
1969								3,355	
1970								3,522	
1971									
1972		4,381						4,279	97.7
1973	5,415	2,870				53.0		2,761	96.2
1974	5,737	2,926				51.0		2,892	98.8
1975	5,582	3,126				54.0		3,109	99.5
1976	6,270	3,198				51.0		2,981	93.2
1977	5,498	3,079				56.0		2,916	94.7
1978	5,320	3,192				60.0		3,044	95.4
1979	5,067	3,192				63.0		2,886	90.4
1980	4,441	3,091				69.6		2,981	96.4
1981	6,269	4,188				66.8		4,088	97.6
1982	6,694	4,063				60.7		3,966	97.6
1983	7,219	4,180				57.9		4,107	98.3
1984	6,816	4,192				61.5		4,172	99.5
1986	13,044	8,022				61.6			
1987	13,446	8,027	2,662	1,802	955	59.7	64.3		
1989	22,344	8,274	9,427	3,855	788	37.0	38.4		
1991	25,210	8,188	6,962	9,481	579	32.5	33.2		
1993	15,759	8,089	3,152	2,761	1,756	51.3	57.8		
1995	15,606	8,135	3,653	2,510	1,308	52.1	56.9		
Panel section									
1989	5,185	1,208	2,593	1,026	358	23.3	25.0		
1991	4,134	2,187	1,071	790	86	52.9	54.0		
1993	5,397	3,470	804	620	503	64.3	70.9		
1995	4,833	3,645	779	259	150	75.4	77.8		

Sources and notes: Banca d'Italia, *BS* and *SBS*, various issues; information completed when necessary with figures drawn from the reports prepared by the private companies conducting the survey for the Bank of Italy. – (a) Ineligible units include the households of persons unknown, dead or emigrated. – (b) Ratio of responses to selected households. – (c) Ratio of responses to selected households net of ineligible units. – (d) Ratio of utilised questionnaires to responses.

4.4 Processing the results

Questionnaires go through several checking procedures. Throughout the fieldwork, systematic reporting mistakes and missed answers are located manually; during this stage

every incorrect or incomplete questionnaire is returned to the interviewer for correction or completion. In the second stage, automatic controls are implemented to eliminate coding and computation errors as well as unreliable questionnaires. If important information, such as the main components of total household income, is still missing, the questionnaire is discarded; otherwise, missing values may be imputed using regression techniques.[22] In the third phase, each questionnaire showing inconsistent values of income, consumption and saving is analysed separately. If no explanation for the inconsistencies is found – possibly after further contacts with the respondents – the questionnaire is discarded. Until 1987, the questionnaires relating to households that declared negative self-employment income were discarded. In general, more than 95 per cent of questionnaires was utilised until 1984; virtually no questionnaire was discarded thereafter (Table 5). The planned structure of the sample is re-established through a process of post-stratification, so that the published figures are corrected for differential response rates by sample stratum.[23] Since 1989, the results are corrected to make the socio-demographic characteristics of the panel section representative of the sample of the previous year.

4.5 The information collected and the definition of income

The design of the questionnaire has been considerably modified over the years as regards the number, quality and definition of the variables surveyed. In recent surveys, special sections have been introduced to study in detail specific subjects (e.g. intergenerational transfers of wealth, use of health, educational and transport services, social mobility, subjective evaluation of working conditions). Sex, age and relationship to the head of the household have been generally collected for all members, while education, occupational status and economic sector have been recorded for all income recipients. The information on household expenditure for consumer goods has been gathered since 1980, with only minor modifications over the years, apart from the distinction between durables and non-durables, which is not available for 1986. Estimates of expenditure for durable

---

[22]   In an extensive study of alternative methods for the imputation of partial non-responses in SHIW income data, Quintano, Castellano and Romano (1996) found that regression-based procedures were out-performed by other techniques, and, in particular, that they reduced the variability of the distribution.

[23]   Hackauf *et al.* (1990, p. 229, Tables 3.1 and 3.2) showed that the effect of such correction in the 1986 SHIW was to reduce average post-tax household income by 4 per cent.

goods are also available between 1966 and 1975. Data on financial assets have not been collected in a continuous manner and have undergone frequent changes of definition. Estimates of real estate, on the other hand, are available for all surveys and are based on definitions kept largely unchanged.

The basic definitions of income and its components were fairly stable until 1986. An exception was that of income from property, which varied mainly in terms of the inclusion or not of imputed rents, interest and dividends. Rents for the owner-occupied dwelling started to be imputed in 1973, and for other property in 1976, on the basis of the estimates provided by owners. Dividends and interest received were recorded in 1973-75 and then regularly since 1986 (interest on bank and postal accounts and government bonds were also recorded in 1982-84): until 1986 interviewees were explicitly questioned on these items; since then the items have been calculated by multiplying a household's holdings of each financial asset by the relevant average market return. The overall revision of the structure of the survey carried out in 1986 made the definitions closer to those used in compiling national accounts by introducing the distinction between receipts on income account and transfers on capital account (e.g. inheritances, lottery wins, etc.), by recording receipts and disbursements of interest in the year they accrue rather than in the year they are actually paid, and by distinguishing between income from private unincorporated enterprises and that from quasi-corporate enterprises. All income is recorded net of payments of taxes and social security contributions and no information on taxation is collected. The absence of this information constitutes the main departure from United Nations' *Guidelines* (1977), to which the current SHIW definition is otherwise fairly close.[24] A synopsis of the basic components that formed household disposable income in each survey is given in Table 6, where they are denoted by a shaded area.

Raw data are generally collected on an individual basis and total figures are obtained by subsequent aggregation. Only interest and dividends, consumption and financial assets are surveyed at the household level. Separate records have generally been kept for each recipient of income. The exceptions are income from participation in household businesses, which is

---

[24] The SHIW also differs because no attempt is made to estimate production for own account and entrepreneurial income is included in household income after deducting the depreciation of fixed capital (though this item is separately recorded).

conventionally assigned to the main owner (except in 1989), and income earned by minors and/or below a certain threshold, which was attributed to the head of household until 1976.

4.6 Data availability and the Historical Archive

The results of the SHIW are illustrated in aggregate form in Bank of Italy's official publications. Microdata are later released in public-use files, available free of charge for institutions and researchers in Italy and abroad. Selected years of the SHIW microdata are also available in the Luxembourg Income Study (LIS) database, since the late 1980s.[25] Because it is so accessible, the SHIW has been used extensively not only to study the distribution of income and wealth but, more generally, to analyse the microeconomic behaviour of Italian households. The latest updating (December 1998) of the bibliography of works based on the SHIW listed almost 300 references (Banca d'Italia, 1998).[26]

Although the SHIW provides unique documentation of distributive changes since the late 1960s, its evidence has to be treated with due attention. We have already mentioned that the the high proportion of non-responses may have altered the representativeness of the samples, and we shall examine below to what extent the data are affected by under-reporting. A third important point to keep in mind is that the SHIW underwent several modifications (summarised in Table 7), hindering temporal comparisons; the numerous changes in the definition of households' disposable income, in particular, complicate historical analyses based on published data alone.

---

[25] In December 1998, the available datasets were those for 1986, 1991 and 1995. For information about the LIS project see Smeeding, O'Higgins and Rainwater (1990) and the LIS website (http://lissy.ceps.lu).

[26] For an example of studies of household saving and consumption see Ando, Guiso and Visco (1994). Some articles on the labour market are briefly surveyed by Cannari and Gavosto (1995, pp. 75-79). In the recent literature on wage dispersion, the SHIW data were used in the international comparisons by Erickson and Ichino (1995), Blau and Kahn (1996a, 1996b), OECD (1996). International comparative studies of household income distribution using the SHIW data were Sawyer (1976), Atkinson, Rainwater and Smeeding (1995), and Gottschalk and Smeeding (1997); in the recent Italian literature, see the reports on distribution and redistribution edited by Rossi (1993, 1994, 1996, 1998). Lastly, the SHIW microdata have been used in all Italian tax-and-benefit microsimulation models (see Sutherland, 1995, for a survey).

Table 6

COMPONENTS INCLUDED IN THE DEFINITION OF DISPOSABLE HOUSEHOLD INCOME. SHIW, 1966-1995 (a)

Type of income (b)	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	86	87	89	91	93	95

Income from employment
wages and salaries (c)
payments in kind (d)

Net self-employment income (e)
income from independent professional and other self-employment activities
income from participation in private unincorporated enterprises
income from participation in private companies and quasi-companies
consumption of fixed capital (-)

Property income
income from participation in private companies and quasi-companies
imputed rent of the owner-occupied dwelling
imputed rents of other property not rented for cash (f)
cash rents of property
interest on bank and postal accounts
interest on government bonds
interest on other financial assets
dividends
interest on mortgages (-)

Transfers
old-age, early retirement, disability and other pensions (g)
social assistance (h)
scholarships
casualty insurance claims
other current transfers (e.g. alimony)
severance pay
other transfers on capital account (e.g. inheritances, lottery wins)

Sources and notes: Author's reconstruction based on Banca d'Italia, *BS* and *SBS*, various issues, and the original SHIW questionnaires when available. When no precise information was found, the definitions were assumed to coincide with those of the previous year. – (a) A shaded area indicates that the income component was included in the year. – (b) All incomes are recorded net of taxes and social security contributions. For self-employment income in 1966-1984 relevant taxes were those actually paid in the year. – (c) Including earnings from overtime work, and the "thirteen month" (*tredicesima*), bonuses, commissions, etc. – (d) Separately recorded since 1980. – (e) Excluding production for own account. – (f) Only for property still owned by the family at the end of the year. Since 1995, imputed rents on property used by self-employed family members for their economic activity are excluded. – (g) Including arrears. – (h) Until 1993, it mainly consists of the benefits paid by *Cassa integrazione guadagni* (wage supplementation fund), plus other unspecified illness or income support benefits. Since 1995, a more detailed question separately records wage supplementation payments, special unemployment benefits (*indennità di mobilità*), other unemployment benefits, and economic support distinguished by paying institution (central, regional, provincial and municipal governments, local health units, other local public institutions, private social institutions).

Table 7

MAIN CHANGES IN THE SHIW, 1966-1995

Years	Changes in the sample	Changes in the definition of income	Comments
1968 →		Transfers other than pensions included	
1971 ↔ 1972	Over-sampling of units living in Southern Italy		
1973 →		Imputed rents of owner-occupied housing included	
1973 ↔1975	Over-sampling of high-income units		Possible increase of inequality
		Receipts from interest and dividends included	Likely increase of inequality
1981 →	Sample size increased to 4,000		
1982 →		Receipts from interest included	Likely increase of inequality
1984 →	Units drawn from registry office records instead of electoral lists		Reduction of average unit size and mean income; virtually no effect on inequality
1986 →	Revision of the sample design; random selection of first-stage units; sample size increased to 8,000		Better representation of poor areas of the country
		Mortgage interest and dividends included	Uncertain effect on inequality
		Transfers on capital account excluded	Unknown effect on inequality
1987 ↔ 1987	Over-sampling of high-income units		Slightly higher mean income; slight increase in the shares of middle deciles at the expense of bottom and top deciles
1989 →	Introduction of a panel section		Virtually no effect on mean income and inequality

Sources and notes: Author's reconstruction on the basis of the information described in the text. The symbol → denotes permanent changes. The symbol ↔ means that the change or changes were applied only in the period indicated and later dropped (even if, in some cases, they were subsequently re-instated).

In order to enhance comparisons over time, the Statistics Unit of the Bank of Italy's Research Department has constructed a Historical Archive (SHIW-HA), starting with 1977 (microdata for preceding years are no longer available). The archive comprises two sections. The "basic files" include the elementary variables as originally gathered; they cover the personal characteristics of each household member, the incomes earned and job status of each income recipient, the real estate, financial assets and liabilities held by the household; variables collected occasionally or in special sections are excluded (D'Alessio and Gallo, 1997). The "derived files" contain data on income, expenditure and wealth aggregated according to homogeneous rules at the individual and household level; they also include a set of weights adjusted to bring five socio-demographic marginal distributions into line with the corresponding distributions found in Istat's population statistics and labour force survey (D'Alessio, 1997).

5. The Isco Consumer Survey

Isco has conducted its monthly Consumer Survey (CS) since 1980 as part of a European project aiming at gauging consumer sentiment. The CS collects qualitative information on households' assessment of the general state of the economy and their personal economic situation (in the preceeding and following 12 months) as well as on their intentions of purchasing durable goods and incurring home improvement expenses. Answers are summarised in a widely used indicator of household confidence.

The CS is conducted monthly (excluding August, until 1995) by telephone on a sample of about 2,000 units. The sampling unit was the household until 1997; since January 1998 it is the individual adult. The sample is selected from the list of telephone subscribers and is stratified by geographical area and size of municipality. Non-responding units are replaced by similar ones. Until 1995 questions were answered by the head of household; they are now answered by any adult member earning an income. Since 1982 Isco has introduced two quantitative income questions. Respondents are asked to select among 22 brackets those corresponding to: (a) the monthly income a household like their own needs to achieve a decent standard of living, and (b) the total monthly income of their own household. The household income is explicitly defined as including income from labour, property (rents and

interest), transfers (pensions) and other sources. In the monthly publication containing the results of the survey, the answers are grouped into 7 income classes.

Despite the widespread use of the CS information, no technical documentation is available, and nothing is known about response rates, automatic controls, imputation of missing data and procedures of post-stratification. The income questions, in particular, were ignored until very recently, when Brandolini and Parigi (1993) examined alternative hypotheses to estimate the mean and dispersion of household incomes from published data; this methodology was later applied by Isco (1997) to compute a monthly indicator of household income. In theory, the information of the CS lends itself to estimating indices of income inequality, and, by exploiting both income questions, to constructing measures of subjective poverty (e.g. Hagenaars, 1986). The CS evidence on income distribution is evidently very crude, but it is readily available and its high frequency is not at the expense of sample size (the quarterly sample comprises about 6,000 units). Distributive indicators based on CS data have already been successfully used as predictors of short-term movements in consumption expenditure (Parigi and Schlitzer, 1995, 1997); interpreted with due caution, they might help us to discern changes in the distribution as they occur.

6. The quality of income data in the SHIW and the SHB

There are several ways to assess the quality of income surveys. First, internal checks can provide estimates of the selection bias generated by differential response rates and the under-reporting of certain types of income. Second, survey data can be compared with information from other sources on the demographic structure and the composition of the labour force, and with aggregate figures from the national accounts and flow of funds. In the following, we review the results of some recent studies concerning the SHIW and present new evidence for both the SHIW and the SHB.

6.1 Effects of selection bias and under-reporting on the SHIW income estimates

According to the estimates by Cannari and D'Alessio (1992) mentioned in Section 4.3, the average household income for 1987 rose by about 5 per cent when the negative correlation between response rates and income levels was corrected. Using the 1989 survey,

Cannari and Violi (1995) studied the under-reporting of labour income by the self-employed. They assumed that: (a) the amount of labour income was fully declared by employed heads of household but under-reported by self-employed ones; (b) both household types had the same expenditure function for food.[27] Under these assumptions, they estimated that the under-reporting of labour income of the households of the self-employed amounted, on average,[28] to over 20 per cent, which is lower than the 35 per cent found by Pissarides and Weber (1989) in a similar study for the United Kingdom. Cannari and D'Alessio (1990) evaluated the under-reporting of occupied real estate by referring to declarations made by occupiers rather than owners, and found that only one out of six houses rented by one household to another was declared by owners in 1987 (see also Brandolini and Cannari, 1994, pp. 383-84). On that basis, they revised upwards the estimate of average household income for 1987 by about 4 per cent, a figure that would probably rise in parallel with the level of household income. With regard to households' financial assets, a number of papers (Cannari et al., 1990; Cannari and D'Alessio, 1993, 1994; Brandolini, Cannari and D'Alessio, 1994) documented how SHIW estimates fall considerably short of corresponding flow of funds figures. This evidence also suggested little correlation between the degree of under-reporting and the level of financial wealth or income, except perhaps for a slightly higher occurrence among the poorest households; however, no measure of the effect on income distribution was provided.

6.2 Comparison between SHIW data and labour force statistics

The labour market status of all household members is defined as the prevalent occupation in the year.[29] Since published data typically refer to the heads of households, we

---

[27] The precautionary saving motive, which should be more important for the self-employed than for employees, was accounted for by introducing a measure of the variability of expected future earnings among the regressors. Such measure was based on the subjective probability distributions of the changes expected by respondents in their nominal earnings and the general price level, according to a methodology originally developed by Guiso, Jappelli and Terlizzese (1992).

[28] Since under-reporting was modelled by a linear relationship between the logarithms of true and reported earnings, Cannari and Violi's results implies that labour incomes were under-reported only above a certain threshold (30 or 32 million lire, depending on the specification), while they were over-reported below that threshold. The correction for under-reporting would lead to a significant rise of measured inequality among the households of the self-employed and, probably, among all households.

[29] This information is complemented by other data (e.g. months worked in the year, average number of hours worked per week), which are collected separately for every main and secondary job. For an assessment of labour market data in the SHIW see Cannari and Gavosto (1995).

used the microdata to compute the composition of the population in the SHIW, and we compared the results with the statistics derived from the Istat Labour Force Survey (LFS).[30] In the years 1986-1995, the SHIW population's shares were higher than those of the LFS for salaried employees and employers and professionals but lower for wage-earners and persons working on own account; on balance, the employed appeared to be over-represented in 1987-89 and under-represented in the other years (Table 8). The proportion of the unemployed and first-job seekers was virtually nil in 1986 and 1987, and then rose to 5-7 per cent in 1989-1995; the corresponding LFS figures varied between 3 and 4 per cent. Focusing on the last 4 years – the sharp change between 1987 and 1989 was probably due to the rewording of the questionnaire – the SHIW showed an almost double proportion of unemployed persons or first-job seekers. The discrepancy is largely explained by the narrower definition used in the LFS, which requires an active job-search for an individual to be classified as unemployed; with a looser definition, based on the individual's declaration, in 1995 the LFS proportion of unemployed and first-job seekers would have been 5.9 instead of 3.8 per cent. Lastly, the SHIW under-representation of housewives combined with the over-representation of pensioners (identified in the LFS with the sum of retired and disabled persons). These differences probably stem from the SHIW emphasis on income, so that a housewife receiving a pension may see herself as a homemaker in the LFS and a pensioner in the SHIW. If we reclassify housewives aged 65 and over as pensioners, in 1995 the share of pensioners in the LFS goes up from 17.3 to 21.2 per cent and that of housewives falls accordingly.

These observations suggest that some of the distance between the SHIW and the LFS can be explained by differences in definitions. However, the composition of the population by occupation is not entirely satisfactory in the SHIW, and for some exercises the adoption of the post-stratification recently proposed by D'Alessio (1997) (see Section 4.6 above) may be advisable. After re-weighting the original data of the SHIW-HA according to the socio-demographic structure of the Italian population described in official statistics, D'Alessio (1997) found that the variations of the estimates for 1977-1995 were rather modest for the average household income but quite substantial for its main components. In particular,

---

[30] The LFS figures are annual averages of quarterly data. The size of the annual sample gradually rose to almost 150,000 households in the late 1980s; it has since been reduced to about 70,000 units. For a critical description of the LFS see Trivellato (1991) and Cannari and Sestito (1995).

income from self-employment was significantly revised upwards, while wages and salaries were revised downwards. As a result, the inequality of total income as measured by the Gini index increased in all years, and especially at the beginning of the period (see Section 7 below).

<div align="right">Table 8</div>

**COMPOSITION OF THE HOUSEHOLD POPULATION IN THE SHIW
AND IN THE LFS, 1986-1995**
(per cent)

Household member status	SHIW (a)						LFS (b)					
	1986	1987	1989	1991	1993	1995	1986	1987	1989	1991	1993	1995
Wage-earners	14.6	14.8	13.5	12.7	12.4	12.5	14.8	14.5	14.4	14.5	13.4	12.6
Salaried employees	12.6	13.9	15.8	15.0	13.9	13.5	11.2	11.5	11.9	12.6	12.5	12.5
Total employees	27.2	28.7	29.3	27.7	26.3	26.0	26.0	26.0	26.3	27.1	25.9	25.1
Employers, professionals	1.2	1.6	2.2	2.5	2.5	2.4	1.3	1.3	1.5	1.6	1.8	1.9
Persons working on own account	6.6	6.3	5.8	6.5	5.7	6.3	7.6	7.6	7.6	7.6	6.9	6.8
Unpaid household workers	1.6	1.3	1.0				1.9	1.9	1.6	1.5	1.7	1.5
Total self-employed	9.4	9.2	9.0	9.0	8.2	8.7	10.8	10.8	10.7	10.7	10.4	10.2
Total employment	36.6	37.9	38.3	36.7	34.5	34.7	36.8	36.8	37.0	37.8	36.3	35.3
Unemployed and first-job seekers	0.2	0.2	5.7	5.3	6.7	6.8	3.2	3.4	3.4	3.1	3.3	3.8
Housewives	14.0	14.4	13.1	12.7	12.0	11.6	17.7	17.4	17.0	16.3	15.6	15.1
Pensioners	17.2	18.1	18.8	20.6	21.7	23.2	15.4	16.1	17.0	16.4	16.8	17.3
Others	32.0	29.4	24.1	24.7	25.1	23.7	26.9	26.3	25.6	26.4	28.0	28.5
Non labour force	63.2	61.9	56.0	58.0	58.8	58.5	60.0	59.8	59.6	59.1	60.4	60.9

Sources and notes: *SHIW*: author's elaboration on SHIW microdata. *LFS*: Istat, *CI* and *SASI-CL*, various issues. – (a) Data computed using the original sample weights, which correct for the differential response rate in each stratum. Figures for 1987 exclude the over-sampling of high-income units. – (b) Because of the extensive revision of the LFS carried out in 1992, the figures for 1993 and 1995 are not entirely comparable with those for the previous years. In particular, the employed were redefined to include individuals who fail to declare an occupation but whose response to a subsequent question reveals they have been working some hours in the reference week.

A second problem derives from the difficulties encountered by the SHIW, and more generally household surveys, in capturing secondary jobs (see Hackauf *et al.*, 1990, p. 201; Brandolini and Cannari, 1994, p. 376; Cannari and Gavosto, 1995, pp. 73-75). In the SHIW, the proportion of employed with a secondary job dropped from 5-6 per cent in 1978-79 to 2-3 per cent in the 1990s; the same trend was showed by the LFS statistics, whose sharp fall in

1984 was probably due to the change of the reference population. Both series largely underestimated the corresponding national accounts statistics, which also exhibited an opposite tendency over the period (Table 9).[31]

The underestimation of secondary jobs is likely to have a discernible influence not only on mean values but also on measured inequality, though the sign of such effect is undefined. On closer scrutiny, however, the bias is not as serious as it may seem. First, all job positions were given equal treatment, with no discrimination between full-time and part-time or permanent and occasional jobs. By allowing for such differences and making the comparison on the basis of "equivalent labour units", national accounts estimates fall considerably, and the divergence with the SHIW is somewhat reduced (bottom panel of Table 9). Second, any adjustment of national accounts to take account of the informal or hidden economy, in which secondary jobs are generally included, is by its very nature problematic and bound to produce estimates surrounded by considerable uncertainty. The estimates of secondary jobs, in particular, are recognised as constituting one of the "most sensitive points" (Istat, 1988, p. 17).

6.3 Comparison between survey estimates and national accounts aggregates

Aggregate estimates derived from national accounts give an external yardstick that is often used to assess the quality of survey figures.[32] The exercise requires dealing with three distinct issues (e.g. Atkinson and Micklewright, 1983): grossing-up of survey figures, institutional population and definition of national accounts aggregates.

The survey data are derived from a sample whose size has varied over the years between 23,000 and 36,000 units for the SHB, and between 3,000 and 8,000 for the SHIW. Survey totals can be grossed-up to the aggregates of national accounts by multiplying either *per household* averages by the total number of resident households, or *per capita* averages by the total number of resident individuals. Provided that individuals living in institutions are excluded, the two methods are equivalent if the mean household sizes in the survey and

---

[31] Cannari, Ceriani and D'Alessio (1997, p. 522) estimated that the number of tax-payers with secondary jobs in the SHIW for 1989 was substantially lower than in the tax records for the same financial year.

[32] Rough comparisons are routinely presented in official publications. Additional evidence was provided by Lemmi (1981), Targetti Lenti (1984, pp. 127-29) and Brandolini and Cannari (1994, pp. 376-80).

population statistics coincide; alternatively, the estimates are bound to depend on the procedure adopted. Here, data from either survey were grossed up on an individual basis, first because the definition of household used in the surveys differs from that used in population statistics, and, second, because the total number of families recorded at registry offices is generally regarded as unreliable.[33]

Table 9

SECONDARY JOBS IN THE SHIW, THE LFS AND NATIONAL ACCOUNTS, 1977-1995
(per cent)

Year	SHIW (a)			LFS (b)	National accounts (c)		
	Employees	Self-employed	Total	Total	Employees	Self-employed	Total
I. Job positions							
1977	1.1	2.8	3.9	9.9			
1978	1.5	3.4	4.9	8.1			
1979	1.6	4.4	6.0	7.4			
1980	1.3	2.7	4.0	8.1	4.0	26.1	30.1
1981	1.3	2.6	4.0	8.0	4.0	26.6	30.6
1982	2.2	2.3	4.5	7.2	4.1	27.3	31.5
1983	1.0	2.3	3.3	7.2	4.6	27.8	32.4
1984	0.9	2.5	3.4	1.7	4.7	28.1	32.8
1986	0.7	2.2	2.9	2.0	4.7	28.1	32.8
1987	0.7	1.5	2.3	2.5	4.9	28.6	33.5
1989	0.3	1.2	1.5	2.4	5.3	28.5	33.8
1991	0.3	1.0	1.3	2.3	5.1	27.3	32.5
1993	0.2	1.9	2.1	1.3	5.5	27.7	33.2
1995	0.5	2.5	3.0	1.3	5.7	28.9	34.6
II. Equivalent labour units							
1987	0.8	0.7	1.3		2.0	7.0	9.0
1989	0.3	0.6	0.8		2.2	6.8	9.0
1991	0.4	0.5	0.8		2.1	6.7	8.8
1993	0.1	0.6	0.7		2.3	6.4	8.7

Sources and notes: *SHIW*: *1977-1983*: Banca d'Italia, *BS* and *SBS*, various issues; *1984-1995*: author's elaboration on SHIW microdata. *LFS*: Istat, *CI* and *SASI-CL*, various issues. *National accounts*: Istat (1997c). – (a) Ratio of secondary jobs to total primary jobs (only one primary job was counted for persons who held two or more primary positions for part of the year). The employment totals were estimated by using the original sample weights, which correct for the differential response rate in each stratum. The figures in equivalent labour units were computed by multiplying each secondary job by the ratio between hours worked in secondary and primary jobs; a similar adjustment was applied to part-time primary jobs. – (b) Employed with one or more secondary jobs. – (c) Ratio of secondary jobs to total primary jobs, excluding non-resident foreign workers.

---

[33] In 1991 the total resident population in registry office records exceeded the Census figure by just over a million; similar discrepancies had been found also in previous Censuses (Istat, 1996, p. 8).

The second issue is that survey data do not cover the institutional population, i.e. persons living permanently in hostels, hotels, boarding houses, nursing homes for the elderly and the ill, residential schools, prisons, military bases. According to the latest Census, in 1991 the institutional population amounted to about 456,000 persons, or 0.81 per cent of the total resident population (Istat, 1992b); this proportion was 1.20 in 1971 and 0.85 in 1981 (Istat, 1989, p. 148, Table 1). The effect of any adjustment of survey totals for the institutional population is therefore likely to be negligible. Since the population series used here includes individuals living in institutions, grossed-up survey figures implicitly assign them the same per capita income as individuals living in households.

The third problem is to render survey totals and national accounts figures comparable. Because of the importance of unincorporated enterprises, the Italian official statistics divide the *household sector* into two sub-sectors: *sole proprietorships with fewer than 20 employees* and *consumer households*. Contrary to appearances, it is the whole household sector that constitutes the most appropriate term of comparison for survey totals. Basically, the methodology developed by Istat requires separating household savings from enterprise savings. Referring to the consumer household sector would imply that the same reasoning is also made by survey respondents, but it is rather unlikely that people running an independent activity, such as shopkeepers, craftsmen or professionals, actually regard the retained profits from their entrepreneurial activity as distinct from the household budget. In practice, the national accounts series was constructed by amending the gross disposable income of consumer households in two ways. In the first place, "withdrawals from sole proprietorships with fewer than 20 employees" were increased by the "net disposable income" of these businesses:[34] with this more comprehensive definition, income from small enterprises was, on average, 2 per cent lower in the 1970s, 3 per cent higher in the 1980s, and about the same in the 1990s; the effect on total income was about a third of these values. Secondly, the transactions of non-profit private institutions, that are included in the household sector, and

---

[34] Disposable income was taken net of the depreciation of fixed capital consistently with the SHIW question. In the previous version of this paper and in Brandolini and Cannari (1994), the income from sole proprietorships with fewer than 20 employees was approximated by the *net operating surplus* of these businesses. The differences between the two alternatives are small, and arise from the inclusion in the definition favoured here of those redistributive transactions which are attributable to the business activity (in particular, direct taxes, interest paid and received, rents and casualty insurance). This solution was preferred because it seemed closer to the formulation of the SHIW questions.

other minor items which have no counterpart in survey data (e.g. net casualty insurance premiums, imputed interest accruing to insurance policy holders) were eliminated. Further details on calculations and data sources are given in Appendix A.

6.3.1 Comparison between SHB estimates and national accounts aggregates

The comparison of the SHB grossed-up totals with the national accounts figures is fairly straightforward. In addition to the aggregate household income just described, a second series was derived by excluding less regular sources of income (mainly, net interest received and dividends) and their share of direct taxes. After reaching 37 per cent in 1982, the shortfall stabilised at about 30 per cent of the basic series, to rise again to 33 per cent in 1995-96; using the second definition, the discrepancy was 6 to 9 points lower (Table 10).[35]

6.3.2 Comparison between SHIW estimates and national accounts aggregates

The availability of separate information on different income components allows us to draw a more elaborate comparison for the SHIW. As the sources of income covered changed over time, the national accounts series for household income had to be adjusted accordingly year by year. The ratio of this harmonised series to the basic series was about 0.90 in 1970-72 and 0.94 in 1976-1981; it was close to 1 in all other years (Table 11). In other words, during most of the 1970s, 6 to 10 per cent of households' aggregate disposable income was not covered by the SHIW questionnaire.

On average, from 1970 to 1995, the grossed-up survey totals fell short of the national accounts harmonised series by about 30 per cent; year-to-year variations were considerable. The totals based on published figures show a gradual lessening of the gap with national accounts in the 1970s, but the shortfall suddenly rose again in the early 1980s; it has generally exceeded 32 per cent since then, with the exception of 1987 and 1989, when it dropped to 27 and 24 per cent. As could be expected, when we use the estimates by D'Alessio (1997), based on the Historical Archive, the pattern is somewhat more stable. Regardless of the weights utilised, in the period 1977-1995 the discrepancies for the series

---

[35] Mantegazza and Tassinari (1992) compared aggregate estimates of households' expenditure based on the SHB with the corresponding figures in national accounts, and observed a rise in the average shortfall from around 12 per cent in the early 1970s to over 20 in the late 1980s. However, they warned against the presumption that national accounts provide the "accurate" estimates, showing how changes in their underlying methodology significantly affected the extent of the discrepancy.

HOUSEHOLDS' DISPOSABLE INCOME IN THE SHB AND NATIONAL ACCOUNTS, 1980-1996
(billions of lire at current prices and per cent)

Year	SHB	National accounts	Discrepancy	National accounts (excluding less regular incomes)	Discrepancy
1980	199,730	292,702	-31.8	271,526	-26.4
1981	235,472	361,521	-34.9	330,590	-28.8
1982	268,016	428,231	-37.4	386,290	-30.6
1983	329,882	498,933	-33.9	449,651	-26.6
1984	371,370	558,789	-33.5	502,568	-26.1
1985	419,694	615,122	-31.8	556,054	-24.5
1986	466,743	679,248	-31.3	615,857	-24.2
1987	511,843	735,277	-30.4	669,270	-23.5
1988	554,563	804,173	-31.0	729,369	-24.0
1989	611,812	872,409	-29.9	784,305	-22.0
1990	664,587	963,816	-31.0	862,905	-23.0
1991	755,667	1,064,143	-29.0	946,130	-20.1
1992	789,200	1,144,159	-31.0	1,007,361	-21.7
1993	798,438	1,142,159	-30.1	1,001,984	-20.3
1994	829,124	1,205,287	-31.2	1,074,406	-22.8
1995	867,616	1,294,444	-33.0	1,148,265	-24.4
1996	902,773	1,353,449	-33.3	1,207,939	-25.3
Mean			-32.0		-24.4

Sources and notes: Author's calculations (see text for details). Discrepancy is the percentage shortfall of the SHB aggregate relative to the corresponding national accounts figure.

excluding net interest and dividends averaged out at about 28 per cent, varying from 24 to 32 per cent; including net interest and dividends, in the five years for which data are available the mean shortfall was 32 per cent.

The difficulty in decomposing the shortfall by sources of income is that direct taxes on income and wealth are not broken down accordingly, so that some arbitrary criterion of imputation has to be adopted. The preferable procedure of estimating pre-tax totals from the survey microdata was not applied because of its high computational cost; instead, post-tax income aggregates were derived from national accounts by assigning each type of income a proportional share of direct taxes. The resulting aggregates were then compared with SHIW totals derived from the more consistent estimates by D'Alessio (1997) rather than the original published data (Table 12).

Table 11

HOUSEHOLDS' DISPOSABLE INCOME IN THE SHIW AND NATIONAL ACCOUNTS, 1970-1995

(billions of lire at current prices and per cent)

Year	National accounts basic series	Coverage ratio	National accounts series harmonised with SHIW	SHIW	Discrep- ancy	National accounts series harmonised with SHIW-HA		SHIW-HA Old weights				SHIW-HA New weights			
						excluding net interest and dividends	including net interest and dividends	excluding net interest and dividends	discrep- ancy	including net interest and dividends	discrep- ancy	excluding net interest and dividends	discrep- ancy	including net interest and dividends	discrep- ancy
1970	49,79(90.2		44,90'	28,768	-35.9										
1971	55,13:89.4		49,30!	31,759	-35.6										
1972	61,06!88.8		54,23:	35,451	-34.6										
1973	73,86·101.5		74,95'	54,473	-27.3										
1974	92,21:101.9		93,99!	66,107	-29.7										
1975	108,47(101.9		110,55(	78,814	-28.7										
1976	133,50(94.5		126,15:	94,338	-25.2										
1977	164,45:93.9		154,35·	117,629	-23.8	152,91(		112,106	-26.7			112,139	-26.7		
1978	195,06:93.7		182,72·	140,097	-23.3	181,05:		135,430	-25.2			128,629	-29.0		
1979	235,28'94.0		221,10·	165,505	-25.1	219,04·		159,534	-27.2			156,166	-28.7		
1980	292,70:93.6		274,049	220,035	-19.7	271,52(		205,111	-24.5			203,673	-25.0		
1981	361,52:92.2		333,329	236,609	-29.0	330,59(		230,837	-30.2			223,610	-32.4		
1982	428,23:101.3		433,829	292,879	-32.5	386,29(		275,833	-28.6			266,919	-30.9		
1983	498,93:101.2		504,87	342,513	-32.2	449,65:		331,431	-26.3			322,627	-28.2		
1984	558,78!101.3		565,86·	393,332	-30.5	502,56:		375,564	-25.3			367,996	-26.8		
1986	679,24:98.8		670,97:	429,127	-36.0	615,85'		417,881	-32.1			416,566	-32.4		
1987	735,27'98.8		726,51:	527,533	-27.4	669,27(	726,51:	482,077	-28.0	497,754	-31.5	477,117	-28.7	492,142	-32.3
1989	872,40(98.6		859,89(	649,714	-24.4	784,30:	859,89(	598,273	-23.7	623,722	-27.5	588,057	-25.0	614,550	-28.5
1991	1,06·98.5		1,04:	693,657	-33.8	946,13(	1,04:	665,643	-29.6	687,432	-34.4	667,040	-29.5	689,892	-34.2
1993	1,14:98.7		1,12(	760,268	-32.5	1,00	1,12(	729,999	-27.1	759,479	-32.6	731,960	-26.9	762,766	-32.3
1995	1,29·98.6		1,27(	834,180	-34.7	1,14:	1,27(	805,713	-29.8	830,536	-35.0	808,773	-29.6	834,356	-34.7
Mean					-29.6				-27.5		-32.2		-28.6		-32.4

Sources and notes: Author's calculations (see text for details). The underlying SHIW figures are drawn from the official publications. The underlying SHIW-HA figures are estimates by D'Alessio (1997, pp. 24-37, Tables A.3-A.16). "Old weights" indicates use of the original sample weights. "New weights" indicates use of the weights derived from post-stratifying the sample according to the socio-demographic characteristics of the population. The coverage ratio is the percentage ratio of the national accounts harmonised series to the national accounts basic series. Discrepancy is the percentage shortfall of the SHIW aggregate relative to the corresponding national accounts figure.

Except in a few years, income from employment was satisfactorily measured until 1989, but in the early 1990s the discrepancy with the aggregate data rose to over 10 per cent. By contrast, self-employment income and net interest and dividends appear to have been very poorly captured in the survey: the shortfall of the former ranged from 50 to 60 per cent of the national accounts figures, while that of the latter was about three quarters between 1987 and 1995. The gap between survey totals and national accounts tended to narrow only for transfers: in 1995 it was down to about a quarter. Rents, inclusive of imputed rents on owner-occupied dwellings, are the only item for which survey data generally overstated national accounts figures.

Table 12

**DISCREPANCY BETWEEN POST-TAX INCOME COMPONENTS IN THE SHIW
AND NATIONAL ACCOUNTS, 1977-1995**
(per cent)

Year	Income from employment		Income from self-employment		Cash and imputed rents		Net interest and dividends		Transfers	
	old weights	new weights	old weights	new weights	old weights	new weights	old weights	new weights	old weights	new weights
1977	-10.3	-23.3	-57.3	-39.6	5.4	14.8			-32.1	-32.4
1978	-3.0	-25.1	-57.8	-46.2	9.3	18.2			-39.4	-29.6
1979	-11.2	-29.2	-54.8	-41.5	13.2	27.9			-36.4	-30.6
1980	-6.6	-24.4	-54.0	-38.4	13.9	27.0			-27.6	-22.1
1981	-6.9	-28.3	-65.7	-48.8	-0.3	11.6			-33.6	-29.9
1982	-1.8	-24.9	-60.0	-45.0	5.4	14.7			-45.6	-36.7
1983	-1.9	-22.4	-57.3	-42.7	12.3	20.5			-40.2	-35.1
1984	-3.3	-21.9	-52.6	-37.4	4.1	9.0			-39.4	-35.3
1986	-13.8	-22.3	-59.1	-52.9	-6.9	-3.0			-36.5	-32.6
1987	-5.9	-17.2	-60.0	-49.5	1.4	5.1	-72.6	-73.8	-34.0	-34.0
1989	-1.9	-14.6	-54.6	-45.5	8.4	9.2	-66.3	-64.9	-34.1	-30.6
1991	-16.0	-20.6	-58.0	-52.5	2.0	2.8	-78.6	-77.6	-31.6	-30.4
1993	-10.8	-16.4	-63.1	-55.6	10.8	11.6	-76.4	-75.3	-29.8	-29.2
1995	-14.4	-18.4	-68.4	-63.8	8.9	10.6	-80.7	-80.1	-26.1	-25.7
Mean	-7.7	-22.1	-58.8	-47.1	6.3	12.9	-74.9	-74.3	-34.7	-31.0

Sources and notes: Author's calculations (see text for details). The underlying SHIW figures are drawn from D'Alessio (1997, pp. 24-37, Tables A.3-A.16). "Old weights" indicates use of the original sample weights. "New weights" indicates use of the weights derived from post-stratifying the sample according to the socio-demographic characteristics of the population. Discrepancy is the percentage shortfall of the SHIW aggregate relative to the corresponding national accounts figure.

Unlike total income, the decomposition by income sources is significantly affected by the post-stratification according to the socio-demographic characteristics of the population. The shortfall for income from self-employment is noticeably reduced at the expense of a considerable increase in the discrepancy for wages and salaries; transfers appear to be slightly less underestimated, while the overestimate of rents is amplified; the discrepancy is virtually unchanged for net income from financial wealth.

These estimates are rather crude measures of the under-reporting of income sources in the SHIW. Nonetheless, the order of magnitude of the discrepancy between the SHIW and national accounts is such as to demand some caution in the use of the data, and to call for further investigations. Interest and dividends emerge as a particularly serious problem area. Since they are calculated by multiplying the holdings of each financial asset by the relevant market yield, their under-reporting reflects the difficulty of measuring financial wealth in household surveys. Independently of the reasons underlying this difficulty, it seems appropriate to compute the remuneration of financial assets after they have been adjusted for non- and under-reporting; this can be done by applying a method developed by Cannari and D'Alessio (1993) and fruitfully employed in recent studies of the wealth distribution.[36] The under-reporting of income from self-employment is common to income surveys. In the United Kingdom, for instance, Atkinson and Micklewright (1983, pp. 39-41) found that the divergence between Household Expenditure Survey and national accounts was typically around 50 per cent on raw data, though it declined to about 30 per cent after appropriate adjustments to enhance comparability. However, the underestimation has a much larger impact on Italian income statistics, since the self-employed represent almost a third of total civilian employment and their income accounts for about a quarter of the total household income (on the basis of national accounts data as reclassified here). The problem is not only that the self-employed show a greater reluctance to disclose their incomes, but also that it is difficult for them to measure their earnings and for researchers to define conceptual frames

---

[36] The method extends a procedure, originally used by Cannari *et al.* (1990), based on the integration of the SHIW 1987 sub-sample of households holding bank deposits with the sample of a survey carried out by Banca Nazionale del Lavoro among its customers in 1987. This sample was not representative of the Italian population, but it was supposed to provide more reliable information on households' financial assets, owing to the greater trust that customers are likely to place in their own bank. In 1987, the effect of the adjustments for non- and under-reporting of total financial assets was to halve the shortfall with respect to the flow of funds (from 69.3 to 33.3 per cent).

that fit a wide spectrum of activities, ranging from marginal and precarious jobs to very profitable professional occupations.

There are other important factors that contribute to some of the discrepancies between the SHIW and national accounts. In the first place, the imprecision of survey-based estimates is amplified by the inadequacy of information on the size and distribution of the Italian population, which affects both the survey design, and the grossing-up of survey data. Secondly, some of the differences in the definitions and methods used in compiling national accounts and those in the survey are irreducible, so that the figures from the two sources can never be rendered perfectly comparable. One example is the depreciation of fixed capital, which is estimated on the basis of the perpetual inventory method in national accounts, whereas it tends to be based on historical costs and tax criteria in survey respondents' answers. Another example is the production for own consumption of farmers: this item is not recorded in the SHIW, but enters into the national accounts definition of household income used here as part of the net disposable income from small agricultural enterprises. A third example is the imputation of the rents on owner-occupied dwellings: until 1994, the computation of this national accounts series relied on owners' declarations, whereas it is now based on actual market prices. Should we use the old national account series, the overestimate of cash and imputed rents in the SHIW would virtually disappear (Table 13). This brings in a third factor: national accounts are based on accounting conventions and methodologies that are subject to periodic modification. Thus, the revision just mentioned of the method of calculating imputed rents caused an average reduction of over 4 per cent, in the period 1980-1994, in the gross operating surplus of consumer households; a similar change in the recording of interest on postal deposits, implemented in 1996, caused interest received by households to be revised downwards by about 3 per cent in the period 1980-1995. Last but not least, the national accounts figures themselves are far from free of measurement errors, particularly owing to the obvious difficulties involved in estimating the hidden economy. These estimates are based on the comparison of pieces of information derived from different sources, and are critically dependent on procedures of imputation very sensitive to measurement errors. To sum up, it would be wrong to blame survey data alone for their discrepancies with national accounts.

Table 13

**DISCREPANCY BETWEEN POST-TAX INCOME COMPONENTS IN THE SHIW
AND OLD AND NEW NATIONAL ACCOUNTS, AVERAGES OVER THE PERIOD 1980-1993**
(per cent)

Year	Income from employment		Income from self-employment		Cash and im- puted rents		Net interest and dividends		Transfers	
	old weights	new weights	old weights	new weights	old weights	new weights	old weights	new weights	old weights	new weights
Old national accounts	-6.7	-21.2	-58.6	-47.0	-0.7	4.6	-74.8	-74.2	-35.1	-31.4
New national accounts	-6.9	-21.3	-58.4	-46.8	5.1	10.9	-73.5	-72.9	-35.2	-31.6

Sources and notes: Author's calculations (see text for details). The underlying SHIW figures are drawn from D'Alessio (1997, pp. 27-37, Tables A.6-A.16). "Old weights" indicates use of the original sample weights. "New weights" indicates use of the weights derived from post-stratifying the sample according to the socio-demographic characteristics of the population. Discrepancy is the percentage shortfall of the SHIW aggregate relative to the corresponding national accounts figure.

7. The time pattern of income inequality in post-war Italy

What do sample statistics tell us about the evolution of income inequality in post-war Italy? Our detailed examination of statistical sources has shown that the unqualified use of published figures may be misleading, and, more importantly, that the weaknesses of the sources undermine the possibility of drawing firm conclusions. On the other hand, it would be erroneous to dismiss entirely the available information: a reasoned reading of the evidence may help to shed some light on distributive changes in post-war Italy.

Estimates of the Gini index of concentration for households' disposable income in the post-war period were collected in Table 14, where all figures except ECHP's refer to incomes unadjusted for household size and composition. The columns headed SHB and ECHP and the first column headed SHIW contain the statistics as they appeared in the respective official publications; the figures in the other columns were recalculated to enhance comparability over time. For the surveys from 1977 to 1995, the Gini ratios and their asymptotic standard errors were computed on microdata from the Historical Archive using three definitions of income (differing for the coverage of imputed rents, interest and dividends) and two sets of weights (with and without adjustment to aggregate population

statistics);[37] for the surveys before 1977, the estimates had to be based on grouped data, because the microdata are no longer available.[38]

The data collected by Doxa in 1948 have several problems and, in the light of the method employed to measure household income, the Gini index is more likely to be underestimated than the opposite. If we are willing to give the Doxa estimate some credit, it appears that income inequality in the early 1970s – as measured in the SHIW – was not much different from two decades earlier;[39] if some change occurred in the period, it was probably towards equality. From the early 1970s until 1982, with the exception of 1978-79, the inequality of household incomes fell dramatically. In the mid-1980s, it showed some tendency to grow; a further decline in 1989-1991 was soon reversed, and in 1995 the Gini coefficient was back to the value of 1980 (Chart 1). These phases correspond to statistically significant changes in the Gini index: for instance, regardless of income definition and weights, 19 out of the 20 pair comparisons 1977-1982, 1982-1987, 1987-1991 and 1991-1995 are significant at the 1 per cent level (Table 15). While broadly confirmed by all SHIW estimates, this pattern is at odds with the SHB figures: the latter are substantially lower and more stable than the former, and exhibit an overall decline since 1980.[40] However, for the

[37] The standard errors were calculated under the simplifying assumption of simple random sampling. This hypothesis is admittedly inaccurate, but the complex design and the post-stratification of the SHIW sample make it difficult to derive analytical expressions for standard errors (*SBS*, 1997, No. 14, p. 32; for a general discussion see Kalton, 1983). The further approximation implied by the use of asymptotic formulae is less problematic in consideration of the large size of the SHIW. For instance, Mills and Zandvakili (1997) recently found that, with a sample of around 4,000 units, the asymptotic and bootstrap estimates of the standard error for the Gini index were virtually the same. The formulae for the asymptotic standard errors were drawn from Cowell (1989) for the Gini index and Beach and Davidson (1983) for the quintile shares reported in Table 15. To our knowledge, asymptotic standard errors for the Gini index of SHIW household incomes have been previously computed only by Latorre (1990), who used a parametric approach on data for 1983. He estimated the index to be 34.2 per cent with a lognormal distribution and 35.3 per cent with a three-parameter Dagum distribution; the corresponding standard errors were 0.0035 and 0.0054, respectively.

[38] In general, we reconstructed the distributions by income classes from unpublished tabulations, that allowed us to approximate the distribution for income excluding interest and dividends, and to obtain estimates roughly comparable with the SHIW-HA longer series. Gini indices and quintile shares were calculated with INEQ, a program for computing inequality indices elaborated by Cowell (1991) (see also Cowell and Mehta, 1982; Cowell, 1995, pp. 156-62), under the hypotheses specified in the notes to Tables 14 and 16. The Gini index for the Doxa survey of 1948 was also computed from grouped data using INEQ.

[39] We discarded the information mentioned above for some intervening years as being not significant. Preliminary "synthetic" estimates computed by Rossi, Toniolo and Vecchi (1999) suggest similar concentrations of household expenditure per equivalent adult in Census years 1951 and 1961.

[40] The SHB income data were also used by Zaidi and de Vos (1998) to complement expenditure data in a comparison of poverty and inequality trends within members states of the European Community. They estimated Gini ratios for household equivalent incomes of 27.7 per cent in 1985 and 28.3 in 1988 (28, Table A4).

Table 14

**GINI INDEX OF CONCENTRATION FOR HOUSEHOLDS' DISPOSABLE INCOME
IN POST-WAR ITALY**

(per cent; asymptotic standard errors × 100 in italics)

Year	Doxa	SHB	ECHP	SHIW							
				Published statistics	Comparable statistics (old weights)				Comparable statistics (new weights)		
Income defini-tion	Total	Total	Total	As de-fined in the year	Excluding imputed rents, in-terest and dividends	Excluding interest and divi-dends	Total		Excluding imputed rents, in-terest and dividends	Excluding interest and divi-dends	Total
1948	42										
1967				40							
1968				40	40.2						
1969				40	39.9						
1970				38	39.2						
1971				40	40.0						
1972				38	38.9						
1973				42		42.9					
1974				41		38.8					
1975				39		36.4					
1976				35							
1977				36	35.9 *0.59*	35.9 *0.59*			36.8 *0.75*	36.6 *0.72*	
1978				36	34.5 *0.61*	35.2 *0.69*			36.3 *0.81*	37.1 *0.91*	
1979				37	36.5 *0.62*	37.2 *0.68*			38.2 *0.97*	39.2 *1.16*	
1980		31.7		37	35.1 *1.07*	35.3 *1.07*			37.2 *1.52*	37.4 *1.55*	
1981		31.2		32	32.8 *0.64*	33.0 *0.71*			34.4 *0.90*	34.8 *1.07*	
1982		31.1		31	31.8 *0.54*	31.8 *0.55*			33.6 *0.74*	33.6 *0.74*	
1983		30.9			32.7 *0.54*	32.8 *0.55*			34.0 *0.65*	34.2 *0.68*	
1984		30.9			32.9 *0.54*	33.1 *0.56*			34.0 *0.61*	34.1 *0.63*	
1985		30.6									

reasons stated in Section 3.2.6, we regard this information as rather weak. Notice, also, that when Istat collected more detailed income statistics in the ECHP for 1993, it came up with a Gini ratio much closer to the SHIW estimates.

Table 14 *(continued)*

Year	Doxa	SHB	ECHP	SHIW						
				Published statistics	Comparable statistics (old weights)			Comparable statistics (new weights)		
Income defini-tion	Total	Total	Total	As de-fined in the year	Excluding imputed rents, in-terest and dividends	Excluding interest and divi-dends	Total	Excluding imputed rents, in-terest and dividends	Excluding interest and divi-dends	Total
1986		30.7		33	33.8 *0.63*	33.7 *0.64*		34.4 *0.66*	34.3 *0.67*	
1987		31.1		34.4	35.6 *0.73*	34.8 *0.70*	35.6 *0.71*	36.7 *0.80*	35.7 *0.77*	36.5 *0.77*
1988		31.7								
1989		31.7		33.9	32.8 *0.51*	32.0 *0.48*	33.0 *0.53*	33.8 *0.58*	32.9 *0.55*	34.0 *0.67*
1990		30.5								
1991		30.2		32.5	32.1 *0.59*	31.6 *0.58*	32.3 *0.60*	32.7 *0.66*	32.2 *0.66*	32.9 *0.67*
1992		29.7								
1993		29.2	37	36.3	36.2 *0.60*	35.2 *0.57*	36.5 *0.59*	36.8 *0.62*	35.8 *0.60*	37.1 *0.62*
1994		29.4	31							
1995		29.3		36.2	36.7 *0.62*	35.7 *0.60*	36.5 *0.61*	37.2 *0.64*	36.1 *0.62*	37.0 *0.63*
1996		29.1								

Sources and notes: *Doxa*: author's computation on grouped data, assuming interval means known and a piecewise linear distribution except for a Paretian top interval; incomes weighted by households. *SHB*: Istat, *SBMS*, *CI* and *I*, various issues; incomes weighted by households. *ECHP*: Eurostat (1997, p. 2, Table 1; 1998b, p. 2, Table 2); income adjusted by the modified OECD equivalence scale; the figure for 1993 refers to incomes weighted by households, that for 1994 to incomes weighted by persons. *SHIW, published statistics*: Banca d'Italia, *BS* and *SBS*, various issues; incomes weighted by households; no figures were published for 1983 and 1984; dotted lines indicate changes in definitions. *SHIW, comparable statistics*: *1968-1975*: author's computation on grouped data (decile distribution for 1968-1972), assuming interval means known and a piecewise linear distribution except for a Paretian top interval; virtually identical results were derived under alternative hypotheses, and by maintaining the assumption of piecewise linear distribution, while supposing that interval and population means were unknown; incomes weighted by households; *1977-1995*: author's computation on microdata from the SHIW-HA; incomes weighted by households; asymptotic standard errors calculated according to the formula derived by Cowell (1989), assuming known mean of sample weights.

According to the SHIW evidence, the dynamics of the income shares of the top population quintile were very close to those of the Gini index (Table 16; Chart 2). Focusing on incomes excluding interest and dividends aggregated with the old weights, between 1973

and 1995 the share of the top fifth fell by over 6 percentage points to the benefit of all other quintiles.[41] During the 1970s, the largest gains accrued to the bottom and, to a lesser extent, second quintiles; except for a drop in 1987, from 1980 to 1991 these shares remained fairly stable at around 7 and 12 per cent, respectively; in 1993 and 1995, they fell to values below those prevailing in 1980. The shares of the third and fourth quintiles exhibited somewhat smaller changes and tended to increase even during the 1980s. Similar patterns characterise the other income concepts and the new weights.

Chart 1

GINI INDEX OF CONCENTRATION FOR HOUSEHOLDS' DISPOSABLE INCOME IN POST-WAR ITALY

(per cent)
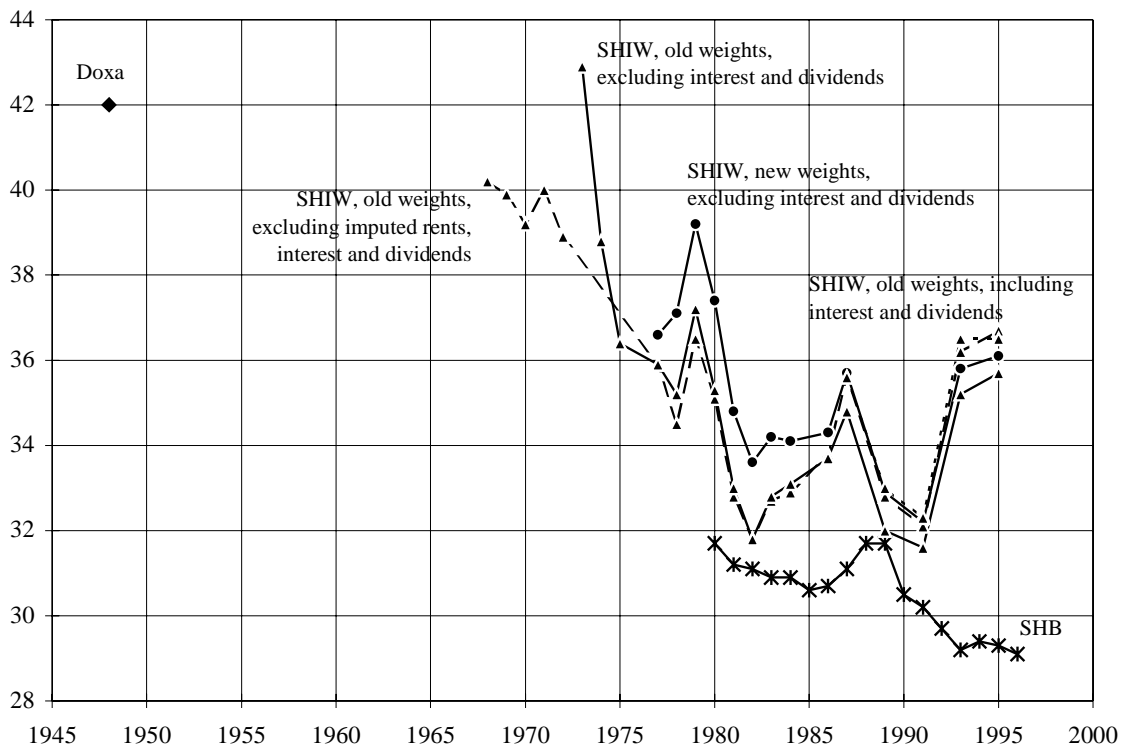
Sources: See Table 14.

---

[41] The fall in inequality between 1973 and 1974 was probably amplified by the design of the survey, which in those years over-sampled households with income above a threshold fixed in nominal terms in spite of the high rate of inflation (see footnote 16). The different effectiveness of the over-sampling in the two years could have manifested itself in the much larger gain of the 4th quintile relative to the first three.

In brief, we can tentatively distinguish three main episodes in the post-war pattern of income inequality: stability, or perhaps moderate decline, in the 1950s and 1960s; a sharp fall in the 1970s; fluctuations around a flattened trend in the 1980s and early 1990s. While identifying the first episode is highly speculative, the other two have some factual support. In any event, this conclusion is tentative and needs to be corroborated with further empirical evidence.

Table 15

SIGNIFICANCE TEST FOR GINI INDICES OF CONCENTRATION. SHIW, 1977-1995

(a) Old weights

	1977	1978	1979	1980	1981	1982	1983	1984	1986	1987	1989	1991	1993
Excluding imputed rents, interest and dividends													
1978	-1.65												
1979	0.70	2.29											
1980	-0.66	0.49	-1.13										
1981	-3.55	-1.92	-4.13	-1.85									
1982	-5.11	-3.31	-5.69	-2.76	-1.19								
1983	-4.01	-2.22	-4.62	-2.01	-0.12	1.18							
1984	-3.74	-1.96	-4.36	-1.84	0.12	1.44	0.26						
1986	-2.43	-0.80	-3.04	-1.05	1.11	2.41	1.33	1.08					
1987	-0.32	1.16	-0.94	0.39	2.89	4.20	3.21	2.98	1.87				
1989	-3.98	-2.15	-4.61	-1.95	0.00	1.35	0.14	-0.13	-1.24	-3.17			
1991	-4.56	-2.84	-5.14	-2.46	-0.80	0.38	-0.75	-1.00	-1.97	-3.75	-0.90		
1993	0.36	1.99	-0.35	0.90	3.88	5.46	4.36	4.09	2.76	0.64	4.34	4.89	
1995	0.94	2.54	0.23	1.30	4.38	5.97	4.89	4.63	3.29	1.15	4.89	5.40	0.58
Excluding interest and dividends													
1978	-0.77												
1979	1.45	2.06											
1980	-0.49	0.08	-1.50										
1981	-3.15	-2.22	-4.26	-1.79									
1982	-5.09	-3.85	-6.14	-2.91	-1.33								
1983	-3.86	-2.72	-5.02	-2.08	-0.22	1.28							
1984	-3.46	-2.36	-4.64	-1.82	0.11	1.65	0.38						
1986	-2.54	-1.60	-3.74	-1.28	0.73	2.25	1.07	0.71					
1987	-1.21	-0.41	-2.46	-0.39	1.81	3.38	2.26	1.90	1.17				
1989	-5.15	-3.80	-6.22	-2.81	-1.16	0.27	-1.10	-1.49	-2.12	-3.31			
1991	-5.24	-4.01	-6.27	-3.05	-1.53	-0.25	-1.51	-1.87	-2.44	-3.55	-0.53		
1993	-0.86	0.00	-2.25	-0.08	2.42	4.29	3.04	2.63	1.75	0.45	4.30	4.45	
1995	-0.24	0.55	-1.65	0.33	2.91	4.79	3.58	3.18	2.29	0.98	4.82	4.94	0.61
Total													
1989										-2.92			
1991										-3.55	-0.88		
1993										0.97	4.39	5.00	
1995										0.96	4.33	4.93	0.00

Table 15 *(continued)*

(b) New weights

	1977	1978	1979	1980	1981	1982	1983	1984	1986	1987	1989	1991	1993
Excluding imputed rents, interest and dividends													
1978	-0.45												
1979	1.14	1.50											
1980	0.24	0.52	-0.55										
1981	-2.06	-1.58	-2.88	-1.58									
1982	-3.05	-2.47	-3.77	-2.13	-0.69								
1983	-2.84	-2.22	-3.60	-1.93	-0.36	0.41							
1984	-2.91	-2.27	-3.66	-1.95	-0.37	0.42	0.00						
1986	-2.42	-1.83	-3.24	-1.69	0.00	0.81	0.43	0.45					
1987	-0.09	0.35	-1.19	-0.29	1.92	2.86	2.63	2.69	2.23				
1989	-3.17	-2.51	-3.89	-2.09	-0.56	0.21	-0.23	-0.24	-0.69	-2.94			
1991	-4.11	-3.45	-4.68	-2.71	-1.53	-0.91	-1.41	-1.45	-1.83	-3.86	-1.25		
1993	0.00	0.49	-1.21	-0.24	2.20	3.32	3.12	3.22	2.66	0.10	3.53	4.51	
1995	0.41	0.87	-0.86	0.00	2.54	3.68	3.51	3.62	3.05	0.49	3.93	4.88	0.45
Excluding interest and dividends													
1978	0.43												
1979	1.90	1.42											
1980	0.47	0.17	-0.93										
1981	-1.40	-1.64	-2.79	-1.38									
1982	-2.91	-2.99	-4.07	-2.21	-0.93								
1983	-2.43	-2.56	-3.71	-1.89	-0.48	0.60							
1984	-2.62	-2.72	-3.86	-1.97	-0.57	0.52	-0.11						
1986	-2.34	-2.48	-3.65	-1.84	-0.40	0.70	0.10	0.22					
1987	-0.86	-1.18	-2.51	-0.98	0.69	1.98	1.47	1.62	1.38				
1989	-4.09	-3.96	-4.90	-2.74	-1.59	-0.76	-1.49	-1.44	-1.62	-2.97			
1991	-4.52	-4.37	-5.24	-3.09	-2.08	-1.42	-2.12	-2.10	-2.24	-3.48	-0.82		
1993	-0.86	-1.20	-2.60	-0.96	0.82	2.32	1.77	1.97	1.67	0.10	3.58	4.07	
1995	-0.53	-0.91	-2.35	-0.78	1.05	2.59	2.07	2.27	1.97	0.41	3.86	4.32	0.35
Total													
1989										-2.45			
1991										-3.52	-1.16		
1993										0.61	3.40	4.60	
1995										0.50	3.26	4.45	-0.11

Sources and notes: Author's calculations. The null hypothesis of the equality of two indices is tested by the asymptotically standard normal statistic $T_{ij} = (G_i - G_j)\big/\sqrt{se_i^2 + se_j^2}$, where G_i and se_i are the values of the Gini ratio and of its standard error in year i. Since this test applies only to independent samples, it is not appropriate for pair comparisons among figures referring to surveys including a panel section (i.e. for the years after 1987). To the extent that the panel section leads to a positive correlation between estimates in subsequent years, the use of the statistic T_{ij} should make rejection of the null hypothesis less likely.

Chart 2

SHARES IN HOUSEHOLDS' DISPOSABLE INCOME
OF POPULATION QUINTILES. SHIW, 1968-1995
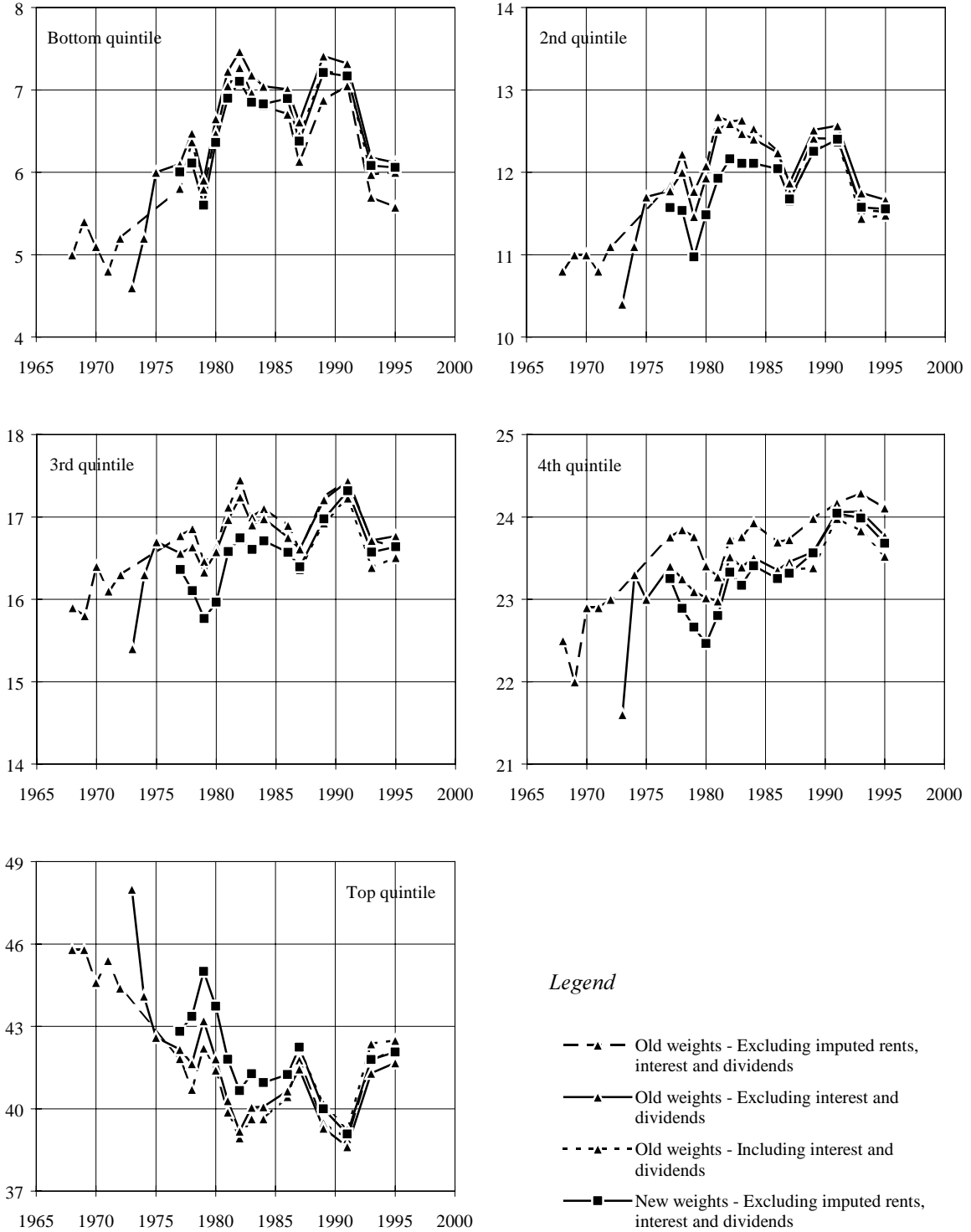
(per cent)

Sources: See Table 16.

Table 16

SHARES IN HOUSEHOLDS' DISPOSABLE INCOME
OF POPULATION QUINTILES. SHIW, 1968-1995
(per cent; asymptotic standard errors × 100 in italics)

(a) Old weights

Year	Excluding imputed rents, interest and dividends					Excluding interest and dividends					Including interest and dividends				
	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th
1968	5.0	10.8	15.9	22.5	45.8										
1969	5.4	11.0	15.8	22.0	45.8										
1970	5.1	11.0	16.4	22.9	44.6										
1971	4.8	10.8	16.1	22.9	45.4										
1972	5.2	11.1	16.3	23.0	44.4										
1973						4.6	10.4	15.4	21.6	48.0					
1974						5.2	11.1	16.3	23.3	44.1					
1975						6.0	11.7	16.7	23.0	42.6					
1977	5.8	11.8	16.8	23.8	41.8	6.1	11.8	16.6	23.4	42.2					
	0.14	*0.17*	*0.19*	*0.23*	*0.51*	*0.14*	*0.16*	*0.18*	*0.22*	*0.51*					
1978	6.4	12.2	16.9	23.8	40.7	6.5	12.0	16.6	23.2	41.6					
	0.15	*0.15*	*0.18*	*0.22*	*0.51*	*0.15*	*0.17*	*0.21*	*0.24*	*0.59*					
1979	5.8	11.8	16.5	23.8	42.2	5.9	11.5	16.3	23.1	43.2					
	0.14	*0.18*	*0.19*	*0.24*	*0.56*	*0.14*	*0.17*	*0.21*	*0.26*	*0.62*					
1980	6.5	12.1	16.6	23.4	41.4	6.7	11.9	16.6	23.0	41.8					
	0.16	*0.22*	*0.28*	*0.36*	*0.91*	*0.16*	*0.22*	*0.28*	*0.36*	*0.91*					
1981	7.1	12.7	17.1	23.3	39.9	7.2	12.5	17.0	23.0	40.3					
	0.13	*0.13*	*0.14*	*0.18*	*0.42*	*0.13*	*0.13*	*0.15*	*0.19*	*0.47*					
1982	7.3	12.6	17.5	23.7	38.9	7.5	12.6	17.2	23.5	39.2					
	0.13	*0.11*	*0.14*	*0.17*	*0.38*	*0.12*	*0.12*	*0.14*	*0.17*	*0.39*					
1983	7.0	12.6	17.0	23.8	39.6	7.2	12.5	16.9	23.4	40.1					
	0.12	*0.12*	*0.14*	*0.18*	*0.38*	*0.12*	*0.12*	*0.14*	*0.17*	*0.39*					
1984	6.8	12.5	17.1	23.9	39.6	7.0	12.4	17.0	23.5	40.1					
	0.12	*0.12*	*0.13*	*0.16*	*0.37*	*0.11*	*0.12*	*0.14*	*0.16*	*0.39*					
1986	6.7	12.3	16.9	23.7	40.4	7.0	12.2	16.8	23.4	40.6					
	0.09	*0.11*	*0.13*	*0.16*	*0.39*	*0.09*	*0.11*	*0.13*	*0.17*	*0.41*					
1987	6.1	11.8	16.6	23.7	41.8	6.6	11.9	16.6	23.5	41.5	6.5	11.7	16.4	23.4	42.2
	0.09	*0.09*	*0.11*	*0.13*	*0.28*	*0.09*	*0.09*	*0.11*	*0.13*	*0.28*	*0.10*	*0.09*	*0.11*	*0.13*	*0.28*
1989	6.9	12.4	17.2	24.0	39.5	7.4	12.5	17.2	23.6	39.3	7.2	12.3	16.9	23.4	40.2
	0.09	*0.08*	*0.10*	*0.11*	*0.24*	*0.08*	*0.08*	*0.09*	*0.10*	*0.24*	*0.08*	*0.09*	*0.10*	*0.11*	*0.27*
1991	7.1	12.4	17.5	24.2	38.9	7.3	12.6	17.4	24.1	38.6	7.2	12.4	17.2	24.0	39.2
	0.08	*0.08*	*0.09*	*0.11*	*0.23*	*0.08*	*0.08*	*0.09*	*0.11*	*0.23*	*0.08*	*0.08*	*0.10*	*0.11*	*0.25*
1993	5.7	11.5	16.7	24.3	41.7	6.2	11.8	16.7	24.1	41.3	6.0	11.4	16.4	23.8	42.4
	0.09	*0.09*	*0.10*	*0.13*	*0.27*	*0.08*	*0.09*	*0.10*	*0.12*	*0.26*	*0.08*	*0.09*	*0.11*	*0.13*	*0.30*
1995	5.6	11.5	16.6	24.1	42.2	6.1	11.7	16.8	23.8	41.7	6.0	11.5	16.5	23.5	42.5
	0.11	*0.10*	*0.12*	*0.14*	*0.33*	*0.09*	*0.10*	*0.12*	*0.14*	*0.32*	*0.09*	*0.10*	*0.12*	*0.15*	*0.34*

Table 16 *(continued)*

(b) New weights

Year	Excluding imputed rents, interest and dividends					Excluding interest and dividends					Including interest and dividends				
	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th
1977	5.7	11.6	16.5	23.6	42.6	6.0	11.6	16.4	23.3	42.8					
	0.14	*0.18*	*0.20*	*0.24*	*0.55*	*0.14*	*0.17*	*0.19*	*0.23*	*0.54*					
1978	6.0	11.8	16.4	23.5	42.3	6.1	11.5	16.1	22.9	43.4					
	0.14	*0.19*	*0.19*	*0.25*	*0.56*	*0.15*	*0.19*	*0.22*	*0.27*	*0.65*					
1979	5.5	11.2	16.1	23.3	43.8	5.6	11.0	15.8	22.7	45.0					
	0.14	*0.20*	*0.22*	*0.28*	*0.63*	*0.14*	*0.20*	*0.24*	*0.30*	*0.72*					
1980	6.2	11.6	16.1	22.7	43.4	6.4	11.5	16.0	22.5	43.7					
	0.17	*0.25*	*0.34*	*0.40*	*1.04*	*0.17*	*0.24*	*0.32*	*0.42*	*1.04*					
1981	6.8	12.1	16.8	23.1	41.3	6.9	11.9	16.6	22.8	41.8					
	0.12	*0.14*	*0.16*	*0.19*	*0.45*	*0.13*	*0.15*	*0.18*	*0.22*	*0.53*					
1982	6.9	12.2	16.9	23.5	40.5	7.1	12.2	16.7	23.3	40.7					
	0.13	*0.14*	*0.17*	*0.20*	*0.46*	*0.12*	*0.14*	*0.17*	*0.19*	*0.46*					
1983	6.6	12.3	16.8	23.5	40.8	6.9	12.1	16.6	23.2	41.3					
	0.12	*0.14*	*0.15*	*0.19*	*0.41*	*0.12*	*0.14*	*0.15*	*0.19*	*0.42*					
1984	6.6	12.2	16.8	23.8	40.5	6.8	12.1	16.7	23.4	41.0					
	0.12	*0.13*	*0.15*	*0.17*	*0.40*	*0.11*	*0.13*	*0.15*	*0.17*	*0.41*					
1986	6.6	12.1	16.8	23.6	41.0	6.9	12.0	16.6	23.3	41.2					
	0.09	*0.11*	*0.14*	*0.16*	*0.39*	*0.09*	*0.11*	*0.13*	*0.17*	*0.41*					
1987	5.8	11.5	16.4	23.6	42.6	6.4	11.7	16.4	23.3	42.2	6.2	11.5	16.2	23.3	42.9
	0.09	*0.10*	*0.11*	*0.14*	*0.29*	*0.09*	*0.10*	*0.11*	*0.13*	*0.29*	*0.11*	*0.09*	*0.12*	*0.13*	*0.29*
1989	6.6	12.1	17.0	24.0	40.3	7.2	12.3	17.0	23.6	40.0	7.0	12.0	16.7	23.3	41.0
	0.09	*0.09*	*0.10*	*0.11*	*0.25*	*0.08*	*0.09*	*0.10*	*0.11*	*0.25*	*0.08*	*0.09*	*0.11*	*0.12*	*0.29*
1991	6.9	12.2	17.3	24.2	39.4	7.2	12.4	17.3	24.0	39.1	7.0	12.2	17.1	23.9	39.7
	0.08	*0.08*	*0.10*	*0.11*	*0.24*	*0.07*	*0.08*	*0.09*	*0.11*	*0.24*	*0.07*	*0.09*	*0.10*	*0.11*	*0.26*
1993	5.6	11.4	16.6	24.2	42.3	6.1	11.6	16.6	24.0	41.8	5.9	11.3	16.2	23.7	42.9
	0.09	*0.09*	*0.10*	*0.13*	*0.28*	*0.08*	*0.09*	*0.10*	*0.12*	*0.27*	*0.08*	*0.10*	*0.11*	*0.13*	*0.30*
1995	5.5	11.4	16.5	24.0	42.6	6.1	11.6	16.6	23.7	42.1	5.9	11.4	16.4	23.4	42.9
	0.10	*0.10*	*0.12*	*0.15*	*0.33*	*0.09*	*0.10*	*0.12*	*0.14*	*0.33*	*0.09*	*0.10*	*0.12*	*0.15*	*0.34*

Sources and notes: *1968-1972*: figures computed from Table B10; *1973-1975*: author's computation on grouped data, assuming interval means known and a piecewise linear distribution except for a Paretian top interval; virtually identical results were derived under alternative hypotheses, and by maintaining the assumption of piecewise linear distribution, while supposing that interval and population means were unknown; *1977-1995*: author's computation on microdata from the SHIW-HA; asymptotic standard errors calculated according to the formulae derived by Beach and Davidson (1983). All figures refer to incomes weighted by households.

8. Conclusions

In this paper we have described and assessed in some detail the sample surveys on household income conducted in Italy since the Second World War. We have not exhausted

the work in this field, as we have ignored sample surveys whose data and characteristics were not made public (e.g. the Nielsen panel on the financial preferences of the Italian households), or which were limited in their scope or geographical coverage (some older examples were discussed in Banca d'Italia, 1986). Nor have we examined all sources on income distribution in Italy, and in particular we neglected administrative archives.[42] Nonetheless, official sample surveys, and the SHIW in particular, remain the main source of information on income distribution in Italy, and a thorough understanding of their features is a pre-requisite for any investigation of the subject.

The SHIW has many problems and deficiencies, but its quality has tended to improve over the years, though the frequent changes in sampling design and variable definitions complicate historical exercises. It would probably fare not too badly in an international comparison of quality, as suggested by Ando (1986, p. 142):

> The quality of the Bank of Italy Survey ... appears to be very similar to that of surveys in other countries of the roughly same size, with one major exception, namely, measurement of net worth and its components appears to be much more subject to error and underestimation than that of other variables in the Bank of Italy Survey itself, and also compared to measurement of net worth and its components in other surveys with similar purpose ....

On the other hand, the information about household income collected in the SHB is rather unsatisfactory; the results have to be treated cautiously, as supporting rather than independent evidence. The information collected in the ECHP appears to be more reliable, but it is still largely unknown and its quality needs to be assessed.

The evidence examined here is admittedly shaky. However, if interpreted with caution, it may help us to detect changes in income inequality in post-war Italy. Three episodes seem to emerge: stability, or perhaps moderate decline, in the 1950s and 1960s; a sharp fall in the 1970s; fluctuations around a flattened trend since the early 1980s. The corroboration and interpretation of these episodes are left for future work.

---

[42] The two main administrative sources are the database of the National Social Security Institute (INPS) (see Abbate and Baldassarini, 1995; Lucifora, 1996, pp. 12-16 for a description), which essentially covers private sector employees and has been increasingly used in recent years; and the tax records, which are published in aggregate form every year, though with a considerable delay, and are still a largely unexplored source on income distribution (see, for instance, Ministero delle Finanze, 1992).

Appendix A
Statistical sources

(1) *Doxa surveys.* The methodology and results of the first Doxa sample survey were presented by Luzzatto Fegiz in a comprehensive report circulated in 1949, and in a later article in *Giornale degli economisti e Annali di economia* (1950); the results also appeared in *Bollettino della Doxa* (*BD*; 1949, Vol. 3, No. 21-22) and Luzzatto Fegiz (1956, pp. 1133-41). The results for the 1955 survey were presented in *BD* (1955, Vol. 9, No. 15-16) and Luzzatto Fegiz (1966, pp. 1589-604); those for the 1958-59 survey in *BD* (1959, Vol. 13, No. 9-10) and Luzzatto Fegiz (1966, pp. 1616-28).

(2) *Istat surveys.* The methodological aspects and the results of the survey on household budgets carried out in 1953-54 are described in Istat (1960). For the following survey of 1963-64, preliminary results were published in Istat's *Supplemento al bollettino mensile di statistica* (*SBMS*; 1966, No. 4); an extensive presentation of the figures on the expenditure side and on the distribution of incomes appeared in Istat (1968) and De Meo (1967, chapter 2), respectively. For the income data of the SHB, the results of the first five surveys were reported in *SBMS*, and those of the following were published in separate issues of the series *Collana d'informazione* (*CI*), until 1995, and *Informazioni* (*I*), since 1996. A list of the articles appeared so far is given in Table A1. Methodological notes are in *SBMS* (1983, No. 25), Moriani (1986), Fabbris *et al.* (1986), Istat (1990), Innocenzi (1992). The results of the ECHP have not yet been published by Istat. Information on income distribution and poverty from the first two waves are in Eurostat (1997; 1998a, 1998b); the methodology is described in Eurostat (1996) and Regoli (1996).

Table A1

OFFICIAL PUBLICATIONS OF THE SHB INCOME DATA

Issue	Report's authors	Content
SBMS, 1983, No. 25	G. Modesti and C. Moriani	Results for 1980, 1981 and 1982
SBMS, 1985, No. 2	C. Moriani	Results for 1983
SBMS, 1984, No. 7	C. Moriani	Results for 1984
CI, 1986, No. 8	C. Moriani	Results for 1985
CI, 1989, No. 3	C. Moriani	Results for 1986 and 1987
CI, 1990, No. 7	not indicated	Results for 1988
CI, 1991, No. 21	not indicated	Results for 1989
CI, 1992, No. 18	not indicated	Results for 1990
CI, 1992, No. 25	not indicated	Results for 1991
CI, 1993, No. 27	not indicated	Results for 1992
CI, 1994, No. 26	not indicated	Results for 1993
CI, 1996, No. 19	C. Ceccarelli	Results for 1994
I, 1996, No. 20	C. Ceccarelli	Results for 1995
I, 1998, No. 62	C. Ceccarelli	Results for 1996

The LFS figures were drawn from the volumes containing mean yearly values, which appeared under the title "Rilevazione delle forze di lavoro" as separate issues in the *CI* series

until 1993, and in the series *Supplemento all'Annuario statistico italiano. Collana lavoro* (*SASI-CL*) since then.

(3) *Bank of Italy surveys.* The results appeared in the Bank's *Bollettino Statistico* (*BS*) and *Supplemento al Bollettino Statistico* (*SBS*; renamed *Supplementi al Bollettino Statistico* after 1991). A list of published articles is in Table A2; presentations in English of the results were provided by Ulizzi (1969, 1970) and Pirrotta (1977, 1979). For methodological notes, in addition to *BS* (1983, No. 3-4), see Pirrotta (1986), Fabbris *et al.* (1986), Brandolini and Cannari (1994), Cannari and Sestito (1995). The Historical Archive was described by D'Alessio (1997) and D'Alessio and Gallo (1997).

Table A2

OFFICIAL PUBLICATIONS OF THE SHIW DATA

Issue and pages	Report's authors	Content
BS, 1966, Vol. 21, No. 4, pp. 441-54	A. Ulizzi	Results for 1965/66
BS, 1967, Vol. 22, No. 4, pp. 441-72	not indicated	Results for 1966
BS, 1968, Vol. 23, No. 5-6, pp. 643-75	A. Ulizzi	Results for 1967
BS, 1970, Vol. 25, No. 1, pp. 103-67	A. Ulizzi	Results for 1968
BS, 1971, Vol. 26, No. 1, pp. 125-78	A. Ulizzi	Results for 1969
BS, 1973, Vol. 28, No. 3-4, pp. 501-60	F. M. Frasca and D. Qualeatti	Results for 1970 and 1971
BS, 1974, Vol. 29, No. 3-4, pp. 449-500	F. M. Frasca and D. Qualeatti	Results for 1972
BS, 1976, Vol. 31, No. 4, pp. 709-59	F. M. Frasca and R. A. Pirrotta	Results for 1973 and 1974
BS, 1977, Vol. 32, No. 1, pp. 169-219	R. A. Pirrotta	Results for 1975
BS, 1977, Vol. 32, No. 4, pp. 827-913	R. A. Pirrotta	Results for 1976
BS, 1978, Vol. 33, No. 2-3, pp. 287-363	R. A. Pirrotta	Results for 1977
BS, 1979, Vol. 34, No. 3, pp. 189-261	R. A. Pirrotta	Results for 1978
BS, 1980, Vol. 35, No. 3-4, pp. 311-74	R. A. Pirrotta and G. Zen	Results for 1979
BS, 1981, Vol. 36, No. 1-4, pp. 539-607	G. Zen	Results for 1980
SBS, 1983, Vol. 36, No. 14	G. Zen	Results for 1981
SBS, 1983, Vol. 36, No. 57	G. Zen	Results for 1982
BS, 1983, Vol. 38, No. 3-4, pp. 305-50	not indicated	Methodological notes
BS, 1984, Vol. 39, No. 3-4, pp. 273-315	D. Gressani	Results for 1983
BS, 1985, Vol. 40, No. 3-4, pp. 433-64	L. Cannari and D. Gressani	Results for 1984
BS, 1987, Vol. 42, No. 1-2, pp. 327-60	L. Cannari	Results for 1986
SBS, 1989, Vol. 42, No. 5	C. A. Bollino, L. Cannari and G. D'Alessio	Results for 1987
SBS, 1991, Vol. 1 (n.s.), No. 26	G. D'Alessio and A. I. Rinaldi	Results for 1989
SBS, 1993, Vol. 3 (n.s.), No. 44	G. D'Alessio	Results for 1991
SBS, 1995, Vol. 5 (n.s.), No. 9	G. D'Alessio	Results for 1993
SBS, 1997, Vol. 7 (n.s.), No. 14	G. D'Alessio	Results for 1995

(4) *Isco surveys.* The results and a brief description of the CS methodological aspects are published monthly in Isco's *Quaderni analitici*.

(5) *National accounts.* Consistent income accounts by institutional sector are available from 1980 onwards (Istat, 1997b). They can be integrated backwards using the series reconstructed by Marotta and Pagliano (1992) for the period 1970-79, though the two sources

are not entirely comparable owing to the revision of the accounting criteria implemented in 1995. The data on actual social contributions paid by the self-employed and in-kind social assistance benefits are from Ministero del Bilancio (various years). The few missing data were estimated as follows. The consumption of fixed capital of sole proprietorships with fewer than 20 employees was computed for the period 1970-79 by multiplying the gross operating surplus by the ratio between the two variables in 1980. An old series for in-kind social assistance benefits in 1975-1980 was chained to the new series in 1980; the figures for 1970-74 were computed using their average share in total benefits in 1975-79. The proportion of actual social contributions paid by the self-employed from 1970 to 1974 was assumed to equal that recorded in 1975.

The national accounts series harmonised with the SHIW income definitions was obtained as the sum of six *pre-tax* national accounts aggregates, less current taxes on income and wealth. The six pre-tax aggregates were defined as follows (the classification slightly differs from that of Table 6, which was based on the official publications): (a) *income from employment*: compensation of employees, less actual and imputed social security contributions (after deduction of the contributions paid by the self-employed); (b) *net self-employment income*: withdrawals from sole proprietorships with fewer than 20 employees, plus disposable income of the same businesses net of depreciation of physical assets, plus withdrawals from corporate and quasi-corporate enterprises (by construction net of the consumption of fixed capital), less social security contributions paid by the self-employed; (c) *cash and imputed rents*: rents from land and royalties, and, since 1973, gross operating surplus of consumer households (which is essentially an estimate of imputed rents for owner-occupied houses); (d) *net interest and dividends*: interest received in 1973-75 and since 1982; interest payments (with a negative sign) since 1986; dividends in 1973-75 and since 1986; (e) *transfers*: social security and assistance benefits net of benefits in kind; (f) *other transfers*: until 1984, casualty insurance claims and current transfers from the rest of the world.

The *post-tax* aggregates were obtained by deducting current taxes on income and wealth proportionally from each item (with the exception of gross operating surplus of consumer households, dividends, casualty insurance claims, and current transfers from the rest of the world). The tax series should have been redefined to exclude some minor contributions (e.g. taxes on gambling games and lotteries, motor-vehicle taxes paid by households) and to include taxes in capital account essentially paid out of current income (an example being the capital income surtax levied in 1997 to achieve the criteria set in the Maastricht Treaty); however, neither adjustment was implemented. In the previous version of this paper, total taxes were also broken down using information on the main categories of personal income taxes. Results from either procedure were broadly similar, with the exception of income from property (see Brandolini, 1993, p. 54, Table 13).

(6) *Population statistics.* The population series is the simple mean of beginning- and end-of-year values. It is based on the series reconstructed by Capocaccia and Caselli (1990) and Istat (1996) for the periods 1972-1981 and 1982-1991, respectively; figures for the following years are from Istat, *Bollettino mensile di statistica* (various years: Table 2.1).

Appendix B
Summary tables on income distribution in Italy, 1948-1996

Table B1

DISTRIBUTION OF HOUSEHOLD INCOMES BY INCOME RANGE. DOXA SURVEY, 1947/48

Income range (thousands of lire)	Number of households (thousands)	Total income (millions of lire)	Mean income (thousands of lire)
below 130	305	30,460	100
130-260	1,704	340,760	200
260-390	2,479	818,268	330
390-520	1,906	876,668	460
520-650	1,441	850,308	590
650-780	845	608,688	720
780-910	566	481,185	850
910-1,040	357	349,958	980
1,040-1,170	212	234,876	1,108
1,170-1,300	269	334,056	1,242
1,300-1,625	229	336,364	1,469
1,625-1,950	158	283,178	1,792
1,950-2,275	63	133,668	2,122
2,275-2,600	62	150,548	2,428
2,600-2,925	21	56,682	2,699
2,925-3,250	21	65,508	3,119
3,250-3,575	16	55,664	3,479
3,575-3,900	20	73,678	3,684
3,900-5,200	25	111,930	4,477
5,200-6,500	16	92,430	5,777
above 6,500	17	415,000	24,412
Population	10,732	6,699,877	624

Sources and notes: Luzzatto Fegiz (1950, p. 352, Table 6) or Luzzatto Fegiz (1956, p. 1135, Table 1). The last column is calculated as ratio of the third to the second column.

Table B2

DISTRIBUTION OF HOUSEHOLD INCOMES BY DECILE. DOXA SURVEY, 1947/48
(thousands of lire and per cent)

	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile	Tenth decile
Decile point	175	265	310	380	445	525	620	770	1,06:	
Decile mean	137	238	306	362	400	506	574	699	886	2,135
Decile share (a)	2.2	3.8	4.9	5.8	6.4	8.1	9.2	11.2	14.2	34.2

Sources and notes: Luzzatto Fegiz (1949, p. 15, Table 2.4). – (a) Calculated from the decile means.

DISTRIBUTION OF HOUSEHOLD INCOMES BY INCOME RANGE. DOXA SURVEYS, 1947-1959

(per cent)

Income range (a) (thousand lire)	Dec. 1947 - Jan. 1948	Jun. 1948	Dec. 1948	Apr. 1955 (b)	Summer-Autumn 1958	Dec. 1958 - Jan. 1959
below 260	20.8	18.6	19.5	7.8	34.3	25.6
260-390	30.5	25.8	22.5	13.3		
390-520	19.4	21.6	19.1	28.9	46.0	32.0
520-650	12.9	14.1	14.9			
650-910	10.4	13.1	14.5	21.1		22.0
910-975	3.1	5.2	7.8		17.1	13.1
975-1,300				17.8		
1,300-1,430	2.3	1.2	1.7	6.7		
1,430-1,950						4.9
above 1,950	0.6	0.4		4.4	2.6	2.4
Sample size	2,049	2,261	1,298	1,235	~3,500	~2,000
Cost-of-living index	100.0	99.0	100.6	121.4	137.7	135.8

Sources and notes: *Dec. 1947-Jan. 1948*, *Jun. 1948*, *Dec. 1948*: Luzzatto Fegiz (1949, p. 77, Table 10.9; p. 107, Table 14.20; p. 120, Table 16.1). *Apr. 1955*, *Summer-Autumn 1958*, *Dec. 1958-Jan. 1959*: Luzzatto Fegiz (1966, p. 1594, Table 3.1; p. 1619, Table 1; p. 1621, Table 7). – (a) Annual values were obtained from monthly figures by multiplying by 13. – (b) The sample size included 10 per cent of non-responses to the income question; the proportions of households in each income range were recalculated to eliminate non-responses.

DISTRIBUTION OF HOUSEHOLD INCOMES BY INCOME RANGE. ISTAT SURVEY, 1963-64

Income range (thousands of lire)	Proportion of house-holds (per cent)	Mean income (thousands of lire)	Proportion of dissaving households (per cent)	Average income shortfall (per cent)
below 600	11.66	431	41.1	-46.6
600-900	18.36	757	38.0	-18.9
900-1,200	22.32	1,044	42.6	-16.1
1,200-1,500	17.30	1,340	41.4	-10.9
1,500-1,800	11.10	1,633	35.5	-5.8
1,800-2,100	6.75	1,931	38.1	-5.3
2,100-2,700	6.81	2,365	25.9	3.5
2,700-3,300	3.05	2,955	25.3	8.6
3,300-4,500	1.78	3,734	12.8	17.1
above 4,500	0.87	6,143	..	30.0
Population	100.00	1,337	37.7	-6.6

Sources and notes: De Meo (1967, p. 21, Table 2.3-1; p. 23, Table 2.3-2; p. 135, Table 21). Dissaving households are defined as those with annual expenditure strictly greater than annual income. The average income shortfall is the difference between income and expenditure as a percentage of income.

DISTRIBUTION OF POST-TAX HOUSEHOLD INCOMES: MEAN AND DECILE POINTS. SHB, 1980-1996
(thousands of lire)

Year	Mean	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile
1980	943	362	504	577	698	797	931	1,084	1,264	1,605
1981	1,111	435	578	702	828	970	1,108	1,304	1,501	1,893
1982	1,310	538	699	840	987	1125	1,346	1,496	1,791	2,265
1982 (a)	1,264	498	691	794	939	1,095	1,281	1,462	1,756	2,206
1983	1,458	586	754	899	1,074	1,244	1,439	1,730	1,930	2,476
1984	1,641	647	887	1,051	1,217	1,404	1,654	1,914	2,254	2,784
1985	1,854	739	965	1,168	1,368	1,603	1,891	2,181	2,517	3,173
1986	1,993	794	1,038	1,254	1,460	1,753	1,999	2,303	2,701	3,442
1987	2,110	808	1,083	1,324	1,542	1,801	2,116	2,459	2,886	3,693
1988	2,285	886	1,119	1375	1,671	1,975	2,279	2,639	3,131	4,023
1989	2,519	952	1,283	1,547	1,824	2,144	2,494	2,894	3,437	4,495
1990	2,734	1,082	1,387	1,735	2,058	2,370	2,703	3,137	3,729	4,793
1991	2,996	1,148	1,554	1,912	2,252	2,632	3,032	3,485	4,135	5,152
1992	3,123	1,254	1,664	2,011	2,299	2,703	3,136	3,648	4,286	5,421
1993	3,149	1,294	1,717	2,073	2,388	2,744	3,203	3,696	4,303	5,320
1994	3,382	1,350	1,800	2,200	2,592	2,975	3,417	3,950	4,600	5,800
1995	3,533	1,450	1,900	2,300	2,709	3,125	3,675	4,120	4,868	6,070
1996	3,670	1,550	2,000	2,374	2,775	3,250	3,750	4,286	5,051	6,299

Sources and notes: Istat, *SBMS*, *CI* and *I*, various issues. – (a) Figures recalculated after the readjustment of the reference population.

DISTRIBUTION OF POST-TAX HOUSEHOLD INCOMES: DECILE SHARES. SHB, 1980-1996
(per cent)

Year	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile	Tenth decile
1980	2.87	4.84	5.71	6.96	8.00	9.28	10.63	12.33	14.99	24.39
1981	2.64	4.73	6.07	6.98	8.18	9.43	10.79	12.64	15.23	23.31
1982 (a)	2.70	4.92	5.92	7.05	8.15	9.35	10.82	12.56	15.03	23.50
1983	2.97	5.13	6.30	7.26	8.38	9.71	11.10	13.03	15.17	20.95
1984	2.85	4.88	5.92	6.96	8.10	9.31	11.01	12.48	15.01	23.48
1985	2.90	4.74	5.89	6.98	8.06	9.54	10.84	12.65	14.93	23.49
1986	2.97	4.74	5.86	6.92	8.14	9.45	10.78	12.46	14.95	23.72
1987	2.95	4.66	5.82	6.86	8.14	9.36	10.81	12.39	15.07	23.94
1988	2.7	4.5	5.6	6.6	7.9	9.9	10.6	12.4	15.4	24.4
1989	2.9	4.4	5.4	6.9	7.6	9.4	10.6	12.4	15.5	24.9
1990	2.9	4.5	5.7	7.4	7.6	9.0	11.0	12.2	15.5	24.2
1991	2.8	4.8	5.7	6.8	8.6	8.9	10.8	12.9	15.3	23.4
1992	3.2	4.3	6.1	6.6	8.0	9.6	10.8	12.7	15.2	23.5
1993	3.0	4.9	5.9	7.0	7.2	10.8	10.6	12.7	15.3	22.6
1994	3.3	5.1	5.9	7.1	7.4	9.8	11.2	12.3	15.3	22.6
1995	3.2	4.8	6.0	7.1	8.2	9.4	10.8	12.6	15.3	22.5
1996	3.4	4.7	5.9	7.2	9.1	9.8	9.7	12.6	15.2	22.4

Sources and notes: Istat, *SBMS*, *CI* and *I*, various issues. – (a) Figures unaffected by the readjustment of the reference population.

DISTRIBUTION OF POST-TAX HOUSEHOLD EQUIVALENT INCOMES: DECILE SHARES. ECHP, 1993-94
(per cent)

Year	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile	Tenth decile
1993	2	4	6	7	8	9	11	12	16	26
1994	2.4	4.7	5.9	7.0	8.2	9.5	11.1	12.9	15.4	22.9

Sources and notes: Eurostat (1997, p. 2, Table 1; 1998b, p. 2, Table 2). Post-tax income covers all monetary incomes, including public and private transfers, net of income taxes and social insurance contributions; imputed rents on owner-occupied dwellings are not included. Incomes are adjusted for household composition using the modified OECD equivalence scale. Figures for 1993 are weighted by households; those for 1994 are weighted by persons.

DISTRIBUTION OF POST-TAX HOUSEHOLD INCOMES: MEAN AND DECILE POINTS. SHIW, 1965-1995
(thousands of lire)

Year	Mean	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile
1965	1,35					1,09				
1966	1,45					1,17				
1967	1,50	364	606	831	1,03	1,24	1,40	1,63	1,98	2,80
1968	1,64	408	673	888	1,10	1,30	1,47	1,82	2,32	3,19
1969	1,83	500	769	1,02	1,21	1,44	1,71	1,98	2,46	3,37
1970	1,93	536	818	1,09	1,32	1,57	1,83	2,17	2,71	3,60
1971	2,11	520	814	1,12	1,42	1,71	1,99	2,38	2,91	4,06
1972	2,28	610	946	1,27	1,58	1,86	2,18	2,59	3,21	4,21
1973	3,38	851	1,33	1,78	2,18	2,56	3,02	3,60	4,39	6,04
1974	4,07	1,07	1,64	2,16	2,63	3,12	3,73	4,51	5,43	6,68
1975	4,68	1,40	2,03	2,55	3,12	3,72	4,35	5,13	6,30	8,14
1976 (a)	5,74	2,00	2,85	3,50	4,00	4,71	5,48	6,50	7,94	10,26
1977 (a)	6,92	2,22	3,19	4,00	4,77	5,53	6,50	7,80	9,52	12,44
1978 (a)	8,46	2,89	4,11	5,03	5,90	6,96	8,15	9,65	11,42	14,59
1979	9,97	3,10	4,50	5,74	6,76	8,01	9,60	11,32	13,62	18,28
1980	12,85	4,36	6,00	7,28	8,67	10,20	12,00	14,00	16,50	21,35
1981	13,81	5,54	7,12	8,58	10,00	11,60	13,40	15,80	18,88	23,80
1982	17,61	6,95	9,20	10,96	12,92	15,20	17,55	20,60	24,30	31,22
1983	20,22	7,84	10,17	12,22	14,44	16,80	19,74	23,42	28,10	36,60
1983 (b)	19,37	7,10	9,75	11,80	13,84	16,02	18,80	22,30	26,94	35,08
1984	22,24	8,10	11,16	13,63	15,70	18,60	22,00	25,69	30,99	39,09
1986	23,50	8,64	11,37	14,24	16,70	19,39	23,00	27,11	32,41	41,99
1987	29,14	10,21	13,83	16,70	20,11	23,36	27,99	33,45	40,48	53,10
1989	34,84	12,85	17,14	20,84	24,60	29,05	34,47	40,76	48,07	62,25
1991	37,21	13,73	18,70	23,00	27,13	31,78	37,60	44,29	52,51	65,07
1993	39,56	12,06	18,00	22,40	27,00	32,09	38,88	46,76	56,34	73,09
1995	42,81	13,66	19,51	24,52	29,76	34,98	41,62	49,66	60,18	76,84

Sources and notes: Banca d'Italia, *BS* and *SBS*, various issues. – (a) Revised figures from 1976 to 1978 were provided in *BS* (1980, No. 3-4), following the revision of the automatic procedures of aggregation. – (b) Figures re-weighted on the basis of the household structure of the 1984 sample in order to correct for the bias generated by the drawing of the 1983 sample from the electoral register instead of the registry office records.

DISTRIBUTION OF POST-TAX HOUSEHOLD INCOMES: DECILE MEANS. SHIW, 1967-1995
(thousands of lire)

Year	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile	Tenth decile
1967	243	481	721	928	1,14	1,32	1,49	1,80	2,33	4,5
1968	273	542	786	988	1,21	1,39	1,63	2,04	2,70	4,8
1969	331	660	904	1,12	1,33	1,57	1,84	2,21	2,87	5,5
1970	365	609	933	1,15	1,44	1,69	1,97	2,41	3,09	5,4
1971	348	668	990	1,28	1,65	1,75	2,23	2,60	3,40	6,1
1972	410	769	1,10	1,42	1,72	2,01	2,37	2,88	3,64	6,4
1973	569	1,08	1,57	1,99	2,36	2,78	3,41	3,97	5,05	11,0
1974 (a)	743	1,35	1,91	2,23	2,87	3,41	4,11	4,92	6,09	12,9
1975	949	1,73	2,29	2,83	3,43	4,01	4,72	5,66	7,18	14,1
1976 (b)	1,38	2,38	3,17	3,77	4,35	5,07	5,97	7,17	8,90	15,3
1977 (b)	1,56	2,71	3,60	4,36	5,13	6,04	7,16	8,64	10,84	19,3
1978 (b)	2,04	3,55	4,62	5,44	6,39	7,53	8,89	10,49	12,78	23,1
1979	2,16	3,80	5,12	6,21	7,45	8,80	10,46	12,42	15,59	28,0
1980	3,12	5,27	6,71	8,00	9,43	11,10	13,10	15,26	18,60	38,3
1981	3,88	6,35	7,90	9,33	10,79	12,44	14,55	17,26	21,09	35,0
1982	5,10	8,12	10,10	11,94	14,02	16,32	18,96	22,32	27,47	42,1
1983	5,53	9,06	11,29	13,35	15,57	18,22	21,44	25,74	31,87	50,7
1983 (c)	5,06	8,56	10,80	12,75	14,90	17,40	20,48	24,57	30,27	48,9
1984	5,92	9,63	12,44	14,65	17,14	20,28	23,84	28,15	34,40	55,9
1986	6,35	10,02	12,86	15,45	17,98	21,08	24,94	29,64	36,53	60,1
1987	7,84	12,13	15,31	18,44	21,64	25,55	30,87	36,65	46,06	76,8
1989	9,32	14,98	19,05	22,63	26,77	31,74	37,48	44,09	54,59	87,7
1991	10,14	16,43	20,86	25,01	29,35	34,55	40,71	48,20	58,14	88,6
1993	8,38	15,13	20,26	24,77	29,49	35,34	42,75	51,40	63,73	104,2
1995	9,61	16,69	22,10	27,09	32,29	38,18	45,51	54,94	67,87	113,7

Sources and notes: Banca d'Italia, *BS* and *SBS*, various issues. – (a) The value for the tenth decile was corrected from the published 12,593 to 12,953 in order to guarantee consistency with the mean income and the decile share reported in the same table of *BS*. – (b) Revised figures from 1976 to 1978 were provided in *BS* (1980, No. 3-4), following the revision of the automatic procedures of aggregation. – (c) Figures re-weighted on the basis of the household structure of the 1984 sample in order to correct for the bias generated by the drawing of the 1983 sample from the electoral register instead of the registry office records.

DISTRIBUTION OF POST-TAX HOUSEHOLD INCOMES: DECILE SHARES. SHIW, 1967-1995
(per cent)

Year	First decile	Second decile	Third decile	Fourth decile	Fifth decile	Sixth decile	Seventh decile	Eighth decile	Ninth decile	Tenth decile
1967	1.6	3.2	4.8	6.1	7.6	8.8	9.9	12.0	15.5	30.5
1968	1.7	3.3	4.8	6.0	7.4	8.5	10.0	12.5	16.5	29.3
1969	1.8	3.6	4.9	6.1	7.2	8.6	10.0	12.0	15.6	30.2
1970	1.9	3.2	4.9	6.1	7.5	8.9	10.3	12.6	16.1	28.5
1971	1.6	3.2	4.7	6.1	7.8	8.3	10.6	12.3	16.1	29.3
1972	1.8	3.4	4.8	6.3	7.5	8.8	10.4	12.6	16.0	28.4
1973	1.7	3.2	4.6	5.9	7.0	8.2	10.1	11.7	14.9	32.7
1974	1.8	3.3	4.7	5.5	7.1	8.4	10.2	12.1	15.0	31.9
1975	2.0	3.7	4.9	6.0	7.3	8.6	10.1	12.1	15.3	30.0
1976	2.4	4.1	5.5	6.6	7.6	8.8	10.4	12.5	15.5	26.6
1977	2.3	3.9	5.2	6.3	7.4	8.7	10.3	12.4	15.6	27.9
1978	2.4	4.2	5.4	6.4	7.5	8.9	10.5	12.4	15.1	27.2
1979	2.2	3.8	5.1	6.2	7.4	8.8	10.5	12.4	15.6	28.0
1980	2.4	4.1	5.2	6.2	7.3	8.6	10.2	11.8	14.4	29.8
1981	2.8	4.6	5.7	6.7	7.8	9.0	10.5	12.4	15.2	25.3
1982	2.9	4.6	5.7	6.8	7.9	9.2	10.7	12.7	15.6	23.9
1983	2.7	4.5	5.6	6.6	7.7	9.0	10.5	12.7	15.7	25.0
1983 (a)	2.6	4.4	5.6	6.6	7.7	9.0	10.6	12.7	15.6	25.2
1984	2.7	4.3	5.6	6.6	7.7	9.1	10.7	12.6	15.5	25.2
1986	2.7	4.3	5.5	6.6	7.6	9.0	10.6	12.6	15.5	25.6
1987	2.7	4.2	5.2	6.3	7.4	8.8	10.6	12.6	15.8	26.4
1989	2.7	4.3	5.5	6.5	7.7	9.1	10.7	12.6	15.7	25.2
1991	2.7	4.4	5.6	6.7	7.9	9.3	11.0	13.0	15.6	23.8
1993	2.1	3.8	5.1	6.3	7.5	8.9	10.8	13.0	16.1	26.4
1995	2.3	3.9	5.2	6.3	7.5	8.9	10.6	12.8	15.9	26.6

Sources and notes: Calculated from the figures of Table B6; figures rounded off to add up to 100. – (a) Figures re-weighted on the basis of the household structure of the 1984 sample in order to correct for the bias generated by the drawing of the 1983 sample from the electoral register instead of the registry office records.

References

Abbate, C. and A. Baldassarini (1995), "Contenuto informativo degli archivi INPS e confronto con altre fonti sul mercato del lavoro", *Economia & Lavoro*, Vol. 28, No. 2, pp. 115-33.

Alesina, A. and R. Perotti (1996), "Income Distribution, Political Instability, and Investment", *European Economic Review*, Vol. 40, No. 6, pp. 1203-28.

Alesina, A. and D. Rodrik (1992), "Distribution, Political Conflict, and Economic Growth: A Simple Theory and Some Empirical Evidence", in A. Cukierman, Z. Mercowitz and L. Leiderman (eds.), *Political Economy, Growth, and Business Cycles*, Cambridge MA, MIT Press, pp. 23-50.

Ando, A. (1986), "Le indagini campionarie sui bilanci familiari: l'esperienza estera", in Banca d'Italia (1986), pp. 139-49.

Ando, A., L. Guiso and I. Visco (eds.) (1994), *Saving and the Accumulation of Wealth: Essays on Italian Households and Government Saving Behaviour*, Cambridge, Cambridge University Press.

Atkinson, A. B. and J. Micklewright (1983), "On the Reliability of Income Data in the Family Expenditure Survey 1970-1977", *Journal of the Royal Statistical Society*, Series A, Vol. 146, Part 1, pp. 33-53.

Atkinson, A. B., L. Rainwater and T. M. Smeeding (1995), *Income Distribution in OECD Countries: Evidence from the Luxembourg Income Study*, Paris, OECD.

Banca d'Italia (1986), *Le indagini campionarie sui bilanci delle famiglie italiane*, Numero speciale dei Contributi all'analisi economica, Roma, Banca d'Italia.

Banca d'Italia (1998), "Bibliografia dei lavori basati sull'indagine dei bilanci delle famiglie italiane", Servizio Studi, 29 December, mimeo.

Battipaglia, P. (1995), "Non-Sampling Errors in the Bank of Italy's Sample Survey on the Budgets of the Italian Families", mimeo.

Beach, C. M. and R. Davidson (1983), "Distribution-Free Statistical Inference with Lorenz Curves and Income Shares", *Review of Economic Studies*, Vol. 50, No. 163, pp. 723-35.

Biggeri, L. (1976), "L'adeguatezza delle informazioni statistiche sulla distribuzione personale dei redditi in Italia", in Istituto per la contabilità nazionale (1976), pp. 471-504.

Blau, F. D. and L. M. Kahn (1996a), "Wage Structure and Gender Earnings Differentials: An International Comparison", *Economica*, Vol. 63, No. 250, Supplement, pp. 29-62.

Blau, F. D. and L. M. Kahn (1996b), "International Differences in Male Wage Inequality: Institutions versus Market Forces", *Journal of Political Economy*, Vol. 104, No. 4, pp. 791-837.

Brandolini, A. (1993), "A Description and an Assessment of the Sample Surveys on the Personal Distribution of Incomes in Italy", University of Cambridge, Department of Applied Economics, Microsimulation Unit, Discussion Paper, No. MU9303.

Brandolini, A. and L. Cannari (1994), "Methodological Appendix: The Bank of Italy's Survey of Household Income and Wealth", in Ando, Guiso and Visco (1994), pp. 369-86.

Brandolini, A., L. Cannari and G. D'Alessio (1994), "The Composition and Distribution of Household Wealth in Italy, 1987-1991", mimeo.

Brandolini, A. and G. Parigi (1993), "Il reddito disponibile delle famiglie e la sua distribuzione: una stima derivata dall'inchiesta mensile dell'Isco", mimeo.

Callan, T. and B. Nolan (1997), "Income Distribution and Socio-Economic Differences in International Perspective", Report prepared for Eurostat, Dublin, Economic and Social Research Institute.

Cannari, L., V. Ceriani and G. D'Alessio (1997), "Il recupero degli immobili sottratti a tassazione", in *Ricerche quantitative per la politica economica*, Numero speciale dei Contributi all'analisi economica, Roma, Banca d'Italia, Vol. II, pp. 493-589.

Cannari, L. and G. D'Alessio (1990), "Housing Assets in the Bank of Italy's Survey of Household Income and Wealth", in C. Dagum and M. Zenga (eds.), *Income and Wealth Distribution, Inequality and Poverty*, Berlin, Springer, pp. 326-34.

Cannari, L. and G. D'Alessio (1992), "Mancate interviste e distorsione degli stimatori", Banca d'Italia, Temi di discussione, No. 172.

Cannari, L. and G. D'Alessio (1993), "Non-Reporting and Under-Reporting Behavior in the Bank of Italy's Survey of Household Income and Wealth", in *Proceedings of the ISI 49th Session*, Firenze, ISI, pp. 395-412.

Cannari, L. and G. D'Alessio (1994), "Composizione e distribuzione della ricchezza delle famiglie", in Rossi (1994), pp. 245-77.

Cannari, L., G. D'Alessio, G. Raimondi and A. I. Rinaldi (1990), "Le attività finanziarie delle famiglie italiane", Banca d'Italia, Temi di discussione, No. 135.

Cannari, L. and A. Gavosto (1995), "L'indagine della Banca d'Italia sui bilanci delle famiglie: una descrizione dei dati sul mercato del lavoro", *Economia & Lavoro*, Vol. 28, No. 1, pp. 63-79.

Cannari, P. and P. Sestito (1995), "Income, Consumption and Labour Force Surveys: An Outlook on Italy", *Annali di statistica*, Anno 124, Serie X, Vol. 5, pp. 25-45.

Cannari, L. and R. Violi (1995), "Reporting Behavior in the Bank of Italy's Survey of Italian Household Income and Wealth", in C. Dagum and A. Lemmi (eds.), *Research on Economic Inequality, Volume 6*, Greenwich, JAI Press, pp. 117-30.

Capocaccia, R. and G. Caselli (1990), "Popolazione residente per età e sesso nelle province italiane: anni 1972-1981", Università degli Studi di Roma "La Sapienza", Dipartimento di Scienze Demografiche, Fonti e strumenti, No. 2.

Clarke, G. R. G. (1995), "More Evidence on Income Distribution and Growth", *Journal of Development Economics*, Vol. 47, No. 2, pp. 403-27.

Coccia, G., D. Grassi and S. Sanzo (1995), "La mancata risposta totale: spunti teorici ed applicazioni nel caso dell'indagine sui consumi delle famiglie, *Rivista italiana di economia, demografia e statistica*, Vol. 49, No. 3, pp. 115-30.

Commissione di indagine sulla povertà e sull'emarginazione (1996a), *La povertà in Italia 1980-1994*, Roma, Istituto Poligrafico e Zecca dello Stato.

Commissione di indagine sulla povertà e sull'emarginazione (1996b), *La povertà in Italia 1995*, Roma, Istituto Poligrafico e Zecca dello Stato.

Cowell, F. A. (1989), "Sampling Variance and Decomposable Inequality Measures", *Journal of Econometrics*, Vol. 42, No. 1, pp. 27-41.

Cowell, F. A. (1991), "INEQ", London, London School of Economics, STICERD.

Cowell, F. A. (1995), *Measuring Inequality*, Hemel-Hampstead, Harvester-Wheatsheaf, 2nd ed.

Cowell, F. A. and F. Mehta (1982), "The Estimation and Interpolation of Inequality Measures", *Review of Economic Studies*, Vol. 49, No. 156, pp. 273-90.

D'Alessio, G. (1997), "Archivio storico dell'Indagine sui bilanci delle famiglie italiane, 1977-95. Archivi derivati e coefficienti di ponderazione", Restricted internal document, Roma, Banca d'Italia.

D'Alessio, G. and M. Gallo (1997), "Archivio storico dell'Indagine sui bilanci delle famiglie italiane, 1977-95. Archivi di base", Restricted internal document, Roma, Banca d'Italia.

D'Apice, C. (1977), "La distribuzione dei redditi nelle indagini della Banca d'Italia", *Politica ed economia*, Anno 8 (3rd s.), No. 2-3, pp. 31-42.

De Meo, G. (1967), "Redditi e produttività in Italia (1951-1966)", *Annali di statistica*, Anno 96, Serie VIII, Vol. 20.

Erickson, C. L. and A. Ichino (1995), "Wage Differentials in Italy: Market Forces, Institutions, and Inflation", in R. B. Freeman and L. F. Katz (eds.), *Differences and Changes in Wage Structures*, Chicago IL, University of Chicago Press, pp. 265-305.

Eurostat (1996), *The European Community Household Panel (EHCP): Survey Methodology and Implementation. Volume 1*, Theme 3, Series E, Luxembourg, Office for Official Publications of the European Communities.

Eurostat (1997), "Income Distribution and Poverty in EU12 - 1993", *Statistics in Focus. Population and Social Conditions*, No. 6.

Eurostat (1998a), "Low Income and Low Pay in a Household Context (EU-12)", *Statistics in Focus. Population and Social Conditions*, No. 6.

Eurostat (1998b), "Analysis of Income Distribution in 13 EU Member States", *Statistics in Focus. Population and Social Conditions*, No. 11.

Fabbris, L., G. Leti, E. Zaghini and A. Zuliani (1986), "Aspetti metodologici delle indagini campionarie sui bilanci delle famiglie italiane", in Banca d'Italia (1986), pp. 11-62.

Gottschalk, P. and T. M. Smeeding (1997), "Cross-National Comparisons of Earnings and Income Inequality", *Journal of Economic Literature*, Vol. 35, No. 2, pp. 633-87.

Guiso, L., T. Jappelli and D. Terlizzese (1992), "Earnings Uncertainty and Precautionary Savings", *Journal of Monetary Economics*, Vol. 30, No. 2, pp. 307-37.

Hackauf, H., R. Randell, J. Coder, T. Smeeding and U. Warner (1990), "Final Report for the Statistical Offices of the European Community Project on Technical Documentation and Income Data Quality for the Luxembourg Income Study Database: Phase Two. Vol. II", Walferdange (Luxembourg), Luxembourg Income Study.

Hagenaars, A. J. M. (1986), *The Perception of Poverty*, Amsterdam, North-Holland.

Innocenzi, G. (1992), "Principali aspetti dell'indagine Istat sui consumi delle famiglie", Università di Bologna, Dipartimento di Scienze Statistiche, Rapporto di ricerca, No. 2.

Innocenzi, G. (1994), "Revisione indagine bilanci di famiglia", Istat, mimeo.

Isco (1997), "L'evoluzione congiunturale dell'economia italiana", *Rapporto semestrale*, No. 67.

Istat (1960), "Indagine statistica sui bilanci di famiglie non agricole negli anni 1953-54", *Annali di statistica*, Anno 89, Serie VIII, Vol. 11.

Istat (1968), "Indagine statistica sui bilanci delle famiglie italiane. Anni 1963-64", *Annali di statistica*, Anno 97, Serie VIII, Vol. 21.

Istat (1985), *Indagine sulla struttura ed i comportamenti familiari*, Roma.

Istat (1988), "Conti economici nazionali. Occupazione e redditi da lavoro dipendente. 1980-1987", *Collana d'informazione*, No. 23.

Istat (1989), *Censimento (XII) generale della popolazione: 25 ottobre 1981. Vol. V: Relazione generale sul censimento,* Roma.

Istat (1990), *Rilevazione sui consumi delle famiglie italiane. Istruzioni per la raccolta dei dati*, Roma.

Istat (1992a), "Indagini sulle famiglie. I rilevatori", *Notiziario*, Serie 4, Foglio 41, Anno 13, No. 5.

Istat (1992b), *13° Censimento generale della popolazione e delle abitazioni, 20 ottobre 1991. Primi risultati*. Roma.

Istat (1996), "Ricostruzione della popolazione residente per età e sesso nelle province italiane. Anni 1982-1991", *Informazioni speciale*, No. 17.

Istat (1997a), "La povertà in Italia nel 1996", *Note rapide*, Anno 2, No. 6.

Istat (1997b), "Conti economici e finanziari dei settori istituzionali. Anni 1980-96", Roma, floppy disk.

Istat (1997c), "Occupazione e redditi da lavoro dipendente 1980-96", Roma, floppy disk.

Istituto per la contabilità nazionale (1976), *Atti del 3° convegno di contabilità nazionale. La distribuzione del reddito in Italia nell'ultimo ventennio*, Roma.

Kalton, G. (1983), *Introduction to Survey Sampling*, Beverly Hills CA, Sage.

Katz, A. J. and S. W. Herman (1997), "Improved Estimates of Fixed Reproducible Tangible Wealth, 1929-95", *Survey of Current Business*, Vol. 77, No. 5, pp. 69-92.

Kuznets, S. (1963), "Quantitative Aspects of the Economic Growth of Nations: VIII. Distribution of Income by Size", *Economic Development and Cultural Change*, Vol. 11, No. 2, Part II, pp. 1-80.

Latorre, G. (1990), "Asymptotic Distributions of Indices of Concentration: Empirical Verification and Applications", in C. Dagum and M. Zenga (eds.), *Income and Wealth Distribution, Inequality and Poverty*, Berlin, Springer, pp. 149-70.

Lemmi, A. (1981), "Un tentativo di confronto aggregato fra le stime del reddito familiare della Banca d'Italia e i valori della contabilità nazionale, nel periodo 1970-1978", *Note economiche*, Vol. 14, No. 2, pp. 125-34.

Lucev, D. (1992a), "Le mancate risposte totali nell'indagine sui consumi delle famiglie", Università di Bologna, Dipartimento di Scienze Statistiche, Rapporto di ricerca, No. 14.

Lucev, D. (1992b), "La revisione manuale dei dati nell'indagine sui consumi delle famiglie", Università di Bologna, Dipartimento di Scienze Statistiche, Rapporto di ricerca, No. 18.

Lucifora, C. (1996), "L'analisi del mercato del lavoro con micro-dati: l'utilizzo degli archivi amministrativi INPS", *Economia & Lavoro*, Vol. 29, No. 3, pp. 3-20.

Luzzatto Fegiz, P. (1949), *I redditi delle famiglie italiane nel 1948*, Milano, Doxa.

Luzzatto Fegiz, P. (1950), "La distribuzione del reddito nazionale", *Giornale degli economisti e Annali di economia*, Vol. 9 (n.s.), No. 7-8, pp. 341-54.

Luzzatto Fegiz, P. (1956), *Il volto sconosciuto dell'Italia. Dieci anni di sondaggi Doxa*, Milano, Giuffrè.

Luzzatto Fegiz, P. (1966), *Il volto sconosciuto dell'Italia. Seconda serie - 1956-1965*, Milano, Giuffrè.

Manfroni, P. (1976), "Flussi e consistenza di beni durevoli di consumo in Italia nel periodo 1951-73", *Rivista italiana di economia, demografia e statistica*, Vol. 30, No. 1, pp. 121-62.

Mantegazza, S. and G. Tassinari (1992), "La coerenza delle valutazioni dei consumi privati nella contabilità nazionale e nell'indagine sui bilanci delle famiglie", Università di Bologna, Dipartimento di Scienze Statistiche, Rapporto di ricerca, No. 4.

Marotta, G. and P. Pagliano (1992), "Income Accounts by Institutional Sector: 1970 to 1979 Estimates", in G. Marotta, P. Pagliano and N. Rossi, "Income and Saving in Italy: A Reconstruction", Banca d'Italia, Temi di discussione, No. 169.

Mills, J. A. and S. Zandvakili (1997), "Statistical Inference via Bootstrapping for Measures of Inequality", *Journal of Applied Econometrics*, Vol. 12, No. 2, pp. 133-50.

Ministero del Bilancio (various years), *Relazione generale sulla situazione economica del paese*, Roma, Istituto Poligrafico e Zecca dello Stato.

Ministero delle Finanze (1992), *Analisi delle dichiarazioni dei redditi delle persone fisiche presentate nel 1990. Mod. 740 e 101*, Roma, Istituto Poligrafico e Zecca dello Stato.

Moriani, C. (1986), "L'indagine sui bilanci di famiglia dell'Istat", in Banca d'Italia (1986), pp. 63-78.

Muttarini, L. (1976), "Su alcuni aspetti metodologici della rilevazione diretta dei redditi", in Istituto per la contabilità nazionale (1976), pp. 389-400.

OECD (1996), "Earnings Inequality, Low-Paid Employment and Earnings Mobility", in *Employment Outlook*, Paris, pp. 59-108.

Pagliano, P. and N. Rossi (1992), "The Italian Saving Rate: 1951 to 1990 Estimates", in G. Marotta, P. Pagliano and N. Rossi, "Income and Saving in Italy: A Reconstruction", Banca d'Italia, Temi di discussione, No. 169.

Parigi, G. and G. Schlitzer (1995), "Quarterly Forecasts of the Italian Business Cycle by Means of Monthly Economic Indicators", *Journal of Forecasting*, Vol. 14, No. 2, pp. 117-42.

Parigi, G. and G. Schlitzer (1997), "Predicting Consumption of Italian Households by Means of Survey Indicators", *International Journal of Forecasting*, Vol. 13, No. 2, pp. 197-209.

Paukert, F. (1973), "Income Distribution at Different Levels of Development: A Survey of Evidence", *International Labour Review*, Vol. 108, pp. 97-125.

Perotti, R. (1994), "Income Distribution and Investment", *European Economic Review*, Vol. 38, No. 3-4, pp. 827-35.

Perotti, R. (1996), "Growth, Income Distribution and Democracy: What the Data Say", *Journal of Economic Growth*, Vol. 1, No. 2, pp. 149-87.

Persson, T. and G. Tabellini (1992), "Growth, Distribution and Politics", *European Economic Review*, Vol. 36, No. 2-3, pp. 593-602.

Persson, T. and G. Tabellini (1994), "Is Inequality Harmful for Growth?", *American Economic Review*, Vol. 84, No. 3, pp. 600-21.

Pirrotta, R. A. (1977), "The Income, Saving and Structure of Wealth of Italian Families in 1975", *Review of the Economic Conditions in Italy*, Vol. 31, No. 5, pp. 259-82.

Pirrotta, R. A. (1979), "The Incomes, Savings and Real Wealth of Italian Households in 1977", *Review of the Economic Conditions in Italy*, Vol. 33, No. 1, pp. 19-52.

Pirrotta, R. A. (1986), "L'indagine sui bilanci delle famiglie italiane della Banca d'Italia", in Banca d'Italia (1986), pp. 115-27.

Pissarides, C. and G. Weber (1989), "An Expenditure-Based Estimate of Britain's Black Economy", *Journal of Public Economics*, Vol. 39, No. 1, pp. 17-32.

Quintano, C., R. Castellano and A. A. Romano (1996), *L'imputazione delle mancate risposte nelle indagini con parte panel. Il caso dei redditi familiari della Banca d'Italia*, Napoli, Curto.

Regoli, A. (1996), "Esperienze empiriche ed analitiche dalle prime due onde della componente italiana del Panel Europeo sulle famiglie", mimeo.

Rossi, N. (ed.) (1993), *La crescita ineguale: 1981-1991. Primo rapporto CNEL sulla distribuzione e redistribuzione del reddito in Italia*, Bologna, Il Mulino.

Rossi, N. (ed.) (1994), *La transizione equa: 1992-1993. Secondo rapporto CNEL sulla distribuzione e redistribuzione del reddito in Italia*, Bologna, Il Mulino.

Rossi, N. (ed.) (1996), *Competizione e giustizia sociale: 1994-1995. Terzo rapporto CNEL sulla distribuzione e redistribuzione del reddito in Italia*, Bologna, Il Mulino.

Rossi, N. (ed.) (1998), *Il lavoro e la sovranità sociale: 1996-1997. Quarto rapporto CNEL sulla distribuzione e redistribuzione del reddito in Italia*, Bologna, Il Mulino.

Rossi, N., G. Toniolo and G. Vecchi (1999), "Is the Kuznets Curve Still Alive? Evidence from Italy's Household Budgets, 1881-1961", mimeo.

Sawyer, M. (1976), "Income Distribution in OECD Countries", *OECD Economic Outlook, Occasional Studies*, July.

Smeeding, T. M., M. O'Higgins and L. Rainwater (eds.) (1990), *Poverty, Inequality, and Income Distribution in Comparative Perspective: The Luxembourg Income Study*, Washington DC, Urban Institute.

Sutherland, H. (1995), "Static Microsimulation Models in Europe: A Survey", University of Cambridge, Department of Applied Economics, Microsimulation Unit, Discussion Paper, No. MU9503.

Targetti Lenti, R. (1984), *Struttura produttiva e distribuzione personale del reddito: una verifica del caso italiano*, Milano, Giuffrè.

Trivellato, U. (1991), "FOLA: Sintesi di una ricerca", *Annali di statistica*, Anno 120, Serie IX, Vol. 11, pp. 3-30.

Ulizzi, A. (1969), "Income, Saving and Structure of Wealth in Italian Households in 1967", *Review of the Economic Conditions in Italy*, Vol. 23, No. 4, pp. 275-303.

Ulizzi, A. (1970), "Income, Saving and Expenditures of Italian Households in 1968", *Review of the Economic Conditions in Italy*, Vol. 24, No. 6, pp. 411-38.

United Nations (1977), *Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households*, Studies in Methods, Series M, No. 61, New York.

United Nations (1981), *A Survey of National Sources of Income Distribution Statistics (First Report)*, Statistical Papers, Series M, No. 72, New York.

Zaidi, M. A. and K. de Vos (1998), "Trends in Consumption-Based Poverty and Inequality in the Member States of the European Union during the 1980s", mimeo.

RECENTLY PUBLISHED "TEMI" (*)

No. 325 — *Style, Fees and Performance of Italian Equity Funds,* by R. CESARI and F. PANETTA (January 1998).

No. 326 — *Adverse Selection of Investment Projects and the Business Cycle,* by P. REICHLIN and P. SICONOLFI (February 1998).

No. 327 — *International Risk Sharing and European Monetary Unification,* by B. E. SØRENSEN and O. YOSHA (February 1998).

No. 328 — *The Behaviour of the Dollar and Exchange Rates in Europe: Empirical Evidence and Possible Explanations,* by P. DEL GIOVANE and A. F. POZZOLO (February 1998).

No. 329 — *Risultati e problemi di un quinquennio di politica dei redditi: una prima valutazione quantitativa,* by S. FABIANI, A. LOCARNO, G. ONETO and P. SESTITO (March 1998).

No. 330 — *La problematica della crescente fragilità nella "ipotesi di instabilità finanziaria" da una prospettiva kaleckiana,* by G. CORBISIERO (March 1998).

No. 331 — *Research and Development, Regional Spillovers, and the Location of Economic Activities,* by A. F. POZZOLO (March 1998).

No. 332 — *Central Bank Independence, Centralization of Wage Bargaining, Inflation and Unemployment: Theory and Evidence,* by A. CUKIERMAN and F. LIPPI (April 1998).

No. 333 — *La domanda di finanziamenti bancari in Italia e nelle diverse aree del Paese (1984-1996),* by D. FOCARELLI and P. ROSSI (May 1998).

No. 334 — *La politica fiscale nei paesi dell'Unione europea negli anni novanta,* by P. CASELLI and R. RINALDI (July 1998).

No. 335 — *Signaling Fiscal Regime Sustainability,* by F. DRUDI and A. PRATI (September 1998).

No. 336 — *Fiscal Consolidations under Fixed Exchange Rates,* by P. CASELLI (October 1998).

No. 337 — *Investimenti diretti all'estero e commercio: complementi o sostituti?,* by A. MORI and V. ROLLI (October 1998).

No. 338 — *Nonlinear VAR: Some Theory and an Application to US GNP and Unemployment,* by F. ALTISSIMO and G. L. VIOLANTE (October 1998).

No. 339 — *The Probability Density Function of Interest Rates Implied in the Price of Options,* by F. FORNARI and R. VIOLI (October 1998).

No. 340 — *Heterogeneous "Credit Channels" and Optimal Monetary Policy in a Monetary Union,* by L. GAMBACORTA (October 1998).

No. 341 — *"Enemy of None but a Common Friend of All"? An International Perspective on the Lender-of-Last-Resort Function,* by C. GIANNINI (December 1998).

No. 342 — *Energy Consumption, Survey Data and the Prediction of Industrial Production in Italy,* by D. J. MARCHETTI and G. PARIGI (December 1998).

No. 343 — *What Caused the Asian Currency and Financial Crisis?,* by G. CORSETTI, P. PESENTI and N. ROUBINI (December 1998).

No. 344 — *Investment and the Exchange Rate,* by F. NUCCI and A. F. POZZOLO (December 1998).

No. 345 — *Reallocation and Learning over the Business Cycle,* by F. SCHIVARDI (December 1998).

No. 346 — *Una ricostruzione omogenea di dati regionali: conti economici e reddito disponibile delle famiglie 1970-1995,* by P. BERRETTONI, R. DELOGU, C. PAPPALARDO and P. PISELLI (February 1999).

No. 347 — *Industrial Districts and Local Banks: Do the Twins Ever Meet?,* by A. BAFFIGI, M. PAGNINI and F. QUINTILIANI (March 1999).

No. 348 — *Orari di lavoro atipici in Italia: un'analisi attraverso l'Indagine dell'uso del tempo dell'Istat,* by R. TORRINI (March 1999).

No. 349 — *Gli effetti economici del nuovo regime di tassazione delle rendite finanziarie,* by R. CESARI (March 1999).