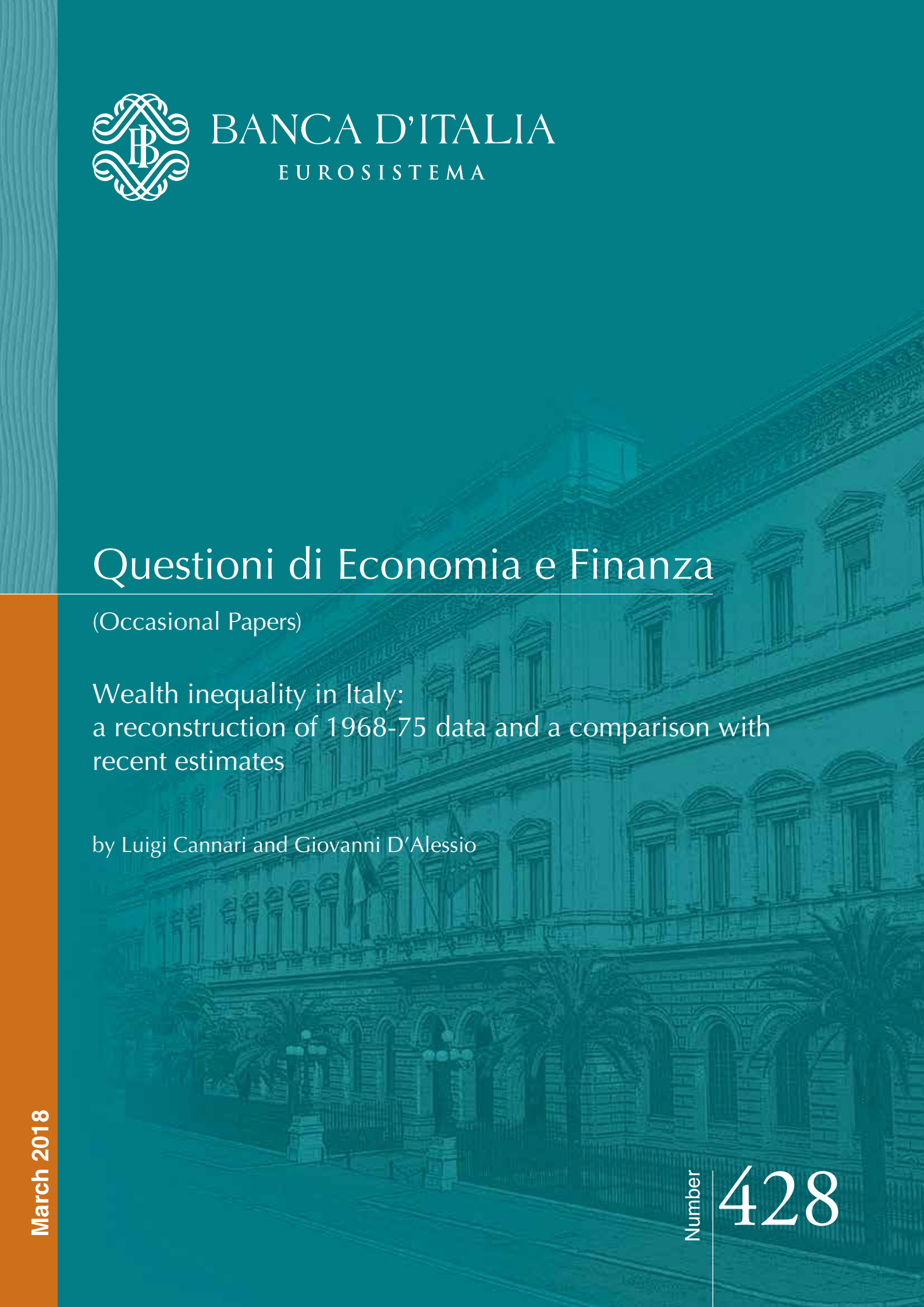
BANCA D'ITALIA
EUROSISTEMA



Questioni di Economia e Finanza

(Occasional Papers)

Wealth inequality in Italy: a reconstruction of 1968-75 data and a comparison with recent estimates

by Luigi Cannari and Giovanni D'Alessio

March 2018

Number 428

BANCA D'ITALIA
EUROSISTEMA

Questioni di Economia e Finanza

(Occasional Papers)

Wealth inequality in Italy: a reconstruction of 1968-75 data and a comparison with recent estimates

by Luigi Cannari and Giovanni D'Alessio

Number 428 – March 2018

The series Occasional Papers *presents studies and documents on issues pertaining to the institutional tasks of the Bank of Italy and the Eurosystem. The* Occasional Papers *appear alongside the* Working Papers *series which are specifically aimed at providing original contributions to economic research.*

The Occasional Papers *include studies conducted within the Bank of Italy, sometimes in cooperation with the Eurosystem or other institutions. The views expressed in the studies are those of the authors and do not involve the responsibility of the institutions to which they belong.*

The series is available online at www.bancaditalia.it .

ISSN 1972-6627 (print)
ISSN 1972-6643 (online)

Printed by the Printing and Publishing Division of the Bank of Italy

WEALTH INEQUALITY IN ITALY: A RECONSTRUCTION OF 1968-75 DATA AND A COMPARISON WITH RECENT ESTIMATES

by Luigi Cannari* and Giovanni D'Alessio*

Summary

This paper provides a reconstruction of the joint distribution of income and wealth among Italians in the years ranging from 1968 to 1975. By exploiting the information available in some historical reports recently published by the Bank of Italy, the paper reconstructs synthetic microdata compatible with the aggregate results of sample surveys carried out in those years. In this way, inequality and poverty can be estimated by using the same statistical criteria that are used today, making possible an intertemporal comparison of the estimates. The concentration of household wealth shows a downward trend in the 1970s and 1980s, an increase in the years following the 1992-93 crisis and a relative stability in the new century. In the period 1968-75 the concentration of wealth turns out to have been higher than in recent years. The estimates of relative poverty, calculated by using both indicators of equivalent income and indicators that combine income and wealth, show a decreasing trend until the 1990s and a subsequent increase; the upward trend of these indicators in recent years is steeper than that of the concentration indices. The poverty indicators that take wealth into account have reached levels similar to those observed in the period 1968-75. Migration flows have significantly contributed to the recent growth in the poverty indices.

JEL Classification: D31, D63, I32, C15.
Keywords: wealth, income, inequality, poverty, synthetic data.

Index

* Bank of Italy, Directorate General for Economics, Statistics and Research.

1 Introduction[1]

In his now famous book 'Capital in the Twenty-First century', Thomas Piketty begins by writing: 'The distribution of wealth is one of today's most widely discussed and controversial issues. But what do we really know about its evolution over the long term? Do the dynamics of private capital accumulation inevitably lead to the concentration of wealth in ever fewer hands, as Karl Marx believed in the nineteenth century? Or do the balancing forces of growth, competition, and technological progress lead in later stages of development to reduced inequality and greater harmony among the classes, as Simon Kuznets thought in the twentieth century? What do we really know about how wealth and income have evolved since the eighteenth century, and what lessons can we derive from that knowledge for the century now under way?' (Piketty, 2014, p. 11).

Despite the importance of the issue, information on the evolution of wealth inequality over time is scarce. One of the main sources of information in Italy is represented by the Survey of Household Income and Wealth (SHIW), conducted by the Bank of Italy since the mid-1960s (Baffigi et al., 2016). On the occasion of the fiftieth anniversary of this survey, the Bank of Italy has made some calculations available to the scientific community that allow us to carefully reconstruct the distribution of income and wealth between the late 1960s and the first half of the 1970s.

Based on this information, the paper reconstructs a benchmark for the joint distribution of income and wealth for the period 1968-1975 and compares these data with those of the most recent surveys. In the paper, we reconstruct synthetic microdata, compatible with the aggregate results published in those years. These microdata are then analysed according to the methods used in current surveys, for which the original microdata are available instead. Therefore, the paper is also of an experimental and methodological nature.

The analysis shows a marked increase in the household wealth to income ratio between the end of the 1970s and the years of the recent financial crisis. The concentration of wealth shows a marked reduction from 1968 until the beginning of the 1990s, then a recovery and a subsequent stabilization; in 2014 the concentration of wealth was much lower than in the years 1968-1975.

The paper is organized as follows: Section 2 shows the data and methods used for the reconstruction of synthetic data. Section 3 illustrates the macro estimates of household income and wealth from the post-war period to the present, comparing the trends with those of the survey. Section 4 reports the main results concerning the inequality of wealth. Section 5 illustrates the evolution of poverty indices from the 1960s to the present, while Section 6 presents the main conclusions.

[1] The opinions expressed in this paper do not necessarily reflect those of the Bank of Italy.

2 Data and methods

2.1 The data used

The analysis of the distribution of wealth is based on the Bank of Italy's Survey of Household Income and Wealth (SHIW). SHIW microdata have been collected since 1977 for many variables but data collection on wealth- based on a comprehensive definition - only started in 1987. For the years before 1977 the analysis can be carried out by using publications from those years and, more recently, the information that the Bank of Italy has made available to the scientific community in the form of statistical tables describing the results of the surveys in detail.[2]

The data taken into consideration refers to the period 1968-1975. For those years, the published reports include some two-way tables that allow us to accurately reconstruct the distribution of household per capita income and wealth and their joint distribution (Table 1). In particular, for the period 1968-1972, the following joint distributions are available: household wealth and household size; household income and household size; household wealth and household income; and household wealth and age of the household head.[3]

The surveys carried out between 1973 and 1975 present some methodological differences in the questionnaire, the definition of some variables, and the sampling methodology with respect to the previous ones (rich households were oversampled; see Brandolini, 1999). The methodological note for the 1973 survey (Bank of Italy, 1973) describes the oversampling of families belonging to the 'upper and upper-middle classes', specifying that some adjustments were made to the weighting coefficients. Moreover, for this three-year period only three of the abovementioned four bivariate distributions are available (household income and household size; household income and wealth; and household wealth and age of the household head): it will be necessary to take these aspects into account in both the processing of data and the analysis of the results.

No information on wealth distribution is available for the years before 1968.

Information on household wealth largely comparable with that of the late 1960s was collected for the SHIW from 1987 to 2014.[4] The analyses that will be presented below will therefore mainly refer to the comparison between the period for which data reconstruction is carried out (1968-75) and the two decades around the end of the twentieth century. For the years between 1977 and 1986, however, information is available on some important components of wealth; this information makes it possible to estimate the trend of inequality and to provide a more complete overview.

---

[2] The information used for our reconstructions is available at: http://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/documenti-storici/index.html

[3] In the original tables some data are missing for income or wealth. In some cases it would have been possible to impute these data by exploiting the partial knowledge present in the data. However, a test conducted for 1969 showed that this practice did not lead to a significant variation in results. Therefore, it was decided to carry out the whole analysis only on the available data, as shown in the published tables.

[4] However, complete comparability is limited to the years from 1991 onwards.

Table 1

Historical tables published on the Bank of Italy's Internet website [(*)], 1968-1975

Year	Income and number of household members	Net wealth and number of household members	Net wealth and income	Net wealth and age of the head of household
1965	-	-	-	-
1966	X	-	-	-
1967	X	-	-	-
1968	X	X	X	X
1969	X	X	X	X
1970	X	X	X	X
1971	X	X	X	X
1972	X	X	X	X
1973	X	-	X	X
1974	X	-	X	X
1975	X	-	X	X

(*) In 1971 net wealth has a less detailed breakdown by wealth brackets.

The definitions of wealth adopted in 1968-1975 are similar to those of 1991 and subsequent years, but not entirely equivalent. In the Statistical Bulletin of 1970, which commented on the 1968 data, we find the following definition of wealth:

> 'The net worth of households can be defined as the algebraic sum of financial assets (deposits, securities, credits) and real assets (real estate and durable assets) and liabilities, both long (mortgages) and short-term (debts for purchases of consumer goods).
>
> With the present survey we tried for the first time to collect data on this aggregate, consolidating the various components for each household interviewed, taken with their sign. Some assets have not been considered for the purpose of calculating wealth due to the difficulty of detection, such as safe-haven assets (gold, jewelry, rare stamps, paintings, etc.) and assets consisting of credits from other families (loans); the investments in companies and businesses, both sole proprietorship and in the form of companies (with the sole exception of the shareholding of listed companies, which are instead considered) were excluded from the calculation, as were capital goods owned by craftsmen, traders, professionals (...). In addition, the insufficiency of certain estimates (deposits and securities in particular) due to the poor collaboration of the interviewees has to be taken into account when interpreting the data'. (Bank of Italy, 1970, page 56).

The main differences in the definition between the data for the late 1960s and the current data are represented by the presence of durable goods in the former and the presence of business equities and valuables in the latter. We do not believe that these differences significantly affect the results of the comparison of inequality indicators. If 1991 data are revised to take the main differences into account, i.e. by deducting the value of business equities, with the exception of listed companies, adding cars and excluding valuables, the Gini wealth index decreases from 0.591 to 0.586, a relatively small variation.

Another important issue is the underestimation of aggregates, due to the phenomena of non-response, non-reporting, and under-reporting, which could have changed over time. By comparing the microeconomic estimates of household wealth with the macroeconomic data estimated by Cannari, D'Alessio and Vecchi (2017), we find that the ratio between the two measures has not remained constant over time; this issue will be discussed in the following sections.

2.2 The method for reconstructing synthetic microdata

Today, technology allows us to process large volumes of data easily and the opportunity for researchers to access microdata is considerably higher than in the past. Yet fifty years ago, when for example the SHIW was born, the hardware and software for data processing were rudimentary compared with today's standards. Computer memory was limited; the data were stored on voluminous and easily perishable punch cards; the result of the calculations consisted of frequency tables, with data grouped in classes.

For the oldest surveys it frequently happens (and this is the case with SHIW) that the original microdata do not survive as time goes by; what remains today for the surveys conducted up to 1975 are only statistical calculations, frequency distributions and average values, for data grouped in classes. The processing of these data is not easy, for example when calculating the share of the poor in the absence of income or consumption classes that identify the poverty line.

The construction of synthetic microdata (i.e. microdata reconstructed in such a way as to replicate the available aggregate tables) makes data processing easier and allows us to use current methods and standards easily.

The use of synthetic data was initially proposed to meet the needs of economic research on microdata, while protecting the confidentiality of respondents (Rubin, 1993, Reiter 2002). This need has grown over time, in correspondence with the increased need for granular data availability for economic analysis. In practice, the idea is to construct a microdata sample by simulating an extraction from a multivariate distribution equivalent to that underlying the individual records whose privacy is to be protected (Barrientos et al., 2017).

However, the use of synthetic data can also be justified by the need for analysis, when the availability of microdata makes it possible to calculate the indicators we are interested in. An example in this sense is found in the work of Shorrocks and Wan (2008), who reconstruct synthetic samples for the analysis of poverty and inequality starting from income data grouped in classes.

In this work we adopt a procedure similar to that proposed by some authors for small area estimators (Tanton, 2014; Williamson, 2013). Starting from a distribution actually observed and plausibly similar to that to be reconstructed, ‘adjustments’ are made to the weighting coefficients to align the observed microdata to the frequency distributions that are to be replicated, which in this case are the tables available for those years described in the previous paragraph.[5]

To reconstruct the microdata on wealth, income, number of household members and age of the head of household in the years considered, we start from the data collected by 12 surveys conducted from 1991 (the first year for which microdata on wealth are available and in line with those of the following years) to 2014 (last year available). The size of the dataset is about 95,000 households (Table 2).

[5] As described in Tanton (2014), a further possibility, though probably more complex and arbitrary, could be the generation of totally synthetic samples able to satisfy the constraints in terms of the joint distribution of the phenomena examined.

For each year between 1991 and 2014 the data have been preliminarily reproportioned in order to make the averages of wealth (W_t) and income (Y_t) equal to those of the year to be estimated:

$W_k^* = W_t * M(W_k)/M(W_t)$ and $Y_k^* = Y_t * M(Y_k)/M(Y_t)$

where k=1968, …, 1975 ; t=1991, …, 2014

and M(.) represents the arithmetic mean operator.

This set of microdata, which in the distribution represents the average profile of wealth and income between 1991 and 2014, has been subjected to a raking procedure (Deville and Sarndal, 1992), using the bivariate distributions drawn from the statistical reports of the surveys published at the time as constraints. The technique performs a post-stratification that first of all allows us to satisfy the constraints imposed by the joint distribution of wealth and the number of components; then the new weights undergo a new reweighting procedure, aimed at satisfying the further constraint imposed by the joint distribution of income and the number of components. Subsequently we proceed by readjusting the weights in order to obtain the joint distribution of wealth and income; finally we proceed with a reweighting that provides the bivariate distribution of wealth brackets and age of the household head. Since only the last joint distribution is fully consistent with the constraints at the end of this first cycle, the process is repeated iteratively until the four bivariate distributions are all satisfied at the same time.[6]

In this way we construct microdata compatible with the constraints, which allows us to estimate indicators based on the wealth and income distribution with great flexibility.[7] For example, synthetic microdata allow us to adopt the same equivalence scales that we use today, making possible the reconstruction of homogeneous historical series, or the calculation of indices based on the joint distribution of income and wealth. Using the full set of data from 1991 to 2014, the sample size is large enough to represent the typical characteristics of these distributions, such as the particular asymmetry and the limited presence of negative values.

Raking is not free from possible shortcomings (Brick et al., 2003) and there is a considerable lag between the period to which the starting data refer and the year whose distribution is estimated; this suggests that the robustness of the results needs to be assessed in various ways.

First we estimated the amount of variance contained in the synthetic microdata of wealth and income attributable to the classificatory variables, and therefore attributable to the information contained in the reports, and the residual variance (within the cells). This assessment can be carried out by using the most recent surveys for which microdata are

---

[6] The use of three bivariate marginal tables (income by wealth, wealth by number of components and income by number of components) makes it possible to estimate all the second order moments of the trivariate distribution.

[7] Shorrocks and Wan (2008) propose a parametric method for estimating the distribution of phenomena starting with the values published in the statistical tables of the reports. Their method, unlike the one proposed here, is aimed at a univariate reconstruction of the variable of interest.

available. In particular we estimated a linear model where the value of household wealth (and income) is a function of the four bivariate classification criteria used in the procedure:

$$W = a + b\ CLY*NCOMP + c\ CLW*NCOMP + d\ CLW*CLY + f\ CLW * CLETA$$

where CLY and CLW represent the income and wealth brackets respectively, NCOMP the number of household members and CLETA the age classes of the household head; a, b and c are parameters to be estimated.

The R^2 coefficients are around 90 per cent between 2010 and 2014; similar models for income provide R^2 values of around 95 per cent on average. Thus it is likely that a very large share (90-95 per cent) of the variance of the 1968-75 micro-synthetic data is explained by the classificatory variables present in the historical reports and used as constraints in our procedure; the residual variability (5-10 per cent) would be attributable to the variance within the cells that the procedure imputes by using data from the most recent years.

Synthetic data can also provide fairly accurate information on some joint distributions. Information on the bivariate distributions between income and wealth (and the others) is directly inserted into the data set through the constraints; the bivariate aggregate tables are perfectly reproduced in the synthetic data. In contrast, the trivariate distributions (for example, between wealth, income and number of components) are only approximated by the knowledge of the three bivariate distributions. The higher order relations are approximated in the microdata, given the constraints on the bivariate distributions, by using the information contained in the most recent surveys.

To assess the accuracy of this approximation, we resort to recent data and estimate the logarithm of the frequency ($\log f_{ijk}$) of the trivariate distribution as a function of the dummies related to the three bivariate distributions:

$$\log f_{ijk} = a + b\ CLY*NCOMP + c\ CLW*NCOMP + d\ CLW*CLY$$

The R^2 of this model is around 90 per cent; therefore synthetic data seem to be a good representation of the trivariate distribution.

A final robustness check was based on simulation models. In particular we generated the 1968 microdata on income and wealth by using a bivariate lognormal distribution (shifted to enable the generation of negative values of income and wealth).

For each household size in terms of the number of components, we extracted a sample from a bivariate lognormal distribution with the mean and variance of income and wealth estimated on the historical statistical reports and with a correlation between income and wealth (by household size) estimated on the most recent microdata. We then applied raking techniques to the synthetic sample in order to make the simulated distributions consistent with the aggregate bivariate historical tables. The results obtained by using this method compare very closely with the previous ones: the choice of starting data seems to have little influence on the results, which seem to be robust.

Table 2

Sample size of SHIW surveys, 1968-1975 and 1987-2014

Year	Sample
1968	3,478
1969	3,355
1970	3,026
1971	6,725
1972	5,889
1973	5,177
1974	4,605
1975	4,447
1987	7,328
1989	8,274
1991	8,188
1993	8,089
1995	8,135
1998	7,147
2000	8,001
2002	8,011
2004	8,012
2006	7,768
2008	7,977
2010	7,951
2012	8,151
2014	8,156
Total 1991-2014	95,586

Given that the bivariate distribution between wealth and number of components is not available for 1973-75, we used the synthetic microdata estimated for 1972 as a starting point, when all three bivariate distributions are available; then we applied the raking procedure, making the 1973-75 data consistent with the bivariate aggregate statistical tables available for those years (i.e. with breakdowns by income and number of members, and by income and wealth).

2.3 The Gini index estimates for 1977-1986

Between 1977 and 1986 the SHIW did not collect data on financial items. The Gini indices of net wealth are therefore estimated starting from those relating to real assets, which are the main component of household wealth. According to the decomposition of the Gini index proposed by Pyatt, Chen and Fei (1980), if W_k (k = 1, ... 3) are the three components of net wealth (real, financial and liability assets) and G_k the respective Gini indices, then:

$G = \Sigma_k \alpha_k R_k G_k$ where $\alpha_k = \mu_k/\mu$ e $R_k = Cov (W_k, R_w) / Cov (W_k, R_{wk})$.

In other words, the Gini index of net wealth is a linear combination of the Gini indices G_k of its components, whose coefficients depend on the ratio of the average values of the components (μ_k) to the average wealth (μ) and on the rank correlation ratio R_k, defined as the ratio of the covariance between the k-th component and the ranking of the average wealth to the covariance between the k-th component and the ranking of the component itself. By assigning the average value observed for the years 1991-2014 to the financial

items, we obtain the Gini index of net wealth: the trend substantially reflects that of real assets, while the level is modified due to the contribution of the other components.[8]

3 Aggregate income and wealth trends since the post-war period

The survey data show a sustained growth in the average wealth-to-income ratio (Figure 1), from values of around 3.0 measured at the end of the 1960s to values above 7.0 in 2014. From a qualitative point of view these results are similar to those based on macroeconomic estimates of the wealth-to-GDP ratio, although in the three years 1973-75 it is clear that the effects of the oversampling of wealthy households were not entirely adjusted by the reweighting procedure.

According to Cannari, D'Alessio and Vecchi (2017), this ratio has shown a downward trend in Italy from the late nineteenth century (when household wealth was more than six times GDP) to the first half of the 1960s (a period when the authors find the ratio to be about 3.0); the ratio then started growing again, returning to the levels of the late nineteenth century in the first decade of the twenty-first century. As Piketty (2014) pointed out, this trend can be found in other important western countries too.

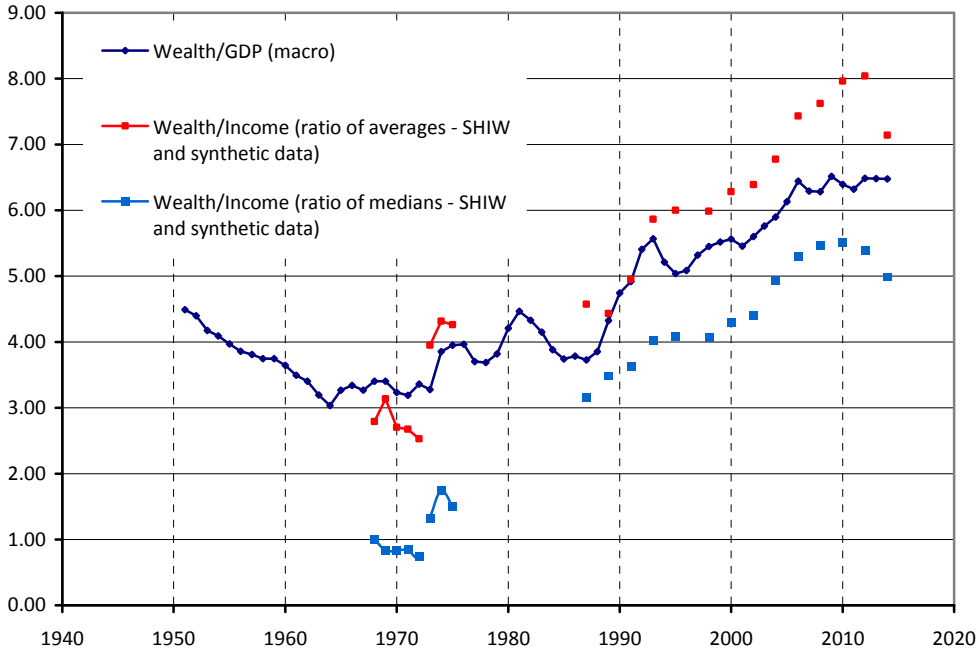
Due to the greater asymmetry that characterizes the distribution of wealth compared with that of income, the ratio of the median of household wealth to the median household income is lower than the values examined so far, based on the ratio of means; we move from values of around 1.0 at the end of the Sixties to about 5.0 in the most recent years. The trends, however, are similar; wealth has significantly increased also for the families belonging to the central distribution classes. At the micro level, the correlation coefficient between income and wealth shows a significant increase over time, from values of around 0.45 in the period 1968-75 to 0.60 in the most recent years.

In Italy the growth of household wealth has been accompanied by an increase in the number of real estate owners, and in particular of home owners, especially in the period 1971-91. The increase in house prices, up to the years of the recent financial and economic crisis, has far outweighed the inflation rate and has also contributed to the growth of wealth (Cannari, D'Alessio and Vecchi, 2017).

[8] A similar reconstruction was carried out by D'Alessio (2012), although using the estimated shares at the macro level as the weights of the various components and not those deriving from the sample estimates, as we did here for continuity with the other available estimates. The results are therefore not comparable.

Figure 1

Wealth, GDP and income



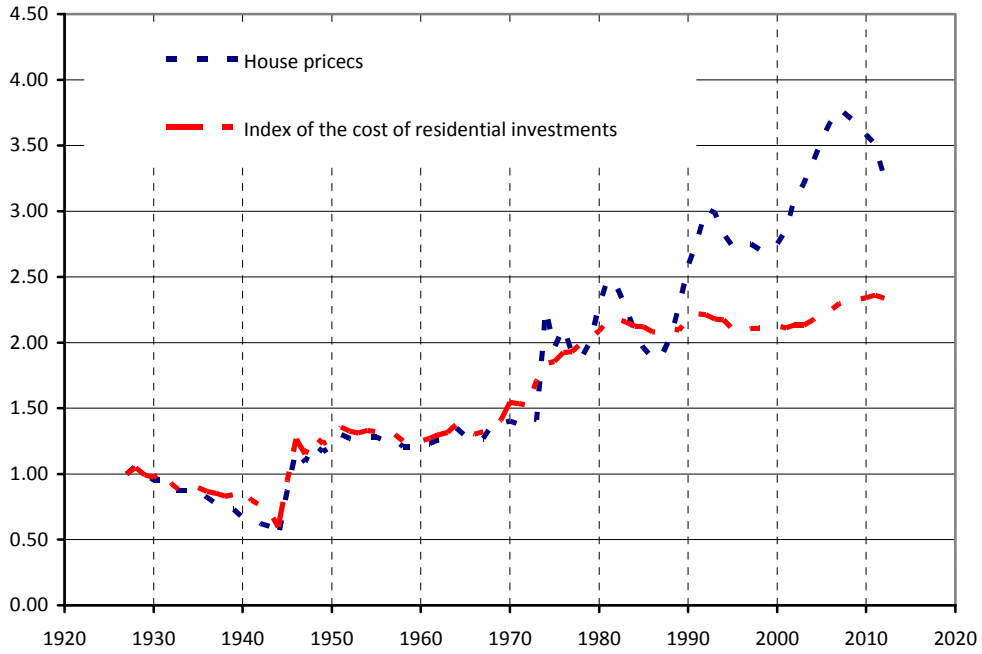
Source: Data on aggregate wealth are drawn from Cannari, D'Alessio e Vecchi (2017). Sample estimates are reconstructed in the present paper.

Starting from the 1970s and despite cycles of different duration and intensity, house prices recorded a rapid growth in Italy: from 1970 to 2007 (maximum point of the real estate cycle) they almost tripled in real terms. The increase in house prices was almost double that of construction costs for residential buildings (Figure 2).

The change in house prices has therefore had a significant effect on the relationship between wealth and GDP. To get an idea of the importance of the price factor for the growth of the GDP-wealth ratio, we can calculate the value of the houses owned by households, net of the real change in house prices. In this way Cannari, D'Alessio and Vecchi (2017) come to an estimate of the household wealth to GDP ratio that is two units lower than that observed in 2012. In other words, two thirds of the increase in the relationship between household wealth and GDP is due to the growth in real house prices, which in turn is largely attributable to the increase in the price of building land.

Figure 2

House prices and residential investment indexes
(Indexes, base 1927=1; real values*)



(*) Aggregates are in real terms, using the Istat general deflator (‘*valore della moneta’*).
Source: Cannari, D’Alessio e Vecchi (2017).

4 Wealth inequality from the late 1960s to 2014

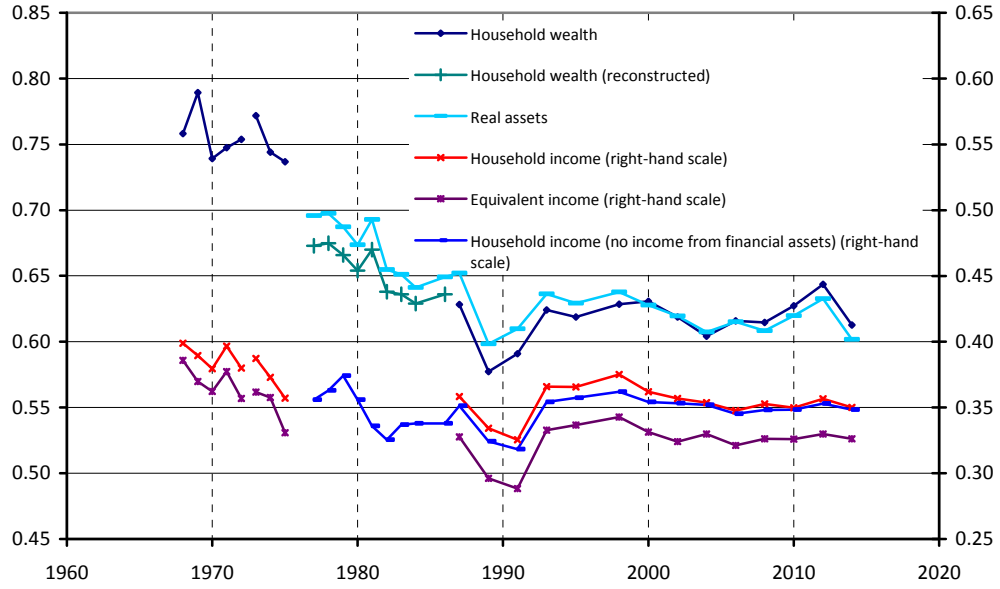
4.1 The estimates from 1968 to the most recent years

Tables A1-A6 in the Appendix show the estimates of the Gini indices and other information on the distribution of wealth and income, at the household level, per capita and equivalent (using the square root of the number of household members as an equivalence scale) obtained on synthetic data generated for the years 1968-75. These estimates are joined by those obtained on the microdata for the period 1987-2014.

At the end of the 1960s, household wealth was, as it is now, far more concentrated than income. The Gini index of household assets ranged between 0.74 and 0.80, while for income it ranged from 0.38 to 0.40. Similar orders of values emerge from the examination of per capita figures (Figure 3).

Figure 3

Wealth and income inequality, 1968-2014



Source: The indices referring to wealth between 1991 and 2014 and to income and real activities between 1977 and 2014 are obtained from the SHIW's Historical Archive data. Indices relative to the net wealth in 1987 and 1989 are obtained from the annual SHIW's archive data. The indices referring to the wealth between 1977 and 1986 were estimated according to the method of Pyatt et al. (1980); those referring to the income and wealth of the period 1968-75 are our calculations using the synthetic data reconstructed here.

In the period 1968-1975, about two tenths of families had negative or zero wealth, compared with a share of around 5 per cent in the most recent years. Some 10 per cent of the wealthiest families had between 56 and 61 per cent of the total wealth in the late 1960s; this share falls to 40.6 per cent in 1989-91 and then goes back up with the 1992-93 recession. The share held by the richest households has been around 45 per cent in the most recent years.

The intermediate classes have acquired increasing shares of wealth. The household segment between the 20th and 80th percentiles of wealth distribution held less than 25 per cent of total wealth in the late 1960s while they held around 40 per cent in the two-year period 1987-89 and still well above 35 per cent in the following years. In other words, between 1968-75 and the most recent years we observe a significant increase in the wealth held by the middle class at the expense of the share held by the richest class (Table A1).

The change in the distribution of wealth is associated with the diffusion of home ownership in the last quarter of the past century: the share of homeowners increases from 45 per cent in the late 1960s to 63 per cent in the early 1990s and then settles at around 68 per cent from the year 2000 onwards; on the other hand, the share of tenants has remained almost stable at just over 20 per cent since the beginning of the new century (Table 3).

Table 3

Principal residence by tenure, 1968-1975 and 1987-2014

Year	Owned by the household	Rented or sublet	Occupied under redemption agreement	Occupied in usufruct, free of charge, etc.	Total
1968	45.6	42.9	3.7	7.8	100.0
1969	45.4	43.0	5.4	6.2	100.0
1970	47.0	42.5	4.2	6.3	100.0
1971	43.5	44.9	4.8	6.8	100.0
1972	45.1	44.3	4.1	5.5	100.0
1973	46.4	44.4	2.3	6.9	100.0
1974	47.0	45.4	2.0	5.6	100.0
1975	46.3	46.1	2.2	5.4	100.0
1976	51.7	39.9	2.6	5.8	100.0
1977	47.3	44.8	1.9	6.0	100.0
1978	48.3	41.9	2.5	7.2	100.0
1979	51.5	40.4	2.0	6.1	100.0
1980	56.2	36.7	1.6	5.5	100.0
1981	49.6	41.3	2.0	7.1	100.0
1982	57.1	35.3	1.4	6.1	100.0
1983	57.5	33.7	1.9	6.9	100.0
1984	59.4	30.9	1.9	7.8	100.0
1986	59.5	31.5	0.9	8.2	100.0
1987	61.6	29.3	1.1	8.1	100.0
1989	62.0	27.8	1.5	8.7	100.0
1991	63.5	24.5	1.5	10.5	100.0
1993	62.6	24.9	1.0	11.5	100.0
1995	64.7	23.7	0.8	10.8	100.0
1998	65.8	22.8	0.6	10.9	100.0
2000	68.2	20.9	0.7	10.1	100.0
2002	68.4	20.9	0.5	10.2	100.0
2004	67.5	21.7	0.4	10.3	100.0
2006	68.5	21.0	0.4	10.1	100.0
2008	68.6	21.5	0.6	9.4	100.0
2010	67.7	21.6	0.3	10.4	100.0
2012	66.6	22.3	0.3	10.8	100.0
2014	67.7	20.7	0.5	11.1	100.0

Source: Estimates referring to 1968-1976 are drawn from the Reports (Supplements to the Bank of Italy's Statistical Bulletin) available at http://www.bancaditalia.it/pubblicazioni/indagine-famiglie/index.html; for the most recent years, estimates are obtained on data from the SHIW's Historical Archive.

In those years, the growth in household wealth that characterized such a large segment of the population could be attributed to the high savings rate, a sustained GDP growth (though lower than in the early 1960s), and to the almost uninterrupted growth in house prices in the last quarter of the 20th century. Public spending was reflected in the accumulation of public debt and private wealth, while the demographic trends kept demand for housing high, especially in large cities.

Over time the concentration of wealth has strongly decreased. The Gini index of household wealth has fallen from values of around 0.75 in the period 1968-1975 to 0.58 in 1989. The Gini indices calculated for the period 1977-1986 by using the method of Pyatt, Chen and Fei (1980) appear to be in consistent with the preceding and following estimates: they confirm the downward trend of the concentration of wealth from the late 1960s to the end of the 1980s (Figure 3). Then the concentration returned to increase up to 0.63 in 2000 and oscillated in the subsequent years (0.64 in 2012 and 0.61 in 2014). Overall, the double

recession, coinciding with the global financial crisis and the European sovereign debt crisis, has had relatively modest effects on inequality.[9]

The two main recessions in Italy's economy since the post-war period have had different effects on inequality: during the first recession, the distributions of income and wealth polarized, while during the second one they recorded a general downward shift. These phenomena are even more evident when the population is divided into three groups: families with wealth below one half the value of the median, those with more than three times the median, and the remaining families that we define as the middle class.[10]

At the end of the 1960s the poorest class included 40 per cent of households, holding a wealth of around 1 per cent of the total; from 1987 onwards, the share of this segment in terms of households decreased to around 35 per cent, while its share in terms of total wealth increased to around 3 per cent. The middle class almost doubled, from just over 25 to about 50 per cent in terms of households; the wealth of this class rose from 12.5 to 44 per cent of the total. The richest class halved in size (from 26 to 13 per cent), with a sharp drop in the share of wealth, from about 85 to 50 per cent.

Table 4

Net wealth and social classes, 1968-2014

Year	Share of households				Share of net wealth			
	Poor segment (wealth lower than half the median)	Middle-class segment (wealth higher than half the median but lower than 3 times the median	Rich segment (wealth higher than 3 times the median)	Total	Poor segment (wealth lower than half the median)	Middle-class segment (wealth higher than half the median but lower than 3 times the median	Rich segment (wealth higher than 3 times the median)	Total
1968	42.9	28.6	28.5	100.0	0.8	12.3	86.8	100.0
1969	43.1	28.5	28.4	100.0	0.7	12.2	87.0	100.0
1970	42.2	28.0	29.8	100.0	1.2	12.4	86.5	100.0
1971	45.4	24.1	30.5	100.0	1.2	11.3	87.4	100.0
1972	44.3	23.8	31.9	100.0	0.9	10.0	89.3	100.0
1973	45.4	23.0	31.6	100.0	0.5	9.8	89.7	100.0
1974	44.0	29.2	26.8	100.0	1.2	15.5	83.5	100.0
1975	43.4	30.9	25.7	100.0	1.3	18.0	80.7	100.0
1987	35.4	50.1	14.6	100.0	3.6	42.2	54.4	100.0
1989	35.6	53.8	10.6	100.0	4.6	54.0	41.3	100.0
1991	36.2	49.9	13.9	100.0	4.2	46.7	49.0	100.0
1993	36.9	48.5	14.6	100.0	3.7	43.4	52.8	100.0
1995	35.5	49.9	14.5	100.0	3.4	44.3	52.1	100.0
1998	36.4	50.3	13.4	100.0	3.6	42.9	53.6	100.0
2000	36.1	50.3	13.6	100.0	3.5	41.8	54.7	100.0
2002	35.9	50.4	13.7	100.0	3.4	44.3	52.2	100.0
2004	37.2	49.5	13.3	100.0	3.7	46.3	50.0	100.0
2006	36.4	49.9	13.6	100.0	3.4	44.0	52.5	100.0
2008	35.8	50.6	13.6	100.0	2.9	44.5	52.4	100.0
2010	36.9	49.8	13.2	100.0	2.9	44.0	52.9	100.0
2012	37.7	47.7	14.6	100.0	2.7	41.0	56.5	100.0
2014	37.4	49.5	13.2	100.0	3.1	45.3	51.8	100.0

[9] According to Acciari et al. (2017), who estimate the concentration of wealth between 1995 and 2013 by using inheritance data, the concentration of wealth in recent years has experienced greater growth than that observed in the SHIW data.

[10] Atkinson and Brandolini (2013) use a similar partition to income to identify the 'middle class'.

On the whole, the concentration of income decreased as well, showing different trends in the various sub-periods. The Gini index of per capita income decreased from 0.39-0.42 in the period 1968-1970 to 0.33 in 1991; it then returned to increase until 1998 (0.365), oscillating in the following years at around slightly lower levels.

4.2 Wealth and under-reporting

Sample data on household wealth are often affected by under-reporting, i.e. the tendency of the interviewees not to declare everything they possess. With regard to the SHIW, the phenomenon has been studied by several authors (Cannari and D'Alessio, 1990; Cannari et al., 1990; Cannari and D'Alessio, 1993; D'Aurizio et al. 2006).

The bias determined by these behaviours can be evaluated by comparing sample estimates with macro sources. The ratio of total SHIW estimates to total macroeconomic wealth estimated by Cannari et al. (2017) for 1987-2014 is around 0.55; over the years 1968-72 the ratio was around 0.6-0.7.

On the contrary, the 1973-75 sample estimates are substantially in line with macro estimates, probably due to the oversampling carried out in those years. Although the differences between micro and macro estimates can be partly attributed to definitional differences (Baffigi et al., 2016), the phenomenon of under-reporting cannot be neglected, even when the analysis concerns the relative distribution of a variable among families rather than the absolute levels. The aforementioned studies have indeed shown that the inequality indices calculated on data adjusted to take the under-reporting into account are generally different from those obtained by using unadjusted data.

As the level of under-reporting may change over time, we use calibration techniques (Deville and Sarndal, 1992). In short, we reweight the starting data so as to align the survey estimates of total wealth with macroeconomic estimates.

The reweighting is carried out according to a statistical criterion; given the constraint, we minimize the distance between the starting weights and the new weights. Different distance criteria can be used. In this paper we resort to four different methods made available in the SAS Calmar macro (linear, raking ratio, logit and linear truncated; see Sautory, 1993) and use their average as a benchmark (Table A8 in the appendix).

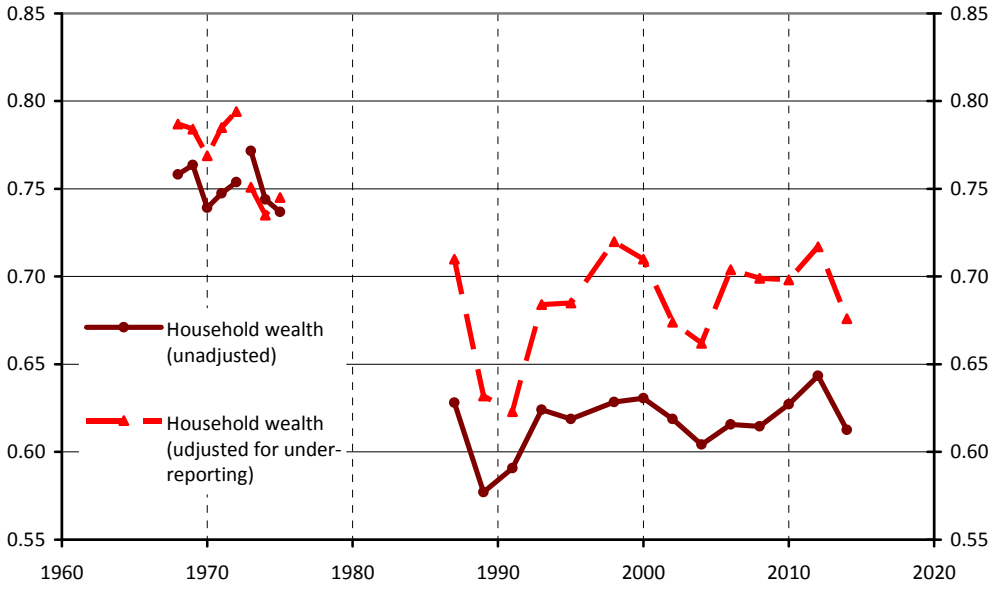
As observed by D'Alessio and Neri (2015), the calibration of wealth data leads to higher concentration levels (Figure 4). For example, in 1968 the concentration index increases from 0.758 to 0.79 after the calibration; in 2014, the increase due to calibration is even more marked (from 0.612 to 0.68).

The overall trend is not significantly affected by these adjustments, although the calibration has a larger impact on the most recent inequality estimates (the impact is around 11 per cent in the period 1987-2014, compared with 4 per cent in the period 1968-72). A significant difference, however, concerns the 1973-75 period, when unadjusted estimates are very close to calibrated ones, due to the oversampling of richest households carried out in those years. The calibration makes the downward trend between the periods 1968-72 and 1987-1989 more evident; after the adjustment, the 1973-1975 estimates are located in an intermediate position between the two periods.

Overall the adjustment made to take the under-reporting into account does not substantially modify the general picture of inequality. Adjusted data, however, predates the decline in the levels of wealth inequality and reduces the gap between the 1973-75 estimates and the more recent ones.

Figure 4

Wealth inequality: adjustments for under-reporting, 1968-2014



Source: The indices referring to wealth between 1968 and 1975 are obtained on the synthetic data reconstructed here; those between 1987 and 2014 are obtained on the data of the SHIW Historical Archive. The estimates adjusted for under-reporting are obtained as the mean of calibrated estimators (Table A8 in the Appendix).

4.3 Inequality in the income-net worth indicator

Both income and wealth are relevant to economic well-being; therefore it is natural to measure inequality by taking both aspects and not just one of them into account. This is particularly important because of the different dynamics that, as we have seen, have characterized the two indicators over time.

In order to carry out this evaluation, we proceeded to calculate a synthetic indicator, obtained by adding the flow of resources that an household could perceive by alienating its assets to the current income (Weisbrod and Hansen, 1968). In the construction of the indicator, income is assumed to be perceived over the residual life of the household head (according to the Istat mortality tables by age and sex), and the return on assets is set equal to 2 per cent. It should be noted in this regard that the relationships between both wealth and income and wealth and age are kept under control in the construction of the synthetic microdata for the period 1968-75; therefore the composite income-net worth indicator should be accurate.

Over the period 1968-1993 the time pattern of the Gini index calculated on this income-net worth indicator is similar to that of household wealth; inequality decreased markedly until 1989, and then recorded a strong increase around the 1992 crisis. After 1993, however, the composite index shows a marked increase in inequality while household wealth inequality remained almost stable. The increase is steeper when measured in equivalent or

per capita terms, reflecting the progressive improvement in the relative conditions of elderly households (usually small in size) to the detriment of younger ones (with children). The values of inequality observed at the end of the reference period are similar to those of the late 1960s (Figure 5).

Figure 5

Income-net worth ineqaulity indices, 1968-2014

4.4 A long-term look

We have seen in in the previous section that on the whole the concentration of wealth decreased from the end of the 1960s to 2014. But what is the long-run trend?

According to Alfani (2016), who studied the distribution of wealth between 1300 and 1800 in four pre-unification states in Italy,[11] during the whole period there was a progressive concentration of wealth, with a tendency for the richest class to move away from the conditions of the other social strata. Between 1300 and 1800 the share of wealth held by ten per cent of the richest individuals rose from 45-55 per cent to 70-80 per cent.[12] The only period in which the author records a reversal in this pattern is that corresponding to the Black Death epidemic in the middle of the fourteenth century.

Gabbuti (2017), using data on inheritance taxes for the years ranging from the late nineteenth century to 1915, estimates a share of wealth held by the richest tenth of the population of between 64 and 81.5 per cent. The maximum is found for the years 1912-1913, which were followed by a significant drop, to 69.6 per cent, in 1914-15. These are lower values than but not too dissimilar to those of France.

---

[11] These are assessments concerning real estate wealth, as inferred from land registers or similar sources of the time, in the Kingdom of Sardinia, Florence, the Kingdom of Naples and the Republic of Venice.

[12] The estimate for the end of the period considered is consistent with that provided by Piketty et al. (2006) for the European average of 1810.

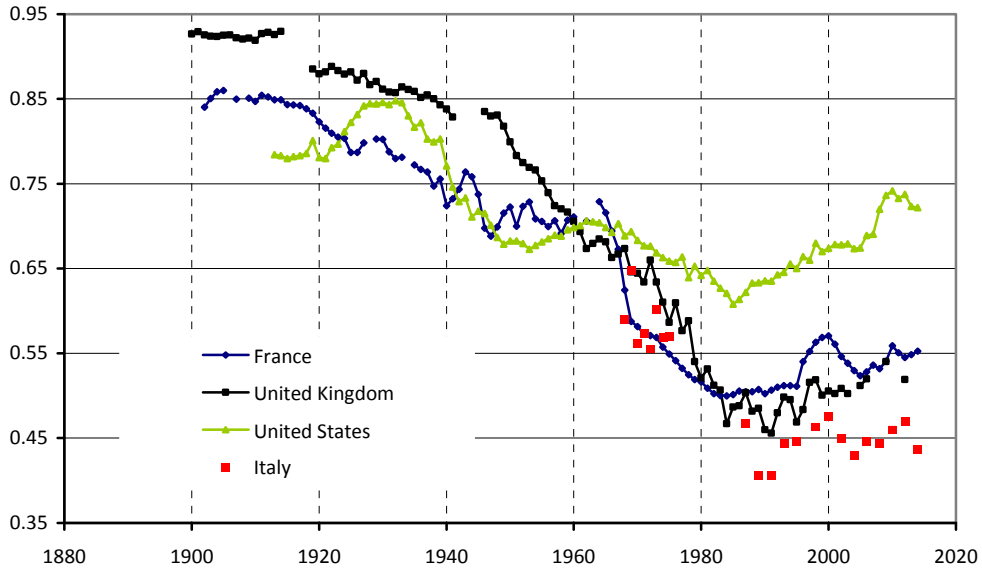
Comparisons with the data for the late 1960s taken from the SHIW need to be cautious, also in consideration of the fact that the survey tends to underrepresent the richest families and it is therefore possible that the concentration of wealth is underestimated. However, it seems plausible that in the years between 1910 and the end of the 1960s the concentration of wealth in Italy decreased considerably.[13]

The share of wealth held by the wealthiest tenth of Italian families at the end of the 1960s stood at relatively similar levels (given the uncertainty that characterizes this kind of estimate) to those of other western countries, in particular France and the United Kingdom. Instead it was lower than that of the United States (Figure 6).[14]

At the end of the period considered, the share of wealth held by the richest tenth was lower than that in the late 1960s in France, the United Kingdom and Italy, while growth was observed in the United States. The decline is more pronounced for Italy than other European countries, and the recovery since the 1990s has been less evident in our country than in others.

Figure 6

Share of wealth held by the richest tenth of households



Source: Wealth and Income Database (WID.world) and our calculations for Italy.

[13] A rise in wealth concentration also happens in other western countries, such as France, the United Kingdom, and Sweden. In the United States, wealth inequality declines over the period 1910-1950 (less than in Europe) and remains relatively stable over the following twenty years (Piketty, 2014).

[14] In this section the SHIW data are compared with those of the WID database (The World Wealth and Income Database, available at WID.world).

5 Indicators of poverty from the 1960s to the present

The availability of microdata for both income and wealth makes it possible to compare poverty indicators according to various definitions, taking into account both the size of the household (for the equivalence scales) and the interaction between these two aggregates.

The relative poverty indicator based on equivalent income alone (with an equivalence scale equal to the square root of the number of components) is significantly reduced between the beginning of the period examined and the beginning of the 1980s; at the beginning of the 1990s it rose abruptly and then, after a certain decline until 2006, it rose again during the last phase of the economic crisis. In 2014 the relative poverty level was only slightly lower than that observed on average for the period 1968-75 (Figure 5). The measurements carried out for the period 1977-1986, when income from financial assets cannot be included in income, make it possible to complete the picture of relative poverty levels in Italy in those years, confirming the trend for the period thereafter, already highlighted for income including any financial returns.

With information on both income and wealth, it may be useful to examine indicators that jointly consider these two aggregates. Hence, reference is made here to a simple indicator that considers households with an equivalent income below the poverty line as being poor and which have, at the same time, a net wealth lower than a fraction (or multiple) of the same threshold. In this way, those who, by liquidating their assets would have sufficient resources to overcome the poverty line for a certain time, are excluded from the category of the poor.[15] Obviously the more time is taken into consideration the lesser the role assigned to the wealth component. Given a certain arbitrariness in the choice of this parameter, the share of poor households was calculated on the basis of the hypotheses of three months, one year and three years.[16]

Indicators that also consider wealth involve a significant reduction of more than half in the estimate of the poor. The reduction is obviously less marked when wealth greater than the poverty line for a period of three years (i.e. about €25,000 for an individual in 2014) is considered sufficient to get out of the poverty condition. The poor are reduced to about a third of the initial estimate calculated only on income when wealth exceeding three times the monthly poverty threshold (€2,200 in 2014, again for an individual) is considered sufficient to get out of the poverty condition.

However, the results of the various experiments converge on two points: a) relative poverty levels in 2014 are close to those at the end of the 1960s, in particular when considering indicators that also consider wealth; b) from 2008 to 2014 the share of components in relative poverty definitely increased. The results for the levels of relative poverty only partially reproduce those obtained for inequality, which does not appear to have increased significantly over the last few years, except in the version of the income-wealth indicator.

---

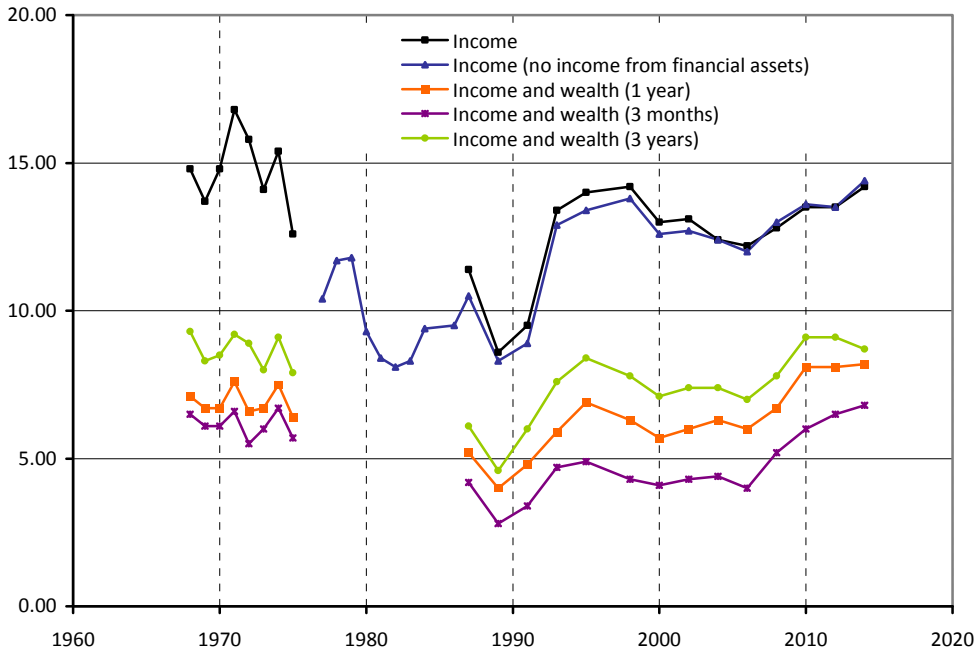
[15] The lack of the wealth that would be needed by the household to cope with unforeseen events can also be seen as a difficulty in itself (asset-poverty). See Brandolini et al. (2010) for a discussion on the point.

[16] Haveman and Wolff (2004), Short and Ruggles (2005) and Brandolini et al. (2010) consider a period of three months; Gornick et al. (2009) instead consider six months. In this paper we have considered both these and other hypotheses, also as a robustness analysis.

Figure 7

Relative poverty, 1965-2014

(percent of individuals)



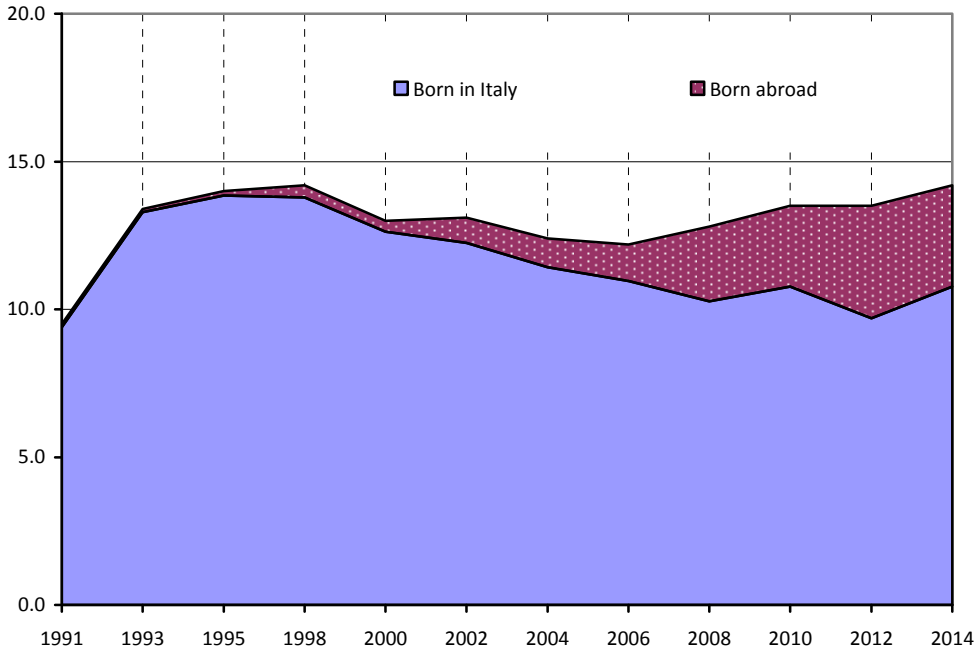
The growth in poverty levels in recent years has been affected by the intensification of migration. The share of immigrants, which in the survey can only be defined on the basis of the place of birth and limited to the regularly resident part, has been increasing, from 1 per cent in the early 1990s up to about 10 per cent in recent years (Table A9). In this segment of the population, the share of the poor has grown steadily over the years, from about 10 per cent in the early 1990s – a share in line with the remaining part of the population - to over 30 per cent in the last few years. This is due to a radical change in the composition of the foreigners present in Italy, with a reduction in the proportion of people born in Western Europe, America and Oceania and a growth in the number of people born in Eastern European countries and especially in Africa and Asia.

The result is an increasing contribution to the spread of poverty in Italy by immigrants, who in recent years have come to represent about a quarter of the poor in Italy. For the population of those born in Italy alone, the spread of relative poverty has been almost permanently decreasing from the mid-90s to 2008 and substantially stable in the following years (Figure 8).

Figure 8

Relative poverty in Italy by place of birth, 1991-2014

(percentage of individuals)



6 Conclusions

By exploiting information in some recently published reports on the Bank of Italy's SHIW between 1968 and 1975 on the distribution of income and wealth in Italy, this paper is the first to estimate wealth inequality in Italy in the period 1968-75.

In particular, micro-synthetic data are reconstructed that are compatible with the information present in the reports of the time. This made it possible to obtain estimates of the concentration and relative poverty indices with the statistical criteria used today, allowing a close comparison with the most recent estimates available (from 1977 onwards).

The results related to wealth concentration identify a downward trend in the 1970s and 1980s similar to that found by other authors on household income (Brandolini, 1999) up until the recovery that characterizes the years following the 1992-93 crisis and the relative stability of the new century. However, the estimated values for the period 1968-75 remain higher than those of the most recent years.

Estimates of relative poverty, calculated using both indicators of equivalent income and indicators that jointly consider income and wealth, highlight a similar decreasing trend up to the 1990s and a subsequent growth; for these indicators, however, a more decisive trend has been observed in recent years compared with concentration indices. In particular, the levels of recent years are similar to those seen in the period 1968-75 for the poverty indicators that also take wealth into account.

Finally, the work showed that a significant contribution to the growth in the share of the poor in Italy in recent years has been provided by the intensification of migration flows, and in particular those coming from emerging countries. In recent years, the relative poverty rates estimated for the population of those born in Italy have been substantially stable.

Statistical tables

Table A1

Wealth distribution in 1968-75 and comparison with 1987-2014 – Household wealth

(Share of wealth per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	-0.4	-0.4	-0.3	-0.5	-0.5	-0.2	-0.1	-0.2	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0
2nd tenth	-0.1	-0.2	-0.1	0.0	-0.1	-0.2	-0.1	0.0	0.3	0.4	0.4	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.0	0.1
3rd tenth	0.1	0.1	0.1	0.3	0.3	0.0	0.1	0.0	1.4	1.6	1.4	1.0	1.1	1.1	1.3	1.2	1.2	1.1	1.0	0.9	0.7	0.9
4th tenth	0.8	0.8	1.0	0.8	0.7	0.3	0.7	0.6	3.1	3.6	3.2	2.7	3.0	2.9	3.1	3.1	3.2	3.2	3.2	2.9	2.7	3.1
5th tenth	1.9	1.8	2.1	1.8	1.8	1.5	2.1	2.1	4.8	5.8	5.3	4.7	4.9	4.8	4.8	5.0	5.2	5.1	5.3	5.2	4.7	5.3
6th tenth	3.8	3.7	3.8	4.1	3.8	3.7	4.4	4.5	6.5	7.8	7.3	6.8	6.9	6.7	6.5	6.7	7.3	7.1	7.2	7.2	6.7	7.4
7th tenth	6.4	6.3	6.7	7.0	6.9	6.7	7.0	7.4	8.4	9.6	9.7	9.2	9.1	8.9	8.6	9.1	9.5	9.3	9.3	9.1	8.9	9.5
8th tenth	10.4	10.3	11.3	10.9	10.9	10.4	10.8	11.3	11.3	12.6	13.1	12.6	12.4	11.8	11.3	12.1	12.5	12.2	12.2	11.8	12.1	12.6
9th tenth	18.6	18.4	19.5	18.5	18.6	16.9	17.6	18.2	17.4	17.9	19.1	18.5	17.9	17.1	16.6	17.6	17.8	17.2	17.3	16.9	17.4	17.6
10th tenth	58.7	59.3	55.9	57.1	57.7	60.9	57.5	56.1	46.8	40.6	40.6	44.4	44.6	46.4	47.5	45.0	43.0	44.6	44.4	46.1	47.0	43.7
P_{10}/Median (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	3.4	4.0	1.2	1.8	2.2	2.4	2.0	2.0	1.4	1.0	0.9	0.4	0.7
P_{20}/Median (%)	0.0	0.0	0.0	4.9	6.2	0.0	0.0	0.0	13.0	13.2	13.1	8.9	8.9	10.5	11.3	9.8	8.8	7.2	5.7	5.6	3.9	4.7
P_{80}/Median (%)	497.7	513.2	517.3	476.0	517.9	531.8	425.5	429.1	243.8	214.9	245.1	255.3	248.2	243.5	237.8	246.1	235.1	225.4	227.3	221.5	242.7	227.1
P_{90}/Median (%)	905.3	917.5	901.7	848.0	971.3	961.4	757.1	749.2	406.2	323.1	376.5	404.3	386.6	383.8	370.7	385.4	355.0	349.7	344.9	344.5	375.6	359.1
Gini index	0.758	0.764	0.739	0.747	0.754	0.772	0.744	0.737	0.628	0.577	0.591	0.624	0.619	0.629	0.631	0.619	0.604	0.616	0.615	0.627	0.643	0.613

Table A2

Wealth distribution in 1968-75 and comparison with 1987-2014 – Equivalent wealth (squared root scale)

(Share of wealth per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	-0.3	-0.5	-0.2	0.0	-0.7	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	-0.2	0.0
2nd tenth	-0.3	-0.2	-0.1	-0.5	0.0	-0.3	-0.1	-0.1	0.4	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.1
3rd tenth	0.1	0.2	0.2	0.3	0.3	0.0	0.1	0.1	1.6	2.0	1.8	1.4	1.5	1.4	1.5	1.5	1.4	1.4	1.2	1.0	0.8	1.1
4th tenth	0.9	0.9	1.0	0.8	0.7	0.3	0.7	0.8	3.5	4.2	3.7	3.2	3.4	3.3	3.3	3.4	3.3	3.4	3.4	3.2	2.9	3.3
5th tenth	2.0	2.0	2.2	1.8	1.8	1.5	2.2	2.5	5.1	6.2	5.5	5.1	5.2	5.0	4.9	5.2	5.3	5.2	5.2	5.2	4.8	5.3
6th tenth	3.8	3.8	3.9	4.1	3.8	3.8	4.5	4.7	6.6	7.9	7.4	7.0	7.1	6.8	6.6	6.9	7.2	7.0	7.0	6.9	6.8	7.2
7th tenth	6.5	6.4	6.8	7.0	6.9	6.7	7.0	7.5	8.5	9.8	9.7	9.4	9.2	8.9	8.5	9.1	9.4	9.2	9.1	8.9	8.9	9.4
8th tenth	10.1	10.1	11.3	11.0	10.9	10.3	10.8	11.2	11.6	12.7	13.2	12.5	12.3	11.7	11.4	12.0	12.7	12.2	12.1	11.8	11.9	12.3
9thtenth	18.2	18.0	19.4	18.1	18.4	16.8	17.4	17.8	17.5	17.7	18.7	18.1	17.9	16.7	16.5	17.3	17.7	17.4	17.4	16.9	17.2	17.6
10th tenth	58.9	59.5	55.6	57.6	57.9	60.9	57.6	55.6	45.2	38.9	39.6	43.0	43.1	45.9	46.9	44.4	42.6	43.9	44.5	45.9	46.8	43.8
P_{10}/Median (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	3.8	4.6	1.7	2.1	2.7	2.2	2.1	1.8	1.9	0.9	0.9	0.3	0.7
P_{20}/Median (%)	0.0	0.0	0.0	4.7	6.0	0.0	0.0	0.0	14.1	15.3	14.6	11.8	11.7	13.0	13.0	12.3	11.0	10.0	7.5	6.4	4.2	5.3
P_{80}/Median (%)	464.9	463.0	500.3	477.8	511.6	488.8	399.9	381.4	235.9	203.8	237.2	242.9	239.7	228.7	236.5	234.5	234.7	236.1	229.8	223.5	244.5	229.3
P_{90}/Median (%)	872.2	869.9	896.6	837.0	948.0	899.7	706.4	661.6	384.5	314.5	356.2	382.7	381.4	362.4	366.9	370.1	355.5	354.6	359.3	349.7	374.2	359.8
Gini index	0.758	0.763	0.736	0.750	0.755	0.770	0.742	0.729	0.612	0.556	0.575	0.604	0.601	0.618	0.623	0.607	0.599	0.607	0.613	0.624	0.639	0.611

Table A3

Wealth distribution in 1968-75 and comparison with 1987-2014 –Per-capita wealth

(Share of wealth per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	-0.3	-0.5	-0.2	0.0	-0.7	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.1	-0.1	-0.1
2nd tenth	-0.3	-0.2	-0.1	-0.5	0.0	-0.2	-0.1	-0.1	0.4	0.6	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.1
3rd tenth	0.1	0.1	0.2	0.3	0.3	0.0	0.1	0.1	1.5	1.9	1.7	1.4	1.4	1.4	1.5	1.4	1.3	1.3	1.1	1.0	0.8	1.0
4th tenth	0.8	0.8	1.0	0.7	0.7	0.3	0.7	0.8	3.2	3.9	3.3	3.1	3.3	3.0	3.0	3.1	3.0	2.9	3.0	2.8	2.6	2.8
5th tenth	1.8	1.8	2.1	1.7	1.7	1.5	2.1	2.4	4.9	5.7	5.1	4.8	5.0	4.6	4.5	4.8	4.8	4.6	4.6	4.6	4.3	4.6
6th tenth	3.5	3.5	3.7	3.8	3.6	3.6	4.1	4.5	6.4	7.4	7.0	6.7	6.8	6.3	6.2	6.6	6.7	6.3	6.4	6.3	6.2	6.5
7th tenth	5.9	5.9	6.5	6.6	6.4	6.3	6.6	7.2	8.4	9.5	9.3	9.1	9.0	8.4	8.1	8.7	9.1	8.6	8.7	8.5	8.5	8.8
8th tenth	9.5	9.4	10.8	10.5	10.5	10.0	10.4	10.9	11.6	12.4	12.8	12.3	12.1	11.3	11.1	11.8	12.4	12.0	12.0	11.6	11.6	12.0
9th tenth	17.4	17.2	19.3	17.7	17.9	16.6	17.1	17.6	17.2	17.6	18.4	17.8	18.2	16.8	16.8	17.5	17.9	17.5	17.9	17.3	17.6	18.1
10th tenth	61.5	62.1	56.8	59.3	59.7	62.1	59.2	56.8	46.4	41.0	41.9	44.5	43.9	47.9	48.7	45.7	44.5	46.5	46.2	47.9	48.5	46.0
P_{10}/Median (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	3.9	4.8	2.0	1.9	2.5	2.1	2.0	1.8	2.0	0.9	0.9	0.3	0.6
P_{20}/Median (%)	0.0	0.0	0.0	4.8	5.8	0.0	0.0	0.0	14.2	16.4	15.8	12.5	12.1	14.2	13.3	12.4	11.4	11.3	9.3	7.6	4.7	6.4
P_{80}/Median (%)	484.6	485.0	511.7	509.2	530.9	518.3	433.0	395.6	242.0	217.3	250.3	248.9	246.2	247.3	247.5	241.9	244.6	259.0	262.8	258.2	270.7	256.1
P_{90}/Median (%)	944.4	943.7	954.7	906.2	981.3	957.8	775.6	707.1	401.7	337.5	385.2	393.5	394.8	393.6	404.8	400.0	392.8	405.7	418.9	406.6	429.4	415.5
Gini index	0.772	0.778	0.743	0.760	0.765	0.778	0.752	0.737	0.623	0.576	0.593	0.616	0.611	0.635	0.640	0.621	0.617	0.631	0.632	0.644	0.656	0.633

Table A4

Income distribution in 1968-75 and comparison with 1987-2014 – Household income

(Share of income per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	1.8	1.9	1.8	1.5	1.6	1.6	1.9	2.1	2.3	2.8	2.7	2.1	2.1	2.0	2.2	2.4	2.6	2.6	2.6	2.4	2.4	2.1
2nd tenth	3.5	3.7	3.6	3.3	3.6	3.4	3.6	4.0	4.1	4.4	4.4	3.8	3.9	3.8	4.0	4.1	4.3	4.3	4.2	4.2	4.1	4.2
3rd tenth	4.8	5.2	5.1	4.8	4.9	5.0	5.1	5.3	5.3	5.5	5.6	5.1	5.1	5.0	5.2	5.2	5.3	5.4	5.3	5.3	5.3	5.4
4th tenth	6.0	6.4	6.3	6.1	6.4	6.3	6.4	6.5	6.3	6.6	6.7	6.3	6.3	6.2	6.4	6.3	6.4	6.5	6.4	6.5	6.4	6.5
5th tenth	7.4	7.6	7.6	7.5	7.7	7.5	7.6	7.8	7.5	7.7	7.9	7.4	7.5	7.4	7.6	7.6	7.4	7.6	7.6	7.6	7.5	7.6
6th tenth	8.4	8.9	8.9	8.9	9.0	8.9	9.0	9.1	8.8	9.1	9.3	8.9	9.0	8.9	8.9	9.0	8.8	9.0	8.8	9.0	8.8	9.0
7th tenth	9.9	10.4	10.3	10.5	10.6	10.5	10.7	10.7	10.6	10.7	11.0	10.8	10.6	10.6	10.7	10.6	10.4	10.5	10.5	10.6	10.6	10.8
8th tenth	12.3	12.5	12.6	12.6	13.0	12.7	12.9	12.8	12.7	12.7	13.0	13.0	12.9	12.7	12.8	12.7	12.5	12.5	12.6	12.6	12.7	13.0
9th tenth	16.3	16.1	16.2	16.4	16.2	15.9	15.9	15.6	16.0	15.7	15.7	16.1	15.9	15.8	15.7	15.7	15.5	15.3	15.7	15.6	15.9	16.0
10th tenth	29.5	27.4	27.6	28.4	27.1	28.1	26.9	26.1	26.4	24.9	23.6	26.4	26.6	27.5	26.6	26.3	26.7	26.3	26.4	26.0	26.4	25.3
P_{10}/Median (%)	36.2	36.1	34.6	31.5	32.2	32.2	34.6	38.1	42.4	44.7	42.3	38.0	38.1	37.9	40.3	41.7	44.3	45.0	43.1	43.6	43.0	41.4
P_{20}/Median (%)	53.1	53.8	54.2	50.9	51.2	51.6	51.9	55.0	58.7	59.2	59.0	56.3	55.5	54.4	56.9	56.6	60.4	58.6	58.7	58.1	58.7	59.6
P_{80}/Median (%)	176.3	169.7	170.7	171.6	174.0	173.5	173.0	166.3	173.1	166.0	167.0	176.2	173.1	171.5	171.5	168.0	171.1	166.3	171.1	168.3	173.0	174.0
P_{90}/Median (%)	244.5	227.9	229.0	232.7	222.3	223.6	217.0	208.5	229.0	214.2	203.9	229.5	220.4	221.5	218.4	219.1	222.4	213.2	223.9	216.7	224.9	219.9
P_{80}/P_{20}	3.3	3.2	3.2	3.4	3.4	3.4	3.3	3.0	3.0	2.8	2.8	3.1	3.1	3.2	3.0	3.0	2.8	2.8	2.9	2.9	3.0	2.9
P_{90}/P_{10}	6.8	6.3	6.6	7.4	6.9	6.9	6.3	5.5	5.4	4.8	4.8	6.1	5.8	5.8	5.4	5.3	5.0	4.7	5.2	5.0	5.2	5.3
Gini index	0.399	0.375	0.379	0.397	0.380	0.387	0.373	0.357	0.358	0.334	0.325	0.366	0.366	0.375	0.362	0.357	0.354	0.348	0.353	0.350	0.357	0.350

Table A5

Income distribution in 1968-75 and comparison with 1987-2014 – Equivalent income (square root scale)

(Share of income per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	2.0	2.2	2.1	1.7	1.9	2.2	2.3	2.7	2.8	3.5	3.4	2.5	2.4	2.2	2.4	2.6	2.8	2.9	2.7	2.5	2.4	2.2
2nd tenth	3.9	4.3	4.1	3.9	4.1	4.2	4.1	4.5	4.6	5.1	5.0	4.5	4.4	4.4	4.6	4.6	4.5	4.6	4.6	4.5	4.5	4.5
3rd tenth	5.0	5.4	5.3	5.1	5.4	5.4	5.3	5.6	5.7	6.0	6.1	5.6	5.6	5.6	5.7	5.8	5.6	5.8	5.7	5.7	5.7	5.7
4th tenth	6.1	6.5	6.4	6.3	6.7	6.4	6.4	6.8	6.7	7.0	7.2	6.6	6.8	6.8	6.8	6.9	6.8	6.9	6.8	6.9	6.8	6.9
5th tenth	7.3	7.7	7.6	7.6	7.8	7.6	7.6	7.9	7.8	8.1	8.3	7.9	7.9	8.0	8.0	8.1	8.0	8.0	8.0	8.0	8.0	8.2
6th tenth	8.5	9.0	8.9	9.0	9.1	8.8	9.0	9.2	9.1	9.2	9.5	9.3	9.2	9.2	9.3	9.3	9.1	9.2	9.3	9.4	9.3	9.5
7th tenth	10.0	10.4	10.4	10.5	10.5	10.2	10.6	10.6	10.5	10.7	10.9	10.9	10.7	10.6	10.8	10.6	10.6	10.6	10.7	10.8	10.8	11.1
8th tenth	12.1	12.4	12.4	12.4	12.6	12.2	12.7	12.4	12.5	12.4	12.6	12.6	12.6	12.3	12.5	12.4	12.3	12.3	12.4	12.5	12.5	12.7
9th tenth	16.0	15.5	15.9	15.8	15.6	15.3	15.5	15.0	15.5	14.9	14.8	15.3	15.2	14.9	15.0	15.0	14.8	14.9	15.0	15.1	15.2	15.2
10th tenth	29.1	26.7	26.9	27.8	26.3	27.6	26.5	25.3	24.8	23.2	22.2	24.8	25.2	26.0	25.0	24.7	25.4	24.8	24.8	24.5	24.8	23.9
P_{10}/Median (%)	41.5	43.0	40.4	37.5	39.2	41.6	41.7	45.7	48.0	52.1	50.6	44.4	43.5	41.6	45.1	45.0	46.1	46.6	46.1	44.3	43.5	42.0
P_{20}/Median (%)	57.4	58.3	58.2	54.7	56.5	58.9	56.2	60.0	60.3	64.1	62.6	59.6	58.5	58.8	59.6	59.8	59.8	61.8	59.1	59.2	59.7	58.8
P_{80}/Median (%)	172.5	163.9	170.3	166.4	166.4	165.8	166.8	157.8	163.0	154.4	153.0	161.4	159.0	153.8	157.8	155.0	155.5	155.1	155.2	157.6	156.5	157.4
P_{90}/Median (%)	237.7	215.9	222.7	220.4	212.0	216.6	212.4	200.9	208.4	192.3	185.5	204.8	198.3	197.6	196.5	197.4	197.1	197.2	195.8	195.7	197.8	192.8
P_{80}/P_{20}	3.0	2.8	2.9	3.0	3.0	2.8	3.0	2.6	2.7	2.4	2.4	2.7	2.7	2.6	2.7	2.6	2.6	2.5	2.6	2.7	2.6	2.7
P_{90}/P_{10}	5.7	5.0	5.5	5.9	5.4	5.2	5.1	4.4	4.3	3.7	3.7	4.6	4.6	4.8	4.4	4.4	4.3	4.2	4.3	4.4	4.6	4.6
Gini index	0.386	0.354	0.362	0.377	0.357	0.362	0.358	0.331	0.328	0.296	0.288	0.333	0.337	0.343	0.331	0.324	0.330	0.321	0.326	0.326	0.330	0.326

Table A6

Income distribution in 1968-75 and comparison with 1987-2014 – Per capita income

(Share of income per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	1,7	2,0	1,8	1,5	1,7	2,0	2,0	2,5	2,5	3,1	3,0	2,2	2,1	1,9	2,1	2,3	2,4	2,5	2,3	2,1	2,0	1,8
2th tenth	3,5	3,9	3,8	3,5	3,8	3,9	3,7	4,3	4,3	4,7	4,7	4,1	4,1	4,1	4,2	4,2	4,0	4,2	4,1	4,0	3,9	3,9
3th tenth	4,6	5,0	4,9	4,8	5,2	5,0	4,9	5,3	5,4	5,8	5,9	5,4	5,4	5,4	5,4	5,5	5,3	5,5	5,3	5,3	5,2	5,2
4th tenth	5,7	6,1	6,1	6,0	6,3	6,0	6,0	6,4	6,7	6,8	7,0	6,6	6,6	6,6	6,6	6,7	6,5	6,6	6,6	6,6	6,5	6,5
5th tenth	6,9	7,3	7,3	7,3	7,4	7,1	7,2	7,5	7,8	7,9	8,1	7,9	7,8	7,8	7,8	7,9	7,7	7,8	7,8	7,8	7,8	7,9
6th tenth	8,1	8,7	8,6	8,6	8,6	8,4	8,5	8,8	9,1	9,2	9,2	9,2	9,2	9,0	9,2	9,2	9,0	9,1	9,1	9,2	9,1	9,3
7th tenth	9,8	10,3	10,3	10,2	10,3	10,0	10,4	10,3	10,6	10,5	10,6	10,7	10,6	10,3	10,6	10,5	10,4	10,5	10,6	10,7	10,7	10,8
8th tenth	12,0	12,3	12,5	12,4	12,5	12,2	12,5	12,3	12,7	12,3	12,4	12,5	12,5	12,2	12,5	12,5	12,3	12,4	12,5	12,6	12,8	12,9
9th tenth	15,9	15,7	16,1	15,8	15,6	15,5	15,9	15,3	15,6	15,1	15,1	15,5	15,4	15,1	15,3	15,4	15,2	15,4	15,4	15,7	15,7	15,8
10th tenth	31,8	28,7	28,6	29,8	28,6	29,9	29,0	27,3	25,4	24,8	24,0	25,9	26,4	27,7	26,4	25,9	27,2	26,2	26,4	26,0	26,1	25,9
P_{10}/Median (%)	39,2	40,1	38,3	34,8	37,7	41,9	39,2	44,8	43,2	47,7	46,8	40,1	38,7	38,5	40,5	40,9	40,4	41,2	39,9	38,8	39,0	36,2
P_{20}/Median (%)	55,2	55,3	55,2	51,9	56,6	57,8	55,0	59,6	57,8	62,2	60,9	56,5	56,4	57,3	57,2	57,1	54,5	57,8	55,8	54,3	54,9	52,6
P_{80}/Median (%)	184,3	170,0	173,9	172,8	171,5	177,1	179,1	166,3	164,9	158,1	156,1	160,3	161,0	159,9	161,0	159,0	159,7	162,9	161,4	161,7	165,4	163,6
P_{90}/Median (%)	257,4	231,5	235,4	229,4	227,3	238,4	239,4	220,3	211,4	205,0	196,8	206,8	208,0	208,3	208,1	207,5	209,2	210,9	210,3	208,9	214,7	208,9
P_{80}/P_{20}	3,3	3,1	3,2	3,3	3,0	3,1	3,3	2,8	2,9	2,5	2,6	2,8	2,9	2,8	2,8	2,8	2,9	2,8	2,9	3,0	3,0	3,1
P_{90}/P_{10}	6,6	5,8	6,2	6,6	6,0	5,7	6,1	4,9	4,9	4,3	4,2	5,2	5,4	5,4	5,1	5,1	5,2	5,1	5,3	5,4	5,5	5,8
Gini index	0,418	0,383	0,387	0,403	0,384	0,392	0,390	0,358	0,342	0,321	0,313	0,349	0,354	0,366	0,353	0,346	0,360	0,347	0,354	0,355	0,359	0,361

Table A7

Distribution of income-net worth indicator in 1968-75 and comparison with 1987-2014

(Share of income-wealth per tenth of households and inequality indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
1st tenth	1.7	1.9	1.8	1.7	1.8	1.6	1.7	2.0	2.3	2.6	2.5	1.9	1.9	1.8	2.0	2.1	2.3	2.1	2.0	1.9	1.8	1.7
2nd tenth	3.3	3.6	3.6	3.4	3.6	3.4	3.5	3.7	3.9	4.3	4.1	3.5	3.5	3.5	3.6	3.6	3.7	3.6	3.4	3.3	3.2	3.4
3rd tenth	4.6	5.0	5.0	4.7	4.9	4.7	4.7	4.8	4.9	5.4	5.3	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.7	4.6	4.4	4.6
4th tenth	5.8	6.1	6.1	6.0	6.2	5.7	5.8	5.9	6.0	6.5	6.4	5.9	5.9	5.8	5.8	6.0	6.0	6.0	5.9	5.8	5.6	5.8
5th tenth	6.9	7.2	7.2	7.2	7.3	6.9	7.0	7.1	7.1	7.6	7.7	7.1	7.2	7.1	7.0	7.2	7.2	7.2	7.0	7.1	6.8	7.2
6th tenth	7.9	8.4	8.4	8.5	8.6	8.3	8.4	8.5	8.4	8.9	9.0	8.6	8.6	8.5	8.3	8.5	8.5	8.5	8.3	8.4	8.2	8.7
7th tenth	9.5	9.9	10.0	10.1	10.3	9.8	10.1	10.2	10.1	10.4	10.7	10.4	10.3	10.1	9.9	10.1	10.0	10.0	10.0	9.9	9.9	10.5
8th tenth	11.8	12.1	12.3	12.2	12.6	11.9	12.2	12.3	12.2	12.3	12.8	12.6	12.4	12.1	12.0	12.3	12.2	12.1	12.1	12.0	12.2	12.6
9th tenth	16.0	15.8	15.9	15.8	15.7	15.4	15.6	15.7	15.7	15.5	15.6	16.0	15.8	15.5	15.2	15.7	15.6	15.4	15.6	15.5	15.8	15.9
10th tenth	32.4	29.8	29.6	30.4	28.9	32.2	31.0	29.9	29.3	26.4	26.0	29.4	29.7	31.0	31.5	29.8	29.6	30.3	30.9	31.5	32.2	29.6
P_{10}/Median (%)	37.0	38.2	36.7	34.2	35.9	34.1	35.9	38.7	42.5	44.5	41.0	35.5	35.7	36.0	38.9	38.3	40.4	38.4	37.3	35.8	35.3	34.0
P_{20}/Median (%)	53.8	56.3	56.4	53.0	53.8	54.2	53.0	54.7	57.4	59.5	56.4	53.2	52.9	53.0	54.1	54.0	54.4	53.5	52.9	51.4	50.7	50.8
P_{80}/Median (%)	183.6	173.8	176.9	175.3	174.2	174.7	175.5	174.8	175.6	166.0	167.0	177.5	174.5	173.6	172.9	177.3	174.0	170.3	176.2	175.4	182.2	174.7
P_{90}/Median (%)	263.4	240.1	238.8	239.7	232.9	244.8	239.5	237.6	236.3	217.0	213.5	239.9	232.2	232.2	232.4	235.7	232.5	229.8	240.2	237.6	253.7	236.2
P_{80}/P_{20}	3.4	3.1	3.1	3.3	3.2	3.2	3.3	3.2	3.1	2.8	3.0	3.3	3.3	3.3	3.2	3.3	3.2	3.2	3.3	3.4	3.6	3.4
P_{90}/P_{10}	7.1	6.3	6.5	7.0	6.5	7.2	6.7	6.2	5.6	4.9	5.2	6.8	6.5	6.5	6.0	6.2	5.8	6.0	6.4	6.6	7.2	7.0
Gini index	0.424	0.394	0.396	0.406	0.390	0.421	0.412	0.397	0.385	0.348	0.352	0.398	0.398	0.409	0.408	0.396	0.389	0.398	0.407	0.414	0.427	0.404

Table A8

Household wealth inequality in 1968-75 and comparison with 1987-2014: adjustments for under-reporting

(Gini indices)

	Estimates on synthetic data								Estimates on Historical Archive data													
	1968	1969	1970	1971	1972	1973	1974	1975	1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012	2014
Household wealth	0.758	0.764	0.739	0.747	0.754	0.772	0.744	0.737	0.628	0.577	0.591	0.624	0.619	0.629	0.631	0.619	0.604	0.616	0.615	0.627	0.643	0.613
Calibration - Method 1	0.780	0.781	0.759	0.776	0.783	0.738	0.733	0.745	0.697	0.607	0.592	0.663	0.668	0.710	0.694	0.657	0.644	0.690	0.691	0.684	0.703	0.655
Calibration - Method 2	0.799	0.789	0.787	0.801	0.816	0.756	0.735	0.746	0.750	0.695	0.703	0.743	0.738	0.782	0.739	0.708	0.694	0.746	0.746	0.728	0.742	0.732
Calibration - Method 3	0.789	0.786	0.768	0.786	0.794	0.757	0.736	0.746	0.705	0.623	0.608	0.673	0.676	0.702	0.712	0.676	0.665	0.699	0.687	0.698	0.721	0.667
Calibration - Method 4	0.780	0.781	0.759	0.776	0.782	0.754	0.734	0.745	0.688	0.603	0.590	0.656	0.660	0.685	0.694	0.657	0.644	0.683	0.672	0.681	0.703	0.648
Average of calibrations	0.787	0.784	0.769	0.785	0.794	0.751	0.735	0.745	0.710	0.632	0.623	0.684	0.685	0.720	0.710	0.674	0.662	0.704	0.699	0.698	0.717	0.676

Calibration methods used (Sautory, 1993): 1=Linear - 2=Raking ratio - 3=Logit - 4= Linear truncated (with parameters 0.1 and 0.9).

Table A9

Relative poverty and place of birth

(Percentages)

Year		Share of poor born in Italy, using the indicator …				Share of poor born abroad, using the indicator				Share of poor (total residents in Italy), using the indicator …			
	Share of individuals born abroad	Income	Income and wealth (1 Year)	Income and wealth (3 months)	Income and wealth (3 years)	Income	Income and wealth (1 Year)	Income and wealth (3 months)	Income and wealth (3 years)	Income	Income and wealth (1 Year)	Income and wealth (3 months)	Income and wealth (3 years)
1968										14.8	7.1	6.5	9.3
1969										14.1	7.6	7.1	9.2
1970										14.8	6.7	6.1	8.5
1971										16.8	7.6	6.6	9.2
1972										15.8	6.6	5.5	8.9
1973										14.1	6.7	6.0	8.0
1974										15.4	7.5	6.7	9.1
1975										12.6	6.4	5.7	7.9
1987										11.4	5.2	4.2	6.1
1989										8.6	4.0	2.8	4.6
1991	0.9	9.5	4.8	3.4	6.0	12.2	3.3	3.3	8.0	9.5	4.8	3.4	6.0
1993	1.1	13.4	5.9	4.7	7.6	10.5	6.6	5.7	7.6	13.4	5.9	4.7	7.6
1995	1.3	14.0	6.9	4.8	8.4	11.6	9.6	8.4	10.1	14.0	6.9	4.9	8.4
1998	1.9	14.0	6.2	4.2	7.7	22.0	11.4	8.8	13.8	14.2	6.3	4.3	7.8
2000	2.5	12.9	5.6	4.0	7.0	15.0	10.4	10.0	11.7	13.0	5.7	4.1	7.1
2002	3.5	12.7	5.5	3.7	6.9	24.3	21.1	19.8	21.1	13.1	6.0	4.3	7.4
2004	4.4	11.9	5.7	4.0	6.9	22.1	19.0	14.7	19.5	12.4	6.3	4.4	7.4
2006	5.4	11.6	5.4	3.6	6.4	23.0	16.6	11.1	17.8	12.2	6.0	4.0	7.0
2008	7.5	11.1	5.3	3.9	6.3	33.7	24.5	20.8	26.8	12.8	6.7	5.2	7.8
2010	9.0	11.8	6.4	4.5	7.4	30.4	25.1	21.6	27.0	13.5	8.1	6.0	9.1
2012	11.1	10.9	5.7	4.4	6.6	34.3	27.2	23.4	29.3	13.5	8.1	6.5	9.1
2014	10.0	12.0	6.1	4.9	6.6	34.3	27.1	23.7	28.2	14.2	8.2	6.8	8.7

References

Acciari P., F. Alvaredo, S. Morelli (2017), The concentration of personal wealth in Italy 1995-2013, Paper presented at the Conference How financial systems work: evidence from financial accounts, 30 November-1 December 2017, Banca d'Italia, Rome.

Atkinson A.B., A. Brandolini (2013), On the identification of the middle class, in J.C. Gornick and M. Jäntti (eds.), Income Inequality. Economic Disparities and Middle Class in Affluent Countries, Stanford (CA), Stanford University Press, pp. 77-100.

Alfani G. (2016), The rich in historical perspective. Evidence for preindustrial Europe (ca. 1300-1800), Working Paper No. 571, IGIER – Università Bocconi.

Baffigi A., L. Cannari, G. D'Alessio (2016), Cinquant'anni di indagini sui bilanci delle famiglie italiane. Storia, metodi, prospettive. Questioni di Economia e finanza (Occasional Papers), No. 368, Banca d'Italia.

Banca d'Italia (1970), Risparmio e struttura della ricchezza delle famiglie italiane nel 1968, Statistical Bulletin, anno XXV, No. 1, January-February.

Banca d'Italia (1973), Nota sull'esecuzione della indagine sul reddito e il risparmio delle famiglie italiane nell'anno 1973, disponibile al sito: http://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/documenti-storici/note-metodologiche/index.html

Barrientos A. F., Bolton A., Balmat T., Reiter J.P., Figueiredo J. M., Machanavajjhala A., Chen Y., Kneifel C., DeLong M. (2017), A framework for sharing confidential research data, applied to investigating differential pay by race in the US government, NBER Working Paper Series No. 23534.

Brandolini A. (1999), The Distribution of Personal Income in Post-War Italy: Source Description, Data Quality, and the Time Pattern of Income Inequality, Temi di discussione (Working Papers), No. 350, Banca d'Italia.

Brandolini A., S. Magri, T. Smeeding (2010), Asset-based measurement of poverty, Temi di Discussione (Working Papers), No. 755, Banca d'Italia.

Brick J. M., J. Montaquila, S. Roth (2003), Identifying problems with raking estimators, Proceedings of the Annual Meeting of the American Statistical Association pp. 710–717.

Cannari L., G. D'Alessio (1990), Housing Assets in the Bank of Italy's Survey of Household Income and Wealth, in Dagum and Zenga (eds.), Income and Wealth Distribution, Inequality and Poverty, Springer Verlag, Berlin, pp. 326-334.

Cannari L., G. D'Alessio (1993), Non-reporting and Under-reporting Behavior in the Bank of Italy's Survey of Household Income and Wealth, in Bulletin of the International Statistical Institute, vol. LV, n. 3, Pavia, p. 395-412.

Cannari L., G. D'Alessio, G. Raimondi, A.I. Rinaldi (1990), Le attività finanziarie delle famiglie italiane, Temi di discussione (Working Papers, No. 136, Banca d'Italia.

Cannari L., G. D'Alessio, G. Vecchi (2017), Wealth, in Measuring wellbeing. A history of Italian living standards, edited by G. Vecchi, Oxford University Press.

D’Alessio G. (2012), Ricchezza e disuguaglianza in Italia, in Disuguaglianze diverse, a cura di D. Checchi, Il Mulino, 2012.

D'Alessio G. A. Neri (2015) Income and wealth sample estimates consistent with macro aggregates: some experiments, Questioni di Economia e Finanza (Occasional Papers), No. 272, Banca d’Italia.

D'Aurizio L., I. Faiella, S. Iezzi, A. Neri (2006), L’under-reporting della ricchezza finanziaria nell’indagine sui bilanci delle famiglie, Temi di discussione (Working Papers), No. 610, Banca d’Italia.

Deville J.C., C.E. Sarndal (1992), Calibration estimators in survey sampling. Journal of the American Statistical Association 87(418): 376–382.

Gabbuti G. (2017), A Noi! Economic Inequality and the Political Economy of Italian Fascism, Thesis submitted for the Master of Philosophy in Economic and Social History, Trinity Term 2017

Gornick J. C., E. Sierminska, T.M. Smeeding (2009), The income and wealth packages of older women in cross-national perspective. Journal of Gerontology: Social Sciences, 64B, 402-414.

Haveman R., E. N. Wolff, (2004), The concept and measurement of asset poverty: Levels, trends and composition for the U.S., 1983–2001. Journal of Economic Inequality, 2, 145–169.

Pyatt G., C.N. Chen, J. Fei (1980), The Distribution of Income by Factor Component, Quarterly Journal of Economics, 95(3): pp. 451-473.

Piketty T. (2014), Capital in the Twenty-First Century, Harvard University Press.

Piketty T., G. Postel-Vinay, J.-L. Rosenthal (2006), Wealth Concentration in a Developing Economy: Paris and France, 1807-1994”. American Economic Review 96(1): 236-256

Reiter J. P. (2002), Satisfying Disclosure Restrictions With Synthetic Data Sets, Journal of Official Statistics, Vol.18, No.4, pp. 531–543.

Rubin D. B. (1993), Discussion: Statistical Disclosure Limitation, Journal of Official Statistics, Vol. 9, No. 2, pp. 461-468.

Sautory O. (1993), Le macro CALMAR, Redressement d’un échantillon par calage sur marges, Document No. F 9310, INSEE.

Shorrocks A., G. Wan (2008), Ungrouping Income Distributions. Synthesising Samples for Inequality and Poverty Analysis, UNU-WIDER Research Paper No. 16.

Short K., P. Ruggles (2005), Experimental measures of poverty and net worth: 1996, Journal of Income Distribution, 13, 8–21.

Tanton R. (2014), A Review of Spatial Microsimulation Methods, International Journal of Microsimulation 7(1) 4-25.

Weisbrod, B. A., and W. L. Hansen (1968), An Income-Net Worth Approach to Measuring Economic Welfare, American Economic Review, vol.58, No. 5, pp. 1315(1329).

Williamson, P. (2013), An Evaluation of Two Synthetic Small-Area Microdata Simulation Methodologies: Synthetic Reconstruction and Combinatorial Optimisation. In R. Tanton & K. Edwards (Eds.), Spatial Microsimulation: A Reference Guide for Users, pp. 19–47. Springer: Netherlands.