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Luigi, Cannari and Giovanni, D'Alessio

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Luigi Cannari and Giovanni D'Alessio

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INTERGENERATIONAL TRANSFERS IN ITALY

Luigi Cannari and Giovanni D'Alessio**

1. Introduction

In the economic literature there is a broad agreement that intergenerational transfers play an important role in the accumulation of household wealth. In fact, households modify their own wealth mainly by saving or dissaving, as described by the life-cycle theory, and by receiving or giving gifts and bequests.¹

Understanding the role of intergenerational transfers in the creation of household wealth is important in many respects. Households who receive or expect to receive, give or plan to give transfers may change their consumption and savings, and their efforts in producing income. Thus, the presence of significant bequests might have important consequences for policy, depending on the reasons people bequeath part or all of their wealth. Furthermore, if inheritance is a way to transmit to future generations the ownership of productive capital and the control over it, it becomes a crucial factor in the efficient allocation of capital. In addition, inheritance poses a problem in terms of equality: if household wealth were primarily determined by inheritance, there would be little room for an individual to reach higher wealth classes through his/her own merits and efforts.

In this paper we measure the importance of transfers in household wealth accumulation, estimating the share of current wealth and total lifetime resources attributable to bequests and gifts, using different methods of estimation.² We then explore how transfers are distributed among the population and look at their correlation with other variables (in particular wealth and lifetime resources). Data on intergenerational transfers are mainly drawn from special sections of the 1991 and 2002 questionnaire of the Bank of Italy's Survey of Household Income and Wealth.

2. Measuring the importance of intergenerational transfers

The theoretical literature has emphasised three main motives for bequests. The most prominent attention has been given to the altruistic model (Becker, 1981), for which the main motive for intergenerational transfers is that parents care for their heirs. In Becker's view, bequests may assume the form of both human capital and financial transfers: as the human capital investments have a declining rate of return, financial transfers take place only when the returns to human capital investments fall below the interest rate. This implies that financial bequest concerns mainly the richest households.

* Bank of Italy. We are grateful to Massimo Omiccioli and Luigi Federico Signorini for their comments on a preliminary version of the paper.

¹ A further source of wealth variations, less investigated in the economic literature, is capital gains (see Cannari, D'Alessio and Gambacorta, 2006).

² The seminal paper by Kotlikoff and Summers (1981) spawned a large debate on the measure of the contribution of intergenerational transfers to household wealth. The discussion has involved both methodological issues, i.e. the capitalisation of returns of past transfers, and the magnitude of the share of wealth due to inheritance, which can vary between 20 and 80 per cent (Kotlikoff and Summers, 1981; Modigliani, 1988; Kessler and Masson, 1989) depending on the method of estimation. More recently the debate has extended to the distribution of transfers and their impact on wealth inequality. For recent contributions see Christelis and Weber (2007), Cox and Stark (2005), De Nardi (2004), Gokhale *et al.* (2001) Gokhale and Kotlikoff (2002), Hurd and Smith (2002), and Kopczuk and Lupton (2005).

Some other authors (Bernheim, Shleifer and Summers, 1985; Cox, 1987) have emphasised the strategic behaviour of parents who may use the promise of future bequests to induce their children to provide them with assistance in old age. In this view, the bequest is simply an exchange, where the bequests of the parents correspond to services (i.e. nursing, companionship) provided by the children. A final motive for bequest is related to uncertainty about the length of life. As parents may accumulate assets for their future needs and for precautionary motives, an early death determines an unintentional bequest (Yaari, 1965). Whatever the motive for bequest is, intergenerational transfers have an impact on the distribution of household wealth.

The importance of intergenerational transfers in the process of wealth accumulation can be measured by the share of wealth that derives from bequests and gifts. This share can be computed by different methods, relying on different assumptions, with their own merits and shortcomings.

Let TR_t be transfers (bequests and gifts) received at time t , TG_t transfers (gifts) given at time t , Y_t income, C_t consumption, and r the rate of return on wealth W_t . Then the accumulation of wealth can be described by the following equation:

$$W_{t+1} = W_t(1+r) + Y_t - C_t + TR_t - TG_t \quad (1)$$

As saving S_t is equal to $Y_t - C_t$, the current value of W_t can be expressed as:

$$\begin{aligned} W_t &= \sum_{i=1, \dots, t-1} (1+r)^{t-i-1} S_i + \sum_{i=1, \dots, t-1} (1+r)^{t-i-1} TR_i - \sum_{i=1, \dots, t-1} (1+r)^{t-i-1} TG_i = \\ &= W_t^L + W_t^R - W_t^G \end{aligned} \quad (2)$$

where W_t^L represents the life-cycle portion of wealth, W_t^R the cumulative value of received bequests and gifts and W_t^G the cumulative value of transfers already given to offspring.

The debate on the relative importance of savings and bequests in accumulation of wealth is based on decomposition (2). Some authors have concentrated on the ratio $\lambda_t = W_t^L/W_t$, expressing the share of wealth attributable to past saving; others have analysed the ratio $\alpha_t^R = W_t^R/W_t$, measuring the importance of bequests. Although the index α_t^R is not the mere complement to 1 of λ_t , it should be close to that when computed on the living population, as the term W_t^G measures inter-vivos transfers only, which represent a very small part of intergenerational transfers.

This ratio α_t^R , proposed by Kotlikoff and Summers (1981), has been criticised by Modigliani (1988) for two main reasons: first, because saving is usually defined as disposable income (including interest income) minus consumption, while in equation (2) interest income on bequests is included in the cumulative value of intergenerational transfers; second, because representation (2) implicitly assumes that the life-cycle profile of consumption is not affected by intergenerational transfers. Admittedly, this is a rather strong assumption; for instance, if the recipient consumed not only the return on bequests but even part of the bequests, then the ratio could be greater than one.

Assuming a different perspective, an index of the role in wealth assumed by intergenerational transfers could be derived by analysing its destination rather than its origin, on the base of the following equation:

$$W_t + W_t^{R*} = W_t^{G*} - S_t^* \quad (3)$$

where W_t^{R*} and W_t^{G*} represent the transfers respectively to be received and to be given in the future and S_t^* is the cumulative amount of future net saving. The equation represents the relationship between the net wealth plus the expected transfers to be received in terms of possible destinations, respectively future transfers to descendants and future dissaving.

The index can thus be defined as:

$$\alpha_t^G = (W_t^{G*} - W_t^{R*}) / W_t = 1 - (-S_t^*) / W_t \quad (4)$$

and represent the complement to 1 of the ratio of future dissaving to net wealth. The more the intergenerational transfers are important in terms of destination of present net wealth, the closer the index is to 1.

Indexes α_t^R and α_t^G , measured on the same population, provide different estimates as they reveal different aspects of the phenomenon: α_t^R looks at the past, α_t^G at the future. These estimates may differ because the counterparts of recipients and donors in a given population are not necessarily included in the same population: the donors of those who have received a transfer can be dead, while the recipients of those who plan to give a transfer may not be born yet. On a more practical level, the estimate of α_t^R is based on a recall of past transfers, which may suffer from some kind of bias, while that of α_t^G is based on expectations, which have their own measurement problems. Nonetheless, we believe that the comparison between the two indexes can help to shed light on the importance that households assign to future transfers. The relevance of this view is plain, as the bequest motive is a well-known factor influencing the saving behaviour of households.

A serious problem of these measures comes from the relationship between wealth, transfers and age. The ratio α_t^R is computed by averaging wealth and transfers over the whole population; thus it will depend on the population structure: in a population mainly made up of elderly people, for instance, many of them will have already received bequests from their parents and the numerator will be greater than in a young population, whose members have not yet received bequests. Analogous considerations hold for the index α_t^G when the expected transfers are taken into account.

The denominator will depend on the average age of the population too: it will be lower in a young population, whose members have not had the time to accumulate wealth and have not yet received bequests; it will be greater when the average age is near to retirement; it will decrease in an elderly population, whose members have already consumed part of their life-cycle wealth and transferred assets to their offspring.

Similarly, the role of intergenerational transfers on wealth distribution could be incorrectly displayed by these measures as they depend on the age structure of the population and the intergenerational age gap. Let us consider the hypothetical situation of a population whose members earn the same income, have the same consumption expenditure and receive the same bequests at the same age, say t_0 . We would say that in this hypothetical world bequests do not contribute to wealth inequality. According to equation (5), on the contrary, we would find that bequests account for a large share of wealth inequality, because in any period there will be individuals (of age $t \geq t_0$) who have already received bequests and individuals (of age $t < t_0$) who have not yet received bequests.

To overcome these shortcomings some changes have to be made in the above measures: a) the flow of inheritance should be considered in a lifetime perspective; b) the amounts should be discounted at a fixed age. In this view, the analysis of

intergenerational transfers can be based on the relationship equating sources and destinations of lifetime resources:

$$LY + LT^R = LC + LT^G \quad (7)$$

where $LT^R = \sum_{i=0, \dots, d} (1+r)^{-i} TR_i$; $LY = \sum_{i=0, \dots, d} (1+r)^{-i} Y_i$.

$$LT^G = \sum_{i=0, \dots, d} (1+r)^{-i} TG_i; LC = \sum_{i=0, \dots, d} (1+r)^{-i} C_i.$$

In a lifetime perspective, an index describing the role of intergenerational transfers analogous to the index α_t^R can be thus derived as:

$$\beta^R = LT^R / (LT^R + LY) \quad (8)$$

In equation (7) bequests and income are discounted over the life span of each individual, ranging from 0 to d (the date of death). The ratio β^R does not depend on the population structure; when looking at the impact of transfers on wealth inequality the ratio β^R is therefore to be preferred to α_t^R , which depends on the average age of the population.

An alternative index of the role of intergenerational transfers, analogous to the index α_t^G , may be derived analysing the destination of lifetime resources:

$$\beta^G = LT^G / (LT^G + LC) = LT^G / (LT^R + LY) \quad (9)$$

β^R and β^G shed light on different aspects of wealth accumulation: while the index β^R evaluates the transfers from the point of view of the recipients (those who receive gifts and bequests), β^G assumes the point of view of the donors (those who intend to transfer wealth to their offspring); the latter indicator represents the intergenerational transfers (as a share of total resources) that individuals have already given or intend to give in the future to their children.

The difference between these estimates can be useful to understand the importance of changes in the propensity to transfer wealth to heirs, once unintentional bequests and the demographic changes (and in particular the change in the number of children) have been taken into account. Both these measures are reported in the following sections.

Moreover, from equation (7) it follows that the difference between the transfers given and those received in a lifetime corresponds to the cumulative lifetime savings. i.e. a sort of lifetime added wealth measure:

$$LY - LC = LT^G - LT^R = LS \quad (10)$$

This quantity may help in understanding the role that people assign to the well-being of descendants.

3. The Bank of Italy's Survey of Household Income and Wealth

Our source of information is the Survey of Household Income and Wealth (SHIW) conducted by the Bank of Italy yearly from 1965 to 1987 (except for 1985), every other year until 1995 and from 1998 on (the reference is to the year *for* which, not *in* which, the survey is conducted). The SHIW seeks to gather information on household microeconomic behaviour. The sample size is about 8,000 units per year. The basic survey unit is the "household", 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. Data are collected in personal interviews

conducted by professional interviewers. Participation is voluntary and not remunerated. As a result, the response rate is low, ranging in the last seven surveys between 33 per cent in 1991 and 58 in 1993. Further methodological details on the SHIW are given in Banca d'Italia (2002, 2004, 2006), Brandolini and Cannari (1994) and Brandolini (1999); on Italian wealth see also Cannari and D'Alessio (2006).

Detailed data have been collected continuously on the social and demographic characteristics of household members and their incomes and, since 1980, on consumption expenditure. Estimates of households' tangible assets are also available from the outset. Financial assets have been surveyed irregularly and dissatisfaction with the quality of the answers has led to frequent changes in the format of the questions: figures on a fairly comparable basis exist only from 1987 onwards. Raw data on tangible assets are collected on an individual basis and then aggregated by household, whereas financial assets are surveyed at the household level.

This basic information on household wealth is complemented with two types of data on intergenerational transfers. In the surveys for 1991 and 2002 a special module was inserted in the questionnaire to ask household members the amount and timing of inheritances and gifts received from the previous generation (Banca d'Italia 1993 and 2004). In the 2002 survey, in particular, household heads and their spouses/cohabitants were asked to indicate both the value of the transfers (bequests and gifts) made and received during the respondent's lifetime and those that they expected to make or receive in the future.³ The detailed wording of the questions is reported in Appendix B.

The second piece of information relates only to the dwellings owned by the household, but it has been asked on a continuous basis since 1987. Respondents have to specify how dwellings were acquired. Each individual property is identified as having been purchased, built to order by the household, inherited or received as a gift. In addition, respondents supply data on the year they became the owners.

Both for 1991 and 2002 the two sources of information on inheritances have been merged, cross-checked and integrated; this explains why figures in this paper are higher than those based on the special modules alone.⁴

As common in sample surveys, SHIW data also are affected by non-response, unwillingness to declare assets and the tendency to undervalue the declared asset holdings; these phenomena are typically correlated with household wealth. We refer the reader to Brandolini *et al.* (2004) for an extensive discussion of the relevance of such distortionary effects in the SHIW as well as for a detailed description of the adjustments adopted to correct for non-responses, non-reporting and under-reporting.

We define household net worth as tangible assets (i.e. consumer durables, jewellery and other valuables, real estate and unincorporated businesses) plus financial assets (transaction and savings accounts, government bonds, equities and other assets) less financial liabilities (mortgages and other debts).

³ The SHIW is not the only source of information on intergenerational transfers in Italy. Information is also collected by the survey SHARE (see www.share-project.org and, for intergenerational transfers, Christelis and Weber, 2007), with questions similar to those used in the HRS (see Hurd and Smith, 2002).

⁴ As the questions in the special modules on inheritance were asked after information had been provided on houses owned (*How did the household acquire ownership?*), sometimes the respondents did not report the same information, even though it was required. Where information on inherited houses was found and the household did not report any transfer, a record was added. In cases where both inherited houses and transfers were found, a conservative strategy was applied, adding information on transfers only when the amount or the year of the transfer were very different.

4. Traditional measures of the role of intergenerational transfers

4.1 Direct evidence from the 1991 and 2002 SHIW

In 1991 about 26 per cent of households declared they had received transfers for an average amount of 41,704 euros at 2002 prices (Table 1). The share of intergenerational transfers in net worth was 30.9 per cent (25.2 from inheritances and 5.7 from gifts). Assuming a real interest rate of 2 per cent per year and adjusting for the income stream produced by transferred assets, the amount would rise to 66,017 euros at 2002 prices and the share to 48.9 per cent.⁵

Table 1

Intergenerational received transfers, 1991 and 2002

(euros)

	1991		2002	
	Average (*)	Ratio to net wealth	Average	Ratio to net wealth (**)
All households				
Without capitalisation				
Inheritance	34,057	25.2	51,485	28.7
Gift.....	7,647	5.7	8,937	5.0
Total received transfers	41,704	30.9	60,422	33.6
With capitalisation				
Inheritance	53,044	39.3	85,489	47.6
Gift.....	12,972	9.6	13,217	7.4
Total received transfers	66,017	48.9	98,706	54.9
Net wealth	135,041	100.0	179,649	100.0
Recipient households				
Received transfers	163,057	83.3	178,785	63.3
Capitalised received transfers	258,114	131.9	292,067	103.4
Net wealth.....	195,696	100.0	282,400	100.0
Non-recipient households				
Received transfers.....	0	0.0	0	0.0
Capitalised received transfers	0	0.0	0	0.0
Net wealth.....	114,196	100.0	127,196	100.0
Net wealth of recipients minus net wealth of non-recipients.....	81,500	-	155,204	-

(*) Amounts for 1991 are expressed at 2002 prices.

(**) Net wealth for 2002 is the estimate obtained on the random sub-sample of those to whom the special module on intergenerational transfers was submitted.

Source: Our calculations based on data from the SHIW.

⁵ In the United States, in the 1992 Survey of Consumer Finances 20.7 per cent of households reported they had received wealth transfers. The present value of all inheritances received up to 1992 and accumulated at a real interest rate of 3 per cent amounted to 25.8 per cent of household net worth (Wolff, 2002, p. 261; see also Brown and Weisbenner, 2002).

In the 2002 survey the share of households who declared they had received transfers is higher than that observed in 1991 (33.8 compared with 26 per cent). The average amounts of the total received transfers are about 45 per cent higher than those observed in 1991; the share in terms of net wealth, however, is only 2.7 percentage points higher (33.6 compared with 30.9 per cent), as wealth too has grown rapidly (33 per cent).⁶ Adjusting for the income stream produced by transferred assets (using the same interest rate of 2 per cent per year as above), the amount would rise to 98,706 euros while the share to net wealth would increase to 54.9 per cent, compared with 48.9 per cent in 1991.

Both in 1991 and 2002, households receiving transfers turned out to be on average richer than those reporting no transfers. If the income stream produced by transferred assets is taken into account, the average wealth of recipients is lower than the received transfers, implying a negative impact of bequests on the saving behaviour of the heirs.

The 2002 survey collected information not only on received transfers but also on transfers given to the offspring. The latter does not include bequests, but only inter-vivos transfers. The share of households that have already given transfers is smaller than the share of households that have already received transfers (3.6 compared to 33.8 per cent; see Table A1 in Appendix); the average size of given transfers, adjusted for the income stream, is small (4,690 euros) compared with received bequests.

The age profiles of total wealth, life-cycle wealth (computed according to equation (2), with capitalisation of returns) and transfers are shown in Table A2 and Figure 1. Both kinds of transfers (received and given) increase with age; net wealth reaches its maximum in the age class 51-60 years (near retirement age) and declines thereafter; the decline in life-cycle wealth is steeper and the amount of life-cycle wealth becomes close to zero over 71 years.⁷

Looking at the destination of wealth, the share of households who plan to leave an inheritance is far greater than that of those who expect to receive one (58.6 compared with 12.6 per cent; Table A1 in Appendix). The discrepancy is even greater when computed on the amounts, as the average inheritance that households plan to leave to their descendants (about 130,000 euros) is approximately 8 times the corresponding amount of transfers households expect to receive in the future (about 16,000 euros). Once the amounts are considered at present value, i.e. discounted at a 2 per cent rate of interest, the gap decreases but remains high (77,012 versus 12,459 euros). This result may be due to the average age of household heads (55 years in the sample). At age of 50, many households will have already received bequests and the amount to be received will be small compared with what they plan to leave. In addition, the discrepancy may depend on uncertainty about the expenditures that will be necessary in the final years of life (healthcare or surgery); this expenditure could be disregarded by the donors (as not depending on his/her will) or overestimated by the potential recipients (see, for instance, Brown and Weisbenner, 2002).

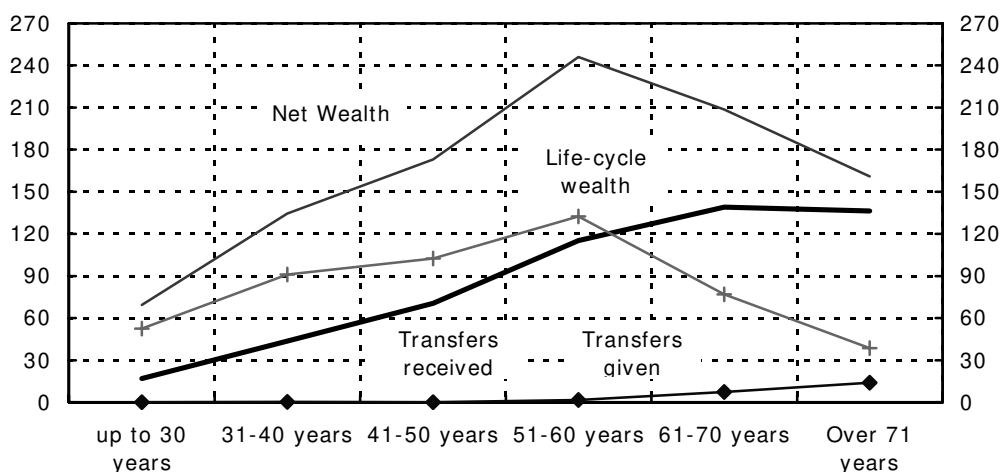
The age profile of the amounts (at present value) shows that the transfers households expect to receive decrease with age while the transfers households expect to leave, like the wealth curve, reach a maximum (about 150,000 euros) in the age group 51-60 years (Figure 2).

⁶ Between 1991 and 2002 real capital gains contributed approximately 40 per cent to the growth of household wealth (Cannari, D'Alessio, Gambacorta, 2006).

⁷ The age profiles, estimated on the basis of a cross-section survey, can be affected by spurious cohort effects. In Italy, the net wealth profile observed in the past decades is similar to that shown in Figure 1, although the most recent years are characterised by lower values for young people and higher values for the elderly.

Figure 1

Household net wealth by origin, 2002
(thousands euros)



Source: Our calculations based on data from the SHIW. Transfers include the capitalisation of interest.

On average, future dissaving is equal to 64.1 per cent of net wealth; the α_t^G index, which represents a measure of how important future transfers are for households, is thus equal to its complement to 1, i.e. 35.9 per cent, lower than the corresponding index α^R (54.9 per cent). The age profile of the future net dissaving tends to increase until retirement age and to decrease thereafter, when wealth is decumulated.

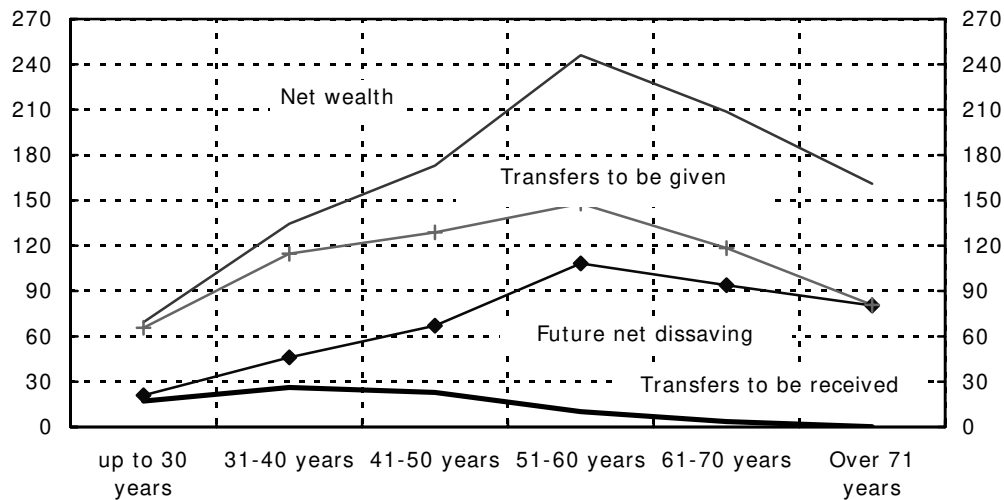
To sum up, these results show that a large share (54.9 per cent) of net wealth is attributable to intergenerational transfers and that households plan to give their offspring a smaller share of wealth (35.9 per cent) than they have received. This result, however, has to be taken cautiously for three main reasons: 1) transfers that households plan to give to their children do not include unintentional bequests; on the contrary, unintentional bequests are included in received transfers; 2) in many cases (in particular for dwellings) the interviewees did not remember the value of received transfers at the time they received them and provided the interviewers with the value of assets at the time of the interview; thus, the value of received transfers includes the capital gains occurred in the period. On the contrary, the value of transfers to be given does not include, by definition, future capital gains; 3) although the interviewees were requested to provide their best estimate of planned transfers, taking into consideration actual and future children, it was very difficult for young couples (especially those without children) to provide an answer.

In addition, the lower amount of given bequests compared with received ones depends on the capitalisation of interest and demographic changes. If we look at the non-capitalised average amounts per household, transfers received over the whole life span are smaller than transfers given over the life span. This difference increases in per capita terms, i.e. taking into consideration the decline in the number of children.⁸

⁸ In Italy the total fertility rate (number of children per woman) has declined from 2.7 in 1965 to 1.32 in 2005. This rate is among the lowest in the European Union: only Spain and Greece show fertility rates lower than Italy's.

Figure 2

Household net wealth by destination, 2002
(thousands euros)



Source: Our calculations based on data from the SHIW. Transfers include the capitalisation of interest.

4.2 The estimate of inherited wealth based on houses

A further estimate can be obtained, for real estate only, using the method proposed by Barca, Cannari and Guiso (1994). The SHIW collects data on the way houses were acquired. Each individual property is identified as having been purchased, built to order by the household, inherited or received as a gift. In addition, respondents supply data on the year they became the owners, making it possible to calculate the capitalisation of the returns on bequests. The value of wealth inherited in the form of real estate is given by:

$$W_t^E = \sum_{k=1}^t \left[\frac{(1+r)}{(1-p)} \right]^{t-k} E_k$$

where E_k is the value of the inherited dwelling at time k . The probability p of an inherited property being sold is estimated at 0.92 per cent on an annual basis. The gross rate of return used for capitalisation (based on survey data) is equal to 2 per cent (net of depreciation).

The share of intergenerational transfers (bequests plus gifts) on total net wealth, without capitalisation, ranges from 23.6 in 1991 to 34.9 per cent in 2004. Adjusting for capitalisation the estimates become 34.4 and 56 per cent respectively (Table 2). The estimates for 1991 and 2002 are similar to those derived from the direct evidence above.

While basic estimates are very similar to those of Barca, Cannari and Guiso (1994), the estimates correcting for the probability of sale and for capitalisation are a little greater. The discrepancies are mainly due to the length of the period between the date of the survey and the year in which households acquired the property, which is longer in the most recent waves.

On the basis of these figures, we again conclude that bequests play a significant role in the accumulation of wealth. In addition, this role turns out to have increased over the years (see Figure 3).

Table 2

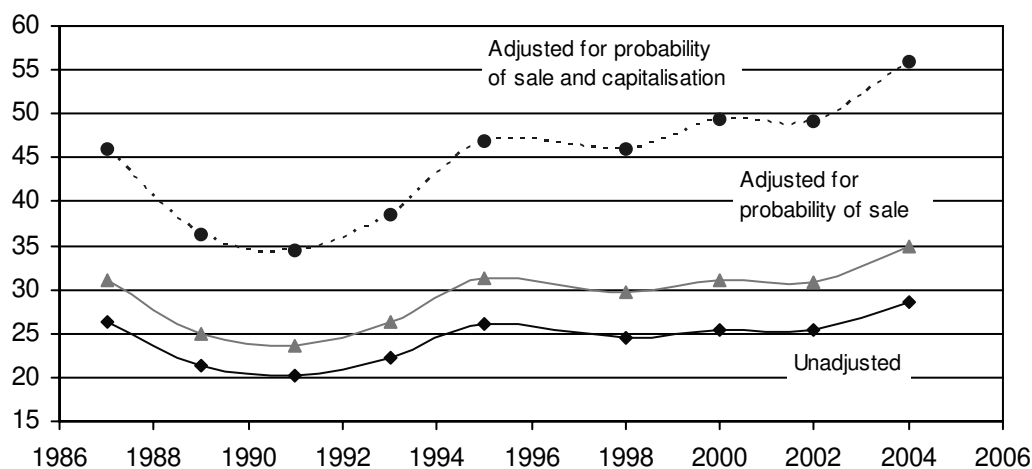
Wealth in the form of real estate inherited or received as a gift in 1987-2004

	Share of household who received a real estate transfer	Total intergenerational transfers in the form of real estate					
		Not correcting for probability of sale	Correcting for probability of sale	Correcting for probability of sale and capitalising	Not correcting for probability of sale	Correcting for probability of sale	Correcting for probability of sale and capitalising
		(euros at 2004 prices)			(ratio to net worth)		
1987 ...	25.4	29,166	34,464	50,863	26.3	31.1	45.9
1989 ...	23.6	26,948	31,442	45,478	21.4	25.0	36.2
1991 ...	24.7	29,807	34,821	50,728	20.2	23.6	34.4
1993 ...	26.4	37,850	44,827	65,782	22.2	26.2	38.5
1995 ...	29.4	43,854	52,498	78,999	26.0	31.2	46.9
1998 ...	28.7	44,404	53,664	83,008	24.5	29.7	45.9
2000 ...	29.3	47,890	58,692	93,594	25.3	31.0	49.4
2002 ...	28.7	49,542	60,357	96,088	25.3	30.8	49.1
2004 ...	29.1	60,974	74,578	119,905	28.5	34.9	56.0

Source: Our calculations based on data from the SHIW-HA.

Figure 3

Value of real estate inherited or received as a gift, 1987-2004
(percentage ratio to net worth)



Source: Our calculations based on data from the SHIW-HA (Version 2.0, June 2006).

4.3 Evidence based on the flow-to-stock conversion method

Survey estimates of inherited wealth may suffer from various biases due to careless recall or under-reporting. An alternative estimate of the role of inherited wealth can be obtained using data on the flows of inheritance observed in one year (Kotlikoff and Summers, 1981; Modigliani, 1988). For a growth rate of per capita output equal to n and an interest rate equal to r , assuming that interest is capitalised, the stock of inherited wealth is:

$$W^e = B(e^{(r-n)g} - 1)/(r - n)$$

where B represents the yearly flow of bequests and g the age gap between parents and descendants.

The flows of inheritance in one year can be estimated by applying the mortality rate (by sex and age) to the corresponding sample; the sum over all the sample of the product of the wealth held by each person – under the assumption that net worth is equally shared among parents – and the corresponding mortality rate can be interpreted as the mean value of the inheritances in that year.

On the base of the estimated age gap between parents and offspring the shares of net wealth deriving from inheritances can be estimated under various hypotheses of constant yearly rates of growth and rates of returns.

Table 3

Inherited wealth estimates based on the flow-to-stock method

Year	Flows/ net wealth	Average gap (in years) between parents and offspring	Share of inherited to total wealth under various hypotheses (*)				
			r-n=0%	r-n=0.5%	r-n=1%	r-n=2%	r-n=3%
1989 ...	0.90	29.6	26.7	28.8	31.1	36.4	43.0
1991 ...	1.04	29.9	31.1	33.6	36.3	42.6	50.4
1993 ...	0.90	29.9	26.8	28.9	31.2	36.6	43.3
1995 ...	0.98	29.9	29.3	31.6	34.1	40.1	47.4
1998 ...	1.12	29.9	33.4	36.1	39.0	45.8	54.1
2000 ...	1.35	30.0	40.4	43.5	47.1	55.3	65.4
2002 ...	1.13	30.3	34.2	36.9	40.0	47.0	55.7
2004 ...	1.12	30.5	34.0	36.7	39.8	46.8	55.6

Source: Our calculations based on data from the SHIW.

(*) n = yearly rate of growth; r = rate of return. The coefficients are supposed constant over time. In case $n=r$ the share $W^e = B g$.

Under all the hypotheses considered, the share of inheritances in wealth grows from 1989 to 2004, due to the growth of both the average gap and the estimated annual flows of inheritance (Table 3); the latter, in turn, reflects the better conditions of older people in more recent years compared with the early 1990s.⁹

⁹ Clearly, this measure does not account for gifts and other intergenerational transfers occurring before the death of the donor. On the other hand, the previous method could overestimate the amount of the flows, as no attention is paid to the negative correlation between wealth and mortality rate (Attanasio and Hoynes, 2000).

Following the above scheme, the role of intergenerational transfers in wealth accumulation decreases with income growth and increase with the increase in the returns on capital. In Italy, the rate of growth of income has been declining over the period analysed; as to capital returns, while real interest rates decreased significantly, capital gains both on shares and on dwellings largely sustained the returns on capital. All in all, it is likely that the slower growth in income and the increasing capital gains have contributed in amplifying the role of inheritances.

4.4 *The role of intergenerational transfers over the life span*

Estimates provided in the previous sections show that intergenerational transfers play an important role in the accumulation process. On average, received transfers represent a share of households' net wealth ranging from 30 to 55 per cent, depending on the method applied.

As shown in Section 2, however, these measures can be influenced by the age of individuals. This shortcoming can be overcome if the amount of transfers is computed in a lifetime perspective, a scheme which differs from the traditional approach for three main reasons: a) it takes into account both the transfers that households have received and those that households will receive in the future (or those given and those to be left); b) it considers the present value of transfers at a fixed age; c) it considers the amount of transfers as a share of lifetime resources (instead of net wealth).

In the following, the computational tasks involved in these three steps are described in detail.

Lifetime income and transfers. Using 2002 SHIW data, the computation of intergenerational transfers can easily be extended to transfers that households will receive in the future, as a specific question on expectations was asked in the questionnaire. Although expectations may differ from actual transfers, they can be considered relatively good proxies of what households will receive.

In order to estimate the present value of inheritance to be received we resort to the expected residual life of the household head's parents; similarly, the present value of future transfers to be left to descendants is computed using the expected residual life of the household head and his/her spouse. The underlying hypothesis that all future transfers take the form of bequests does not seem too strong because, according to survey data, they make up more than 80 per cent of transfers.

As already shown in Section 2, the present value of transfers depends on the difference between the household head's age and his/her age at the time when the transfers occurred. Equal transfers received at different times and ages of the household head have different values that depend on capitalised returns.

To control for such heterogeneity, we compute the present value of transfers, past and future, at a fixed age of 15 years. The rate of return is fixed at 2 per cent.

The computation of lifetime income, in order to obtain household lifetime resources, is a demanding task. While the year at which the employed persons started to work is known from the survey, information on periods of unemployment in the past is unknown; in addition, the year of death of individuals is unknown, although its average value can be estimated on the basis of demographic information. In general difficulties arise because SHIW data provide a picture of household income in a single year only, while longitudinal data over the life span would be required.

Lifetime income is obtained summing the income from labour or pensions (Y_t) estimated at each age of the household head. At any age, income (in log) is made up of three components:

$$\log Y_t = X\beta + f(\text{age}) + u_t \text{ where } u_t = \rho u_{t-1} + e_t \text{ and } e_t \text{ is N.i.i.d.}$$

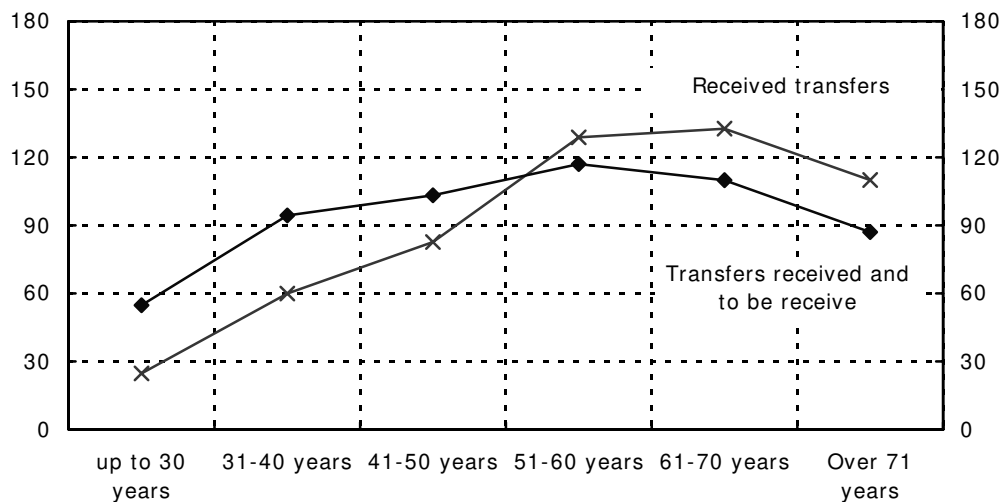
The first component ($X\beta$, where β is a vector of parameters to be estimated) accounts for the invariant characteristics (X) of individuals (i.e. sex, education, geographical area); the second component ($f(\text{age})$) is a quadratic function of age; the third is a residual, which is assumed to follow a first order autoregressive process. The parameter ρ has been estimated by resorting to the panel sample 1998-2002 (which provides an estimated coefficient close to 0.9).¹⁰

Intergenerational transfers of lifetime resources. *The ratio of transfers received over the whole life span to the total amount of resources, both discounted at the age of 15, is on average equal to 4.6 per cent, a significant share considering the large size of the denominator (Table A3).*

The age profile of both received and expected intergenerational transfers is much flatter than that observed for received transfers at a given age (Figure 4); the younger generations, however, maintain the worst conditions in terms of received transfers. Although this result could depend on the underestimation of the value of inheritances, which for young people may appear far in the future, it is also possible that it reveals negative expectations of the young.

Figure 4

Received transfers by age, 2002
(index 100 = all ages)



Source: Our calculations based on data from the SHIW. Transfers include the capitalisation of interest.

¹⁰ The correlation coefficient ρ has been estimated taking into account the measurement errors in income data, as estimated by Biancotti, D'Alessio and Neri (2004).

5. Intergenerational transfers: distribution and correlation with other variables

In this section we look at the distribution of transfers, their concentration and their correlation with other variables, in order to provide the reader with useful information to assess the impact of intergenerational transfers on inequality.

This assessment is very complex and in many respects is a value judgment, because people differ in their views on inequality.

Some people argue that inequality does not change when all resources are increased in the same proportion (the relative criterion); others argue that inequality does not change when an equal amount is added to all previous resources (the absolute criterion). As Atkinson and Brandolini (2005) write, there is no a priori reason to rank one criterion over the other.

Table 4

Distribution of transfers among the population

	Transfers		Capitalised transfers (2% yearly)		Lifetime transfers (discounted at 15 years)	
	Given	Received	Given	Received	Given and planned	Received and expected
Household deciles.....						
Up to 1st decile	0.0	0.0	0.0	0.0	0.0	0.0
From 1st to 2nd decile ..	0.0	0.0	0.0	0.0	0.0	0.0
From 2nd to 3rd decile ..	0.0	0.0	0.0	0.0	0.0	0.0
From 3rd to 4th decile ..	0.0	0.0	0.0	0.0	1.9	0.0
From 4th to 5th decile ..	0.0	0.0	0.0	0.0	3.9	0.0
From 5th to 6th decile ..	0.0	0.0	0.0	0.0	6.2	0.0
From 6th to 7th decile ..	0.0	0.4	0.0	0.3	8.7	2.1
From 7th to 8th decile ..	0.0	5.4	0.0	4.6	12.4	7.5
From 8th to 9th decile ..	0.0	15.4	0.0	13.5	17.9	16.8
Over the 9th decile	100.0	78.8	100	81.6	49.0	73.5
Top 5 per cent.....	100.0	63.8	100.0	67.1	34.8	57.9
Top 1 per cent.....	73.6	32.3	75.1	36.1	16.2	28.3
Top 0.5 per cent.....	54.2	18.0	55.6	22.7	11.1	16.3
Gini index	0.987	0.887	0.988	0.898	0.671	0.860

Source: Our calculations based on data from the SHIW.

People looking at the space of opportunities or at the different nature of transfers and earned wealth will have different views on the impact of transfers on inequality than people looking at the space of disposable resources. Some people will have little doubt that intergenerational transfers represent a clear source of inequality of opportunity, because they provide individuals with different resources at the beginning of their life;

others will think that transfers are not the result of individuals' merits and efforts while income has to be earned, and therefore it would be preferable to use some welfare function instead of to look at the distribution of wealth; others will think that what matters is (present and future) consumption and therefore it is the total amount of resources to be considered and not their origins. Having in mind these different views, the aim of this section is not to assess the impact of transfers on inequality but to provide readers with information useful to make their own judgment.

Transfers are extremely concentrated: the Gini index of received transfers is 0.89 while that of given transfers is 0.99 (Table 4).

As already mentioned, the amount of transfers, received and given, increases with age, introducing a spurious effect in the analysis of its distribution among population.¹¹ It is not surprising that lifetime transfers are less concentrated than the corresponding phenomena described so far; the Gini index of the transfers received and expected is 0.86 (compared with 0.89 for the transfers received until the moment of the interview); that of the transfers given or planned for the descendants is 0.67 (compared with 0.99).

Although reduced, the lifetime transfers appear also highly concentrated when compared with family income or net wealth (the Gini index is 0.36 and 0.62 respectively) or lifetime income and consumption (both 0.38). The top 5 per cent of households receive more than half of all the transfers while the top 10 per cent receive approximately three quarters; on the other hand, the top 10 per cent of households have transferred or have planned to transfer approximately half of all the transfers.

Households receiving transfers show higher levels of lifetime income, consumption, net wealth and given transfers than non-recipient households (Table 5). Computed on the recipients, which represent approximately 40 per cent of the population, the ratio of transfers received over the whole life span to the total amount of resources is on average 9.4 per cent. For the top 10 per cent of households with the highest received transfers, the ratio of transfers to total lifetime resources is equal to 22 per cent.

The gap in terms of lifetime income between those who receive transfers and those who do not, is equal to 25.7 per cent; it becomes 38.8 per cent in terms of lifetime resources. Households belonging to the top 10 per cent of the distribution of transfers have a lifetime income approximately 40 per cent higher than those who do not receive transfers; the gap becomes 80 per cent after the transfers are taken into account.

In terms of lifetime consumption the gap between the households receiving transfers and the others is narrower than that observed for lifetime resources (36.4 compared with 38.8 per cent) as the former households transfer a higher absolute amount of their lifetime resources to their descendants.

The correlation between the capitalised received transfers (until the date of the interview) and net wealth is positive and equal to 0.39; on the contrary, the correlation between transfers and life-cycle wealth is negative (-0.72).

The coefficient of variation of net wealth is lower than that of life-cycle wealth (computed as the difference between net wealth and transfers). Richer households receive higher transfers but, as a proportion of their current wealth holdings, transfers are greater for poor households than rich ones (Table A5).

¹¹ For this reasons in this paragraph we concentrate the analysis on the variables referring to the whole life span (and discounted at the age of 15), unless clearly specified otherwise.

Table 5

**Lifetime transfers and resources of descendants
by educational qualification of fathers**

	Share of population	Received capitalised transfers	Lifetime income	Lifetime resources	Lifetime consumption	Given capitalised transfers
	(percent)	Average amount (discounted at 15 years old)				
Educational qualification of the father of the household head ⁽¹⁾						
None	28.1	23,330	669,442	671,727	650,682	21,045
Elementary school ..	46.8	49,481	1,130,139	1,134,588	1,089,555	45,032
Middle school	13.8	48,645	1,450,890	1,464,713	1,429,891	34,822
High school	7.1	127,922	1,501,860	1,562,701	1,495,620	67,081
University degree ...	3.2	188,058	1,519,398	1,651,602	1,595,748	55,854
Received transfers						
Non-receiving						
Households.....	58.9	0	900,573	900,573	877,212	23,361
Total receiving	41.1	117,25	1,132,326	1,249,576	1,196,364	53,211
of which top 10% ..	10.0	353,374	1,262,846	1,616,220	1,514,472	101,749
Total	100.0	48,202	995,848	1,044,050	1,008,417	35,633
Share of lifetime resources (percentages)						
Educational qualification of the father of the household head ⁽¹⁾						
None	-	3.5	99.7	100.0	96.9	3.1
Elementary school ..	-	4.4	99.6	100.0	96.0	4.0
Middle school	-	3.3	99.1	100.0	97.6	2.4
High school	-	8.2	96.1	100.0	95.7	4.3
University degree ...	-	11.4	92.0	100.0	96.6	3.4
Received transfers						
Non-receiving						
Households.....	-	0.0	100.0	100.0	97.4	2.6
Total receiving	-	9.4	90.6	100.0	95.7	4.3
of which top 10% ..	-	21.9	78.1	100.0	93.7	6.3
Total	-	4.6	95.4	100.0	96.6	3.4

Source: Our calculations based on data from the SHIW.

Table 6

**Correlation coefficients among
transfers, income, consumption and wealth**

	Transfers received	Transfers given	Transfers to be received	Transfers to be given	Net wealth	Income	Con- sumption	Life- cycle wealth
Transfers received.	1.00							
Transfers given	0.19	1.00						
Transfers to be received.....	0.02	0.01	1.00					
Transfers to be given	0.24	0.06	0.19	1.00				
Net wealth	0.39	0.07	0.11	0.55	1.00			
Income	0.23	0.05	0.15	0.41	0.58	1.00		
Consumption	0.23	0.03	0.14	0.34	0.50	0.73	1.00	
Life cycle wealth ..	-0.72	0.01	0.06	0.16	0.34	0.20	0.13	1.00

Source: Our calculations based on data from the SHIW. Transfers include the capitalisation of interest.

Table 7

**Correlation coefficients among
lifetime transfers, income, consumption and resources**

	Transfers received or to be received	Transfers given or to be given	Lifetime resources	Lifetime consumption	Lifetime income
Transfers received or to be received	1.00				
Transfers given or to be given	0.34	1.00			
Lifetime resources	0.31	0.26	1.00		
Lifetime consumption.....	0.28	0.16	1.00	1.00	
Lifetime income	0.10	0.20	0.98	0.98	1.00

Source: Our calculations based on data from the SHIW. Transfers include the capitalisation of interest.

These results, very similar to those obtained by Wolff (2002), cannot be interpreted as an equalising effect of transfers because people tend to react to transfers, changing their saving and consumption behaviour.¹²

Estimating life-cycle wealth as a function of transfers (received, to be received, given, to be given) and other explanatory variables, it turns out that households reduce

¹² In Italy the correlation between transfers received and life-cycle wealth is -0.72 (Table 6). In the US, according to Wolff's estimates, the correlation between transfers (WT) and current wealth holdings excluding transfers (NWX) varied over time from -0.30 in 1989 to -0.71 in 1992. In all four years the negative correlation between WT and NWX reduced (mechanically) overall wealth inequality. It is worth noting that, even if saving and consumption behaviour did not change in response to transfers, the equalising effect would not necessarily be intentional: it may be due to the random process of unintentional bequests. According to Gokhale and Kotlikoff (2002), in the US many, if not most, bequests appear to arise because the resources of the elderly are not fully annuitised; who receives inheritances is, in large part, a random process, which can, according to their model, equalise the distribution of wealth. On this issue see also De Nardi (2004) and Gokhale *et al.* (2001).

their life-cycle wealth less than the received transfers (with a coefficient close to -0.8 in the OLS estimate and to -0.48 in our preferred IV estimates in Table 8). Symmetrically, the coefficient of the given transfers is close to 1 in OLS and greater than 1 in 2SLS, suggesting that households increase their savings to compensate for the part of wealth transferred to offspring.

Table 8

Effects of transfers on life-cycle wealth

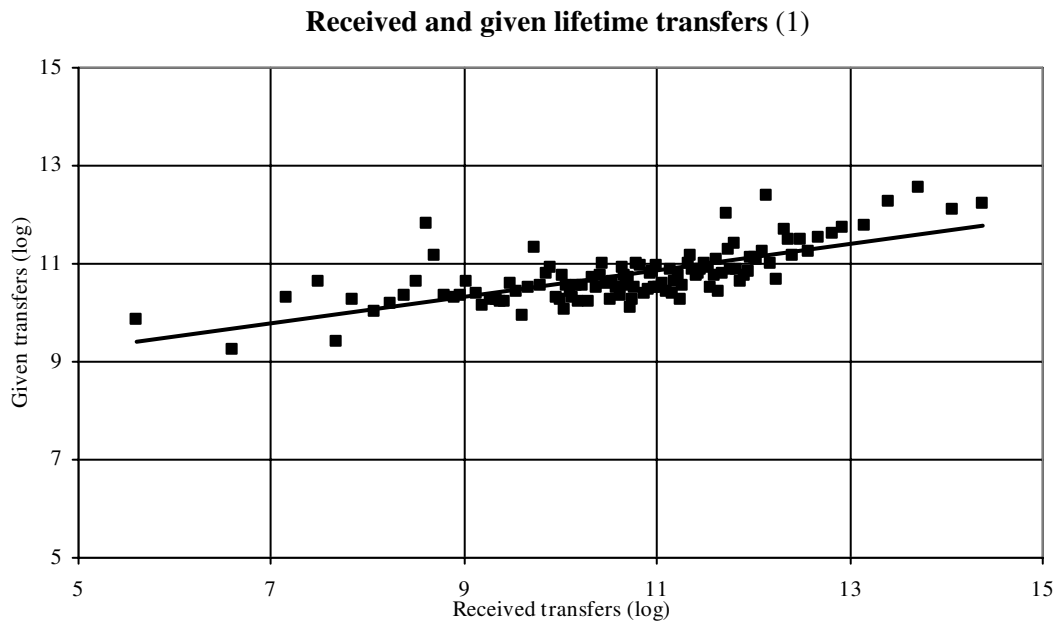
Variable (1)	Parameter estimate	Standard error	t-value	Prob.
OLS (Adjusted R squared=0.43)				
Received transfers	-0.80338	0.02188	-36.73	<.0001
Transfers to be received	-0.15523	0.05896	-2.63	0.0085
Given transfers	0.90778	0.07293	12.45	<.0001
Transfers to be given	0.96351	0.02669	36.09	<.0001
2SLS (2) (Adjusted R squared=0.24)				
Received transfers	-0.83633	0.062893	-13.30	<.0001
Transfers to be received	-0.24773	0.141973	-1.74	0.0811
Given transfers	2.290186	1.055186	2.17	0.0300
Transfers to be given	1.196099	0.387602	3.09	0.0020
2SLS (3) (Adjusted R squared=0.07)				
Received transfers	-0.48650	0.175584	-2.77	0.0056
Transfers to be received	0.824985	0.676886	1.22	0.2230
Given transfers	1.711696	0.881536	1.94	0.0522
Transfers to be given	0.702330	0.285305	2.46	0.0139

Dependent variable: ratio of life cycle wealth to household income. Other explanatory variables: intercept, $1/(\text{household income})$, geographical areas (2 dummies), municipality size (3 dummies), sex, age, age squared, household head's education (4 dummies), number of family members, number of income receivers, ratio of precautionary saving to income.

(1) Transfers include the capitalisation of interest and are divided by family income. (2) Transfers given and to be given are considered endogenous variables. Education, sector of activity and professional status of the household head's father are used as instrumental variables. (3) Transfers given and to be given are considered endogenous variables; transfers received and to be received are considered affected by measurement error. Therefore, all transfers are instrumented, resorting to education, sector of activity and professional status of the household head's father as instrumental variables.

Source: Our calculations based on data from the SHIW.

Figure 5



Source: Our calculations based on data from the SHIW. – (1) Transfers include the capitalisation of interest.

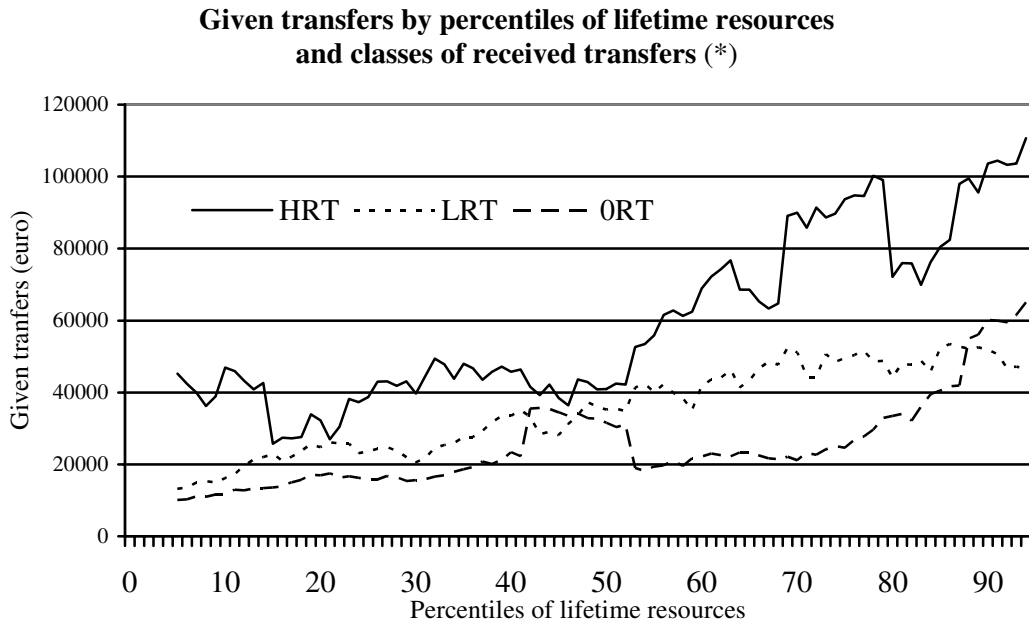
The transfers that households plan to leave to their descendants also present coefficients close to 1, suggesting that transfers to be given bring about higher saving. On the contrary, the transfers that households expect to receive have a small (and/or not significant) impact on saving, suggesting that households tend to adjust their saving behaviour only after they have received a transfer and not before; this result is very similar to that obtained by Brown and Weisbenner (2002).

In a lifetime perspective, the correlation between received and given transfers is positive (the correlation coefficient is equal to 0.33); it remains approximately the same when controlling for lifetime income (the partial correlation coefficient is equal to 0.32).

A positive relationship between planned bequests and received inheritance holds up even after controlling for lifetime resources. Figure 6 shows the amount of lifetime transfers that households have given or planned to give to their offspring by percentiles of lifetime resources and three classes of received (or expected to receive) transfers (zero, greater than zero and lower than the median, greater than the median). The figure suggests that the stronger intent to bequeath among inheritors is not merely a manifestation of wealth. Similar results obtain looking at the percentage of households who expect to leave a greater-than-the-median bequest (Figure 7). These results are very similar to those of Cox and Stark (2005), who find a large, significant, and robust effect of (received) inheritances on intended bequests, probably due to the importance of family traditions.

The increase in given transfers is less than proportional to the increase in received transfers (Figure 5). The ratio of given to received transfers is greater when received transfers are small and lower when transfers are large.

Figure 6

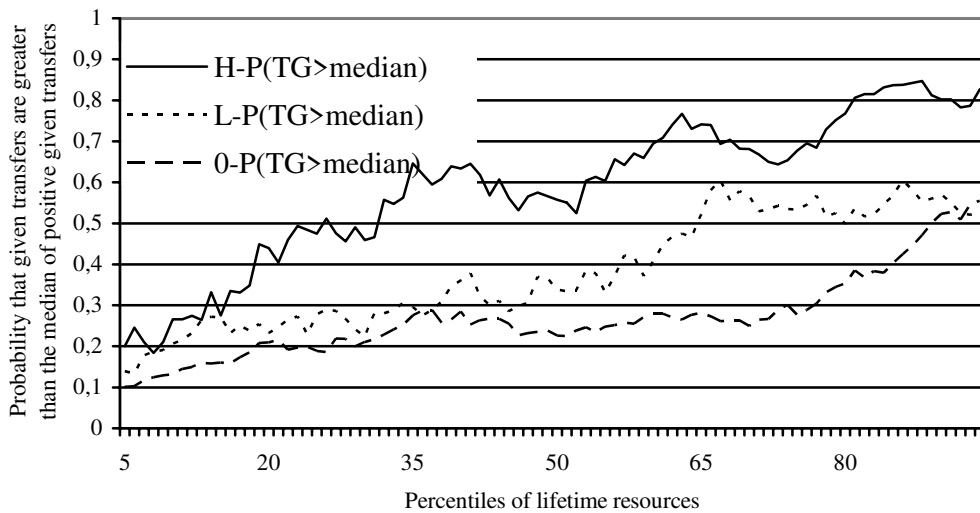


(*) Transfers include the capitalisation of interest. HRT= Received transfers greater than the median; LRT = Received transfers greater than zero and lower than the median; ORT = Received transfers equal to zero.

Source: Our calculations based on data from the SHIW.

Figure 7

Probability that given transfers are greater than the median of positive given transfers, by percentiles of lifetime resources and classes of received transfers (*)



(*) Transfers include the capitalisation of interest. H-P(TG>median) = Received transfers greater than the median; L-P(TG>median) = Received transfers greater than zero and lower than the median; 0-P(TG>median) = Received transfers equal to zero.

Source: Our calculations based on data from the SHIW.

The correlation between transfers (received or expected over the whole life span) and lifetime income is positive. Richer households do receive greater inheritances and other wealth transfers than poorer households (Table A4). However, as a proportion of their lifetime income, transfers are greater for poorer households than richer ones. A similar result obtains for transfers to be left to future generations: richer households give to their siblings greater transfers than poorer households, but as a proportion of the resources, transfers are greater for poorer donors. Again, these results do not imply an equalising impact of transfers on lifetime resources.

In fact, these results could be due to several factors.

- 1) Households receiving transfers may make less effort to produce income; in this case there would be a negative correlation between received transfers and income; the decrease in inequality of lifetime resources would be attributable to the change in the behaviour of recipients.
- 2) Parents may plan the amount of transfers to bequeath on the basis of children earning ability; thus low-income children could receive more transfers than high-income children. In addition, parents may decide to leave financial transfers to children with fewer abilities, while investing in the education of children with greater potential. In both cases the ratio of received transfers to income will decrease as children's income increases. The decrease in inequality would be intentionally due to the behaviour of parents.
- 3) Richer parents may invest more than poorer parents in children's education and provide their offspring with greater earning opportunity; for these children the ratio of received transfers to income will be low because they will have a greater probability of getting well paid jobs.
- 4) The decrease in inequality of lifetime resources could be due to the random process of unintentional bequests.

We do not find a significant effect of received transfers on income. When estimating (log) of household head's and spouse's current income from labour or pensions as a function of (received and expected) transfers and other household characteristics, the coefficient of transfers is negative (as expected) but not significant; results do not change when transfers are interacted with the dummy spouse, or when we consider only greater-than-median transfers and their interaction with the dummy spouse (Table 9).

Similar results obtain when estimating lifetime income as a function of (received and given over the life span) transfers and other control variables (age, age squared, sex, education, geographical area, dummy married, number of income earners and parents' occupation). The coefficient reporting the effect of received transfers on income is negative and not significantly different from zero; the coefficient of given transfers is positive and significantly different from zero. Given transfers, however, cannot be considered an exogenous variable as they depend on lifetime resources. Resorting to IV estimators (using education and sector of activity of household head's father and number of children as instruments) the coefficients of both transfers turn out to be highly non-significant (these results are not reported). In other words, while received transfers lead to an increase in consumption and given transfers to a decrease in consumption, their

influence on income turns out to be small.¹³

Table 9

The effects of transfers on family income

Variable (1)	Parameter estimate	Standard error	t-value	Prob.
Transfers (received and expected)....	-7,34733E-9	2,094389E-8	-0,35	0,7258
Transfers (received and expected)* dummy spouse	-4,0734E-10	3,041089E-8	-0,01	0,9893
Transfers (received and expected) greater than the median	-5,91843E-9	2,084285E-8	-0,28	0,7765
Transfers (received and expected) [greater than the median]*dummy spouse.....	6,01977E-10	3,018176E-8	0,02	0,9841

Dependent variable: log of household head's and spouse's income from labour or pensions. Other explanatory variables: intercept, municipality size (3 dummies), geographical area (2 dummies), sex, age, age squared, education (4 dummies), father's education (5 dummies), spouse (1 dummy). Adjusted R squared=0.41; RMSE=0.525; Dependent mean=9.62.

Source: Our calculations based on data from the SHIW. (1) Transfers include the capitalisation of interest.

The measurement of the importance of the role of the other factors is beyond the aim of this paper; some consideration, however, seem proper. Type 2 factors tend to increase the resources of worse-off households; to some extent this kind of bequest can therefore be equalising. Type 3 factors tend to hide the importance of the mechanisms of transmission of inequality, when looking at financial transfers only. In fact, financial transfers are just one of the channels of transmission of inequality and probably not the most important. Parents transfer not only wealth, but also education, ability and opportunities; these factors influence lifetime resources more than bequests and inter vivos transfers.¹⁴

Lifetime received transfers account for 8.6 per cent of the variance of lifetime resources; received transfers and family background variables (i.e. father's education dummies) account for 21.6 per cent of the variance. With the increase in the education of parents, the increase in lifetime resources of children is much greater (in absolute terms) than the increase in received transfers (Table 5). Family background variables play a much more important role than bequests as a factor of transmission of inequality of

¹³ The small effect of inheritance on income seems to be consistent with previous studies examining the effect of inheritance on labour supply. Joulfaian and Wilhelm (1994) find that inheritance does not lead to a large reduction in the labour supply of men and married women; Holtz-Eakin, Joulfaian and Rosen (1993) find small reductions in the labour supply of inheritors who remain in the labour force (but the likelihood that a person decreases his or her participation in the labour force increases with the size of the inheritance received). Looking at old-age support in developing countries, Cameron and Cobb-Clark (2001) find little evidence that transfers are a substitute for the income support provided by the elderly parent's own labour supply. The findings of Brown, Coile and Weisbenner (2006), however, contrast with those of the previous literature, which failed to find large and consistent effects of inheritance receipt on retirement; in addition, they find that the effect on retirement is larger when the inheritance is unexpected.

¹⁴ See, for instance, Bowles and Gintis (2002). Gokhale and Kotlikoff (2002, p. 269) argue that "While bequests are important, the main determinant of wealth inequality, according to our model, is earning inequality".

lifetime resources. In other words, the main determinant of inequality of lifetime resources is earning inequality, significantly influenced by family background variables. Intergenerational (financial) transfers play a more limited role in generating inequality of lifetime resources; in some circumstances, intergenerational (financial) transfers can also reduce the inequality of resources (for instance, when they are unintentional and follow a random process¹⁵ or when they are made to children with relatively low earnings, or poor saving discipline¹⁶).

6. Concluding remarks

In this paper we have examined the role of intergenerational transfers in the wealth accumulation of Italian households. The traditional measures employed in Section 3 show that received transfers represent an important share of the net wealth held by households. Direct estimates referring to 2002 range from 30 to 55 per cent, depending on the inclusion of the income stream produced by transferred assets. This share has shown a tendency to increase over the last decade.

In a lifetime perspective, the ratio of transfers received over the whole life span to the total amount of resources, both computed at the age of 15, is on average equal to 4.6 per cent, a significant share considering the size of the denominator. Computed on the recipients, the same ratio is 9.4 per cent. The lifetime perspective allows a deeper analysis of the age profile of inheritance; while received transfers at the observed age appears positively correlated with age, in particular when the return on capital is taken into account, the amount of inheritance received over the life span is much flatter. Looking at intergenerational transfers received (or given) until a given age can lead to an overestimation of the role of transfers as a factor of inequality. Transfers, however, are very concentrated, more than income and wealth, even when considered in a lifetime perspective.

Households receiving transfers show higher levels of lifetime income, consumption, net wealth and given transfers than non-recipient households. Richer households receive larger transfers but, as a proportion of their current wealth holdings, transfers are greater for poorer households than richer ones. These results cannot be interpreted as an equalising effect of transfers, because people tend to react to transfers, changing their saving and consumption behaviour.

The correlation between transfers (received or expected over the whole life span) and lifetime income is positive. Again, richer households receive greater inheritances and other wealth transfers than poorer households; as a proportion of their lifetime income, transfers are greater for poorer households than richer ones. This result is likely to be due to the much more important role played by family background variables than bequests as factors of transmission of inequality of lifetime resources.

Finally, we find a positive relationship between left-to-children bequests and received-from-parents inheritances; this relationship holds even after controlling for lifetime resources, suggesting the importance of the role of family traditions.

¹⁵ See, for instance, De Nardi (2004) and Gokhale *et al.* (2001).

¹⁶ See, for instance, Gokhale and Kotlikoff (2002).

APPENDIX A
STATISTICAL TABLES

Table A1

Intergenerational transfers by age of household head
(percentages of households, euros)

Age (years)	Share of households that have received transfers	Share of households that have given transfers	Share of households that expect to receive transfers	Share of households that expect to give transfers
up to 30	17.9	0.0	27.7	51.9
31-40	28.7	0.4	26.7	59.0
41-50	33.1	0.3	19.2	60.6
51-60	43.5	3.1	11.3	64.5
61-70	36.1	5.6	3.7	58.1
over 71	31.2	9.0	1.0	53.0
Total	33.8	3.6	12.6	58.6
	average amounts			
	Received	Given	To be received	To be given
up to 30	14,923	0	27,071	61,480
31-40	36,236	192	36,134	110,040
41-50	49,958	71	29,231	135,971
51-60	77,824	1,489	11,875	184,724
61-70	80,141	5,708	4,128	135,897
over 71	66,479	10,041	280	98,480
Total	60,422	3,522	16,262	129,436
	average amounts (capitalised or discounted)			
	Received	Given	To be received	To be given
up to 30	16,999	0	17,240	21,027
31-40	43,679	201	26,206	46,059
41-50	70,572	85	22,937	67,120
51-60	115,368	1,629	10,186	108,330
61-70	138,966	7,340	3,617	93,846
over 71	136,350	13,965	261	80,424
Total	98,706	4,690	12,459	77,012
	average amounts (discounted at 15 years)			
	Received	Given	To be received	To be given
up to 30	13,359	0	13,819	16,978
31-40	28,656	128	17,530	30,163
41-50	38,896	44	12,916	36,958
51-60	52,335	723	4,684	49,402
61-70	52,160	2,760	1,421	35,279
over 71	38,161	3,848	84	23,746
Total	40,855	1,497	7,347	34,135

Source: Our calculations based on data from the 2002 SHIW.

Table A2

Wealth and transfers by age of household head
(euros, percentages)

Age (years)	Life-cycle wealth	Future net dissaving	Net wealth	Ratio of life-cycle wealth to net wealth	Ratio of future net dissaving to net wealth
up to 30	52,478	65,690	69,477	75,5	94,5
31-40	91,031	114,655	134,509	67,7	85,2
41-50	102,506	128,810	172,993	59,3	74,5
51-60	132,315	147,909	246,054	53,8	60,1
61-70	77,002	118,400	208,628	36,9	56,8
over 71.....	38,604	80,827	160,989	24,0	50,2
Total	85,632	115,095	179,649	47,7	64,1

Source: Our calculations based on data from the 2002 SHIW. Transfers include the capitalisation of interest.

Table A3

Lifetime resources, consumption, income and transfers by age of household head
(values discounted at the age of 15 years, euros)

Age (years)	Lifetime received transfers (1) (a)	Lifetime given transfers (1) (b)	Lifetime income (2) (c)	Lifetime resources (a) + (c)	Lifetime consumption (a)+(c)-(b)
up to 30	27,178	16,978	1,518,864	1,546,041	1,529,063
31-40	46,186	30,291	1,518,259	1,564,445	1,534,154
41-50	51,812	37,002	1,324,082	1,375,894	1,338,892
51-60	57,019	50,126	996,785	1,053,804	1,003,678
61-70	53,581	38,040	665,493	719,074	681,034
over 71.....	38,245	27,594	446,902	485,147	457,553
Total	48,202	35,633	995,848	1,044,050	1,008,417

(1) With capitalisation of interest. (2) Autocorrelation coefficient of residuals = 0.9; adjusted for productivity growth.

Source: Our calculations based on data from the 2002 SHIW.

Table A4

Lifetime resources, consumption, income and transfers (1)
(average values, discounted at 15 years old; euros and percentages)

Tenths of households by lifetime resources	Lifetime resources	Lifetime consumption	Lifetime income (2)	Lifetime received transfers	Lifetime given transfers	Ratio of lifetime income to lifetime resources	Ratio of lifetime transfers received to lifetime resources	Ratio of lifetime transfers given to lifetime resources
1	238,663	228,210	233,067	5,595	10,453	97.7	2.3	4.4
2	360,855	344,757	348,923	11,932	16,097	96.7	3.3	4.5
3	485,506	464,918	468,387	17,119	20,588	96.5	3.5	4.2
4	629,637	605,427	601,582	28,055	24,210	95.5	4.5	3.8
5	765,142	735,907	743,122	22,020	29,235	97.1	2.9	3.8
6	926,384	892,410	889,762	36,622	33,974	96.0	4.0	3.7
7	1,124,531	1,083,812	1,083,689	40,842	40,719	96.4	3.6	3.6
8	1,385,889	1,336,344	1,327,063	58,826	49,545	95.8	4.2	3.6
9	1,798,367	1,742,984	1,708,662	89,706	55,384	95.0	5.0	3.1
10	2,732,596	2,656,275	2,560,818	171,777	76,320	93.7	6.3	2.8
Total	1,044,050	1,008,417	995,848	48,202	35,633	95.4	4.6	3.4
Tenths of households by lifetime consumption	Lifetime resources	Lifetime consumption	Lifetime income (2)	Lifetime received transfers	Lifetime given transfers	Ratio of lifetime income to lifetime consumption	Ratio of lifetime transfers received to lifetime consumption	Ratio of lifetime transfers given to lifetime consumption
1	253,254	220,246	244,081	9,172	33,007	110.8	4.2	15.0
2	359,160	340,998	345,376	13,784	18,162	101.3	4.0	5.3
3	482,588	463,361	465,344	17,244	19,227	100.4	3.7	4.1
4	627,878	601,875	604,920	22,958	26,003	100.5	3.8	4.3
5	763,240	739,162	736,974	26,266	24,078	99.7	3.6	3.3
6	928,350	891,931	882,844	45,506	36,419	99.0	5.1	4.1
7	1,123,324	1,083,818	1,083,643	39,681	39,506	100.0	3.7	3.6
8	1,386,150	1,345,624	1,334,552	51,599	40,527	99.2	3.8	3.0
9	1,797,681	1,737,021	1,687,848	109,834	60,660	97.2	6.3	3.5
10	2,725,236	2,666,392	2,578,733	146,504	58,844	96.7	5.5	2.2
Total	1,044,050	1,008,417	995,848	48,202	35,633	98.8	4.8	3.5
Tenths of households by lifetime income	Lifetime resources	Lifetime consumption	Lifetime income (2)	Lifetime received transfers	Lifetime given transfers	Ratio of lifetime income to lifetime resources	Ratio of lifetime transfers received to lifetime income	Ratio of lifetime transfers given to lifetime income
1	258,356	242,586	229,625	28,730	15,770	88.9	12.5	6.9
2	364,680	347,254	340,943	23,737	17,426	93.5	7.0	5.1
3	497,014	474,384	462,208	34,806	22,631	93.0	7.5	4.9
4	650,522	626,033	603,041	47,481	24,488	92.7	7.9	4.1
5	779,979	744,095	729,368	50,610	35,884	93.5	6.9	4.9
6	939,560	902,117	880,028	59,531	37,442	93.7	6.8	4.3
7	1,112,481	1,073,667	1,068,468	44,013	38,814	96.0	4.1	3.6
8	1,380,374	1,332,965	1,323,046	57,328	47,409	95.8	4.3	3.6
9	1,755,853	1,705,857	1,708,829	47,024	49,996	97.3	2.8	2.9
10	2,710,284	2,643,689	2,621,419	88,865	66,595	96.7	3.4	2.5
Total	1,044,050	1,008,417	995,848	48,202	35,633	95.4	4.8	3.6

(1) Transfers include the capitalisation of interest. (2) Lifetime income is adjusted for productivity growth; autocorrelation coefficient of residuals = 0.9.

Source: Our calculations based on data from the 2002 SHIW.

Table A5

Wealth and transfers (1)
(average values; euros and percentages)

Tenths of households by net wealth	Wealth	Lifecycle wealth	Future dissaving	Received transfers	Given transfers	Transfers to be received	Transfers to be given	Ratio of received transfers to net wealth	Ratio of given transfers to net wealth	Ratio of transfers to be received to net wealth	Ratio of transfers to be given to net wealth
1	-1,016	-396	-3,732	1,654	2,274	6,884	9,600	-162.8	-223.8	-677.6	-944.9
2	5,033	5,944	2,239	3,266	4,177	7,453	10,247	64.9	83.0	148.1	203.6
3	20,441	2,736	9,797	23,991	6,286	6,618	17,262	117.4	30.8	32.4	84.4
4	55,760	11,309	33,413	45,290	838	7,869	30,216	81.2	1.5	14.1	54.2
5	89,643	46,322	54,795	44,300	979	4,180	39,028	49.4	1.1	4.7	43.5
6	120,100	65,053	70,199	56,207	1,161	7,958	57,858	46.8	1.0	6.6	48.2
7	162,171	71,126	100,617	94,424	3,379	9,703	71,257	58.2	2.1	6.0	43.9
8	218,245	134,656	137,088	86,076	2,487	16,122	97,278	39.4	1.1	7.4	44.6
9	314,428	165,555	205,228	151,412	2,539	20,670	129,870	48.2	0.8	6.6	41.3
10	813,789	355,134	542,806	481,562	22,907	37,261	308,244	59.2	2.8	4.6	37.9
Total	179,649	85,632	115,095	98,706	4,690	12,459	77,012	54.9	2.6	6.9	42.9
Tenths of households by lifecycle wealth	Wealth	Lifecycle wealth	Future dissaving	Received transfers	Given transfers	Transfers to be received	Transfers to be given	Ratio of received transfers to lifecycle wealth	Ratio of given transfers to lifecycle wealth	Ratio of transfers to be received to lifecycle wealth	Ratio of transfers to be given to lifecycle wealth
1	236,845	-420,401	138,911	666,057	8,810	8,765	106,699	-158.4	-2.1	-2.1	-25.4
2	30,743	-6,460	17,486	37,620	417	6,965	20,222	-582.4	-6.5	-107.8	-313.0
3	13,446	2,679	6,888	10,855	88	4,544	11,102	405.2	3.3	169.6	414.4
4	27,873	11,966	15,589	15,977	71	7,764	20,048	133.5	0.6	64.9	167.5
5	72,138	43,406	41,216	29,429	697	4,897	35,818	67.8	1.6	11.3	82.5
6	104,025	81,578	68,526	23,397	950	11,876	47,375	28.7	1.2	14.6	58.1
7	138,041	116,798	79,220	22,839	1,596	8,081	66,901	19.6	1.4	6.9	57.3
8	189,582	168,617	124,580	23,097	2,132	11,694	76,695	13.7	1.3	6.9	45.5
9	282,624	249,780	176,204	43,763	10,919	26,733	133,153	17.5	4.4	10.7	53.3
10	700,789	611,295	482,212	110,737	21,243	33,046	251,623	18.1	3.5	5.4	41.2
Total	179,649	85,632	115,095	98,706	4,690	12,459	77,012	115.3	5.5	14.5	89.9
Tenths of households by future dissaving	Wealth	Lifecycle wealth	Future dissaving	Received transfers	Given transfers	Transfers to be received	Transfers to be given	Ratio of received transfers to future dissaving	Ratio of given transfers to future dissaving	Ratio of transfers to be received to future dissaving	Ratio of transfers to be given to future dissaving
1	43,642	17,898	-60,855	28,811	3,068	1,921	106,417	-47.3	-5.0	-3.2	-174.9
2	11,080	2,127	49	12,245	3,292	114	11,145
3	29,872	17,484	8,048	15,719	3,331	805	22,628	195.3	41.4	10.0	281.2
4	65,973	-8,996	22,240	79,687	4,718	3,425	47,158	358.3	21.2	15.4	212.0
5	94,475	35,260	43,073	61,699	2,483	5,084	56,487	143.2	5.8	11.8	131.1
6	116,448	74,296	68,299	45,524	3,371	7,143	55,293	66.7	4.9	10.5	81.0
7	174,559	104,320	99,947	72,693	2,454	8,952	83,563	72.7	2.5	9.0	83.6
8	220,356	96,884	144,460	124,797	1,325	10,750	86,645	86.4	0.9	7.4	60.0
9	289,275	148,484	214,634	151,980	11,189	23,060	97,701	70.8	5.2	10.7	45.5
10	754,438	370,465	614,023	395,638	11,664	63,616	204,032	64.4	1.9	10.4	33.2
Total	179,649	85,632	115,095	98,706	4,690	12,459	77,012	85.8	4.1	10.8	66.9

Source: Our calculations based on data from the 2002 SHIW. (1) Transfers include the capitalisation of interest.

APPENDIX B

SECTION EXTRACTED FROM 2002 SHIW QUESTIONNAIRE

INTERGENERATIONAL TRANSFERS – 2nd ROUND

HEAD OF HOUSEHOLD'S YEAR OF BIRTH IS ODD |__|__|__|__|

1. Have you (and your spouse) ever received a bequest or a gift or valuable presents?
 - Yes..... 1
 - No..... 2 → **Quest. 3**
2. Think of all the transfers of assets that you (or your spouse/cohabitant) have received as a bequest or gift and answer the following questions:

Bequest	Gift	To the head of household or his/her spouse/cohabitant		From parents (or grandparents) or other persons?		Year of the transfer	Value of the transfer in the year it was made €	or Value of the transfer €	in (year)
		HH 1	SP 2	PA-GR 1	OTHER 2				
1	2	HH 1	SP 2	PA-GR 1	OTHER 2	_ _ _ _	_ . _ _ _ _ . _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	PA-GR 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	PA-GR 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	PA-GR 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	PA-GR 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _

3. Have you (or your spouse/cohabitant) ever given or bequeathed large sums of money, houses, securities or other assets to your children, grandchildren or other persons?
 - Yes..... 1
 - No..... 2 → **Quest. 5**
4. Think of all the transfers of assets that you (or your spouse/cohabitant) have made and answer the following questions:

Bequest	Gift	By the head of household or his/her spouse/cohabitant		To children (or grandchildren) or other persons?		Year of transfer	Value of the transfer in the year it was made €	or Value of the transfer €	in (year)
		HH 1	SP 2	CH-GC 1	OTHER 2				
1	2	HH 1	SP 2	CH-GC 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	CH-GC 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	CH-GC 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	CH-GC 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _
1	2	HH 1	SP 2	CH-GC 1	OTHER 2	_ _ _ _	_ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ →	_ _ _ _

5. Do you (or your spouse/cohabitant) expect to receive bequests, gifts or other valuable presents in the future?

- Yes..... 1
- No..... 2 → **Quest. 7**

6. Can you specify, in particular, whether you (or your spouse/cohabitant) expect to receive something from your parents or grandparents or other persons? If yes, please give an estimate of the present value of the assets you expect to receive. **(Read the cases and enter codes and values where expected)**

To the head of household or spouse/cohabitant		From parents (or grandparents) or other persons		Present value €
HEAD OF HOUSEHOLD 1	SPOUSE/COHABITANT 2	PARENTS/ GRANDPARENTS 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _
HEAD OF HOUSEHOLD 1	SPOUSE/COHABITANT 2	PARENTS/ GRANDPARENTS 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _
HEAD OF HOUSEHOLD 1	SPOUSE/COHABITANT 2	PARENTS/ GRANDPARENTS 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _
HEAD OF HOUSEHOLD 1	SPOUSE/COHABITANT 2	PARENTS/ GRANDPARENTS 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _

7. **(If aged less than 50)** Do you think you will have (other) children? **(If yes)** How many?

- Yes..... 1 → **How many (more) |_|_|**
- No..... 2
- Don't know 3

8. Considering both gifts and bequests, do you (or your spouse/cohabitant) expect to leave some form of wealth (financial assets, dwellings, etc.) to your existing or future children, grandchildren or other heirs?

- Yes..... 1
- No..... 2 → **Section F**
- Don't know 3 → **Section F**

(SHOW CARD 9 2^ ROUND)

9. **(If yes)** At today's prices, what do you think could be the total value of your bequests, gifts and other valuable presents to these persons; i.e. how much will you transmit in total to your children and how much to other persons?

To		Present value €
CHILDREN/GRANDCHILDREN (existing and future) 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _
CHILDREN/GRANDCHILDREN (existing and future) 1	OTHER PERSONS 2	_ _ . _ _ _ _ . _ _ _ _

End of 2nd ROUND

→ **Go to Section F**

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