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6.1 Introduction

It is increasingly recognized that detailed analysis of microeconomic data can shed light on households' motivation for saving, discriminating between life-cycle motives, concern for future generations, the need to insure against income, health, and mortality risks, and the desire to acquire a house. Studies of household behavior have begun to develop along these lines in Italy, in particular drawing on the Survey of Household Income and Wealth conducted by the Bank of Italy. This paper offers an overview of the life-cycle pattern of Italian households' consumption, income, saving, and wealth and provides other background information on the determinants of their saving behavior, based on several waves of this survey.

Section 6.2 presents the main characteristics of the data and compares the implied aggregate measures of income, consumption, and wealth with the corresponding national and financial account aggregates. In section 6.3 we report the cross-sectional age profiles of income, consumption, saving, and wealth in the 1987 Survey of Household Income and Wealth. Section 6.4 compares these profiles with cohort-adjusted profiles estimated on pooled data from the 1984, 1986, 1987, and 1989 surveys and relates the saving behavior of Italian households to demographic and economic variables by regression analysis.

The availability of housing finance, the public provision of health care, and the rules of the social security system can be presumed to influence saving

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decisions significantly. In section 6.5 we evaluate the potential impact of these institutional arrangements on saving by Italian households. The timing and the financing of home acquisition shed light on the role of housing purchases in asset accumulation. The incidence of private health expenditure helps indicate the importance of uninsured health risk as a motive for saving. Finally, we use survey data on ex post and ex ante replacement rates to evaluate the role of social security in saving choices.

6.2 The Data

The Survey of Household Income and Wealth (SHIW) is the best source on the saving behavior of Italian households. It provides reliable data on income, consumption, and wealth from a sample that is representative of the population. Appendix A describes the main features of this survey, its sample design, interviewing procedure, and response rate; it also evaluates the survey's relative strengths and weaknesses with respect to the two other Italian databases on households, namely, the National Institute of Statistics (ISTAT) and Banca Nazionale del Lavoro (BNL) surveys.

Table 6.1, which refers to all the individuals covered by the SHIW (including those who are not income recipients), shows a close correspondence between the sample means for selected demographic characteristics and the general

Table 6.1 Population and Sample Means of Selected Demographic Characteristics of Individuals Covered by the 1989 SHIW

Variable	Population	1989 SHIW
Gender		
Male	48.6	48.7
Female	51.4	51.3
Age		
<24	32.7	32.9
25-44	28.6	28.8
45-64	24.1	26.1
>65	14.5	12.3
City Size		
<20,000	46.8	44.7
20,000-40,000	13.1	12.4
40,000-1 million	28.8	29.6
>1 million	11.2	13.3
Region		
North	44.3	46.5
Center	19.1	18.9
South	36.6	34.7

Source: "I bilanci delle famiglie italiane nell'anno 1989," *Supplemento al Bollettino Statistico*, no. 26 (Rome: Bank of Italy, 1991), table 1.

population averages in 1989. The comparison for 1987 yields a very similar picture and for brevity has not been reported here.

In table 6.2 we report the sample means of the demographic and occupational characteristics of household heads in 1987 and 1989. The structure of the two samples is similar. There is a relatively small number of young household heads, reflecting the large proportion of young working adults living with their parents. In fact, in 1989 the fraction of income recipients under age 30 (not reported in the table) was 19.8 percent, compared with only 7.6 percent of household heads that young. The occupational breakdown reveals that over one-third of household heads were not in the labor force in 1989. Of the remaining two-thirds, 27 percent were self-employed.

Table 6.3 displays population averages and sample means of disposable income, durable and nondurable consumption, and net worth broken down into

Table 6.2 Sample Means of Selected Demographic and Occupational Characteristics of Household Heads in the 1987 and 1989 SHIW

Variable	1987 SHIW	1989 SHIW
Gender		
Male	82.6	81.5
Female	17.4	18.5
Age		
<30	6.9	7.6
31-40	18.4	17.5
41-50	21.3	23.1
51-65	30.2	30.4
>65	23.2	21.4
Region		
North	48.7	50.1
Center	18.8	19.0
South	32.5	30.8
Occupation		
Operative	24.0	21.0
Clerical	16.8	17.5
Manager	5.8	7.6
Entrepreneur, professional	4.0	4.5
Other self-employed	14.0	12.7
Not in the labor force	35.3	36.7
Sector		
Agriculture	5.2	4.3
Industry	21.9	20.0
Public administration	17.9	19.3
Other	19.8	19.7
Not in the labor force	35.3	36.7

Sources: For 1987, "I bilanci delle famiglie italiane nell'anno 1987," *Supplemento al Bollettino Statistico*, no. 5 (Rome: Bank of Italy, 1989), table A1. For 1989, "I bilanci delle famiglie italiane nell'anno 1989," *Supplemento al Bollettino Statistico*, no. 26 (Rome: Bank of Italy, 1991), table A1.

Table 6.3 Comparison between National and Financial Account Data and the 1987 SHIW

	Aggregate Data (total) ^a (1)	Average Figures (per household) Based on Aggregate Data ^b (2)	Average Figures (per household) Based on 1987 SHIW ^c (3)	Ratio of (3) to(2) (4)
<i>Disposable income</i>	720	37,696	30,400	80.6
<i>Total consumption</i>	614	32,147	21,900	68.2
Nondurables	545	28,534	19,500	68.4
Durables	69	3,613	2,400	66.7
<i>Net worth</i>	3,743	195,969	130,578	66.6
Real assets	2,150	112,565	98,204	87.2
Durables	414	21,675	n.a.	n.a.
Net financial assets	1,179	61,728	32,374	52.5
Financial assets	1,260	65,969	35,486	53.8
Cash and deposits ^d	515	26,963	17,887	66.3
Public debt ^e	349	18,272	13,209	72.1
Other financial assets ^f	396	20,733	4,390	21.3
Liabilities	81	4,241	3,112	73.8
<i>Ratio of averages</i>				
Total consumption / disposable income		0.85	0.72	
Net worth / disposable income		5.20	4.30	
Financial assets / disposable income		1.75	1.17	
Financial assets / net worth		0.34	0.27	
Deposits / financial assets		0.41	0.50	
Public debt / financial assets		0.28	0.37	
Other financial assets / financial assets		0.31	0.12	
Liabilities / financial assets		0.06	0.09	

Sources: Col. (1)—Pagliano and Rossi (1992, table 21); *Annual Report*, Statistical Appendix (Rome: Bank of Italy, 1990), table aD29. Col. (3)—SHIW for 1987. Data on financial assets are adjusted on the basis of the 1987 BNL survey, as explained in text.

^aTrillion lire.

^bThousand lire. At the end of 1987 there were 19.1 million households.

^cThousand lire.

^dDeposits include checking accounts, savings accounts, and postal deposits.

^ePublic debt includes BOT (Treasury bills up to one-year maturity), CCT (floating-rate Treasury credit certificates, two to four years in maturity indexed to BOT), BTP (long-term government bonds), bonds issued by the Postal Deposits and Loans Fund, and bonds issued by local governments and public sector enterprises.

^fOther financial assets include bonds issued by private enterprises and special credit institutions, investment funds, and equities. Insurance and severance pay are included in the aggregate but not in the SHIW figure.

its main components. Like all the summary statistics in the rest of the paper, means are computed using sample weights. In column (2) we divide the national aggregates by the number of households at the end of 1987. In column (3) we report sample means for the corresponding variables in the 1987 SHIW.

The figures in column (3) are consistently lower than those in column (2),

indicating that the averages based on microeconomic data are likely to be underestimates of the true population values. Disposable income appears to be underestimated by about 20 percent and consumption by about 30 percent. As a result, the average propensity to consume resulting from the 1987 SHIW is 13 percentage points lower than that based on the national accounts (72 percent vs. 85 percent). Brandolini and Cannari (1994) explain that the discrepancy between the two measures of disposable income arises mainly from self-employment income (underestimated by half), pension benefits (underestimated by a third), and interest income. On the other hand, the SHIW slightly overestimates wages and salaries relative to the national accounts data. The figures on rents and transfers are consistent.

The SHIW underestimates net worth by 33 percent, most of the discrepancy arising from financial assets. Its estimate for real assets is fairly good (an underestimate of 13 percent); the estimate of owner-occupied houses is quite close to that based on ISTAT data, but "the estimated number of houses owned by households for purposes other than owner occupation is appreciably lower than that recorded in the 1981 Census" (Cannari and D'Alessio 1990, 327).

Net financial assets come to only 52.5 percent of the corresponding financial accounts aggregate. Note that the figure for net financial assets reported in table 6.3 and used in this paper is not based on the raw SHIW variable, but is adjusted on the basis of more reliable information drawn from the 1987 BNL survey.¹

Table 6.3 shows that the item that is most seriously underestimated is "other financial assets," the sum of corporate bonds, shares, investment funds, insurance, private pensions, and foreign assets. This is partly due to underreporting by the wealthy, who own a disproportionate share of the more sophisticated financial instruments; it also depends on important definitional differences. Insurance policies and accrued severance pay entitlements, which accounted for roughly 10 percent of financial assets in the second half of the 1980s (Jappelli and Pagano 1994a), are not included in the SHIW data. If we exclude these two items from the figure reported in column (2), the underestimate of "other financial assets" is reduced by 10 percentage points.

Table 6.4 gives more detailed figures on sample means and medians of the components of income, consumption, and wealth in the 1987 SHIW. The income and consumption variables used in this table and in the rest of the paper exclude imputed rental income from owner-occupied housing and are thus not directly comparable with those reported in table 6.3.

Table 6.4 confirms Italians' demonstrated inclination to save (the median saving rate is 0.28) and to hold a large amount of assets (the median wealth-

1. The raw data underestimate aggregate financial wealth by 69 percent. As described by Cannari et al. (1990), the adjustment procedure takes into account the probability of owning a particular asset and the amount of assets held. The adjustment lowers the weight given to households which report zero financial assets in the SHIW sample; the assets figure reported in the BNL survey is then used to revise upward the amount of assets of households that report positive assets in the SHIW. In this paper, we always report weighted sample statistics.

Table 6.4 Average and Median Values of Main Variables in the 1987 SHIW (thousand lire)

Variable	Average	Median
<i>Income</i>		
Disposable income	26,832	21,696
Labor income	18,877	16,000
Transfer income	155	0
Pension income	4,912	0
Property income	2,953	771
Rents	505	0
Income from financial assets	2,448	701
<i>Consumption and saving</i>		
Total consumption	18,364	16,000
Durable consumption	2,433	0
Saving (disposable income minus consumption)	8,468	5,587
<i>Wealth</i>		
Net worth	130,578	75,877
Real assets	98,204	58,000
Real estate	81,270	51,600
Business capital	13,410	0
Other real assets	3,524	1,000
Total net financial assets	32,374	10,573
Deposits	17,877	7,190
Public debt	13,209	0
Other financial assets	4,390	0
Liabilities	3,112	0
<i>Ratios</i>		
Consumption / disposable income		0.72
Saving / disposable income		0.28
Net financial assets / disposable income		0.48
Net worth / disposable income		3.48

income ratio is 3.48). Households hold substantial amounts of assets in liquid form: median financial assets are over 10 million lire, and the median ratio of financial assets to disposable income is 48 percent (about 6 months' income). Most of these assets are held in the form of bank deposits and public debt. The majority of households do not hold shares or investment funds, included in the "other financial assets" category. Liabilities are a tiny fraction of net worth and of total financial assets. This fact, which dovetails with the aggregate data in table 6.3, has been interpreted as evidence of borrowing constraints in the mortgage and consumer credit market, rather than as evidence of a low propensity to borrow (Jappelli and Pagano 1989, 1994b; Guiso, Jappelli, and Terlizzese 1992b).

6.3 Cross-Sectional Age Profiles

Table 6.5 displays the median values of disposable income, consumption, saving, and wealth by five-year age groups. The data refer to the 1987 SHIW, the only year the survey contained publicly available data for financial assets.

Median household disposable income (col. [1]) peaks in the age bracket 55–59, when it is 1.9 times the income of the youngest bracket and 2.1 times the income of the oldest bracket. As we shall see, the cross-sectional profile heavily overestimates the actual income decline in old age: in large part, the comparatively low income of the older cohorts reflects the sustained, rapid growth of income in the postwar period.

The profile of disposable income results from the different patterns of earnings, pensions, and capital income. The earnings profile is rather flat over the working life and declines around the statutory retirement age (55 for women and 60 for men); this decline is much sharper for the self-employed than for wage earners. Pensions, rents, and income from financial assets partly offset the fall in labor income.

The cross-sectional profile of consumption (col. [2]) peaks 10 years earlier and is flatter than that of disposable income, leading to a hump-shaped saving profile (col. [3]). The fact that consumption is smoother than income is consistent with the life-cycle hypothesis. However, the saving profile also shows that all households save, even those headed by the very old and the very young, which is inconsistent with the standard version of the life-cycle model: given the concave shape of the earnings profile, the young should borrow and the old should dissave. Nevertheless, the literature on earnings uncertainty and liquidity constraints can explain why optimizing households might save even during their younger years; lifetime uncertainty, health risk, and operative bequest motives can account for continued asset accumulation in old age.

One reason why the elderly appear to save so much has to do with the measurement of income: the inflation premium on nominal assets and the depreciation of housing are not subtracted from income, leading to an overestimate of nominal interest and rental income, which constitute a large part of the income of old households. This measurement error may therefore account for the high saving rate of old cohorts and also reconcile their positive gross saving with their declining net worth (col. [8]).

Columns (6)–(9) report net worth and financial assets net of liabilities by age cohort. In the cross section, net worth increases rapidly up to ages 50–54 and then declines steadily, displaying the typical hump-shaped profile predicted by the life-cycle model. The wealth-income ratio increases up to ages 60–64 and declines slightly afterward. However, cross-sectional wealth profiles are potentially misleading: to test the life-cycle theory's prediction of dissaving after retirement, one must control for differences in permanent income between age cohorts, as was done by King and Dicks-Mireau (1982) in their study of wealth decumulation after retirement. Applying this methodology to

Table 6.5 Cross-Sectional Age Profiles for Selected Variables (thousand lire)

Age Cohort	Disposable Income (1)	Consumption (2)	Saving (3)	Saving-Income Ratio (4)	Saving-Consumption Ratio (5)	Net Financial Wealth (6)	Ratio of Net Financial Wealth to Income (7)	Net Worth (8)	Ratio of Net Worth to Income (9)
<25	14,189	12,600	689	0.06	0.07	3,008	0.11	7,007	0.34
25-29	20,066	17,160	2,553	0.16	0.19	4,589	0.22	21,175	1.04
30-34	21,105	16,440	3,982	0.20	0.25	4,851	0.24	30,264	1.27
35-39	27,250	19,561	7,260	0.26	0.35	11,396	0.42	76,003	2.81
40-44	25,788	18,900	5,426	0.22	0.28	10,509	0.42	95,772	3.50
45-49	26,370	20,000	6,013	0.23	0.30	11,517	0.45	94,803	3.50
50-54	27,471	19,800	7,829	0.31	0.45	17,833	0.62	111,289	3.79
55-59	27,517	18,000	7,762	0.32	0.48	15,346	0.58	104,877	3.93
60-64	20,284	13,000	6,300	0.34	0.51	9,982	0.57	90,025	4.74
65-69	16,825	11,400	5,604	0.36	0.55	11,260	0.67	68,457	4.16
70-74	13,243	8,700	3,900	0.31	0.46	8,321	0.61	50,000	4.29
Total	29,614	20,200	5,587	0.28	0.39	10,573	0.48	75,877	3.48

Source: SHIW for 1987 (median values).

the 1984 SHIW, Brugiavini (1987) found that in Italy the elderly run down accumulated assets at a rate ranging from 1.5 to 8 percent per year, depending on model specification. This is lower than the estimate implied by a standard life-cycle model without a bequest motive and lifetime uncertainty, but higher than that found by King and Dycks-Mireaux (1982) for Canada (from 0.7 to 1.5 percent per year between ages 65 and 85) or Hubbard (1986) and Hurd (1987) for the United States (1.5 percent or less).

To assess the effect of income distribution on saving, we report a cross-tabulation of saving by age and income classes. The households in each age cohort are divided into four groups, depending on whether their disposable income is (1) below the first income quartile, (2) between the first and the second quartiles, (3) between the second and the third quartiles, and (4) above the third quartile. For each cell we then compute the median value of saving (table 6.6) and of the saving rate (table 6.7).

The two tables show that, within each age cohort, rich households save considerably more than poor ones, confirming a common finding of cross-sectional data, i.e., that the propensity to save is an increasing function of income. In the bottom two income quartiles, the median saving rate increases up to ages 65–69 and declines afterward, whereas in the top two quartiles, the rate shows no tendency to decline, possibly reflecting the stronger bequest motive of affluent households.

Taken literally, table 6.7 implies that a reduction in income inequality would be associated with a lower aggregate household saving rate. Indeed, since the late seventies, household income inequality in Italy has declined considerably, as witnessed by Brandolini (1992): the share of income going to the top 10 percent of the population declined from 30 percent in 1975 to 25 percent in 1989, while that of the bottom 50 percent rose from 24 to 27 percent.² The more equal income distribution may account for part of the reduction in the Italian household saving rate observed in the eighties.

However, the table could also reflect differences in transitory income shocks rather than behavioral differences between poor and rich households. The low-income cells include households that experience temporary income drops and, on the permanent-income hypothesis, reduce their saving in order to smooth consumption. Symmetrically, the high-income cells include those enjoying a positive income shock, who may increase saving to absorb the windfall. Thus the positive correlation between saving rates and income levels in table 6.7 may simply reflect the use of current rather than permanent income to define the quartiles.

Attanasio (chap. 2 in this volume) suggests that this problem might be reduced by classing households by educational attainment, which correlates with permanent income more closely than does current disposable income and is less likely to be affected by transitory shocks and measurement error. In table

2. The overall Gini coefficient declined from a value of 0.41 in 1975 to 0.33 in 1989.

Table 6.6 Saving by Income Quartile and Age (thousand lire)

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25-29	600	2,285	4,389	12,528	2,553
30-34	709	2,872	7,828	14,522	3,982
35-39	1,166	5,960	9,996	17,653	7,260
40-44	749	4,254	9,598	20,904	5,426
45-49	1,963	5,807	7,504	20,801	6,013
50-54	2,056	5,764	11,573	26,533	7,829
55-59	1,171	5,600	14,920	25,697	7,762
60-64	1,400	5,901	12,071	24,657	6,300
65-69	1,872	4,506	7,129	19,005	5,604
70-74	943	2,204	6,419	16,971	3,900

Source: SHIW for 1987 (median values).

Table 6.7 Ratio of Saving to Disposable Income by Income Quartile and Age

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25-29	0.05	0.14	0.17	0.33	0.16
30-34	0.06	0.16	0.29	0.37	0.20
35-39	0.09	0.25	0.30	0.37	0.26
40-44	0.05	0.21	0.29	0.41	0.22
45-49	0.14	0.23	0.23	0.34	0.23
50-54	0.17	0.24	0.33	0.43	0.31
55-59	0.12	0.23	0.41	0.45	0.32
60-64	0.17	0.34	0.42	0.46	0.34
65-69	0.23	0.33	0.36	0.46	0.36
70-74	0.13	0.24	0.40	0.48	0.31

Source: SHIW for 1987 (median values).

6.8 we divide each age cohort into four groups according to the educational attainment of the household head: elementary education (5 years of schooling or fewer), junior high school education (6 to 8 years), high school education (9 to 13 years), and college education (14 years or more). For most age cohorts, saving does increase with education, but the differences in saving rates between the cells in table 6.8 are much smaller than in table 6.7. This suggests that the positive correlation between saving and income in the latter is largely spurious.

Finally, we cross-tabulate net financial assets and net worth by age and income groups, following the same cell definition used for saving. The amount of financial assets and its ratio to income, reported in tables 6.9 and 6.10, both rise monotonically across income quartiles. The distribution of financial assets

Table 6.8 Ratio of Saving to Disposable Income by Educational Attainment and Age

Age	Years of Education				Whole Sample
	≤5	6–8	9–13	≥14	
25–29	0.16	0.16	0.14	0.16	0.16
30–34	0.18	0.19	0.20	0.26	0.20
35–39	0.15	0.26	0.22	0.33	0.26
40–44	0.17	0.20	0.23	0.24	0.22
45–49	0.19	0.23	0.29	0.30	0.23
50–54	0.31	0.29	0.31	0.38	0.31
55–59	0.29	0.37	0.35	0.34	0.32
60–64	0.30	0.30	0.45	0.45	0.34
65–69	0.34	0.36	0.37	0.30	0.36
70–74	0.29	0.40	0.38	0.44	0.31

Source: SHIW for 1987 (median values).

Table 6.9 Net Financial Assets by Income Quartile and Age

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25–29	775	2,236	8,221	34,308	4,589
30–34	2,538	2,604	9,292	22,782	4,851
35–39	2,117	8,771	1,553	46,337	11,396
40–44	1,899	9,918	17,358	43,776	10,509
45–49	2,503	10,980	16,580	57,573	11,517
50–54	2,582	14,211	31,255	55,950	17,833
55–59	1,553	10,569	34,687	56,568	15,346
60–64	1,365	7,326	34,405	65,549	9,982
65–69	1,955	7,827	21,868	45,071	11,260
70–74	969	4,271	16,876	81,342	8,321

Source: SHIW for 1987 (median values).

is heavily skewed toward the rich: the median ratio of financial wealth to income is 0.48 for all age groups, but it is about 1 for most cells in the highest income quartile, compared with about 0.15 for the bottom quartile. The low level of financial assets of these households conforms to Deaton's (1991) model of impatient consumers subject to liquidity constraints and earnings uncertainty. However, the correlation between financial assets and income could also be explained in the same way as for the saving rate, i.e., as the result of transitory income shocks that households buffer by adjusting their liquid assets. This is confirmed by table 6.11, where we tabulate the ratio of net financial assets to income by educational attainment. Again, the ratio increases with education, but again the differences are considerably smaller than those shown in table 6.10.

Table 6.10 Ratio of Net Financial Assets to Income by Income Quartile and Age

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25–29	0.07	0.13	0.35	0.82	0.22
30–34	0.18	0.14	0.32	0.57	0.24
35–39	0.15	0.39	0.47	0.81	0.42
40–44	0.13	0.43	0.57	0.86	0.42
45–49	0.16	0.46	0.46	0.89	0.45
50–54	0.19	0.66	0.85	0.99	0.62
55–59	0.20	0.44	0.95	0.94	0.58
60–64	0.19	0.43	1.12	1.14	0.57
65–69	0.25	0.59	1.09	1.19	0.67
70–74	0.13	0.39	0.99	1.94	0.61

Source: SHIW for 1987 (median values).

Table 6.11 Ratio of Net Financial Assets to Income by Educational Attainment and Age

Age	Years of Education				Whole Sample
	≤5	6–8	9–13	≥14	
25–29	0.19	0.19	0.27	0.42	0.22
30–34	0.12	0.20	0.33	0.40	0.24
35–39	0.14	0.40	0.42	0.56	0.42
40–44	0.26	0.35	0.64	0.48	0.42
45–49	0.42	0.50	0.55	0.44	0.45
50–54	0.54	0.69	0.53	0.99	0.62
55–59	0.40	0.80	0.72	1.18	0.58
60–64	0.37	0.80	1.06	1.56	0.57
65–69	0.46	1.09	1.49	0.82	0.67
70–74	0.43	1.65	1.49	1.81	0.61

Source: SHIW for 1987 (median values).

Net worth is more evenly distributed across income quartiles than saving and net financial assets (tables 6.12 and 6.13), especially for age cohorts over 40. Presumably, the effect of transitory income shocks on net worth is smaller than on saving and financial assets: when faced with a shortfall in income, households are more likely to use savings or to spend down financial assets than to use real assets. And unlike the pattern for saving and financial assets, it turns out that the cross-tabulation of the wealth-income ratio by education (table 6.14) is similar to that by income quartile (table 6.13).

6.4 Cohort-adjusted Age Profiles

Cross-sectional age profiles of income, consumption, saving, and wealth such as those presented above can hardly be interpreted as describing the time

Table 6.12 Net Worth by Income Quartile and Age

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25–29	4,044	10,909	27,221	114,063	21,175
30–34	8,000	18,921	57,291	78,363	30,264
35–39	16,012	66,024	86,558	198,902	76,003
40–44	18,192	72,983	127,211	228,301	95,772
45–49	44,069	94,803	92,531	186,168	94,803
50–54	49,077	86,200	141,679	245,536	111,289
55–59	46,411	82,021	139,508	283,236	104,877
60–64	45,089	76,294	128,337	270,004	90,025
65–69	30,959	53,755	90,149	170,240	68,457
70–74	21,455	47,940	69,826	225,408	50,000

Source: SHIW for 1987 (median values).

Table 6.13 Ratio of Net Worth to Disposable Income by Income Quartile and Age

Age	Below First Quartile	Between First and Second Quartiles	Between Second and Third Quartiles	Above Third Quartile	Whole Sample
25–29	0.33	0.66	1.16	2.90	1.09
30–34	0.68	1.05	2.09	1.94	1.27
35–39	0.98	2.91	2.80	4.11	2.81
40–44	1.49	3.55	4.24	4.02	3.50
45–49	4.31	3.88	2.84	3.31	3.50
50–54	3.69	3.90	3.80	3.76	3.79
55–59	3.99	3.36	3.71	4.58	3.93
60–64	5.52	4.33	4.71	5.05	4.74
65–69	3.94	4.02	4.72	4.16	4.16
70–74	4.62	4.44	4.29	6.52	4.29

Source: SHIW for 1987 (median values).

path of these variables over the lifetime of a representative household. In fact, each cohort in the cross section is affected by differences in mortality rates, productivity, preferences, and institutional arrangements (such as taxes and social security). Only studies that employ relatively long panel data on households can fully disentangle individual behavior from cohort effects. Since no such data are available for Italian households, one must rely on repeated cross-sectional data, i.e., exploit the variation in the behavior of each cohort over time to estimate cohort-specific profiles from several waves of cross-sectional data.

We use the method proposed by Deaton (1985) and the data set constructed by Attanasio, Guiso, and Jappelli (1993). We stack four waves of SHIW data (1984, 1986, 1987, and 1989) and regress each variable (e.g., consumption)

Table 6.14 Ratio of Net Worth to Disposable Income by Educational Attainment and Age

Age	Years of Education				Whole Sample
	≤5	6–8	9–13	≥14	
25–29	0.31	0.58	1.36	1.39	1.09
30–34	0.56	0.75	2.09	1.75	1.27
35–39	2.26	1.41	2.52	3.83	2.81
40–44	2.99	3.06	4.31	3.97	3.50
45–49	3.33	3.24	4.07	3.60	3.50
50–54	3.66	3.20	4.16	6.49	3.79
55–59	3.71	3.15	3.98	8.31	3.93
60–64	4.42	4.10	4.74	7.85	4.74
65–69	3.94	4.55	4.78	6.34	4.16
70–74	3.81	4.89	4.75	7.17	4.29

Source: SHIW for 1987 (median values).

against a set of cohort-specific dummies and a fifth-order polynomial in age. The hypothesis implicit in this method is that the relevant profile (e.g., the consumption profile) of the typical household differs across cohorts only by a constant and that its shape depends only on time. An estimate of the cross-sectional profile unadjusted for cohort effects is obtained by running the same regression but dropping the cohort dummies. The difference between the fitted values of the age polynomial in the two regressions is an estimate of the cohort effect.

Consumption and income are defined differently here from the previous section. To guarantee comparability between the different waves of the SHIW used in the estimation, consumption and disposable income include imputed rents from owner-occupied housing, while disposable income excludes interest and dividends, which are available only for the 1987 and 1989 cross sections. Lack of data on wealth for all SHIW surveys except 1987 and 1989 prevents us from gauging the distortion induced by cohort effects on the age profiles of financial assets and net worth. All figures have been converted into 1989 lire using the consumer price index as deflator.

Cohorts are defined over five-year intervals. The first of 10 cohorts consists of households with heads born between 1955 and 1959 (aged 25–29 in 1984), the last cohort, of those born between 1910 and 1914 (aged 70–74 in 1984). Regressions are carried out by least absolute deviations (LAD), to obtain consistent estimates of the median values of each profile. This estimator is preferred to OLS because it is robust with respect to the presence of influential values and because the estimated profiles are more closely comparable with those of the previous section.³ Rather than reporting the estimated coefficients

3. Still, they are not fully comparable, for two reasons: first, as noted, the definitions of income and consumption differ in the two sections; second, the cross-sectional profiles in section 6.3 refer

of each regression, we plot the fitted values of the age polynomials of the regression that includes cohort dummies and of the one that excludes them.

Figures 6.1 and 6.2 display the fitted values of the regressions for disposable income and earnings. The profiles adjusted for cohort effects are shaped quite differently from the cross-sectional profiles: (1) they rise more steeply at younger ages, (2) they peak about 10 years later (at ages 55–59 rather than 45–49), and (3) they stay at a higher level beyond retirement (at age 75 the estimate of disposable income adjusted for cohort effects is more than twice as great as the unadjusted estimate).

The conclusion drawn from figure 6.3, which reports the estimated profiles of total consumption, is similar. Here, however, the cohort adjustment raises the consumption of the elderly more than their income. As a result, while unadjusted saving increases steadily with age, adjusted saving declines from age 34 onward. This is shown by figure 6.4 (saving rate) and figure 6.5 (saving-consumption ratio) which provide a striking reminder of the fallacies concerning individual behavior that can result from reliance on cross-sectional data. The unadjusted profile indicates that in Italy the old are the big savers, whereas the adjusted profile shows that it is the young that do most of the asset accumulation, possibly anticipating future family needs and the purchase of housing and durable goods.

The regression technique used so far to control for cohort effects can also be used to describe other features of household saving behavior. In table 6.15 we expand the list of regressors by adding demographic variables and schooling, residential, and occupational dummies to the cohort dummies and the age polynomial. In columns (1) and (2) the dependent variable is the saving rate; in columns (3) and (4) the dependent variable is the ratio of saving to consumption, which is less subject than income to extreme value problems and is a better measure of permanent income.⁴

The saving rate proves to increase with the number of adults in the household and to decline with the number of children; the former effect dominates the latter, so that larger households save proportionately more than smaller ones. Married couples save less, and households with male heads save more.

Column (1) shows that households in the South save 5 percentage points less than those in the Center and 3.3 points less than those living in the North. This may be due to an absolute income effect (per capita income is substantially lower in the South): if preferences are not homothetic (e.g., they are represented by a Stone-Geary utility function), the saving rate can be a positive

to the 8,027 households of the 1987 SHIW, whereas those estimated in this section are based on the larger cross section of 28,324 observations obtained by pooling the 1984, 1986, 1987, and 1989 surveys.

4. In the first regression we exclude observations referring to households whose disposable income is below 1 million lire (311 observations); in the second we also exclude those whose consumption is below that level (14 observations).

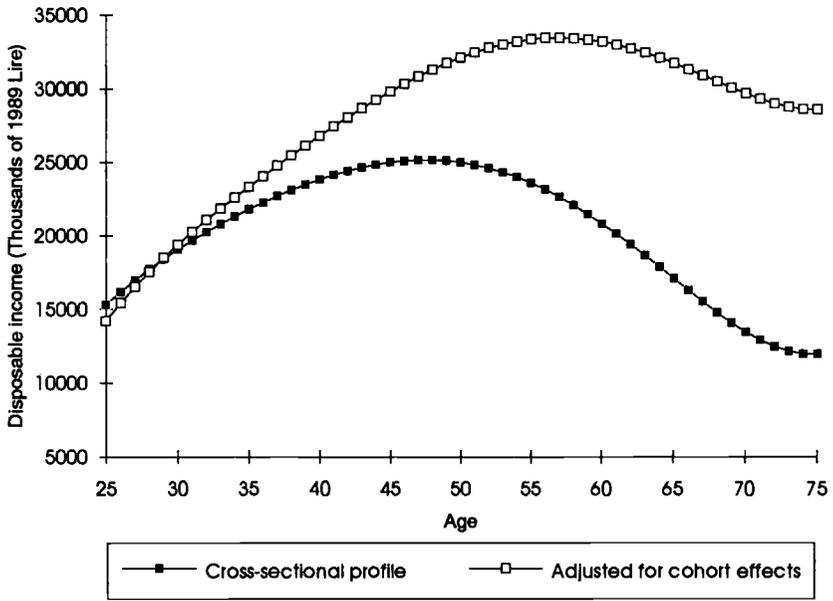


Fig. 6.1 Age-income profile

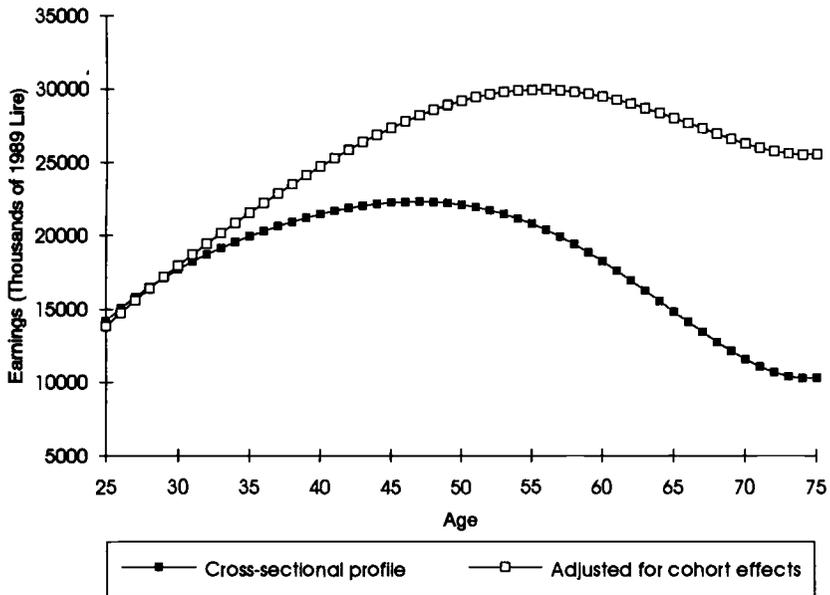


Fig. 6.2. Age-earnings profile

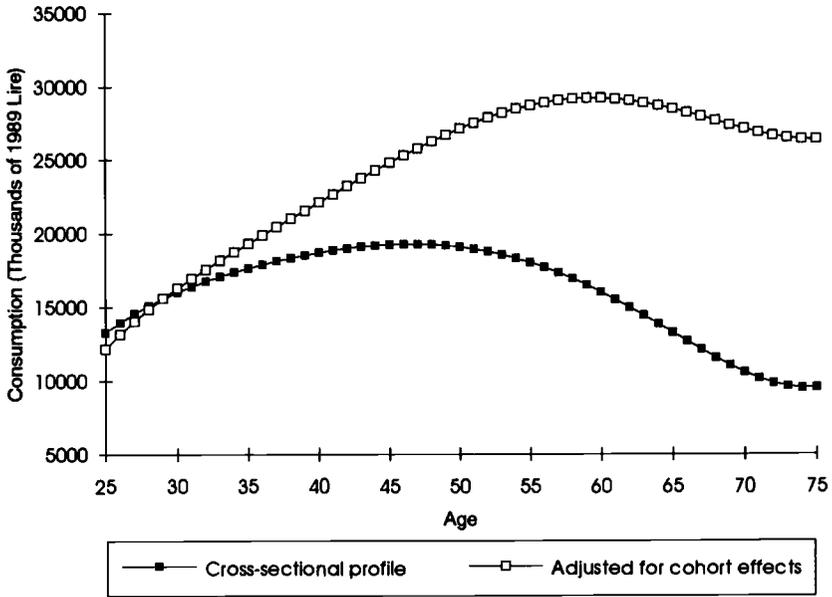


Fig. 6.3 Age-consumption profile

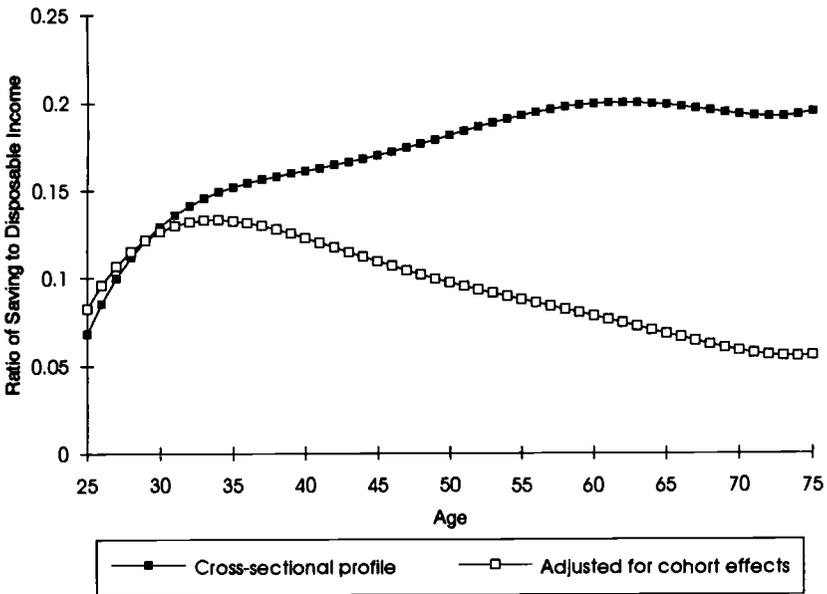


Fig. 6.4 Profile of the saving rate

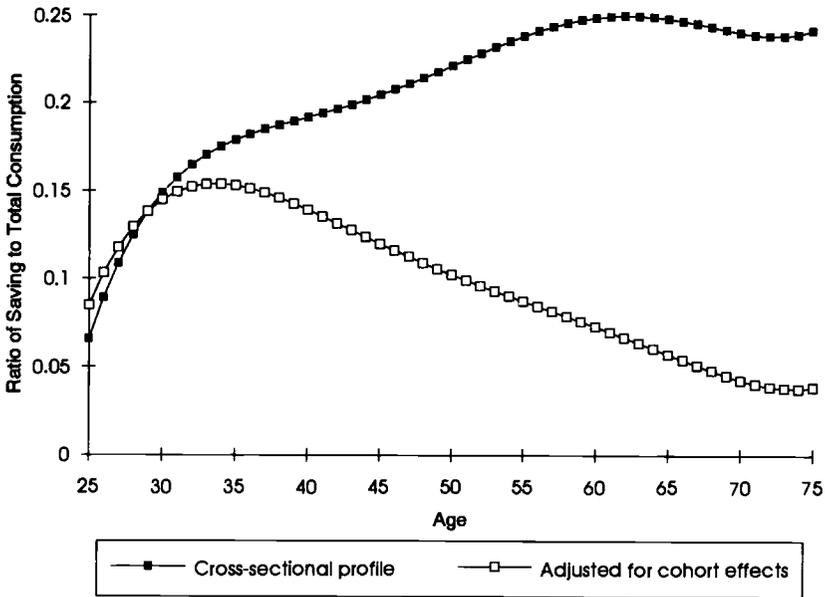


Fig. 6.5 Profile of the saving-consumption ratio

function of permanent income. Another explanation could be greater underreporting of income in the South, which would produce an underestimate of the saving ratio.⁵

As is already apparent from the descriptive evidence given in table 6.5, the saving rate is associated with education: column (1) shows that 10 years of schooling increase the saving rate by 3 percentage points. On the one hand, education may proxy for permanent income; on the other, it may be associated with a lower rate of time preference and give access to more attractive investment opportunities.

If employment status is a proxy for earnings uncertainty, household heads with riskier jobs may be expected to save more to buffer uninsurable income fluctuations. Thus the saving rate of wage and salary earners, whose income is relatively stable, can be expected to be lower than that of self-employed workers. But no such pattern emerges from table 6.15: for instance, clerical workers tend to save less than entrepreneurs, but more than professionals and other self-employed workers. The pattern of the coefficient estimates parallels the results in Skinner (1988): controlling for other variables, he finds no correlation between saving and employment status. A possible explanation may be that those who choose riskier jobs are less risk averse in general.

5. Cannari et al. (1990) find that financial assets are more under reported in the South than in the Center and North.

Table 6.15 Saving Rate Regressions

Variable ^a	Coefficient (1)	<i>t</i> -statistic (2)	Coefficient (3)	<i>t</i> -statistic (4)
Number of adults	0.047	13.09	0.081	15.12
Number of children	-0.003	-1.90	-0.004	-1.44
Married	-0.035	-4.88	-0.064	-6.01
Male	0.034	4.58	0.051	4.63
Living in the Center	0.050	10.77	0.073	10.58
Living in the North	0.033	8.30	0.047	7.85
Living in a city ^b	-0.035	-8.51	-0.050	-8.24
Years of education	0.003	6.74	0.005	6.65
Clerical worker	0.034	6.53	0.048	6.19
Manager	0.057	4.62	0.089	4.87
Entrepreneur	0.040	3.13	0.061	3.19
Professional	0.014	2.75	0.021	2.75
Other self-employed	0.020	2.12	0.028	2.07
Born in 1955-59	-0.101	-2.83	-0.162	-3.05
Born in 1950-54	-0.099	-2.97	-0.159	-3.22
Born in 1945-49	-0.076	-2.44	-0.128	-2.78
Born in 1940-44	-0.064	-2.21	-0.113	-2.62
Born in 1935-39	-0.047	-1.72	-0.090	-2.24
Born in 1930-34	-0.018	-0.74	-0.048	-1.29
Born in 1925-29	-0.008	-0.35	-0.032	-0.98
Born in 1920-24	-0.006	-0.34	-0.025	-0.94
Born in 1915-19	0.015	1.13	0.009	0.45
Constant	0.074	2.66	0.075	1.80
Number of observations	25,829		25,815	

Note: Dependent variable is saving-income ratio in cols. (1) and (2) and saving-consumption ratio in cols. (3) and (4). Estimation method is least absolute deviations.

^aThe regression also includes a fifth-order age polynomial. Excluded attributes are: head of household not married, households headed by a female, households living in the South, households living in towns with less than 500,000 inhabitants, operative and laborer, households with heads born in 1910-14.

^bA city is defined as a town with over 500,000 inhabitants.

Finally, the cohort dummies indicate that younger generations save a smaller fraction of their income. This may be attributed to a preference shift, as well as to a diminished need for precautionary saving: postwar generations have grown up in a more stable environment, with public insurance schemes unavailable to their parents.

6.5 Institutional Factors

The availability of housing finance, the public provision of health care, and the rules of the social security system are likely to affect the saving decisions of Italian households in a powerful fashion. In this section we evaluate the potential impact of these institutional arrangements. Data on the timing and

financing of home acquisition illustrate the role of housing purchases in asset accumulation. Figures on the incidence of private health expenditure are used to evaluate the importance of uninsured health risk as a motive for saving. Finally, the role of social security wealth in saving decisions is assessed by focusing on ex post and ex ante replacement rates.

6.5.1 Credit Markets and the Acquisition of Housing

Housing is the only durable item for which the SHIW reports detailed information. Italian households acquire homes comparatively late in life: most buy their homes in their forties or fifties, whereas most Americans and Britons purchase their first house in their twenties or early thirties (Jappelli and Pagano 1989). Table 6.16 shows that the fraction of home owners starts at 25 percent, increases gradually to 34 percent at ages 30–34, and reaches a plateau of around 70 percent in the age brackets between 55 and 69.

Previous work suggests that this pattern derives from mortgage market imperfections that keep young households from borrowing to buy their home (Guiso, Jappelli, and Terlizzese 1994). Indirect evidence in this sense is provided by table 6.17, which shows that in 1987 the average liabilities of Italian households—consisting mainly of housing loans—were just over 3 million lire (11.6 percent of average disposable income and 2.4 percent of average net worth) and that only 21 percent of households were indebted. Average household debt peaks between ages 40 and 44, when most Italians purchase their first house. But since these liabilities are fairly small, home buyers must rely mainly on accumulated savings, inter vivos transfers, and bequests.

The relative importance of saving, transfers, and bequests in the acquisition of housing is detailed in table 6.16, which distinguishes between households

Table 6.16 Profile of Home Ownership by Age (% of households in the age group)

Age	Home Ownership	Purchased	Received as Bequest	Received as Gift
<25	0.25	0.13	0.11	0.02
25–29	0.34	0.21	0.06	0.06
30–34	0.34	0.27	0.04	0.04
35–39	0.52	0.38	0.12	0.02
40–44	0.59	0.42	0.13	0.04
45–49	0.63	0.49	0.13	0.02
50–54	0.68	0.52	0.16	0.02
55–59	0.69	0.54	0.16	0.01
60–64	0.72	0.53	0.19	0.00
65–69	0.72	0.51	0.20	0.01
70–74	0.61	0.44	0.17	0.00
Total	0.60	0.45	0.14	0.02

Source: SHIW for 1987.

Table 6.17 Household Liabilities by Age

Age	Number of Households with Liabilities	Fraction of Households with Liabilities in Cell	Mean Value of Total Liabilities (thousand lire)
<25	9	0.18	2,100
25-29	103	0.27	2,691
30-34	190	0.31	4,860
35-39	274	0.31	4,947
40-44	255	0.28	5,904
45-49	248	0.26	3,640
50-54	232	0.25	3,242
55-59	155	0.19	3,192
60-64	125	0.17	2,809
65-69	67	0.10	1,048
70-74	54	0.05	356
Total	1,712	0.21	3,112

Source: SHIW for 1987.

who purchased or built their house themselves, those who inherited it, and those who received it as a gift. The profile of buyers dominates the pattern of owner-occupation over the life cycle: only 16 percent of households report that their house came as a bequest or as a gift, regardless of age. Thus most young households do not rent in anticipation of a bequest, but of a future house purchase.⁶

6.5.2 Health Risks and the Public Provision of Health Care

One reason for saving is to cover uninsured health expenditures. Measuring the subjective assessment of health hazards is virtually impossible in the absence of specifically designed surveys, so that one must rely on indirect indicators of the effects of health risk. In a 1990 survey conducted by the BNL and the Centro Einaudi,⁷ only 7 percent of the respondents reported that medical assistance was their primary reason for saving (3.2 percent of those younger than age 30 and 14 percent of those older than age 60). The apparently low weight attached to health risk in saving decisions can be explained by the universal coverage of the Italian National Health Service. Although the quality of

6. Some direct purchases of housing are inter vivos transfers in disguise, being financed by monetary transfers from parents, friends, or other relatives. To the extent that this is a valid concern, the gift component reported in table 6.16 is an underestimate of its true value.

7. The results of this survey are published in the *Rapporto BNL-Centro Einaudi sul risparmio e sui risparmiatori in Italia* (Rome: Editoriale Lavoro, 1990); the data in the text are drawn from table 2.2 of this publication. The survey has been conducted annually since 1984 and oversamples medium- and high-income households, because it selects about 1,000 households holding a bank account, T-bills, or bonds. The breakdown between the various motives for saving reported in the text is quite stable over time.

its medical services is quite uneven and generally poorer than in most EC countries, this system does insure all health risks for any amount.

As a result, Italian households spend little out of pocket on health. According to the 1989 SHIW, health expenditure (whether privately insured or not) accounts for just 1.8 percent of disposable income and 2.3 percent of consumption. Average health expenditure, however, does not convey the full picture. Precautionary saving depends on the variance, not the level, of health hazards. In fact, the coefficient of variation of health expenditure is 2.1, to be contrasted with 0.6 for total consumption. This results from a small fraction of households incurring substantial health costs: 1 percent of the sample allocate more than 20 percent of their consumption expenditure to health, and 3.7 percent spend between 10 and 20 percent. But, for the vast majority, the incidence of health expenditure is low: less than 5 percent of consumption for 86.9 percent of the sample, and between 5 and 10 percent for 8.5 percent of the sample.

The ratio of health expenditure to total consumption does not rise much in old age (table 6.18), showing that the National Health Service provides effective insurance against health risks. The table's data on out-of-pocket health expenditure tally with those reported by the 1987 ISTAT survey, which contains very accurate data on the composition of household consumption. They also square with the low incidence of health insurance in the population: only 4 percent of households hold a private health insurance policy, and only 1.5 percent spend more than half a million lire a year on such coverage. The sample average of health insurance premiums is a tiny 0.1 percent of total consumption.

Table 6.18 Ratio of Private Health Expenditure to Disposable Income and Total Consumption Expenditure by Age

Age	Ratio of Health Expenditure to Disposable Income	Ratio of Health Expenditure to Consumption Expenditure
<25	0.012	0.014
25-29	0.014	0.017
30-34	0.018	0.022
35-39	0.019	0.023
40-44	0.020	0.025
45-49	0.019	0.023
50-54	0.020	0.024
55-59	0.018	0.022
60-64	0.018	0.023
65-69	0.020	0.025
70-74	0.017	0.022
Total	0.018	0.023

Source: SHIW for 1989 (mean values).

Table 6.19 Replacement Rate by Income Class

Income Class (million lire)	<i>Ex Post</i> Replacement Rate (1)	<i>Ex Ante</i> Replacement Rate (2)
<10	0.65	0.68
10-15	0.67	0.76
15-20	0.67	0.79
20-25	0.74	0.78
25-30	0.76	0.79
30-35	0.73	0.79
35-40	0.75	0.80
45-50	0.76	0.79
50-60	0.76	0.80
60-70	0.77	0.80
70-80	0.78	0.80
80-90	0.80	0.79
90-100	0.72	0.81
>100	0.69	0.80
Total	0.73	0.79

Source: SHIW for 1989 (mean values).

Note: The *ex post* replacement rate is based on 877 responses by retired workers concerning the ratio of their first monthly pension check to their last monthly salary. The *ex ante* replacement rate is based on 2,831 responses by people still in the labor force in 1989 about their expectation of the ratio of their first monthly pension to their last monthly income.

6.5.3 Pension Arrangements and Life Insurance

The income replacement rate, defined as the ratio between pension benefits and preretirement earnings, is a key determinant of how much households choose to save for retirement. In 1989 the SHIW for the first time included a special section on pensions, providing data on both actual replacement rates and the subjective assessment of expected retirement income by people still in the labor force.

We have tabulated the average *ex post* replacement rate by classes of disposable income (table 6.19), based on responses to this question: "Consider the moment when you received your first monthly pension. Setting your last monthly salary equal to 100, what was your first monthly pension?"⁸ We concentrate on retirement pensions only, thus excluding disability pensions and veterans' pay. Out of 2,385 pension recipients, 877 replied to the question; of these, 826 receive retirement benefits. The overwhelming majority of respondents (99.4 percent) are public pension recipients.

The average *ex post* replacement rate is 73 percent. The rate is some 10 percentage points lower for pension recipients whose current disposable in-

8. This question is asked separately for up to three pensions. The figures in table 6.19 are based on the response for the first pension only, because the number of respondents who received second and third retirement pensions is negligible (13 and 0, respectively).

come was below 20 million lire, possibly because these workers retired with relatively low seniority. It is also lower than average for pensioners with current incomes above 90 million lire in 1989: this reflects the ceiling on pension benefits, which is independent of social security contributions (33.5 million lire after 40 years of contributions in 1988). Overall, these figures reflect the high benefits and broad eligibility criteria of the Italian social security system (Jappelli and Pagano 1994a).

To understand the determinants of saving, however, what matters is not the effective (*ex post*) rate, which reflects the retirement rules that applied to the cohorts of retirees alive at the time of the interview, but the expected replacement rate. An estimate of this *ex ante* rate can be inferred from the following question posed to all income recipients in the labor force (both employees and the self-employed) in 1989: "Consider the moment when you will retire. Setting your final monthly income before retirement equal to 100, what do you expect your first monthly pension to be?"

A total of 2,831 household heads answered this question; the responses are tabulated by income classes in column (2) of table 6.19. The average expected replacement rate is 79 percent, and it ranges between 76 and 81 percent for all income classes except the lowest. Even high-income households expect their pension to make up almost fully for the fall in earnings at retirement. This is striking, considering that in 1989 the Italian social security system was already financially unsustainable, due to the increase in benefits in the 1970s and 1980s and the rapid growth in the number of recipients. Clearly the apparent long-run unsustainability of the system, well known to policymakers and experts, was not evident to the vast majority of households in 1989.

The pattern of expected replacement rate by age of the worker (table 6.20) is perhaps even more surprising. If the system were perceived to be unsustainable, one would expect young workers to be less optimistic than older ones

Table 6.20 Replacement Rate by Age

Age	<i>Ex Ante</i> Replacement Rate
< 25	0.82
25-29	0.79
30-34	0.78
35-39	0.79
40-44	0.81
45-49	0.80
50-54	0.79
55-59	0.79
60-64	0.76
65-69	0.74
Total	0.79

Source: SHIW for 1989 (mean values).

about their future benefits, but the actual pattern is just the opposite: the young and the middle aged expect a higher replacement rate than older respondents.

An increase in the replacement rate for social security may reduce saving if households regard social security wealth as a substitute for private asset accumulation. A potential countereffect, however, is the possibility of earlier retirement, which would increase the need for retirement saving. The simple correlation between the expected replacement rate and the saving rate is very small and positive (0.0024). Regression analysis indicates that the conditional correlation (controlling for demographics and other economic variables) between the propensity to save and the expected replacement rate is small and not significantly different from zero, suggesting that the two effects largely offset one other.

A confirmation that in 1989 Italian households anticipated a high replacement rate is that they planned to rely mostly on social security income after retirement: in fact their recourse to private pension schemes was very limited. The SHIW does not tally private pension benefits and income from life insurance policies, but their quantitative importance can be judged indirectly by looking at private pension contributions and life insurance premiums, which averaged 84,000 lire (0.2 percent of disposable income) and 147,000 lire (0.4 percent of disposable income), respectively, in 1989. Households reporting significant private pension plan contributions (more than 500,000 lire) are 4.4 percent of the sample; those contributing more than 500,000 lire to a life insurance fund are 8.6 percent.

6.6 Conclusions

The stylized facts about household saving in Italy presented here are based on the Survey of Household Income and Wealth. Without estimating structural models and explicitly testing competing hypotheses, one cannot discriminate between different motives for saving or assess their relative importance. However, this kind of description of the microeconomic data can disclose broad patterns of saving behavior.

First of all, the data confirm the well-known fact that Italian households on average are high savers. More interesting, perhaps, is the very widespread nature of the saving impulse. The median saving rate is 0.28, the median wealth-income ratio is 3.48, and even the lowest-income quartile features high saving rates and wealth-income ratios. To be sure, there are important differences in saving behavior between population groups: the saving rate is higher for the richer and better educated households, and lower in the South and for post-war generations.

Our analysis also underscores the importance of cohort effects. Unless these are controlled for, cross-sectional data can be misleading in studying the life-cycle behavior of households. While the cross-sectional data indicate that the saving rate increases with age up to retirement, our cohort analysis shows that

it is the young who exhibit the highest saving rates, possibly anticipating future family needs and the purchase of their first house. In fact, in direct interviews conducted in 1990 by the BNL and the Centro Einaudi, the majority of Italian households (52 percent) mention the purchase of a house as their main motive for saving. The data on home acquisition presented here show that Italians buy their first house drawing mainly on self-financing rather than borrowing; only a minority rely on private transfers and bequests.

The next most common reason for saving mentioned by households (19.5 percent) is to supplement pension income after retirement. The relatively low weight assigned to retirement saving is probably explained by the generosity of the Italian social security system, which survey respondents, at the time, expected to continue. In fact, in the 1989 SHIW most working-age household heads expected that pension benefits would nearly equal their preretirement earnings.

Saving for one's descendants is probably even less important for the average household: only 9 percent of the respondents to the BNL–Centro Einaudi survey report this as their main reason for saving. Finally, although recent research stresses the importance of precautionary saving, only 7 percent of Italian households cite uninsured health and disability risks in old age as their main saving motive,⁹ evidently reflecting the full insurance and universal coverage provided by the National Health Service. It is also consistent with the evidence from cross-sectional data, which register private health-related expenditure as only a minor item in the consumption basket of most households.

Appendix A

Microeconomic Data in Italy

In this appendix we briefly describe the characteristics of the three main surveys that provide microeconomic data on Italian households: the Bank of Italy Survey of Household Income and Wealth (SHIW; *Indagine sui bilanci delle famiglie italiane*), conducted by the Bank of Italy, the survey conducted by the Banca Nazionale del Lavoro (BNL), and the Survey of Family Budgets (*Indagine sui bilanci di famiglia*) conducted by the National Institute of Statistics (ISTAT).¹⁰ Each has its own distinct purpose and characteristics.

The SHIW

Since 1965 the Bank of Italy has sponsored a survey of consumer finances and characteristics. The survey was conducted yearly until 1987 (except for

9. A residual fraction of responses is allocated to "saving for other purposes" (12.5 percent).

10. In addition, the Centro Einaudi and BNL publish (yearly since 1984) the results of a survey with few demographic characteristics but many "qualitative" variables related to households' motivations for saving and their behavior in financial markets.

1985); since then it has been conducted every two years. Until 1984 each survey covered about 4,000 households; starting in 1986 the sample size was doubled. In this paper we use data for 1984 (4,001 households), 1986 (8,022 households), 1987 (8,027 households), and 1989 (8,274 households). A major innovation of the 1989 SHIW was the inclusion of a small panel component. In fact, the 1989 SHIW included 1,208 households that were also interviewed in 1987, plus a random sample of 7,066 households interviewed for the first time. The 1991 SHIW has a similar structure.¹¹

The SHIW is representative of the Italian resident population. Selection is by a two-stage stratified sampling procedure (towns, then households). In the first stage, all Italian metropolitan areas and towns are divided into strata. Towns with more than 40,000 inhabitants and a random sample of all towns with fewer than 40,000 inhabitants (of which there are more than 9,000) are selected. In the second stage, households are drawn by a random sampling procedure from the list of all resident households in a given city. Probability selection is enforced at all stages of sampling.

Interviews are conducted by a specialized agency with professional interviewers. The interviews are preceded by extensive training and several meetings with Bank of Italy representatives who instruct the interviewers. The latter are given no discretion in the choice of households and families to be interviewed. Interviews take place in person, by visiting the residence of the household. Nonrespondents are replaced by households with similar characteristics.

Brandolini and Cannari (1994) report that "the response rate was slightly above 50 percent in the mid-seventies and oscillated around 60 percent until 1987, but it dropped to only 37 percent in . . . 1989." Cannari and D'Alessio (1992), focusing on the small panel section of the 1987 survey, find that the response rate is inversely correlated with family income and wealth, leading to an underestimate of respondents' income of about 5 percent.

The interviews usually take place in January and February. Balance sheet items are reported as of December 31 of the preceding year, while income is reported for the previous calendar year. Thus, the 1989 SHIW was conducted at the beginning of 1990. The survey data are available to the public.¹²

The SHIW contains detailed demographic, income, and wealth data and some information on household expenditures. The major weakness of the SHIW is that, by comparison with the national financial accounts, it seriously underestimates the financial wealth of households. For this reason, the SHIW data on financial wealth are not released to outside users. However, Bank of

11. The main source of information about the SHIW is a series of Bank of Italy publications in Italian. For the 1987 SHIW, see "I bilanci delle famiglie italiane nell'anno 1987," *Supplemento al Bollettino Statistico*, no. 5 (Rome: Bank of Italy, January 1989). For the 1989 SHIW, see "I bilanci delle famiglie italiane nell'anno 1989," *Supplemento al Bollettino Statistico*, no. 26 (Rome: Bank of Italy, October 1991). The main reference in English is Brandolini and Cannari (1994).

12. The tape, questionnaire, reference material, and description of the SHIW can be requested by writing to: Statistical Office, Research Department, Bank of Italy, Via Nazionale 91, 00186 Rome, Italy.

Italy and BNL statisticians have recently adjusted the financial wealth figures of the 1987 survey using the 1987 BNL survey (see below) as the benchmark. These adjusted 1987 data have been made available to us on special request to the Research Department of the Bank of Italy, and are used in this paper. The 1989 survey contains unique information on health expenditures, social security benefits, insurance premiums, and private pension contributions.

Empirical studies have used the SHIW (especially the 1987 and 1989) for econometric tests of various hypotheses about consumer behavior. Many of the most recent studies are part of a research project on household behavior sponsored by the Bank of Italy. Brugiavini (1987) and Ando, Guiso, and Terlizzese (1994) test whether the decumulation of wealth after retirement conforms to the predictions of the life-cycle model. Barca, Cannari, and Guiso (1994) estimate the fraction of housing wealth received as a bequest. Guiso, Jappelli, and Terlizzese (1992a) test whether a self-reported measure of earnings uncertainty affects saving and wealth accumulation. Cannari and Franco (1990) focus on pension benefits and household retirement income, while Ando et al. (1992) analyze young households' behavior. Attanasio, Guiso, and Jappelli (1993) merge five successive surveys and study the microeconomic causes of the decline in saving experienced by the Italian economy in the eighties. Jappelli and Pagano (1988) find that desired consumption exceeds actual consumption for liquidity-constrained households. According to Guiso, Jappelli, and Terlizzese (1994) imperfections in the mortgage market increase the saving rate of households with plans to purchase a house. Brugiavini and Weber (1994) examine the connection between liquidity constraints and durable goods purchases. Guiso and Jappelli (1991) test whether inter vivos transfers help to relax credit constraints.

The BNL Survey

The BNL survey has been conducted each year since 1984. The sample is a rotating panel of about 1,000 households drawn from among BNL customers. The sample is not representative of the population, overrepresenting high-income households. The BNL sample is stratified according to two criteria: occupation (entrepreneur, self-employed, manager, employed worker, and a residual class including retired and nonemployed customers) and the BNL branch. This survey contains information on demographic characteristics (household head's occupation, sector, age, sex and education, residence, and family size and number of income recipients), income (earnings, real and financial income, and transfers), and main categories of expenditure. The strength of the survey is its detailed and highly disaggregated information on assets and liabilities. The customer relationship between the BNL and survey respondents makes this source of information the least subject to underreporting: it is the best source for data on financial wealth at the household level in Italy. Unfortunately, it is not publicly available, apart from summary statistics published by the Research Department of the BNL itself. However, a re-

cent study by Cannari et al. (1990) has used the BNL data to revise the data on financial wealth of the 1987 SHIW.

The ISTAT Survey

The ISTAT survey contains detailed data on consumption, some information on income, and none on wealth (with the exception of ownership of the house of residence).¹³ The survey has been conducted yearly since 1980. The sample is a random stratified sample and is fairly large (over 30,000 households); one-twelfth of the sample is interviewed each month. Demographic characteristics are available with some detail: households are asked to report age, schooling, region of residence, sector, occupation, family size, gender, and number of income recipients. Consumption data are collected accurately and at a highly disaggregated level, the main purpose of the survey being the collection of data on the composition of consumer durables and nondurable expenditure. Households are also asked to report monthly income and annual saving, choosing between 16 predetermined income and saving classes. The income question is meant to capture "normal" monthly after-tax disposable income, including imputed rents from owner-occupied dwellings (asked about separately). No distinction is available as to the source of income (labor income, transfers, capital income, etc.). Since many income components do not accrue on a monthly basis, the income measure is likely to be seriously underestimated.

Appendix B

Definition of Variables

Head of household: Normally the husband or the father. If the person who would usually be considered the head of the household has migrated or works abroad, the household head is the person responsible for the economic activity of the family.

Household size: Total number of persons in the family. Persons include head, spouse (whether married or not married), children, and other relatives and nonrelatives living in the household.

Education of head of household: Years of education. Coded as: 0 (no education), 5 (completed elementary school), 8 (completed junior high school), 13 (completed high school), 18 (completed university degree), and 20 (postgraduate education).

Occupation of head of household: Main occupation of household head.

13. Descriptive statistics have appeared regularly in ISTAT publications. For the 1989 survey, see *Collana d'Informazione*, no. 21 (Rome: ISTAT, 1989).

Coded as: 1 (operative or laborer), 2 (clerical), 3 (professional), 4 (manager), 5 (entrepreneur), and 6 (self-employed).

Sector of occupation of head of household: Refers to the main sector of occupation. Coded as: 1 (agriculture), 2 (industry), 3 (public administration), and 4 (service).

Region of residence: Coded as: 1 (North—Piemonte, Valle D'Aosta, Liguria, Lombardia, Trentino, Friuli, Veneto, and Emilia-Romagna), 2 (Center—Marche, Umbria, Toscana, and Lazio), and 3 (South—Abruzzi, Molise, Campania, Basilicata, Puglia, Calabria, Sicilia, and Sardegna).

Labor earnings of household: All income from labor net of taxes and contributions.

Disposable income of household: In the cross-sectional data referring to 1987, disposable income is the sum of wages and salaries, self-employment income, property income, and transfers, less income taxes and social security contributions of each member of the household. Wages and salaries include overtime bonuses, fringe benefits, and payments in kind, and exclude tax withholdings. Self-employment income is net of taxes and includes the income from unincorporated business, net of depreciation of physical assets. Property income is the sum of rental (excluding imputed rental income from owner-occupied housing) and income from financial assets (interest received, less interest paid, plus dividends). Transfers are the sum of pension benefits, pension arrears, severance pay, unemployment and illness compensation, student grants, alimony, bequests, and inter vivos transfers. For reasons of data availability, in the pooled data formed by the 1984, 1986, 1987, and 1989 surveys, property income is defined simply as rents (inclusive of imputed rents from owner-occupied housing).

Consumption of household: Sum of the expenditures on nondurable items (food, clothing, medical expenses, insurance, fuel, entertainment, education, house maintenance, and rents) and durable goods (vehicles, furniture and appliances, and valuables). Imputed rents on owner-occupied housing are not included. For reasons of data availability, in the pooled data formed by the 1984, 1986, 1987, and 1989 surveys, consumption includes imputed rents from owner-occupied housing.

Household net worth: Sum of household's net financial assets and real assets. Net financial assets are the sum of checking accounts, saving accounts, money market accounts, certificates of deposit, stocks, and government bonds and other bonds, less household liabilities (consumer credit and real estate mortgages). Real assets are the sum of real estate and unincorporated business holdings.

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