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Working Paper

Households' saving and debt in Italy

CFS Working Paper, No. 2007/30

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Center for Financial Studies (CFS), Goethe University Frankfurt

Suggested Citation: Jappelli, Tullio; Padula, Mario (2007) : Households' saving and debt in Italy, CFS Working Paper, No. 2007/30, Goethe University Frankfurt, Center for Financial Studies (CFS), Frankfurt a. M.,
<https://nbn-resolving.de/urn:nbn:de:hebis:30-51016>

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Households' Saving and Debt in Italy*

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September 22, 2007

Abstract:

We review savings trends in Italy, summarizing available empirical evidence on Italians' motives to save, relying on macroeconomic indicators as well as on data drawn from the Bank of Italy's Survey of Household Income and Wealth from 1984 to 2004. The macroeconomic data indicate that households' saving has dropped significantly, although Italy continues to rank above most other countries in terms of saving. We then examine with microeconomic data four indicators of household financial conditions: the propensity to save, the proportion of households with negative savings, the proportion of households with debt, and the proportion of households that lack access to formal credit markets. By international comparison, the level of debt of Italian households and default risk are relatively low. But in light of the deep changes undergone by the Italian pension system, the fall in saving is a concern, particularly for individuals who entered the labor market after the 1995 reform and who have experienced the largest decline in pension wealth.

JEL Classification: D91

Keywords: Saving, Household Debt

* Some of the material contained in this paper was prepared for the Ministry of Social Solidarity's Commission for the Study of Social Exclusion, and presented at the Poverty, Redistribution, and Social Inclusion Policy Conference at the Università di Napoli Federico II, 16-17 November 2006. We thank Marco Pagano for useful comments.

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1. Introduction

Recent data on Italian households' saving behavior indicate that people are tending to reduce saving and accumulate more debt, as well as financing their current expenditures with greater difficulty. Thus, understanding of the relation between saving, debt, and poverty is fueling the economic and social policy debate. From an aggregate perspective, the Italian households' propensity to save has fallen nearly ten percentage points in the last two decades. Household indebtedness in relation to GDP has similarly risen by ten points, from 23 percent in 1995 to 36 percent in 2004. Additionally, the 2004 Bank of Italy Survey of Household Income and Wealth (SHIW) shows that 13 percent of interviewed households believed they faced "great difficulty in matching monthly expenses with current income," while 14 percent believed they faced "difficulty." Thus, nearly 30 percent of Italian households declared having balance sheet problems.

A reduction in savings is often interpreted as a signal of households' impoverishment and financial fragility, and raises several questions. Is a reduction in saving associated with an increase in poverty? Could rising indebtedness and falling savings complement or replace other poverty indicators, based on the distribution of income or consumption? What is the relationship between the propensity to save and the ability to face future expenses, expected or unforeseen?

To answer these questions, we review savings trend in Italy and summarize available empirical evidence about Italians' motives to save. We rely on macroeconomic indicators as well as data drawn from the Bank of Italy's Survey of Household Income and Wealth from 1989 to 2004. The macroeconomic data indicate that households' saving has dropped significantly, although Italy continues to rank above most other countries in terms of saving (Section 2). We then examine with microeconomic data four indicators of household financial conditions: the propensity to save, the proportion of households with negative savings, the proportion of households with debt, and the proportion of households that lack access to formal credit markets. The microeconomic data show a strong correlation between the propensity to save and the level of current income, as well as a strong correlation between income and indebtedness (Section 3). Even though indebtedness and default rates are low by international standards and not directly related to current poverty (Section 4), diminished

propensity to save and increased liabilities make households more vulnerable to falling government pension benefits, future income shocks, and health-care costs (Section 5).

2. Italy's saving rate in international perspective

Historically, Italy exhibited a high saving rate compared to other industrialized nations. As shown in Table 1, which reports saving rates for the main European countries, Japan, and the United States, in 1980 Italians saved 25 percent of their disposable income. The saving rate continued to stay high until 1990, when Italy ranked first in the international comparison. During the 1990s, the gap between Italy and other OECD countries narrowed considerably.

Figure 1 provides further more details on the dynamics of the national and household saving rates from 1970 to 2005, a long period characterized by high inflation, hefty public debt, financial market innovations, progressive integration of international financial markets and several pension reforms.

International panel data suggest that saving is strongly correlated with the growth rate of income, and that saving changes parallel growth change, as shown by Attanasio, Picci and Scorcu (2000) using the 150 countries of the World Bank Saving Database. The Modigliani-Brumberg Life-Cycle Hypothesis can explain such correlation. According to the model, the income profile of every generation is constant, and productivity growth accelerates from one generation to the next. It follows that productivity growth boosts positive savings of active workers in comparison to the negative savings of the elderly, thereby raising aggregate saving. The transitional dynamics of the Solow growth models and models with endogenous growth also suggest a positive relation between saving and growth. The productivity slow-down is therefore the prime candidate to explain the fall in Italy's saving rate (Modigliani and Jappelli, 1990).

Besides the productivity slow-down, the last three decades featured several developments that are often suggested as explanations for the saving decline: the pervasive borrowing constraints and imperfections of insurance markets followed by the liberalization in the 1990s, the transition to an unfunded and increasingly generous social security system in the late 1960s and 1970s, the spectacular drop in fertility, the increasing tax pressure associated with the build-up of public debt, and the changing tastes of Italian households (Jappelli and Pagano, 2000). These features are emphasized by different empirical studies.

Observing that the decline in the aggregate saving rate starts in the late seventies, following the period of high and sustained growth of the fifties and sixties, Modigliani and Jappelli (1990) emphasize that the reduction in productivity growth is the main factor explaining the trend decline in the Italian saving rate, particularly after the 1973 oil shock.

Rossi and Visco (1995) argue that the accumulation of social security wealth due to the transition to a pay-as-you-go social security system and the increasing generosity of the system also explain a substantial portion of the fall in household saving. Attanasio and Brugiavini (2003) and Bottazzi, Jappelli and Padula (2006) compare saving behavior before and after the three pension reforms of the last decade (1992, 1995, and 1998), observing that savings rates did not rise after the reform, a lag probably due to the sluggishness with which individual decisions conform to institutional changes. Other explanations focus on the reduced need for precautionary saving due to the increased availability of social insurance schemes, and the financial liberalization of the nineties (Guiso, Jappelli and Terlizzese, 1992; Jappelli and Pagano, 2000; Casolaro, Gambacorta and Guiso, 2005).

Figure 2 compares Italy's savings rate, as calculated using the national accounts data, with the propensity to save computed with SHIW data. The long-term trends present in the microeconomic data (whether the average or the median propensity to save) confirm the drop in savings observed in the aggregate data. Even though the year-to-year fluctuations of the microeconomic data match only partly the aggregate dynamics, the survey data appear to be a useful tool to analyze the microeconomic consequences of Italy's macroeconomic developments.

3. Microeconomic evidence

In this section we try to shed light on some of the trends of saving rate in Italy analyzing four indicators of households' economic and financial well being: the propensity to save, the proportion of households with negative saving, the proportion of households with debt, and the proportion of credit constrained households. The SHIW allows us to compute these indicators from 1984 to 2004 and to distinguish general trends from the saving behavior of specific population groups.

The propensity to save indicates households' capacity to handle future income declines, either expected or unexpected. Accumulated assets can be used to finance consumption

during retirement, to maintain the same standard of living after exiting the labor market. Saving can also be used to buffer short-term income fluctuations, such as unemployment spells. Thus, households that save little during their working years are at risk of being poor in the future and more vulnerable to shocks.

Our second indicator is the proportion of households with negative saving, i.e. households that currently consume more than they earn, as a further indicator of financial vulnerability. Saving can of course be negative for two types of households: those which are running down assets (experiencing a decrease in wealth), and those who are unable to finance consumption with current resources and must resort to debt (experiencing an increase in liabilities).

The third indicator is the proportion of households with debt. Debt allows people to shift resources from the future to the present, for example to purchase durable goods or to face transitory income shocks, and can be taken as a signal that households can rely on financial markets to smooth income fluctuations. Debt represents, nonetheless, an element of potential financial fragility, whose severity depends on time to maturity, availability of collateral, and weight of installment payments in disposable income. For example, variable interest rate mortgages expose households to market risk, while short-term debt contracts amplify default risk for households with more variable incomes.

The proportion of households with debt is a useful yet incomplete indicator of the capacity to buffer adverse income shocks. Those who are unable to borrow are even more exposed to the effects of negative income shocks. We take as credit constraint indicator the proportion of households that don't have access to formal credit markets. They include households that applied for a mortgage loan or consumer credit the year before the interview and whose application was rejected, as well as households that did not apply because they thought that credit would not have been granted. It should be noted that access to credit markets does not only depend on households' behavior and characteristics, but also on the competitive structure of the banking market, the incentive to default provided by the civil code, and other supply side factors.

Figure 3 plots the propensity to save, the proportion of households with negative savings, the proportion of households with debt, and the proportion lacking access to credit

for each disposable income quartiles from 1984 to 2004.¹ The figure shows that households at the bottom of the income distribution are those which save the least. Indeed, the saving rate of households below the first quartile is less than 10 percent, while saving reaches almost 40 percent above the fourth quartile.²

The relation between income and the proportion of households with negative saving has a similar behavior. Households with negative saving are concentrated in the left tail of the income distribution, as the proportion in the first quartile is almost three times as large as in the top quartile. The relation between income and the proportion of households with debt is positive, and is thus inversely correlated with the previous two indicators. The relation between income and the credit constraint indicator is weaker, suggesting that credit constraints mostly populate the low end of the income distribution.

Figure 3 suggests that low-income households are also less well-off from an economic and financial point-of-view since they potentially don't save enough for retirement; moreover, they encounter more difficulties in accessing credit to buffer negative income shocks or other adverse events.

Households' economic resources depend on income, but also on socioeconomic characteristics such as education and geographical location. Education affects earnings, but also familiarity with financial instruments, and pension rules. Figure 4 relates the four indicators to education of the household head: college degree, high school diploma, and compulsory education. The figure indicates that the propensity to save is positively related to education, and that the proportion of households with negative savings decreases among college and high school graduates. Moreover, the proportion of households with debt is 10 percentage points higher among households whose head has a college degrees compared to those who only completed compulsory education. The figure confirms that debt is widespread among middle and upper-middle classes, and also shows that the proportion of credit constrained households is lowest among college graduates. On the whole, less well educated households are also less well-off from an economic and financial point-of-view.

¹ Saving is defined as household disposable income (including imputed rents) less total consumption expenditures (including imputed rents).

² A positive relationship between savings and income is also found in other empirical studies, see Dynan, Skinner e Zeldes (2004). The relation could be due to the fact that people with low transitory income buffer income fluctuations by reducing assets, to financial market imperfections, preferences, or a bequest motive in the upper income levels.

Households' financial situation also varies with geographical area of residence. Figure 5 indicates that saving is higher in Northern and Central Italy, while the proportion of households with negative savings is higher in the South. The proportion of households with debt is larger in the North. In most years, the proportion of credit constrained households is higher in the South and Centre, but recently the gap has disappeared and the fraction of households denied credit is similar across Italian regions.

Figure 3 reveals that propensity to save falls gradually from 1984 to 2004 for the entire income distribution. The evidence in Figures 4 and 5 is similar: the propensity to save falls for all households, regardless of the educational level or region of residence. The proportion of households with negative savings increases sharply (by 10 percentage points) after the 1992-93 recession. Interestingly, the rise in households with negative savings is particularly large in downturns, for households living in the South and with compulsory education.

The proportion of households with debt exhibits a cyclical behavior, with humps and bumps varying across groups. The proportion of households with debt has two peaks, following the 1992-93 and 2001-2004 recessions. The first peak was particularly pronounced for households in the Center and the South, the second for high-income households. The peaks associated with the recessions suggest that debt was used, at least in part, to smooth income fluctuations. The differences between groups are also reflected in the dynamics of inequality, which has risen sharply after the 1992-93 recession (Boeri and Brandolini, 2004). In general, the evidence documents a reduction in the proportion of credit constrained households, suggesting that accessing to credit has gradually improved over time, as well as households' capacity to use debt to buffer negative income shocks.

Table 2 relates the four indicators of economic and financial wellbeing to income, education, area of residence, and groups defined by year-of-birth. The results of the regression analysis confirms that saving and debt are positively associated with income and that younger cohorts have lower saving rates and a higher propensity to borrow.

The drop in savings and the rise of debt, as well as the trends of the four indicators trigger three questions: (1) Are Italians over-indebted? (2) Are they not saving enough? (3) Which social groups are most vulnerable from a saving and debt perspective?

4. Are Italians over-indebted?

Only in recent times have Italians begun to use debt to finance consumption, purchase a home or other durable goods. Even though the mortgage and consumer credit markets are still small relative to other industrialized nations, the markets have grown at double digit rates for the last twenty years.

Figure 6 plots the ratio of consumer credit to household disposable income in 15 European countries and in the United States. The figure shows that by international standards Italian households don't feature a high propensity to borrow. In 2004 consumer credit in Italy barely exceeded 5 percent of disposable income, while in France, Spain, and Germany consumer credit was above 10 percent, and in the United States and Great Britain 20 percent. Italy features also a relatively thin mortgage market (Chiuri and Jappelli, 2003). Therefore, despite rapid progress in recent years, a low propensity to borrow persists among Italian households, at least in comparison with countries that have reached a similar level of economic development.

The European Community Household Panel distinguishes between arrears on consumer credit and on mortgage liabilities. We therefore compute the proportion of household failing to pay scheduled debts, providing two indicators of default risk, respectively for consumer credit and mortgage loans. Both indicators are reported in Figure 7, and suggest that in Italy default risk is limited and at the same level as Austria and the Netherlands. On average, in Europe the proportion of households with late mortgage payments is about 3 percent, and the proportion with late consumer loans payments is 5 percent. The same numbers for Italy are 1 and 1.5 percent, respectively. Credit risk is not only low by international comparison, but it has also declined in the mid 1990s, as shown in Figure 8.

Figure 9 documents for the period 1997-2005 trends in default and severe default rates in the Italian consumer credit market. The data are drawn from the Assofin-Prometeia-CRIF annual survey on consumer credit and are not directly comparable with the data in Figure 8 because the time span is different, and because Figure 8 refers to households, while Figure 9 refers to all consumer credit lines. The data indicate stability in the number of severe defaults (missed a payment by more than three months) and a slight reduction in minor defaults and arrears (less than 3 months). Overall, in the last six years loans in arrears or defaults have dropped by 1.5 percentage points.

Whether by international comparison or historical trend, the problem of over-indebtedness that fuels economic and social policy debate in the European Union does not seem particularly acute in Italy. Of course, this does not rule out the existence of a non-trivial number of Italian households with late payments and financial problems, as SHIW data point out. Since 13 percent of Italian households borrow in the consumer credit market, in 2005 the overall rate of arrears and defaults in the population is about 0.5 percent.

Even if the SHIW does not contain specific indicators of defaults, the survey allows to compute the proportion of households that declare not being able to “match monthly expenses with current income,” an indicator closely related to households’ ability to pay debts at their natural maturity.³ Table 3 points out that in 2004 10 percent of households declared having “great difficulty in matching monthly expenses with disposable income.”

Unfortunately the data don’t allow to distinguish whether households’ problems originate from permanent or transitory shocks. Only the first case is a situation of significant financial risk, which debt burden could amplify even more. To establish if financial problems are persistent, we use the panel component of the SHIW to compute a transition matrix. The matrix shows on the main diagonal the percentage of households who report the same answer in 2002 and 2004, and off the main diagonal the percentage of households that changes answers between the two survey.

Table 3 shows numbers around 50 percent on the main diagonal. This suggests that the volatility of answers between the two studies is substantial. For example, about 40 percent of households that experienced “difficulty in matching monthly expenses with current income” in 2002 declared to face the same problem also in 2004, while 60 percent provides different answers. At the opposite extreme, less than 19 percent declared “great ease in matching monthly expenses with current income” in 2002 and did not change answer in 2004. Overall, about a half of households with balance sheet problems are potentially exposed to financial risk.

³ The question is: “Does your household income allow you to match monthly expenses with great difficulty, difficulty, some difficulty, some ease, ease, or great ease?”

5. Do Italians save too little?

Although the problem of over-indebtedness still appears limited, the pension reforms of the 1990s, having substantially reduced benefits for certain categories of workers, place a saving-related question at the forefront of discussions on social and economic policy: are Italians saving enough to offset the fall in benefit implied by the new pension regime?

To offset a reduction in pensions, private savings must rise. Workers that don't boost savings after a benefit-shrinking reform increase their risk of poverty after retirement, when earnings cease. This possibility is concerning, particularly for those who entered the labor market after the 1995 Dini reform and for those with discontinuous jobs. Even though negative savings are not necessarily associated with current poverty, they signal a potential situation of future poverty that could materialize after exiting the labor market if pension benefits fail to adequately finance consumption.

Figure 10 displays our four financial indicators for three birth cohorts: households head born before 1940, in 1941-1960, and after 1960. The figure suggests that the propensity to save is lowest for the generation that entered the labor market after the Dini reform (born after 1960), i.e. those most affected by the pension reform and most uncertain about their own future.⁴ On the other hand, the propensity to save of those born before 1960 are higher; these are workers who at the time of the Amato and Dini reforms (1992 and 1995) were already retired or were able to maintain the same level of pension benefits even after the reforms.

Paradoxically, workers most affected by the pension reforms are also those saving the least. The figure moreover confirms that the most recent generations are less well-off from an economic and financial point-of-view, either because they are saving relatively little, or because they encounter greater problems accessing credit markets and hence incurring debt.

For some groups of workers, lack of a rise in private saving following the pension reforms results from the slowness with which they have reacted to the new pension rules. Workers choose how much to save based on the benefits they expect to receive. It is therefore particularly important to understand to what extent individuals overestimate (or underestimate) their pension entitlements. SHIW data allow to quantify the degree of mismatch between expected and statutory replacement rates, the ratio of the first pension to

⁴ For an analysis of the effect of pension reform on Italian household saving rate, see Attanasio and Brugiavini (2003) and Bottazzi, Jappelli and Padula (2006).

the last salary. Figure 11, based on Bottazzi, Jappelli and Padula (2006), reports the expected and the statutory replacement rates for private employees, public employees, and self-employed, distinguishing between the three regimes under which future pensions are calculated: the old earnings-related regime, the new contribution-based regime, and the transitional pro-rata regime. The figure shows that in 2004 all workers expect to receive a higher pension than they will be entitled to. Information problems thus play an important role in explaining why saving has not yet fully offset the pension reforms. This suggests that it is important to improve the quality of pension information, specifically for youngest cohorts, for which the gap between expected and statutory replacement rates are most pronounced.

6. Conclusions

Although Italy continues to rank above most other countries in terms of savings, the propensity to save has progressively decreased in the past two decades, approaching that of most other OECD countries. The fall in saving has been accompanied by an increase in households' liabilities and a reduction in credit constraints. Survey data allow us to single out the groups with the highest propensity to borrow, revealing that debt and income are indeed positively correlated. The current rise in households' liabilities does not represent an issue of special concern. By international comparison, the level of debt of Italian households and default risk are relatively low.

Saving is not, by itself, an indicator of poverty, wealth or welfare. Similarly, a rise or drop in saving does not signal households' impoverishment or enrichment. However, saving is an indicator of the future ability to face liquidity shocks, particularly when income falls due to foreseen or unexpected events. In light of the deep changes undergone by the Italian pension system, the fall in saving is indeed a concern. The pension reforms imply that the post-retirement fall in income and increase in health-care expenses will no longer be matched by government transfers and generous pensions. The issue of the adequacy of saving affects therefore particularly individuals who entered the labor market after the 1995 reform and who have experienced the largest decline in pension wealth.

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Table 1.
The household saving rate: an international comparison

	<i>1980</i>	<i>1990</i>	<i>2000</i>	<i>2004</i>
Austria	13.2	14.0	8.3	7.8
Belgium	20.3	18.0	13.4	14.1
Denmark	n.a.	11.2	4.8	6.1
Finland	4.1	2.2	-0.9	1.3
France	12.1	7.8	10.8	12.1
Germany	13.4	13.9	9.8	10.8
Ireland	12.1	8.5	10.7	15.1
Italy	25.0	25.5	12.4	13.9
Netherlands	7.8	11.6	6.7	10.8
Norway	1.5	0.8	4.5	5.9
Spain	11.1	12.3	10.6	10.2
Sweden	7.9	0.0	2.4	6.8
United Kingdom	12.4	8.0	4.3	5.8
Japan	19.9	14.0	9.8	5.8
United States	10.2	7.8	2.8	4.8

Note. The household saving rate is the ratio between saving and household disposable income. Saving definitions reflect also differences in the individual country definitions. Source: Cesifo-Dice and OECD Economic Outlook.

Table 2.
Determinants of saving and debt: regression analysis

	Propensity to save	Negative saving	Households with debt	Households with credit constraints
II quartile	0.900 (0.092)**	-0.106 (0.002)**	0.059 (0.005)**	-0.000 (0.002)
III quartile	1.058 (0.095)**	-0.159 (0.002)**	0.122 (0.006)**	-0.003 (0.002)
IV quartile	1.189 (0.101)**	-0.204 (0.002)**	0.170 (0.006)**	-0.002 (0.002)
Secondary school	-0.164 (0.082)*	0.027 (0.003)**	0.020 (0.004)**	-0.004 (0.001)**
College	-0.125 (0.127)	0.014 (0.006)*	-0.014 (0.005)**	-0.006 (0.002)**
Center	0.006 (0.086)	-0.000 (0.003)	0.016 (0.004)**	0.007 (0.002)**
South	0.079 (0.074)	-0.008 (0.003)**	0.008 (0.003)*	0.003 (0.002)*
Born in 1941-1960	-0.403 (0.072)**	0.111 (0.003)**	0.156 (0.004)**	0.024 (0.002)**
Born after 1960	-0.620 (0.117)**	0.170 (0.006)**	0.250 (0.007)**	0.044 (0.004)**
N. of observations	83917	84036	63880	55583

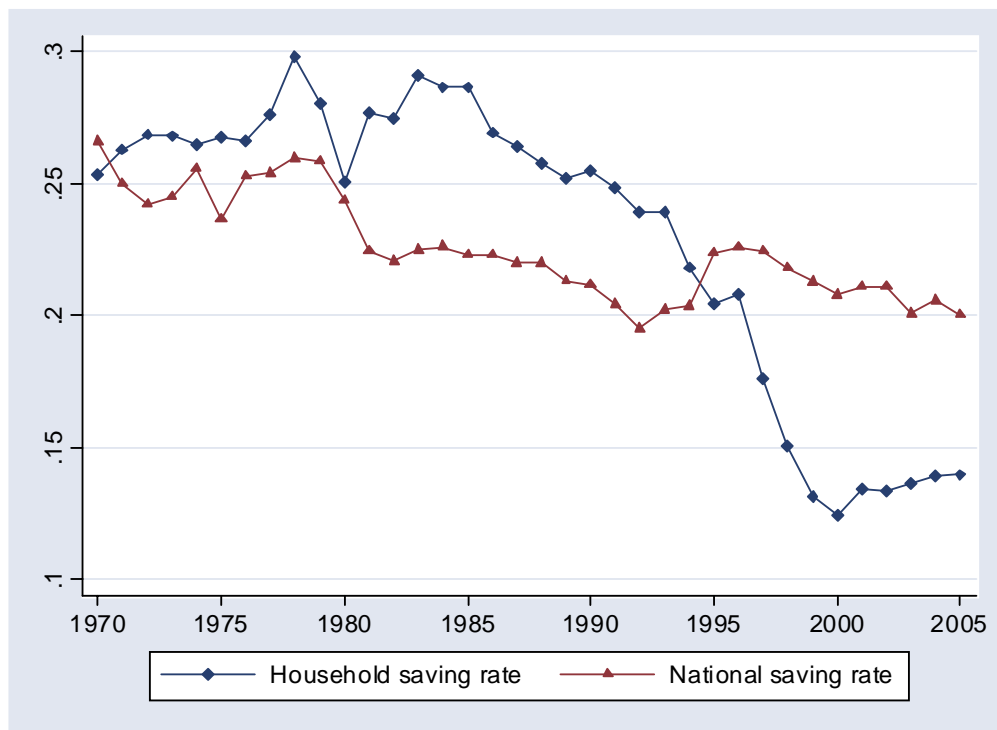
Note. The first column reports the estimated coefficients and the standard errors (in parenthesis) of a regression of the household saving rate. The other columns report probit estimates for the probability that a household has negative saving, debt, or has been denied credit. Each regression refers to 1989-2004, and includes time dummies. One asterisk denotes that the coefficient is statistically different from zero at the 5 percent level, two asterisks at the 1 percent level.

Table 3.
Transition matrix of the indicator of financial distress

Year 2004	Great difficulty	Difficulty	Some difficulty	Relatively easy	Easy	Very easy	Total
Year 2002							
Great difficulty	41.07	23.67	30.16	3.94	0.93	0.23	100.00
Difficulty	17.34	26.61	43.35	11.09	1.41	0.20	100.00
Some difficulty	6.24	16.11	49.91	25.23	2.51	0.00	100.00
Relatively easy	2.49	5.50	32.90	48.54	9.36	1.20	100.00
Easy	0.86	1.15	14.66	52.01	27.01	4.31	100.00
Very easy	0.00	1.10	12.09	34.07	34.07	18.68	100.00
Total	10.04	13.21	36.79	31.08	7.55	1.33	100.00
N. of observations	362	476	1,326	1,120	272	48	3,604

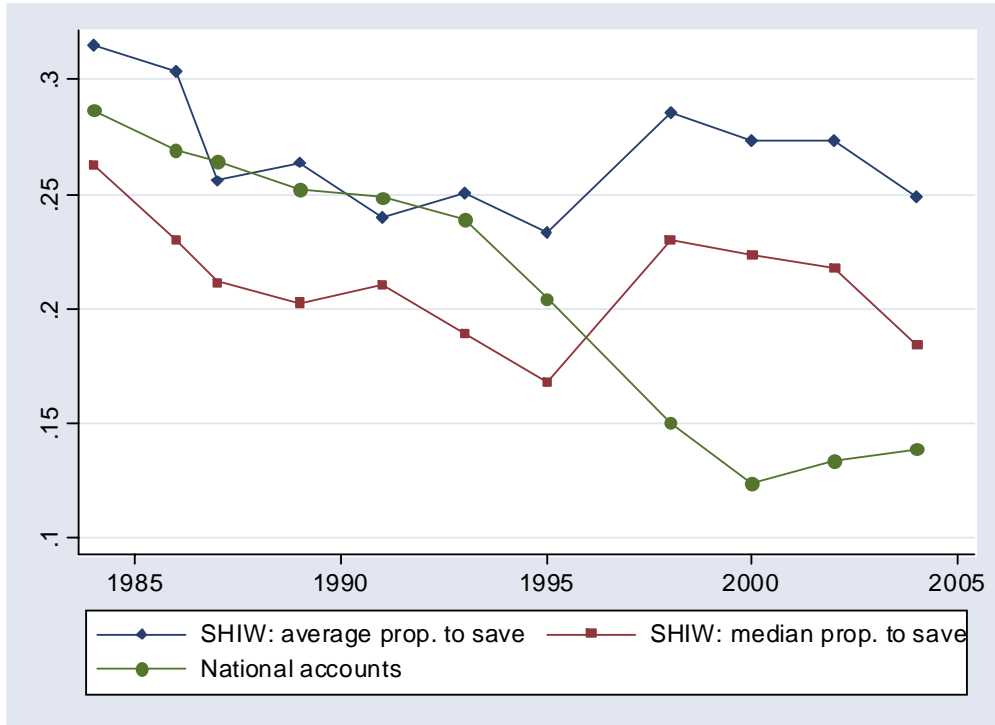
Note. The table reports the transition matrix of the variable: “Your income and that of your household allows you to make ends meet with great difficulty / difficulty / some difficulty / relatively easy / easy / very easy. Source: Panel component of the 2002-04 SHIW.

Figure 1.
National and household saving rates, 1970-2005



Note: The household saving rate is the ratio between household saving and household disposable income; the gross national saving rate is the ratio between gross national saving and gross national income. Source: ISTAT and Bank of Italy.

Figure 2.
Household saving rate in the national accounts and in survey data



Note: The figure plots the national accounts' propensity to save and the average and median propensities to save in the Bank of Italy's SHIW.

Figure 3.
Saving and debt, by income quartiles

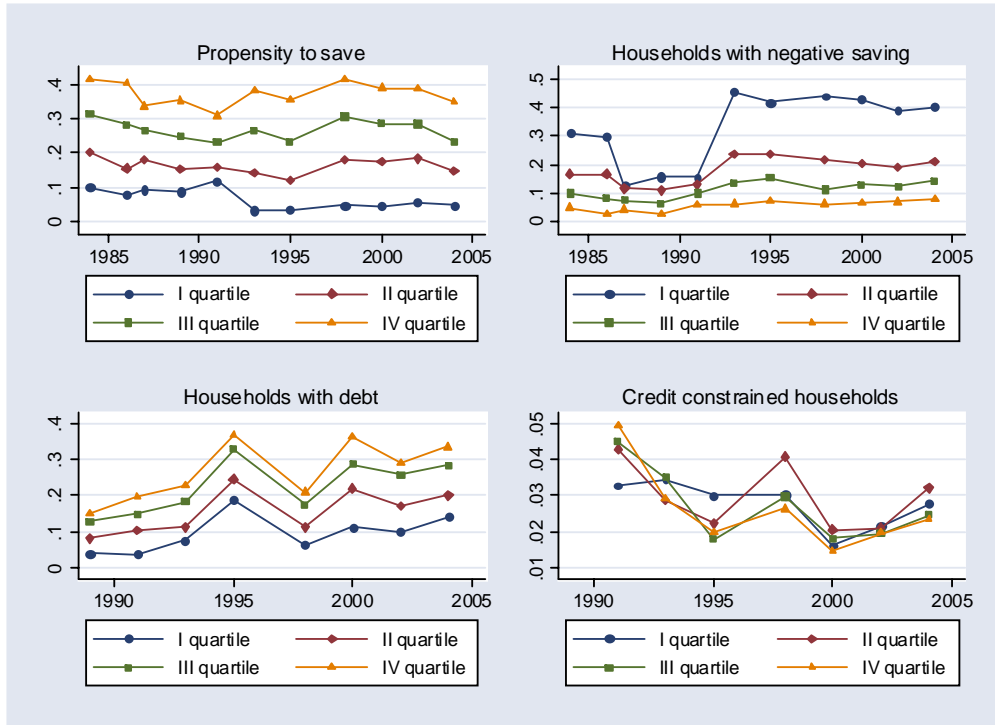


Figure 4.
Saving and debt, by education

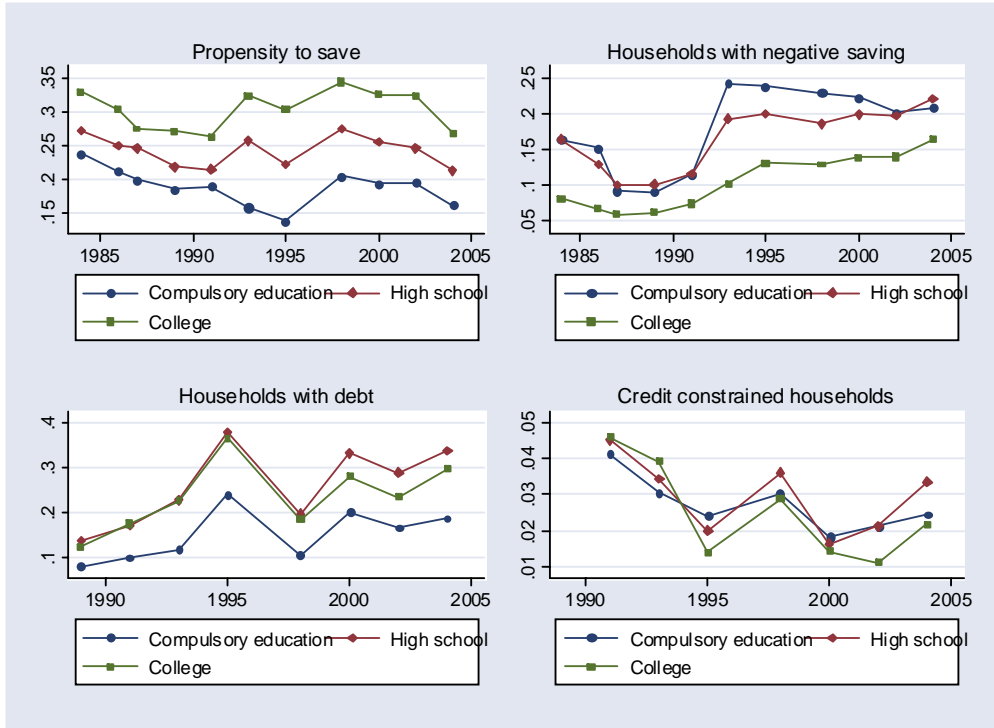


Figure 5.
Saving and debt, by region

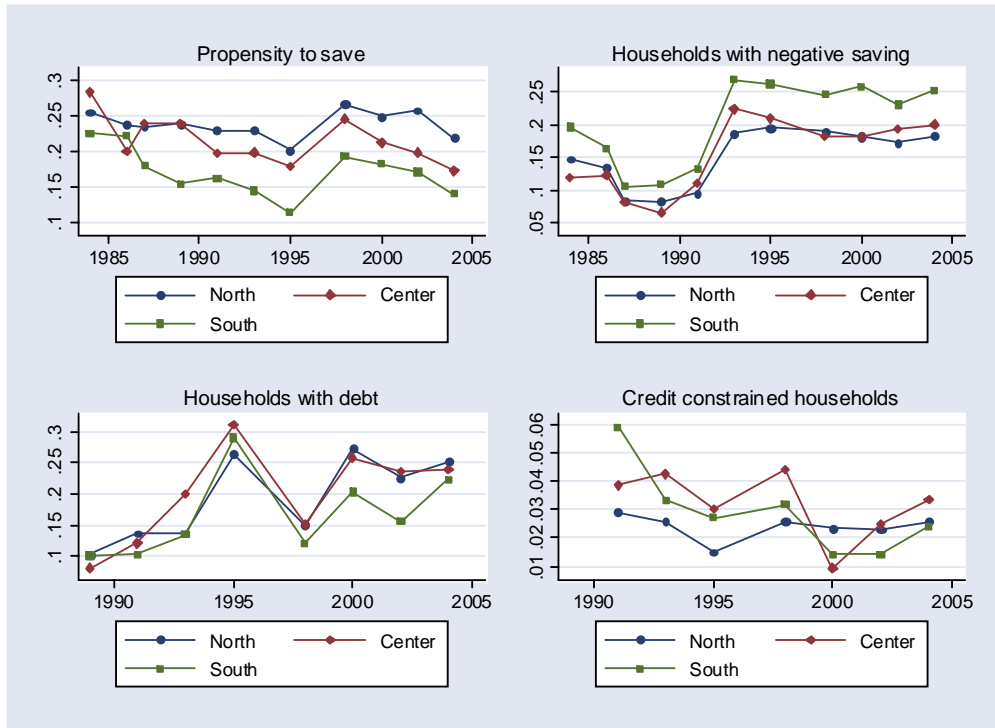
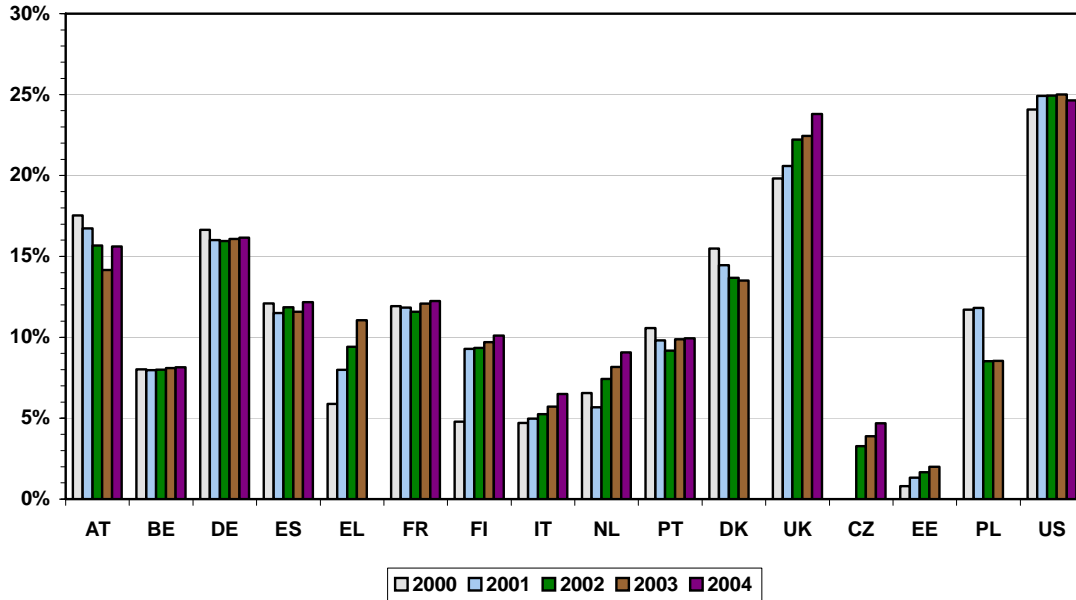
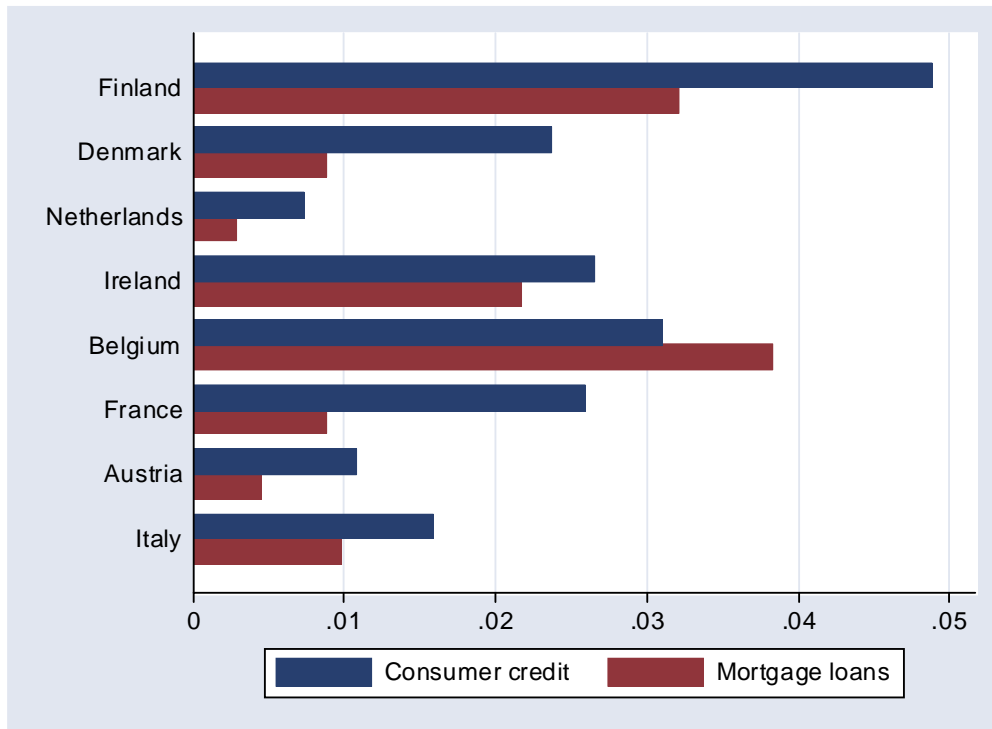


Figure 6.
Households' debt: international comparison



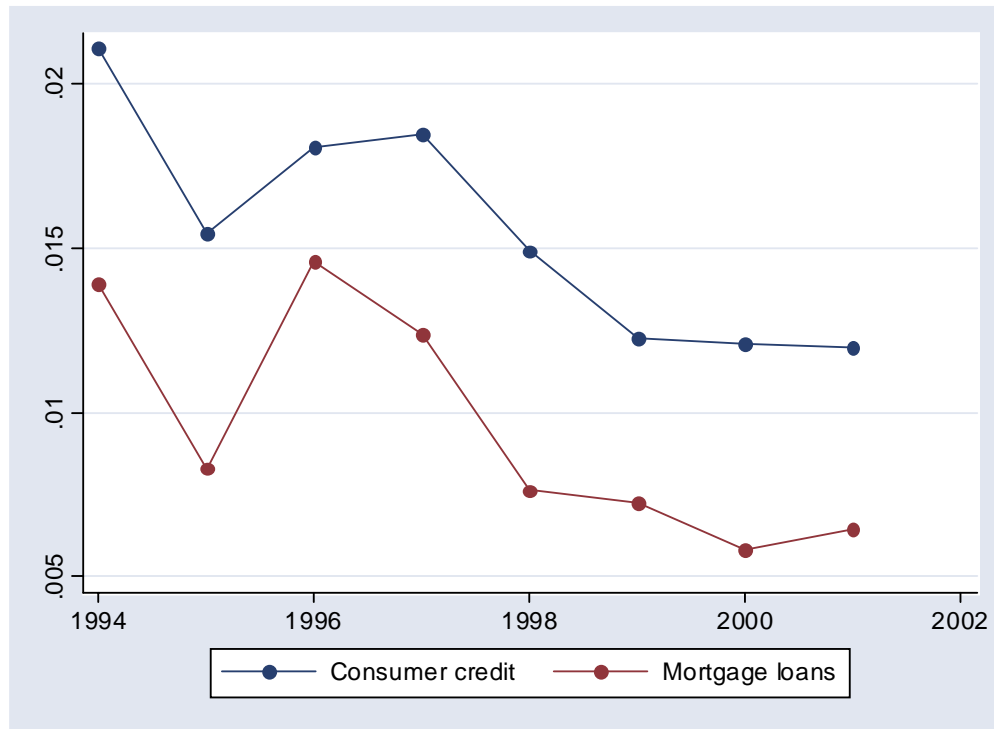
Note. The figure plots the ratio of consumer credit to household disposable income in the United States and in the following EU countries: AT (Austria), BE (Belgium), DE (Germany), ES (Spain) EL (Greece), FR (France), FI (Finland) IT (Italy), NL (Netherlands), PT (Portugal), DK (Denmark), UK (United Kingdom), CZ (Czech Republic), EE (Estonia), PL (Poland). Source: Consumer Credit and Lending to Households in Europe – ECRI 2005 Statistical Package. Bruxelles: European Credit Research Institute.

Figure 7.
Mortgage loans and consumer credit arrears: international comparison



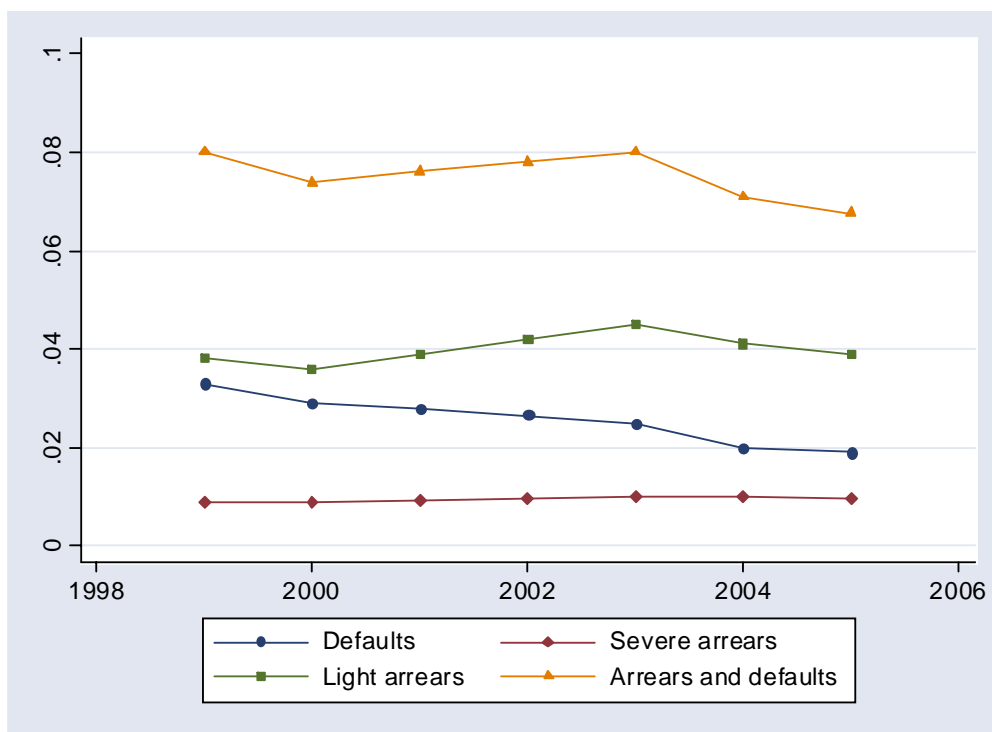
Note. The figure plots the proportion of households that did not meet scheduled mortgage and consumer credit payments installments. Data refer to 1994-2001 and are drawn from the European Household Panel.

Figure 8.
Mortgage loans and consumer credit arrears in Italy



Note. The figure plots the proportion of Italian households that did not meet scheduled mortgage and consumer credit payments installments. Data refer to 1994-2001 and are drawn from the European Household Panel.

Figure 9.
Arrears and defaults in the consumer credit market



Note. The figure plots the rates of defaults, “severe” arrears (missed a payment by more than 3 months), and “light” arrears (missed a payment by less than 3 months) in the consumer credit market. Data are drawn from the Assofin-Prometeia-CRIF Annual Report on consumer credit.

Figure 10
Saving and debt, by year of birth

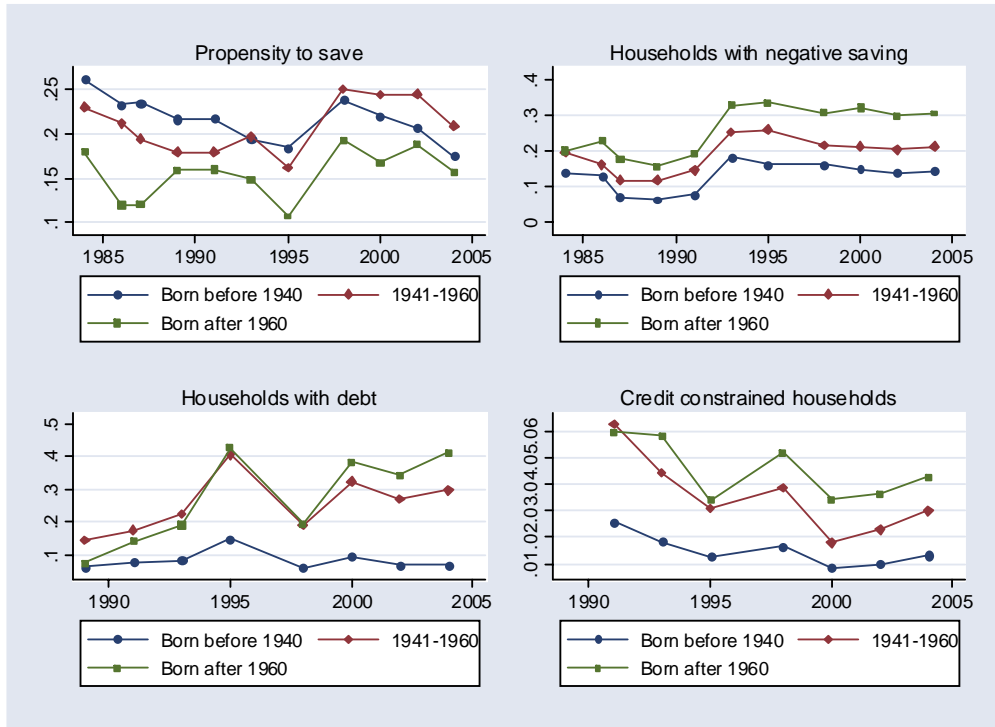
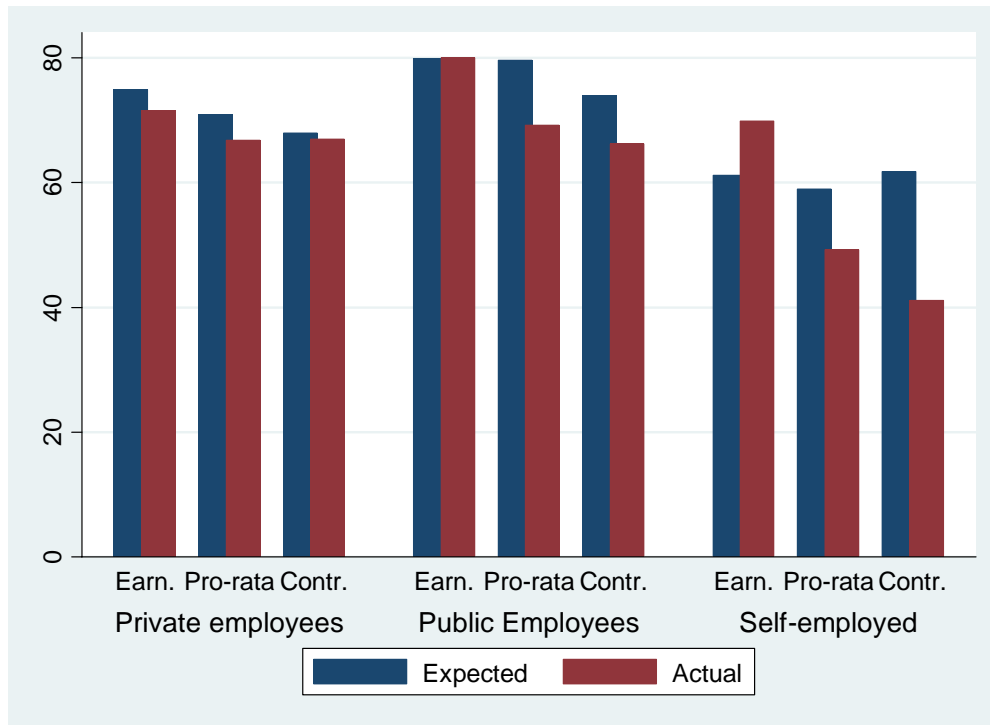


Figure 11
Expected and actual replacement rates



Note. The figure plots the actual and expected replacement rate for three groups of workers (private employees, public employees, and self-employed) and three different regimes: earnings method (workers with more than 18 years of contributions in 1995), pro-rata regime (workers with less than 18 years of contributions in 1995), and contribution-based (workers who entered the labor market after 1995).

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