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Households' Saving and Debt in Italy

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Abstract

In this paper we review household saving and debt trends in Italy. We summarize the available empirical evidence on Italians' motives to save, relying on macroeconomic indicators and data drawn from the Bank of Italy's Surveys of Household Income and Wealth from 1984 to 2012. The macroeconomic data indicate that households' saving has dropped significantly, although Italy continues to rank above most other countries for saving. Using microeconomic data we examine four indicators of household financial conditions: propensity to save, proportion of households with negative saving, proportion of households with debt, and proportion of households that lack access to formal credit markets. An international comparison shows that the level of debt and default risk among Italian households are relatively low. However, in light of the deep changes made to the Italian pension system, the fall in saving is a concern, particularly in the case of individuals who entered the labor market after the 1995 reform who have experienced the largest decline in pension wealth.

Keywords: household saving, household debt, financial fragility, pension reforms.

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1. Introduction

Recent data on Italian households' saving behavior shows a tendency for people to reduce saving and accumulate more debt, and greater difficulty to finance current expenditures. Trying to understand the relation between saving, debt and poverty is fueling the economic and social policy debate. From an aggregate perspective, Italian households' propensity to save has fallen by 15 percentage points, from 25 percent in 1980 to 10 percent in 2014. Over the same period, households' indebtedness in relation to GDP has almost tripled and reached about 60 percent in 2014. Additionally, the Bank of Italy Survey of Household Income and Wealth (SHIW) shows that more than 30 percent of Italian households declare having balance sheet problems. In fact, the fraction of households reporting "difficulty" or "great difficulty" in matching monthly expenses to current income has increased from 28 percent in 2006 to 32 percent in 2012 the most recent available year of data.

A reduction in saving is often interpreted as a signal of household impoverishment and financial fragility, and raises several questions. Is a reduction in saving associated with an increase in poverty? Could rising indebtedness and falling saving 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 saving trends in Italy, and summarize the available empirical evidence on Italians' motives to save. We rely on macroeconomic indicators and data drawn from the Bank of Italy's Surveys of Household Income and Wealth from 1984 to 2012. The macroeconomic data indicate that household saving has dropped significantly, although Italy continues to rank above most other countries for saving (section 2). We exploit microeconomic data to examine four indicators of household financial conditions: propensity to save, proportion of households with negative saving, proportion of households with debt, and proportion of households lacking access to formal credit markets.

The microeconomic data show strong correlations between the propensity to save and the level of current income, and between income and indebtedness (section 3). Although indebtedness and default rates are low by international standards and not related directly to current poverty (section 4), the reduction in household saving rates, and the increase in the

propensity to borrow, make households more vulnerable to the expected reduction in social security benefits for younger generations (especially those with unstable careers), and to future income shocks (section 5).

2. Italy's saving rate from an international perspective

Historically, Italy has exhibited a high saving rate compared to other industrialized nations. Table 1 reports household saving rates for the main European countries, Japan, and the United States, and shows that in 1980 Italians saved 25 percent of their disposable income. The saving rate remained high until 1990 when Italy was ranked first in international comparisons. During the 1990s, the gap between Italy and other OECD countries narrowed considerably, and in 2010 almost vanished. In 2014, Italy was ranked third in international comparison, after France and Sweden, with a saving rate almost in line with the European average (10 percent vs. 8.6 percent), although still considerably higher than in the U.S. and Japan.[1]

Figure 1 compares Italy's saving rate in the last three decades calculated using national accounts data (from 1980 to 2012), with the propensity to save computed using Bank of Italy SHIW data (for 1984 to 2012).[2] Up to the early 1990s, this long period was characterized by high inflation and increasing public debt, followed by financial market innovations, and integration of international financial markets, culminating with adoption of the euro, several pension reforms, and most importantly, slowing economic growth and the great recession.

The long-term trends present in the microeconomic data (whether average or median propensity to save) confirm the drop in saving observed in the aggregate data. Although the year-to-year fluctuations observed in the microeconomic data only partly match the aggregate dynamics, SHIW data appear to be a useful tool to analyze the microeconomic consequences of Italy's macroeconomic developments.

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[1] The household saving rate is the ratio of saving to household disposable income. Most countries report household saving as the difference between gross saving and consumption of fixed capital. In most countries "household" refers to the household sector and non-profit institutions serving households. Data and definitions from the OECD Economic Outlook.

[2] In the National Accounts household saving is defined as gross saving divided by gross disposable income, the latter adjusted for changes in households' net equity in pension funds reserves (Source: Istituto Nazionale di Statistica - ISTAT). The aggregate saving rate in the SHIW is computed as the ratio of total private saving to total disposable income.

Our microeconomic data span the 1984-2012 period. During this period, Italy suffered three recessions: the first in 1992-93, the second from the last quarter of 2001 to 2003, and the third in 2008-09 (with an overall GDP drop of more than 6 percentage points). During the sample period the unemployment rate increased steadily until 1997 (from 7.1% in 1980 to 11.3% in 1997), declined in the second half of the period (reverting to about 7% in 2006), and increased again after the Great Recession. Throughout the 1990s and 2000s, the Italian economy was characterized by slow or even negative productivity growth.

Among the relevant institutional changes that impacted on the macroeconomic background were two major pensions reforms (the 1992 *Amato* reform and the 1995 *Dini* reform, both named after the prime ministers who signed them into law), aimed at reducing the imbalance in the social security system induced by the progressive aging of the population, labor market reform that tended to make employment contracts more flexible, and the process of banking reforms and financial liberalization preceding accession to the Euro area in 1999.

International panel data suggest that saving is strongly correlated with the growth rate of income, and that saving changes go hand-in-hand with changes in the rate of growth of GDP, as shown by Attanasio et al. (2000) using the 150 countries in the World Bank Saving Database. Modigliani's life-cycle model can be used to explain this correlation. According to that 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 saving by active workers compared to negative saving among the elderly, thereby increasing aggregate saving. The transitional dynamics of the Solow growth models, and models based on endogenous growth, also suggest a positive relation between saving and growth. Therefore, the productivity slow-down of the last three decades is the primary explanation for the fall in Italy's saving rate.

In addition to the productivity slow-down, the last few decades have been characterized by several developments often suggested as explanations for the decline in saving: the pervasive borrowing constraints and imperfections of insurance markets followed by their liberalization in the 1990s, the transition to an unfunded and increasingly generous social security system in the late 1960s and 1970s, the quite spectacular drop in fertility, and the increasing tax pressures associated with the accumulation of public debt (Jappelli and Pagano, 2000).

These features have been emphasized by different empirical studies. Observing that the decline in the aggregate saving rate started in the late seventies, following the period of high and sustained growth in 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.

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 in the 1980s. Attanasio and Brugiavini (2003) and Bottazzi et al. (2006) compare saving behavior before and after the three pension reforms in the nineties (1992, 1995, 1998), observing that saving rates did not rise after the reforms, a lag likely to be due to sluggishness in individual decisions to 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 that occurred in the nineties (Guiso et al., 1992; Jappelli and Pagano, 2000; Casolaro et al., 2006).

Jappelli and Pistaferri (2010) report that changes in indexation clauses and labor market institutions have had a deep effect on labor wage dynamics and labor market relations; in this respect the early 1990s represents a turning point away from policies favoring wage compression and reduction of inequalities towards policies associated with widening income disparities and greater wage instability.[3] In principle, greater job insecurity could be expected to increase the incentive to save for precautionary reasons, and to buffer temporary income shocks. However, this effect is tempered by social insurance, and especially (in the Italian context) by family networks. For instance, Bentolila and Ichino (2008) find that an increase in the duration of unemployment spells of male household heads is associated with small consumption losses in countries such as Italy and Spain, where extended family networks provide an important source of insurance against unemployment, despite relatively low coverage of social insurance and relatively low development of financial markets.

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[3] As noted by Jappelli and Pistaferri (2010) "in the earlier period (1975-91) labor markets were tightly regulated, and wage indexation granted the same absolute wage increase to all employees in response to price changes. The second, more recent period starts with abolition of the indexation system in 1992, and extensive labor market reforms aimed at increasing the degree of flexibility of the labor market."

It should be noted that a large portion of the decline in saving occurred during the process of European financial market integration, which was accompanied by growth of the consumer credit and mortgage markets, the two financial markets linked more directly to households' ability to smooth income fluctuations. Historically, the Italian mortgage and consumer credit markets were severely limited by regulation, judicial inefficiency and high enforcement costs. Chiuri and Jappelli (2003) document that the cost of mortgage foreclosure, the length of trials, and judicial inefficiency in Italy are higher than in countries with similar levels of financial development.[4] Also, Casolaro et al. (2006) stress that, compared to other countries, Italy features a lower level of social capital and trust, which affects financial transactions.

Despite the small size by international standards of Italian mortgage and consumer credit markets, the process of European financial integration and the associated fall in interest rates have considerably increased households' incentives to borrow. Furthermore, financial integration has spurred increasing competitive pressure, reducing the cost of debt and increasing the supply of loans. Jappelli and Pistaferri (2011) show that the household debt to GDP ratio more than tripled from the early 1980s to 2006. They point out that national regulatory changes played an important role with the removal of regulations on entry, limits on the geographical span of lending, and separation of long and short-term lending. Specific mortgage regulation has also eased considerably, while loan maturities and loan-to-value ratios have gradually increased. The development in the mid-1990s of a credit reporting system and credit scoring techniques improved the quality of information on prospective borrowers, benefiting the performance of household debt markets. In short, although the household debt market still lags behind other industrialized nations, it has grown at double digit rates, especially around and after the 1999 introduction of the euro, and might have played a relevant role in explaining the reduction in the propensity to save.

Finally, since the seventies, Italy has undergone a rapid demographic transition. On the one hand, there has been accelerated aging of the population due in part to an increase in life expectancy, and in part to a dramatic fall in the total fertility rate (from 2.4 in 1970 to 1.3 in

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[4] A further reason for the relatively thin mortgage and consumer credit markets is the presence of informal arrangements and various forms of intergenerational transfers (bequests, *inter vivos* transfers, help for down payment or outright purchase, free housing or co-residency), that partly overcome borrowing constraints and reduce the need for mortgage credit.

most recent years).[5] However, the demographic transition has also affected the structure of the population, inducing dramatic changes in family size and composition. In 1980 couples represented about 85 percent of all household types, today this has fallen to about 70 percent. The decline is accounted for almost exclusively by a decline in the proportion of couples with children. In direct contrast, the proportion of single households has tripled from 6 percent in 1980 to almost 20 percent in the most recent years.

Each of these demographic changes has had a deep effect on household saving and its dynamic over time. For example, there are economies of scale in consumption, such that a household's consumption is not simply the sum of its individual members' consumption. Households with multiple earners can pool income risks, providing insurance and reducing the need for precautionary saving. The increase in longevity should also increase retirement saving if retirement age does not adjust in proportion. The decline in fertility might reduce the incentives to save for bequests and other intergenerational transfers, but might also prompt more saving for retirement since the elderly will not be able to rely on their children to support their consumption. We regard future research on these themes as crucial to understand the dynamics of household saving in Italy. The research is challenging, because demographic effects on saving depend on households' preferences, institutional constraints and resources, and are difficult to identify even with good panel data on income, consumption and wealth.

3. Microeconomic evidence

In this section we try to shed light on some of the trends in the saving rate in Italy by 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 2012, and to distinguish general trends from the saving behavior of specific population groups. Information on the survey and definition of the variables is reported in the Appendix.

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[5] The total fertility rate is defined as the sum, over the reproductive life, of the age specific fertility rate. The age specific fertility rate is the average number of children per women at each age. Data and definitions from Istituto Nazionale di Statistica (ISTAT).

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 be negative for two types of households: those running down assets (experiencing a decrease in wealth), and those unable to finance consumption with current resources which are forced to 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, e.g. 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. Nonetheless, debt represents 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 unable to borrow are even more exposed to the effects of negative income shocks. We take the proportion of households that have no access to formal credit markets as an indicator of credit constraint. This includes households that applied for a mortgage loan or consumer credit the year before the interview, and whose application was rejected, and also households that did not apply because they thought that credit would not have been granted. It should be noted that access to credit markets depends not only 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 2 plots the propensity to save, the proportion of households with negative saving, the proportion of households with debt, and the proportion lacking access to credit for every

disposable income quartile from 1984 to 2012.[6] Figure 2 shows that the households at the bottom of the income distribution are those that 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.[7]

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

Figure 2 suggests that low-income households are also less well-off economically and financially since they may not save enough for retirement; also, they encounter greater 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, employment, age and geographical location. Education affects earnings and also familiarity with financial instruments and pension rules. Figure 3 relates the three indicators of household head's education: college degree, high school diploma, and compulsory education. The propensity to save is positively related to education, and that the proportion of households with negative saving decreases among college and high school graduates. Moreover, the proportion of households with debt is 10 percentage points higher among households where the household head has a college degree, compared to household heads who completed only compulsory education. Figure 3 suggests that debt is more prevalent among households headed by high-school and college graduates, and shows

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[6] Saving is defined as household disposable income (including imputed rents) less total consumption expenditures (including imputed rents). The life-cycle hypothesis posits that saving is positive for young households and negative for the retired, so that wealth should be hump-shaped. Yet, if one looks at the microeconomic evidence on saving by age, dissaving by the elderly is limited or absent. But the saving measures usually computed on cross-sections or panel data are based on a concept of income that does not take into account the presence of pension arrangements. In fact, disposable income treats pension contributions as taxes, and pension benefits as transfers. But since contributions entitle the payer to receive a pension after retirement, contributions should be regarded as life-cycle saving and hence included back to income.

[7] Other empirical studies find a positive relationship between saving and income, see Dynan et al. (2004). This relation could be due to people with low transitory income buffering income fluctuations by reducing assets, or due to financial market imperfections, preferences, or a bequest motive in the upper income levels.

also 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 economic and financial points of view.

Figure 4 plots our four indicators by household head's employment type. It suggests that public employees have a higher propensity to save than private employees and self-employed people. A priori the relation between employment and saving is not obvious. On the one hand, the self-employed have more risky incomes, and therefore higher precautionary saving. On the other hand, public and private employees receive higher incomes which tend to be associated with a higher propensity to save.

There are no significant differences among employment groups if we consider the proportion of households with negative saving. In relation to the proportion of households with debt, and the proportion of credit constrained households, there is a persistent gap between employee and self-employed. In fact, in 2012 the proportion of households with debt was around 25 percentage points higher among households where the household head was an employee compared to self-employed household heads. Furthermore, the gap between public employees and private employees peaked in 2008, suggesting that during the Great Recession public employees relied more heavily on debt to smooth income fluctuations.

Figure 5 depicts the selected financial indicators for four household head age groups: 30 to 45 years, 46 to 55, 56 to 70, and over 70 years of age. Figure 5 suggests that households headed by younger adults have the lowest propensity to save over the entire period. Moreover, the proportion of households with negative saving is 10 percentage points higher among households whose head is aged below 45 years compared to those aged between 46 and 55 years. Credit constrained households tend to be younger, and households headed by younger adults appear to be the most indebted (40% of households with heads younger than 45 are indebted).

Households' financial situations vary also by region of residence. Figure 6 indicates that saving is higher in Northern and Central Italy, while the proportion of households with negative saving is higher in the South and increased during the Great Recession. The proportion of households with debt is larger in the Center and North of Italy. In most years, the proportion of credit constrained households is higher in the South and Center, but recently the gap has closed, and the fraction of households denied credit is similar across Italian regions.

Figure 2 reveals that the propensity to save reduces gradually in 1984 to 2012 across the entire income distribution. Similarly, figures 3, 4, 5 and 6 show that the propensity to save falls for all households, regardless of the household head's educational level, employment type, age or region of residence. The proportion of households with negative saving increased sharply (by 10 percentage points) after the 1992-93 recession and the most recent financial crisis. Interestingly, the increase in the proportion of households with negative saving is particularly large during downturns, in the South, among households with compulsory education and employed in public sector.

The proportion of households with debt exhibits cyclical behavior, with humps and bumps varying across groups. The proportion of households with debt has two peaks, following the two largest recessions in our sample (1992-93 and 2008-09). The first peak is particularly pronounced for households in the Center and the South, while during the 2008 Great Recession the propensity to borrow increased quite strongly in the lowest income quartile. The peaks associated with these recessions suggest that debt was used, at least in part, to smooth income fluctuations.[8]

The effect of income shocks is visible also in the inequality dynamics, which rose sharply after the 1992-93 recession (Boeri and Brandolini, 2004). More recently, Brandolini (2014) show that the impact on inequality of the Great Recession was fairly limited since the crisis affected households across the entire income distribution.

In general, the evidence shows a reduction in the proportion of credit constrained households up to 2004, suggesting that before the Great Recession access to credit improved gradually over time, as did households' capacity to use debt to buffer negative income shocks. Between 2004 and 2008, there seems to have been an increase in the proportion of credit constrained households across the entire income distribution, with more than 6 percent of low-income households remaining constrained up to 2012.

Table 2 merges all surveys from 1989 to 2012, and summarizes the evidence relating the four indicators of economic and financial wellbeing to the dummies for income quartile, education, area of residence, type of employment, group defined by household head age, and time dummies (not reported). The regression results confirm the descriptive evidence. In particular, saving and debt are positively associated with income, households headed by

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[8] Cristaudo et al. (2014), using administrative data, show that the composition of borrowers has also changed during the recession, with a reduction of the number of relatively large loans and an increase of small borrowers.

younger adults show lower saving rates and a higher propensity to borrow, credit constrained households tend to be younger and have relatively lower levels of education.[9]

The drop in the propensity to save, the increase in the proportion of households with negative saving, the increase in the fraction of borrowers and of credit constrained households observed during the sample period, prompt two questions: (1) Are Italians over-indebted? (2) Are they saving enough for retirement and future emergencies? In turn, these questions raise the issue of which social groups are most vulnerable from a saving and debt perspective.

4. Are Italians over-indebted?

It is only in recent times that Italians began to use debt to finance consumption, to purchase a home or other durable goods. Although the mortgage and consumer credit markets are still small relative to other industrialized nations, those markets have grown at double digit rates since the early nineties.

Over-indebtedness is of interest because of its potential effect both on the society as a whole and on the stability of the financial system. While the definition of over-indebtedness (households accumulate more debt than they can repay) is widely accepted and intuitive, in practice it is difficult to measure, and to identify households in such a condition. Over-indebtness may arise not only from poor financial decisions and poor understanding of the terms of the loan contracts but also might be the consequence of unforeseen events such as income shocks, unforeseen medical expenses, unexpected variations in the cost of credit. There is no consensus in the literature on how to measure over-indebtedness, and recent studies have tended to converge towards a common set of indicators.

D'Alessio and Iezzi (2013) review the main measures of over-indebtedness used in the literature, and calculate some of them using the SHIW. The most common measures compare debt amounts to total assets and income, the interest burden relative to household income, the number of loans and arrears, and the fraction of households reporting it difficult to make ends meet. Each of these indicators can be constructed using SHIW data, and each has advantages

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[9] Since we use quartile income dummies defined for each survey year, we implicitly adopt the concept of relative poverty. We could have considered the dynamics of the propensity to save above or below given levels of income, adopting a concept of absolute poverty.

and disadvantages. D'Alessio and Iezzi conclude that, in 2010, according to the five most popular objective indicators, whereas about 8 percent of households are over-indebted according to at least one indicator, no more than 2 per cent are over-indebted according to two indicators simultaneously.

We focus on two indicators provided by the survey: households reporting making ends meet "with difficulty" or with "great difficulty", and households in arrears for more than three months for repayment of a credit commitment. In 2008 the fraction of households in arrears was 0.9 percent of the total sample (1.2 percent in 2012). Focusing on the sample of indebted households, the fraction increased from 3.4 in 2008 to 5.3 in 2012.

Figure 7 plots the ratio of indebted households more than three months in arrears on a credit commitment, from 2008 to 2012 (the only surveys for which the indicator is available). Figure 7 shows that arrears are clearly associated with income: in the lowest income quartile the fraction of households with arrears is around 10 percent, and is 8 percent in the second quartile. Arrears are also more prevalent among young households (household heads born after 1970), and those with lower education. There is also an association between arrears and private sector employees which might reflect not only a higher propensity to default in this group but also that credit is more easily obtained by employees relative to self-employed for whom it is more tightly rationed.

More disaggregated data that distinguish between consumer credit and mortgage loans, are not available in the SHIW. The European Community Household Panel distinguishes between arrears on consumer credit and on mortgage liabilities. Jappelli et al. (2013) 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 suggest that in Italy default risk, at least in the pre-crisis period, was small. On average, before the crisis, in Europe the proportion of households guilty of late mortgage repayments was about 3 percent, and the proportion responsible for late consumer loans repayments was 5 percent. The same numbers for Italy were 1 and 1.5 percent, respectively.

Judged by either international comparison or historical trend, the problem of over-indebtedness fueling economic and social policy debate in the European Union, does not seem to have been particularly acute in Italy.[10] However, in recent years the difficult economic

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[10] Chmelar (2013) constructs a comprehensive measure of household debt that includes mortgage debt, and secured and unsecured consumer credit. The paper reports dramatic variation across

conditions associated with the 2007/8 crisis have resulted in a growing number of households experiencing difficulty managing debts. This involves the existence of a non-trivial number of Italian households with late payments and financial problems, as suggested by the SHIW data.

As an overall measure of financial distress, the survey allows the proportion of households that declare being unable to "match monthly expenses with current income" to be computed; this indicator is closely related to households' ability to repay debts at their natural maturity.[11]

Notice that cross-sectional data do not distinguish whether households' financial problems originate from permanent or transitory shocks. Only the first case is a situation of significant and persistent financial risk which debt burden could amplify. To establish whether financial problems are persistent, the panel component of the SHIW can be used and transition matrices constructed for the persistence of financial distress. Table 3 reports two such matrices, one for 2004 and 2006 (upper panel) and the second for 2010 and 2012 (lower panel).

In the upper panel the numbers in the first row refer to percentages of households and the degree of difficulty or ease in matching monthly expenses with disposable income in 2004, ranging from "great difficulty" (column 1), "difficulty" (column 2), "some difficulty" (column 3), "relatively easy" (column 4), "easy" (column 5) and "very easy" (column 6) in 2006. The last column reports the overall percentage of households matching monthly expenses with disposable income "with great difficulty" in 2004. The second to sixth rows are defined similarly. The lower panel in Table 3 presents the transitions between 2010 and 2012.

The main diagonal in each of the two matrices in Table 3 displays the fraction of households reporting the same answer in both years; off the main diagonal shows the fraction of households whose answers differed between the two years. The closer to 100 the average of the main diagonal elements, the more persistent the financial distress.

Comparison between the last column in the upper panel and the last row in the lower panel shows that the fraction of households declaring "great difficulty" increased by 5

countries of the ratio between debt and GDP as well as the growth rate of the ratio. Before the crisis, the overall stock of household debt in the EU expanded almost threefold, while in countries with significant real-estate expansion, such as Ireland and Spain, the debt increased as much as six fold. In 2012 the average EU debt-GDP ratio was around 100 percent while in Italy household debt is still relatively low (around 60 percent of GDP), and has grown relatively smoothly even during the crisis.

[11] The survey asked: Does your household income allow you to match monthly expenses with great difficulty, difficulty, some difficulty, some ease, ease, or great ease?

percentage points, from 12 percent in 2004 (upper panel) to 17 percent in 2012 (lower panel), while the fraction reporting "difficulty" increased by 3 points over the same period. Overall, households reporting "great difficulty" or "difficulty" increased from 25 percent in 2004 to 33 percent in 2012. The first cell in the two matrices in Table 3 indicates that 50 percent of households reported experienced "great difficulty" in both 2004 and 2006, and 56 percent reported "great difficulty" in both 2010 and 2012.

This suggests that a significant and rising fraction of households experiences persistent financial problems. A non-trivial fraction of households experience temporary financial distress; for instance, 29 percent reported "some difficulty" in matching monthly expenses with current income in 2010, while in the following survey, 20 percent reported it being relatively easy to match monthly expenses with income.

5. Do Italians save too little?

Although the problem of over-indebtedness would still appear limited, the pension reforms during the 1990s substantially reduced future benefits, particularly for individuals with only a few years of contributions because they entered the official labor market late, or had long spells of unemployment. The pension reforms pose a saving-related question which is at the forefront of discussions on social and economic policy, i.e. are Italians saving enough to offset the fall in benefit implied by the new pension regime?

Until 1992 the Italian social security system featured high replacement rates (first pension benefit to last income ratio), earnings-based benefits, indexation of pensions to real earnings and cost of living, generous provision for early retirement, and a large range of social pensions (i.e. old-age income assistance). This resulted in the ratio of pension benefits to GNP reaching almost 16 percent in 1992, the highest value among the industrialized countries. The high pension benefits burden on the state budget prompted two major pension reforms (in 1992 and 1995), followed by several other interventions (the most recent being the Fornero reform implemented in 2012). The main features of these reforms are a substantially older retirement age and substantially higher minimum years of contributions for pension eligibility, abolition of seniority pensions for all those starting to work after 1995, and a new formula to compute benefits. While under the old regime pensions were linked to final

years of earnings, and could easily replace 80 percent of the last salary for private employees, the new regime links pensions to contributions over the entire life-cycle. Furthermore, under the new regime the formula used to compute social security benefits depends on a moving average of the GDP growth rate and is adjusted to take account of trends in life expectancy. Overall, the series of pension reforms has substantially reduced social security replacement rates, affecting especially young cohorts.

To offset a reduction in future pensions, private saving or retirement age must rise. Workers that do not increase saving after a benefit-shrinking reform face a higher risk of being poor in retirement, when earnings cease. The risk is particularly high for those who entered the labor market after the 1995 Dini reform, and those with discontinuous jobs. Therefore, although lower saving rates are not necessarily associated with current poverty, they signal a potential risk of future poverty which could materialize after labor market exit if pension benefits fail to finance consumption adequately.

Workers choose how much to save for retirement, and how long to work, on the basis of expected social security wealth which depends on the number of years they expect to contribute to the social security system, the wage dynamics, and the benefits they expect to receive. Therefore, it is important to understand to what extent individuals overestimate (or underestimate) their pension entitlements.

SHIW data allow estimation of the expected retirement age and the expected replacement rates that individuals rely on for their future, and allow us to check whether expectations are in line with the replacement rates and retirement age implied by the current pension regime. Figure 8 reports the expected retirement age for private employees, public employees, and self-employed. Between 1989 and 2102 the expected retirement age increased by about 5 years for all groups considered, partially offsetting the need for retirement saving. However, expectations are lower than the likely retirement age that will apply to future generations (between 68 and 70 in 2030 and beyond).

Figure 9 plots the expected replacement rate of private employees, public employees, and self-employed from 1989 to 2012. For private sector employees and the self-employed expected replacement rates fall by about 20 percentage points compared to 15 points for public employees. Figure 10 focuses on the youngest cohort, born after 1970 and entering the labor market after 1995, and therefore not observed before the reform. Given the high

unemployment rates and the prevalence of temporary contracts among the young, this cohort is exposed to high pension risk (Guiso et al., 2013).

To assess how the history of contributions affects future pensions, we compute the "statutory"[12] replacement rates of a worker born in March 1970, retiring in 2038 at the age of 68, for various years of contributions and employment groups (public employees, private employees, self-employed).[13] Workers with 25 years of contributions should expect a replacement rate between 28 percent (self-employed) and 47 percent (public employees). Replacement rates gradually increase with years of contributions, and reach 73 percent for public and private employees with 40 years of contributions (44% for self-employed), suggesting that unemployment spells and irregular labor contracts have major impacts on the welfare of future retirees.

Figure 10 investigates the issue of discontinuous careers. It plots replacement rate against years of contribution for private and public employees and self-employed. It shows that for each lost year of contributions the replacement rate falls by 1.7 percentage points in the case of private and public employees, and by about 1 percentage point for self-employed.

In 2012 the replacement rate expectations depicted in Figure 11 are broadly in line with the statutory replacement rates implied by the current pension regime: self-employed individuals can expect a replacement rate of about 53 percent, private employees about 60 percent and public employees about 64 percent. Note however that the expected retirement age (65) is well below the 68-69 years that will apply to future retirees. Furthermore, during the last 15 years, expectations have been very optimistic, and young generations may have accumulated an insufficient amount of wealth to sustain their future consumption. The problem is compounded for those with irregular jobs, discontinuous careers, and spells of unemployment not covered by social security contributions. Therefore, the adequacy of resources to finance post-retirement consumption is likely to be an important issue for many individuals.

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[12] By "statutory" replacement rate we mean the replacement rate that will apply, under plausible assumptions, to future retirees according to the rules of the contributions-based pension regime.

[13] To compute replacement rates we use the pension accrual formula of the current pension regime, assuming an inflation rate of 2 percent and a real GDP growth rate of 1.5 percent. Retirement age is set at 68, and the rate of growth for salaries to 2% per year. Assuming a lower salary growth rate increases the replacement rate, while assuming a lower GDP growth rate reduces the replacement rate. Guiso et al. (2013) provide more details on how changes in GDP and salary growth affect replacement rates.

Furthermore, statutory replacement rates reported in the text are based on the assumption that real GDP growth will be 1.5 percent per year up to retirement, while lower growth rates will translate into lower replacement rates. Comparing expectations with the rules of the current pension regime suggests that to address a potential problem of adequacy of saving, improved quality of pension information is also crucial, particularly for the youngest cohorts and for women, for whom the probability of discontinuous job careers and unemployment is particularly high, and the gap between expected and statutory replacement rates the most pronounced (Bottazzi et al., 2006).

6. Conclusions

Although Italy continues to rank above most other countries in terms of saving, the propensity to save has progressively decreased since the early nineties, and is now 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 allowed us to identify groups with the highest propensity to borrow, revealing that debt and income are positively correlated. The current rise in households' liabilities is not a cause for especial concern. In international comparison, the level of debt and default risk among Italian households 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 household impoverishment or enrichment. However, saving is an indicator of the future ability to face income shocks, particularly when income falls due to foreseen or unexpected events. In light of the deep changes made to the Italian pension system, the fall in saving is indeed a concern. The pension reforms imply that the post-retirement fall in income will no longer be matched by government transfers and generous pensions.[14] The issue of the adequacy of saving therefore, particularly affects individuals who entered the labor market after the 1995 reform and who have experienced the largest decline in pension wealth.

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[14] A related issue, not explored in the paper, is that health risks also increases the probability that saving will not be sufficient to finance expenditures after retirement.

Appendix

The SHIW covers a representative sample of the Italian resident population. The sample design is similar to the Labour Force Survey conducted by ISTAT (the Italian national statistics agency). Sampling is carried out in two stages: the first covers the selection of municipalities, the second the selection of households. Municipalities are categorized into 51 strata, defined by 17 regions and 3 classes of population size (over 40,000, 20,000-40,000, less than 20,000). All municipalities in the first group are included; those in the second and third groups are selected randomly with a probability proportional to their population size. In the second stage households are selected randomly from registry office records. Data are collected through personal interviews. Questions concerning the whole household are addressed to the household head or the person most knowledgeable about the family's finances; questions on individual incomes are answered by the individual household members wherever possible. The unit of observation is the family which is defined as including all persons residing in the same dwelling who are related by blood, marriage or adoption. Individuals described as "partners or other common-law relationships" are also treated as family.

Consumption is the sum of durables and non-durables expenditure; the latter includes imputed rents from owner-occupied housing. SHIW includes only a few questions on consumption. Non-durable goods except food are included in a broad question on average monthly expenditure on all items except a few listed durable goods; there is also a question on monthly expenditure on food only. Battistin et al. (2003) assess the quality of this expenditure data for 1995 with data from the corresponding diary based survey run by the Italian National Statistical Institute (ISTAT). They find that recall expenditure questions do not suffer from excessive item non-response, or at least display similar item non-response to recall questions on household income or earnings. Also, the degree of difficulty experienced by respondents in answering such questions varies with the characteristics of the respondent. Finally, the recall total expenditure questions encompass considerable heaping and rounding. This is a familiar problem and there are ways of dealing with it; so for most analyses this is a relatively minor difficulty (Heitjan and Rubin, 1990).

Earnings. Earnings are the sum of wages and salaries and self-employment income, less income taxes. Wages and salaries include overtime bonuses, fringe benefits and payments in kind, and exclude withholding taxes. Self-employment income is net of taxes and includes income from unincorporated businesses, net of depreciation of physical assets. Capital income includes imputed rents for owner-occupied housing.

Disposable income. Disposable income is the sum of household earnings, transfers, pension benefits, capital income and income from financial assets, net of taxes and social security contributions. Validation studies report that disposable income is under-reported by 25 percent with respect to national accounts data, while consumption is under-reported by 30 percent.

Liabilities. Liabilities is the sum of mortgage and other real estate debt, consumer credit, personal loans and credit card debt.

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Table 1.
The household saving rate: an international comparison

	1980	1990	2000	2010	2014
Austria	13.3	12.4	9.3	8.9	8.5
Belgium	14.7	12.5	12.5	9.9	9.6
Denmark	.	1.2	-4.0	0.0	-1.4
Finland	2.3	1.7	0.5	3.6	1.2
France	18.3	12.7	14.3	16.0	15.4
Germany	.	.	9.4	10.9	9.8
Italy	25.0	25.5	12.4	9.4	10.0
Netherlands	11.3	18.1	6.9	3.3	4.7
Norway	3.1	2.7	4.3	5.6	8.7
Spain	12.3	13.5	11.1	13.9	8.9
Sweden	9.7	1.3	3.1	8.3	11.7
United Kingdom	13.5	8.6	4.6	7.3	5.5
Japan	16.1	14.2	7.3	2.0	0.6
United States	10.6	7.8	4.0	5.6	4.4

Note. The household saving rate is the net saving rate of households and non profit institutions as a percentage of household disposable income. Saving definitions reflect also differences in the individual country definitions. Source: Cesifo-Dice, OECD Economic Outlook and ISTAT.

Table 2.
Determinants of saving and debt: regression analysis

	Propensity to save	Negative saving	Household with debt	Household with credit constraints
	(1)	(2)	(3)	(4)
II income quartile	2.248***	-0.147***	0.055***	-0.007***
	(0.707)	(0.002)	(0.005)	(0.001)
III income quartile	2.451***	-0.212***	0.097***	-0.010***
	(0.739)	(0.002)	(0.005)	(0.001)
IV income quartile	2.426***	-0.263***	0.129***	-0.012***
	(0.805)	(0.002)	(0.005)	(0.001)
Secondary school	0.000	0.028***	0.005	-0.007***
	(0.622)	(0.003)	(0.003)	(0.001)
College	0.013	0.019***	-0.026***	-0.011***
	(0.950)	(0.006)	(0.004)	(0.001)
Center	0.383	0.005	0.023***	-0.003**
	(0.650)	(0.004)	(0.004)	(0.001)
South	0.898	-0.022***	-0.003	-0.003***
	(0.575)	(0.003)	(0.003)	(0.001)
Age 46-55	1.141	-0.023***	-0.040***	-0.008***
	(0.719)	(0.003)	(0.003)	(0.001)
Age 56-70	3.200***	-0.095***	-0.117***	-0.018***
	(0.794)	(0.003)	(0.003)	(0.001)
Age >70	4.355***	-0.158***	-0.209***	-0.033***
	(0.932)	(0.003)	(0.003)	(0.001)
Private employees	2.783***	-0.009**	0.060***	0.002
	(0.754)	(0.004)	(0.004)	(0.002)
Public employees	2.200**	0.077***	0.076***	0.009***
	(0.923)	(0.006)	(0.005)	(0.002)
N. Observations	87,279	87,279	87,279	87,279

Note. The table reports estimated coefficients and standard errors (in parenthesis) of a regression of the household saving rate, the probability that a household has negative saving, positive debt, or has been denied credit. Each regression refers to 1989-2012, and includes a full set of 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 matrices of the indicator of financial distress

Year 2006	Great difficulty	Difficulty	Some difficulty	Relatively easy	Easy	Very easy	Total
Year 2004							
Great difficulty	49.56	23.25	19.96	6.80	0.22	0.22	11.52
Difficulty	22.24	28.14	36.50	10.46	2.09	0.57	13.29
Some difficulty	10.07	17.70	45.41	22.46	3.88	0.48	37.13
Relatively easy	2.86	6.57	28.45	47.31	12.29	2.53	30.02
Easy	1.12	2.60	12.27	49.07	28.25	6.69	6.79
Very easy	0.00	0.00	14.29	40.82	24.49	20.41	1.24
Total	13.34	15.14	33.56	28.56	7.66	1.74	100
N. observations	528	599	1,328	1,130	303	69	3,957

| Year 2012	Great difficulty	Difficulty	Some difficulty	Relatively easy	Easy	Very easy	Total
Year 2010							
Great difficulty	56.08	23.56	16.41	3.34	0.61	0.00	14.27
Difficulty	25.85	29.26	36.22	7.81	0.85	0.00	15.27
Some difficulty	13.80	18.25	44.81	20.40	2.52	0.22	29.26
Relatively easy	2.97	6.89	28.86	47.79	11.17	2.32	29.91
Easy	1.31	3.15	17.32	44.88	27.03	6.30	8.26
Very easy	1.42	1.42	9.22	39.72	26.24	21.99	3.05
Total	17.02	15.53	31.32	26.85	7.33	1.95	100
N. observations	785	716	1,444	1,238	338	90	4,611

Note. The table reports the transition matrices 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 2004-06 and 2010-2012 SHIW.

Figure 1.
Household saving rate in the national accounts and in the survey data
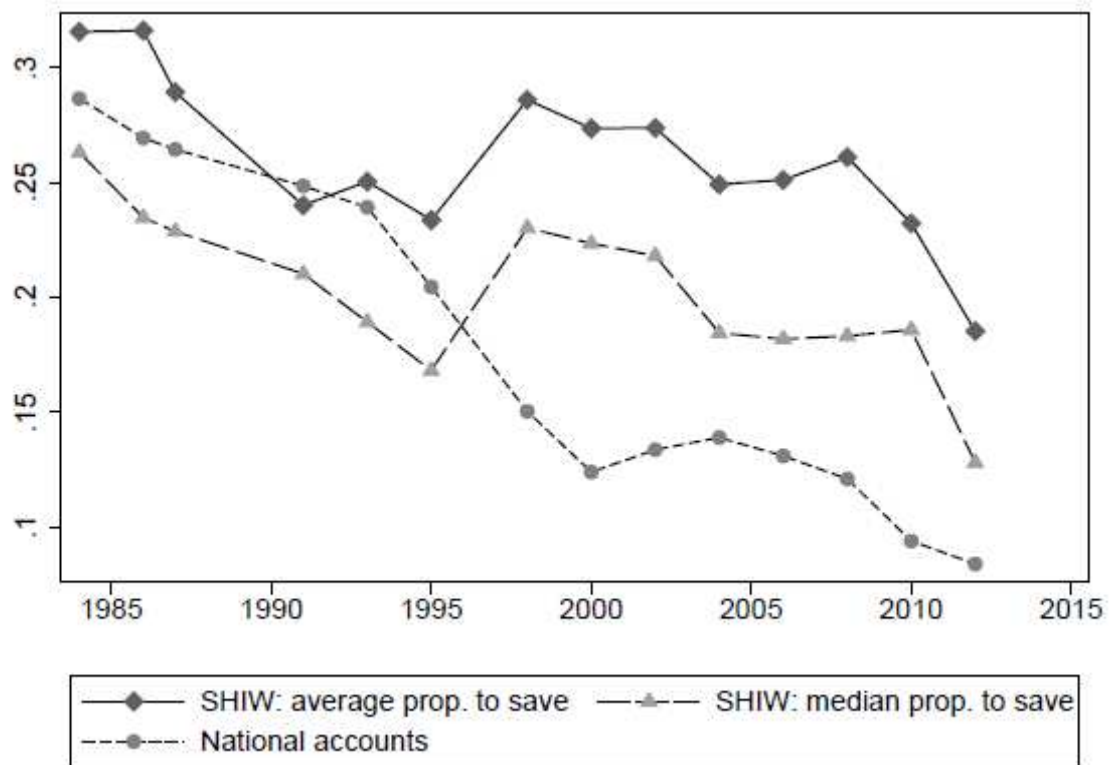

Note. The figure plots the national accounts' propensity to save and the average and median propensities to save in the Bank of Italy's SHIW.

Figure 2.
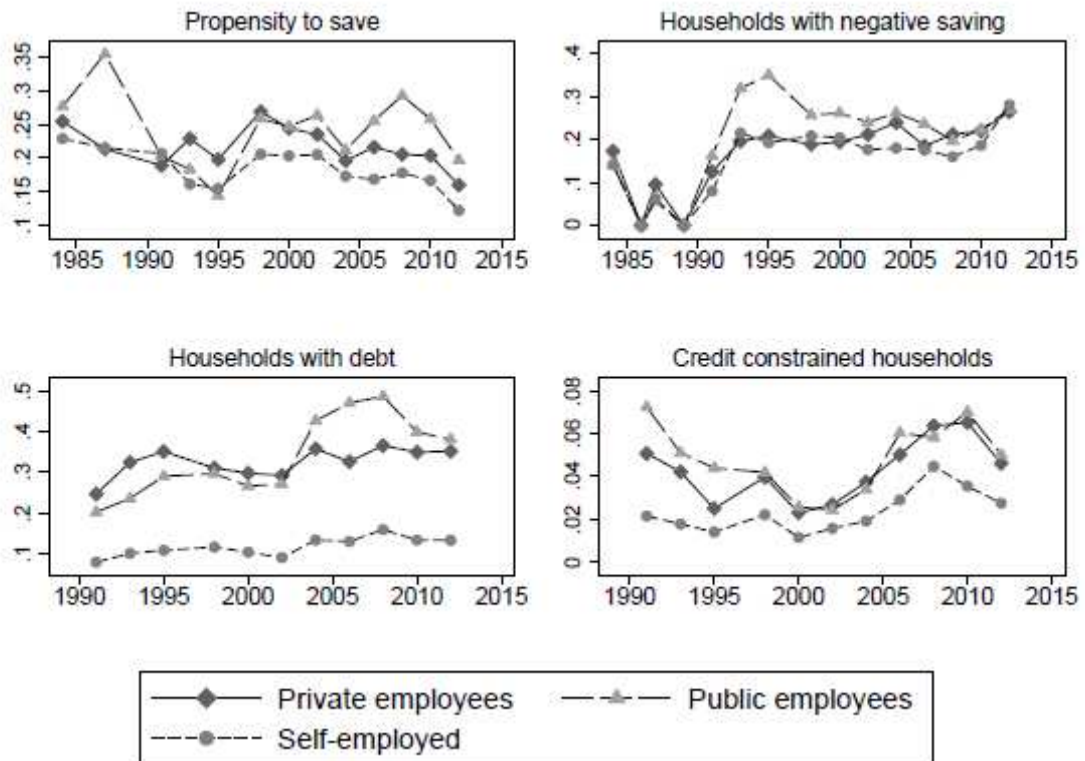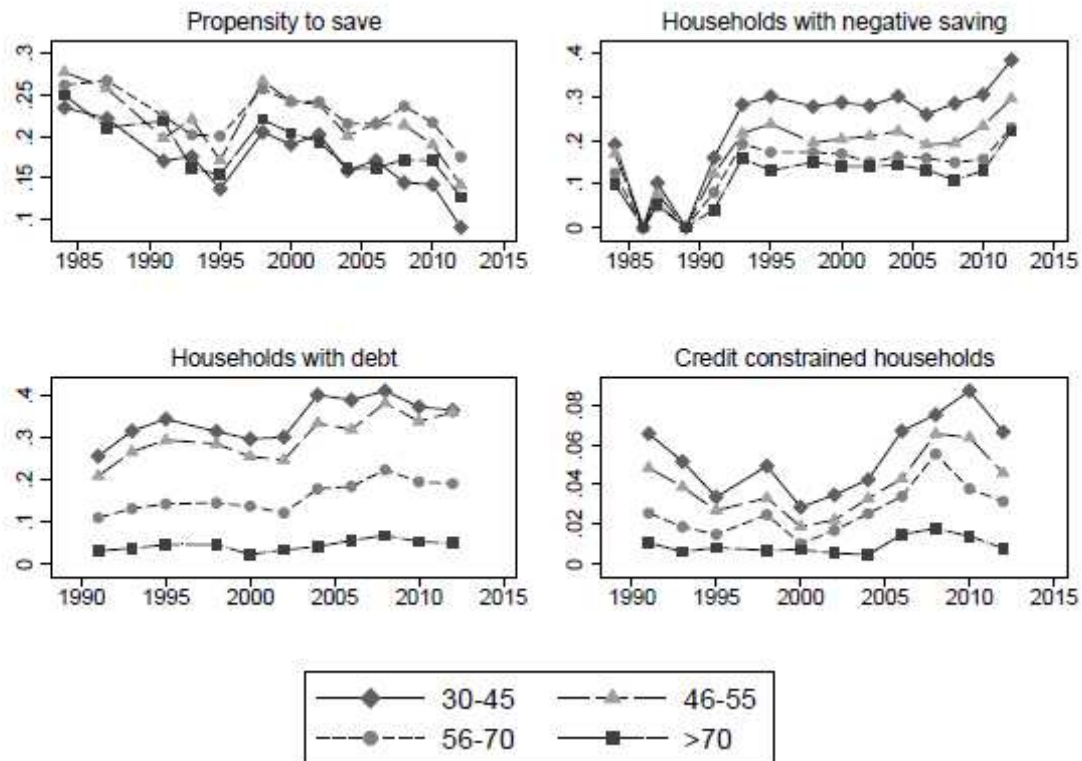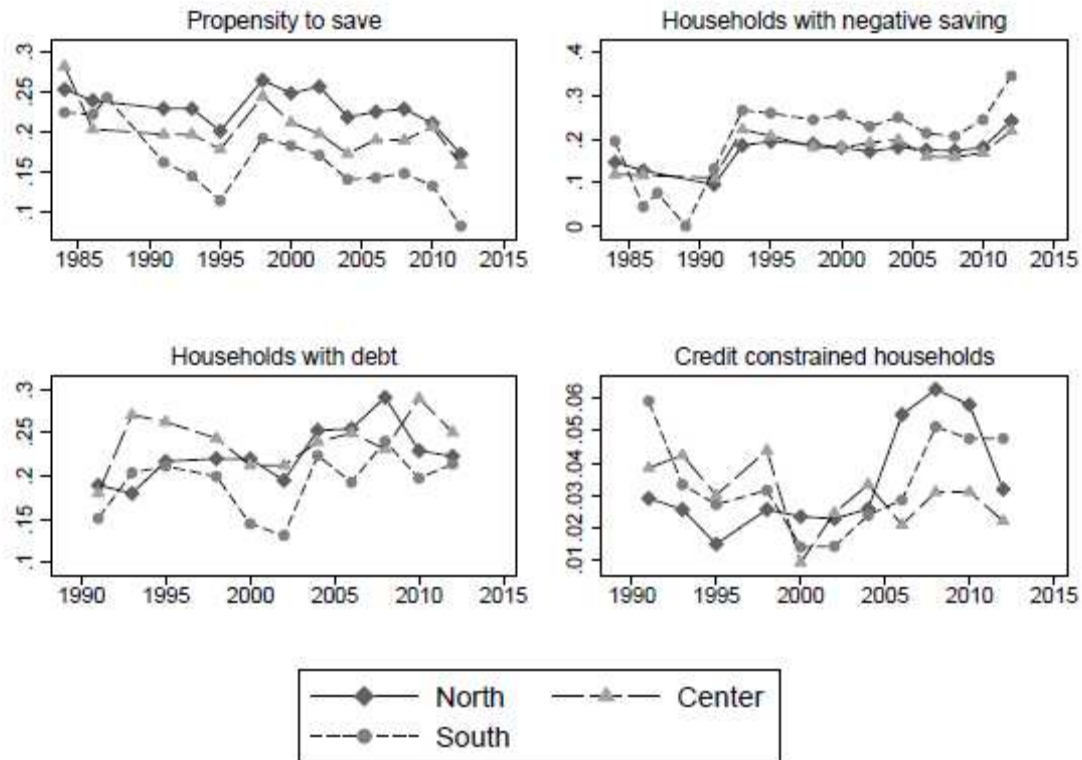**Saving and debt, by income quartiles**
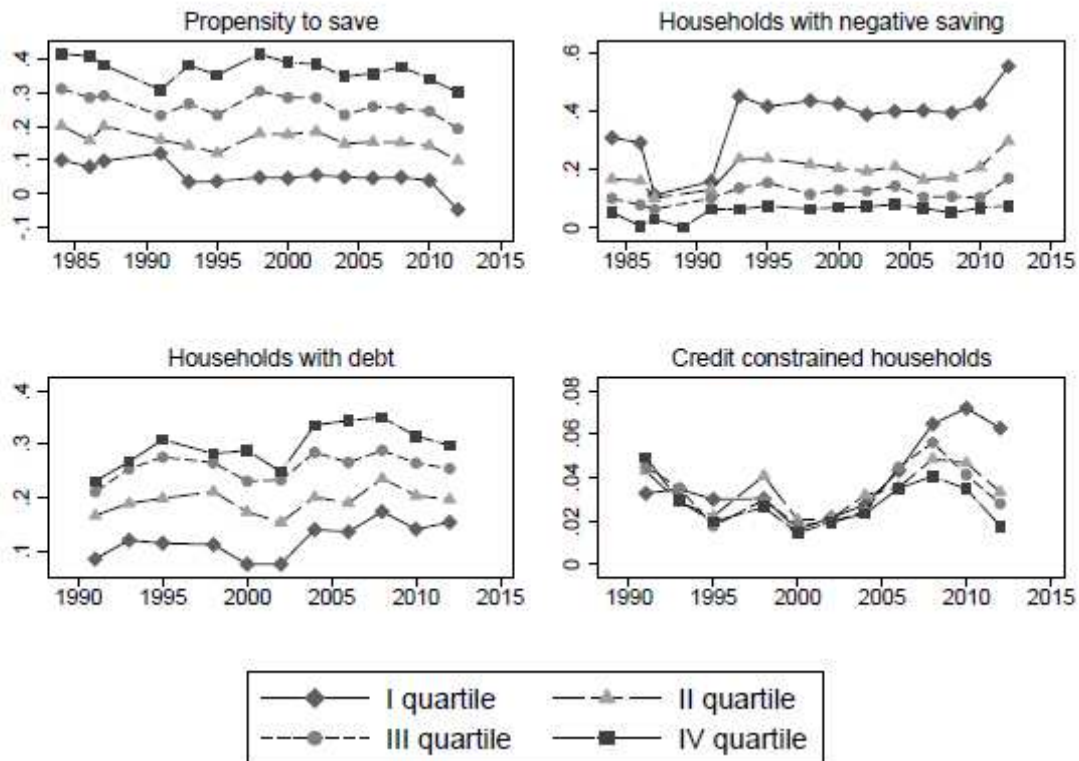
Note. The figure plots the propensity to save, the fraction of households with negative saving, the fraction of households with positive debt, and the fraction of credit constrained households by income quartiles. Source: SHIW.

Figure 3.
Saving and debt, by education
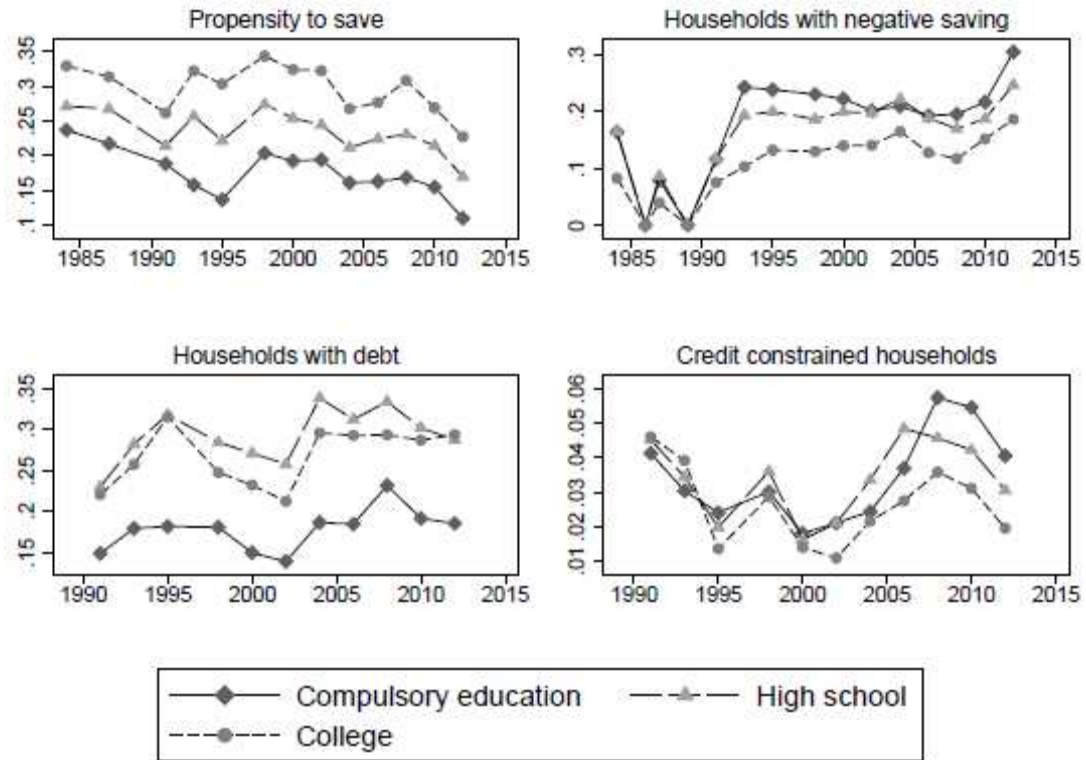
Note. The figure plots the propensity to save, the fraction of households with negative saving, the fraction of households with positive debt, and the fraction of credit constrained households by education levels of the household head. Source: SHIW.
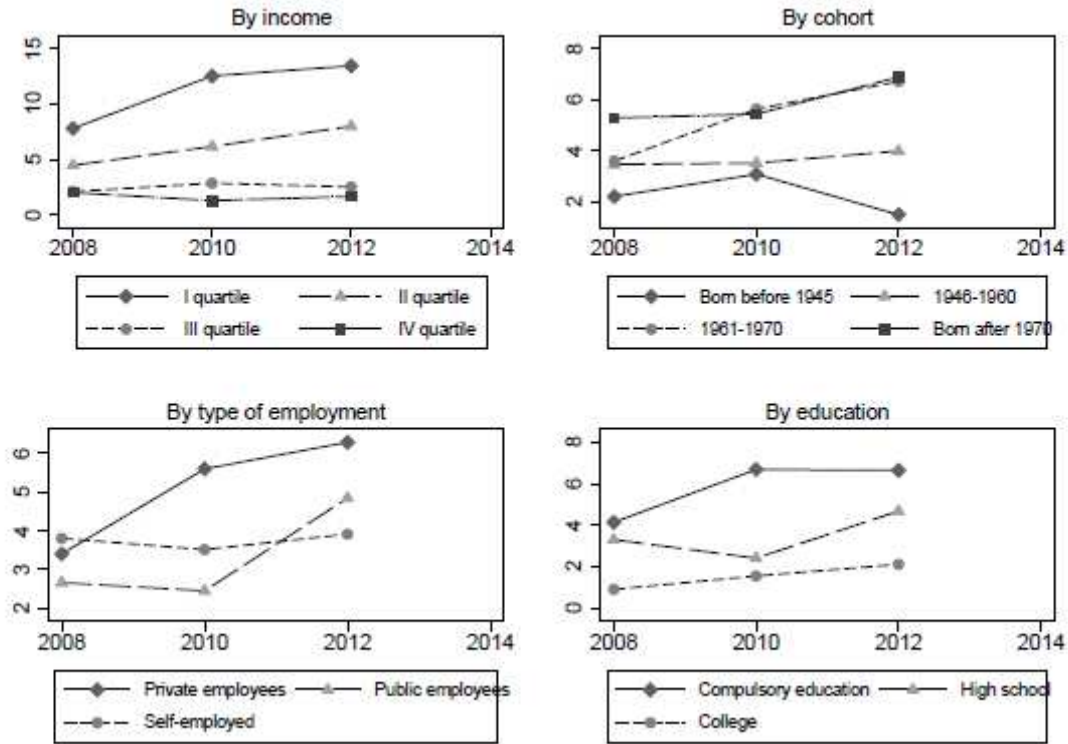
Figure 4.
Saving and debt, by employment groups

Note. The figure plots the propensity to save, the fraction of households with negative saving, the fraction of households with positive debt, and the faction of credit constrained households by type of employment of the household head. Source: SHIW.

Figure 5
Saving and debt, by age

Note. The figure plots the propensity to save, the fraction of households with negative saving, the fraction of households with positive debt, and the fraction of credit constrained households by age of the household head. Source: SHIW.
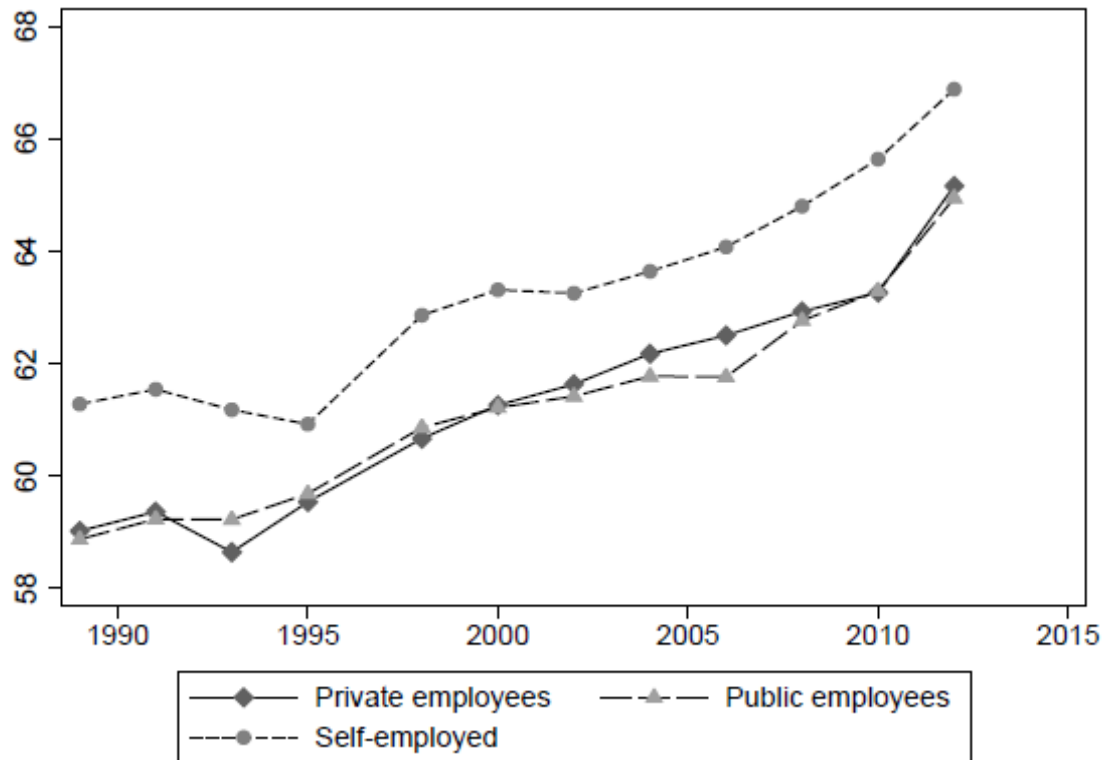
Figure 6.
Saving and debt, by region

Note. The figure plots the propensity to save, the fraction of households with negative saving, the fraction of households with positive debt, and the faction of credit constrained households by income quartiles. Source: SHIW.

Figure 7.

**Share of indebted households in arrears on a credit
commitment for more than 3 months**

Note. The figure plots the share of indebted households in arrears on a credit commitment for more than 3 months by income quartiles, education, year of birth and region of residence of the households. Source: SHIW.
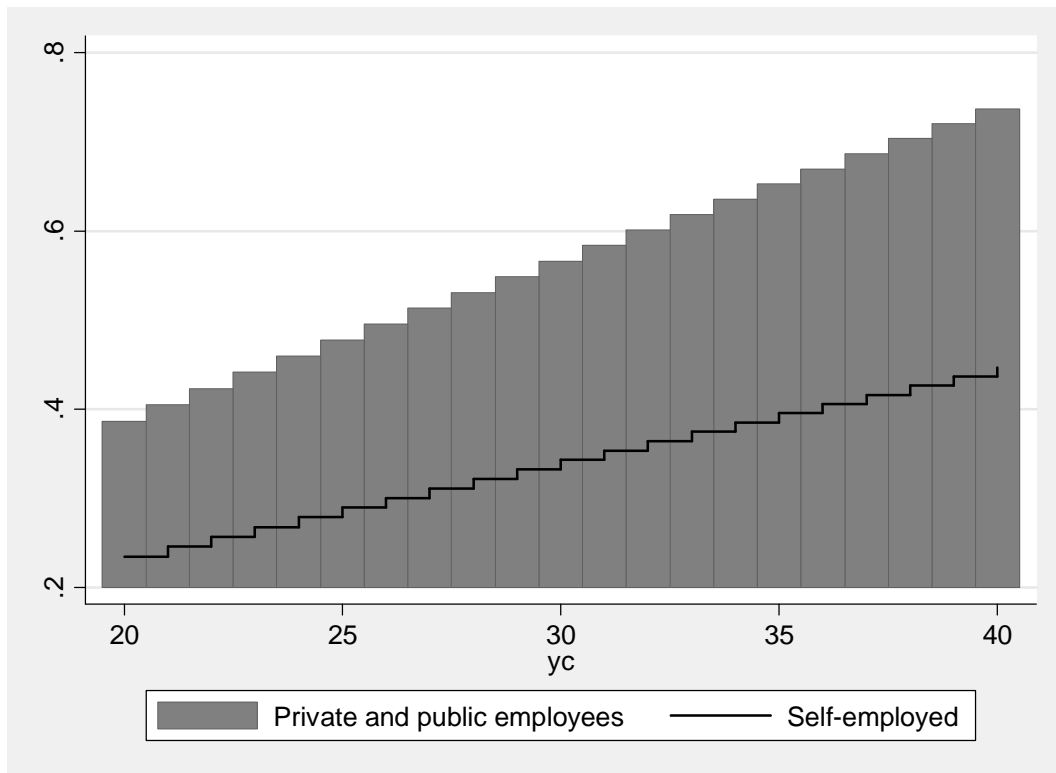
Figure 8.
Expected retirement age

Note. The figure plots the average expected retirement age for private employees, public employees and self-employed. The expected retirement age is computed from the SHIW where workers are asked when they expect to retire. Source: SHIW.

Figure 9.
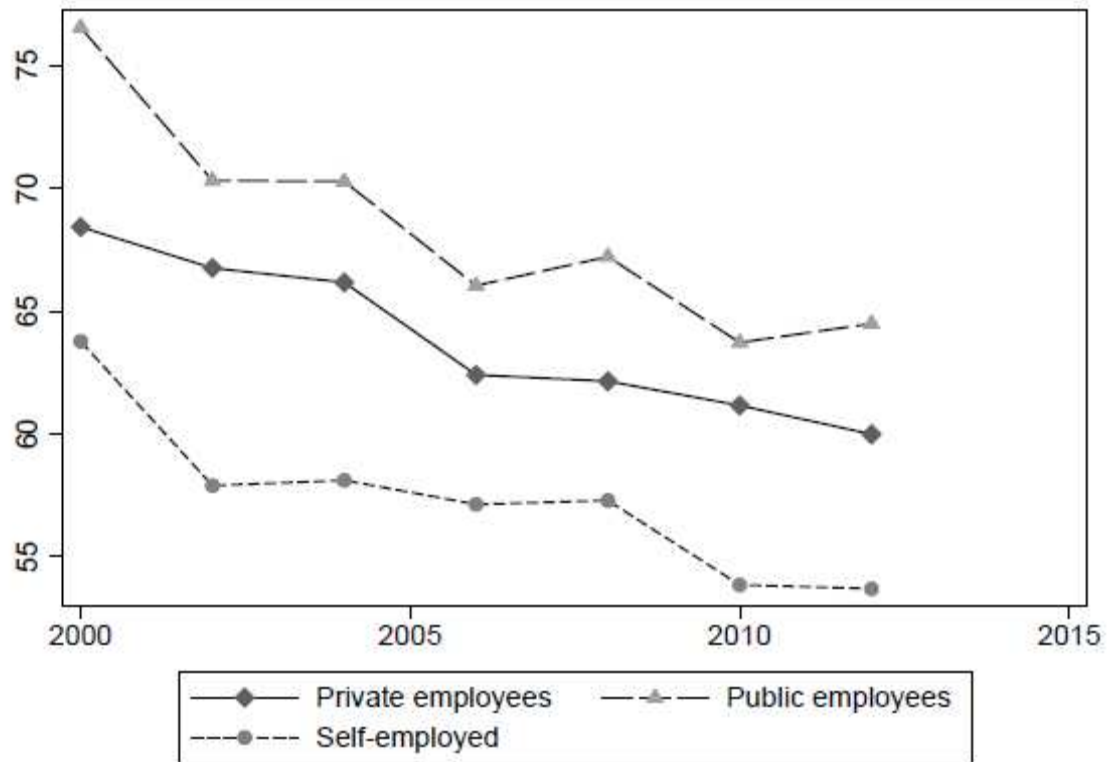**Expected replacement rate, by employment groups**
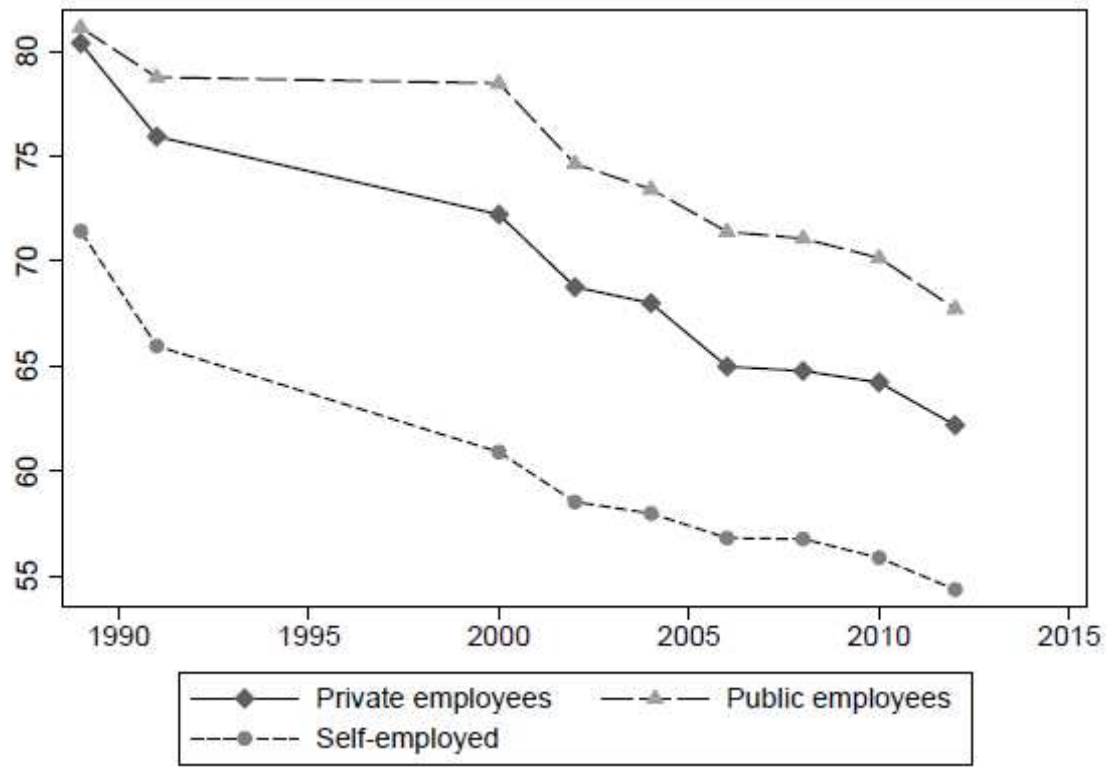
Note. The figure plots the average expected replacement rate for private employees, public employees and self-employed. Source: SHIW.

Figure 10.
Replacement rates by years of contribution

Note. The figure plots the replacement rate for private and public employees (dark grey bar) and the replacement rate for self-employed (black stair step line) for an individual born in 1970, retiring at the age of 68, whose salary increases at 2% per year. The GDP real growth rate and the inflation rate are assumed to be 1.5% and 2%, respectively.

Figure 11.
Expected replacement rates, workers born after 1970

Note. Note. The figure plots the average expected replacement rate for private employees, public employees and self-employed for workers born after 1970. Source: SHIW.