

Marriage and other risky assets: A portfolio approach

Graziella Bertocchi^a, Marianna Brunetti^b, Costanza Torricelli^{c*}

^a *University of Modena and Reggio Emilia, RECent, CEPR, CHILD and IZA, Viale Berengario 51, 41100 Modena, Italy*

^b *University of Rome Tor Vergata, CEFIN and CHILD, Via Columbia 2, 00133 Roma, Italy*

^c *University of Modena and Reggio Emilia and CEFIN, Viale Berengario 51, 41100 Modena, Italy*

This version: 21 March 2011

Abstract

We study the joint impact of gender and marital status on financial investments by testing the hypothesis that marriage represents - in a portfolio framework - a sort of safe asset and that this attribute may change over time. We show that married individuals have a higher propensity to invest in risky assets than single ones, that this marital status gap is stronger for women and that, for women only, it evolves and declines at the end of the sample period. Next we explore a number of possible explanations of the observed gender differences by controlling for background factors that capture the evolution of family and society. We find that both the higher female marital status gap and its time variability vanish for those women who are employed. Our empirical investigation is based on a dataset drawn from the 1993-2006 Bank of Italy Survey of Household Income and Wealth.

JEL classification: G11; E21; J12; J21

Keywords: Household portfolios; Risky investments; Marriage; Divorce; Labor force participation

* Corresponding author. Tel.: +39 059 2056733; fax: +39 059 2056947.

E-mail addresses: graziella.bertocchi@unimore.it (G. Bertocchi),

marianna.brunetti@uniroma2.it (M. Brunetti), costanza.torricelli@unimore.it (C. Torricelli).

1. Introduction

The goal of this paper is to investigate the joint impact of gender and marital status on portfolio decisions, as well as its evolution and its potential determinants. The relevance of gender and marital status is established for a variety of related issues, ranging from political choices (Edlund and Pande, 2002) and preferences toward the size of government (Lott and Kenny, 1999) to wealth accumulation and saving behavior. The financial literature assesses the link between gender, risk aversion and economic decisions in various contexts. Examples are Schubert et al. (1999), Lusardi and Mitchell (2008), Cardak and Wilkins (2009), Croson and Gneezy (2009), Fan and Zhao (2009), Dohmen et al. (2011). This mainly empirical research generally reveals for women a higher degree of risk aversion and a lower propensity to undertake risky projects. Besides, a parallel strand focuses on the impact of marital status on financial choices (e.g. Lupton and Smith, 2003), showing that single individuals are more risk averse than married. Nevertheless, only a few studies consider marital status and gender jointly when analyzing their implications on financial decisions. The following are noteworthy exceptions. Sundén and Surette (1998) point to the interaction between gender and marital status in determining the allocation of assets in retirement savings plans, with single women exhibiting a more cautious attitude. Jianakoplos and Bernasek (1998) find that single women show relatively more risk aversion in financial decision making than single men. Barber and Odean (2001) report that the differences in portfolio turnover and net return performance are larger between the accounts of single men and single women than between the accounts of married men and married women. Schmidt and Sevak (2006) document large differences in American households' wealth accumulation by gender and marital status. Zissimopoulos et al. (2008) show that the large differences in wealth accumulation between single and married women cannot be explained by observable characteristics. While the above studies focus on the United States, Guiso and Jappelli (2002) gauge the relevance of

gender and marital status, although as separate dimensions, for portfolio decisions of Italian households, while Christiansen et al. (2010) take into account their joint effects using data for Denmark.

In this paper we aim to investigate how these gaps, and in particular the one between married and single women, evolve over time. In other words, we test the hypothesis that marriage represents - in a broad portfolio framework - a sort of safe asset and that this effect is stronger for women. The idea of marriage as a source of financial security, particularly for women, is based on the fact that women tend to have a more insecure societal role. Compare the asset position of a single woman with that of a married one and focus on two components of wealth: financial assets and the present value of labor income. The latter introduces background risk into the picture and thus a lower propensity to invest in risky financial assets. By getting married, a woman becomes entitled to at least a portion of the gender gap in labor income. When no risks are associated with the married status and with the size of the gender income gap, or when such risks are uncorrelated with the risks on financial returns, marriage can decrease the overall risk of a married woman's asset position and increase in the share of risky financial assets in her portfolio, if compared to that of a single woman. The safer position of married women introduces a marital status gap between married and single women. Thus, marriage can be viewed as a sort of safe asset, in the sense that it is perceived as a substitute for it. The marital status gap, however, may well evolve over time, under the influence of a variety of factors. In recent times, the perception of being married as a risk free status may have changed in the face of the observed evolution of intra-family dynamics and women's professional careers. The increasing diffusion of divorce and the decline of marriage have caused a progressive dissolution of the traditional family structure, while the growing participation of women to the labor market has provoked a parallel gradual reduction in the gender income gap. All these factors are likely to be more relevant for women,

suggesting that for them marriage may no longer represent a safe asset. Thus, we also test the hypothesis that, for women, the marital status gap evolves over time. Furthermore, we explore a number of possible explanations of this evolution.

We estimate a binary choice model for the decision to participate, i.e., to invest in risky assets, to test two main hypotheses and possible explanations for the results obtained. The first hypothesis is that the impact of the marital status on portfolio choices, i.e., the marital status gap, is stronger for women. The second hypothesis is that the marital status gap for women is not time-invariant. Finally, we explore possible determinants of the marital status gap and its evolution. We control first for aggregate factors, such as divorce risk and labor market structure. Next we focus on individual factors, including risk aversion, granular measures of marital instability and employment status.

Our empirical analysis tests the above predictions on a dataset drawn from the 1993-2006 Bank of Italy Survey of Household Income and Wealth. Italy provides an ideal setting for our investigation. On the one hand, the last decade of the sample period witnesses significant developments, along both the gender and the marital status dimensions, in the financial behavior of Italian households: the number of females in charge of financial decisions registers a substantial increase, while figures for marital status display a parallel increase in single decision makers. On the other hand, the Italian society experiences a particularly fast evolution, with a pronounced transformation of its family structure: while divorce became legal in Italy only in 1974, divorce figures boost in the last ten years of our sample. At the same time, the post-war period witnesses an almost uninterrupted expansion of women's participation in the labor market, which alters profoundly the role of women in the Italian society. As a consequence, our sample can fully capture the evolving role of gender and marital status for financial choices.

The rest of the paper is organized as follows. Section 2 introduces the theoretical framework underlying our empirical investigation. Section 3 illustrates the evolution of marriage, divorce and female labor force participation in Italy. Section 4 describes our dataset. Section 5 presents a first set of empirical findings highlighting the differential behavior of the marital status gap for men vs. women. Based on further empirical evidence, Section 6 discusses possible explanations. Section 7 concludes and suggests directions for future research. Appendix A provides information about the data we employed, while Appendix B reports results of some robustness tests.

2. A theoretical framework

In this section we develop a conceptual framework that highlights the potential effect of gender and marital status on portfolio choice and that can generate testable implications. We build on the basic Arrow-Debreu portfolio decision problem summarized for example in Gollier (2002). In a contest where financial investment opportunities are represented by risky assets and a risk free one, preferences associated with higher risk aversion induce a lower proportion of risky assets in the optimal portfolio holdings. Since most of the observed volatility of households' earnings comes from variations in labor income, we consider a version of the model which also includes, beside financial risk, background risk, i.e., those uninsurable sources of risk that affect human capital and thus labor income (see Pratt and Zeckhauser, 1987). For simplicity we assume that human capital risk is independent of financial risk. Total wealth now equals the sum of the value of the financial portfolio and labor income. In the resulting setting, for a broad class of conventional utility specifications, households that are subject to a larger uncertainty about their labor income should be more conservative on their financial portfolios, i.e., more background risk leads to a lower propensity to invest in risky assets.

The amount of background risk borne by agents may differ on the basis of individual characteristics. For instance, age matters, since younger people tend to face a larger background risk to human capital. In this paper we are especially interested in those individual characteristics that reflect gender and marital status. Therefore, following the literature on family formation and economic decisions (see Cubeddu and Ríos-Rull, 2003, Stevenson and Wolfers, 2007 and Love, 2009), we build on the above framework in three steps. First, we introduce a distinction among individuals on the basis of gender. Second, we add a further distinction on the basis of marital status. Third, we acknowledge the fact that marital status can change over time.

2.1. Gender

We initially assume that individuals differ only on the basis of gender. Gender differences can enter the picture through two channels. First, they can affect preferences. As reported in the previous section, the available empirical evidence indeed shows that women tend to be more risk averse than men. Second, gender can affect the nature of background risk. It is realistic to assume that women, being in a more vulnerable position in the labor market, tend to bear more labor risk and therefore more background risk.¹ Moreover, women's preferences may respond to background risk in a way that differs from men's. These general implications of gender differences point in the same direction, with women choosing portfolios with a larger share of the risk free asset, if compared to men.

2.2. Marital status

¹ Edlund and Pande (2002) and Lott and Kenny (1999) provide suggestive evidence. Del Boca and Pasqua (2003) reach similar conclusions for the case of Italy.

Next we introduce another crucial distinction, in the marital status of individuals. For simplicity, we distinguish between married and single individuals. Single individuals of either gender face a standard decision problem, while married couples solve a joint maximization problem with given weights on the husband's and the wife's preferences, under a common budget constraint reflecting the sum of their wealth. Consider now the problem faced by a married woman who is fully in charge of the household decision. By getting married, a woman becomes entitled to a share of the aggregate household labor income, which implies for her a decrease in background risk and thus a larger share of risky assets in her portfolio, if compared with a single woman. The safer position of married women thus introduces a marital status gap between married and single women. It is in this sense that we can interpret marriage as a sort of safe asset, since it is perceived as a substitute for it. The higher the vulnerability of women's income to labor risk, the stronger is this channel.

Consider now an analogous problem for a married man who is charge of the household portfolio. In a symmetric fashion, married men should hold a smaller share of risky assets, if compared with single men, since they bear more background risk coming from their wives. However, this symmetry breaks down because of the gender differences previously described. Therefore, the risk reduction effect associated with marriage tends to be stronger for women than for men. We can conclude that there is an interaction between gender and marital status and that the impact of marriage differs across genders. In particular, the marital status gap tends to be larger for women than for men.²

2.3. Changes in marital status

² Marriage can also reduce the transaction costs associated with investment in risky assets, thus raising the propensity to hold them. However, this channel tends to operate in a symmetric fashion across genders.

Finally, let us recognize the fact that marital status may change and it is therefore subject to uncertainty, questioning the view of marriage as a sort of safe asset. We can assume that changes in marital status occur with a given probability that reflects the diffusion of marriage and divorce in a given society, and/or individual perceptions about the likelihood of a change of status.

Consider now again the problem of a married woman and assume that there is a positive probability of marriage dissolution. The higher the probability of divorce, the weaker the impact of marriage on her portfolio choice, the larger the amount of background risk she bears and the lower the share she invests in risky assets. By the same token, changes in marital status also modify the decision problem of single women, since they also take into account a probability to switch to a married status. To be noticed is that marriage and divorce show a clear inverse correlation in actual data. In other words, a lower probability of getting married tends to be associated with a higher probability of getting divorced. Therefore, the two possible causes of the decline of marriage tend to coexist and to exert an unambiguous impact on portfolio choice. We can therefore conclude that, for any given women's position in the labor market, the stronger is the institution of marriage in a society, the larger is the gap between the portfolio decisions of married and single women. Likewise, a decline of marriage should dilute the marital status gap. When we turn to men, changes of marital status should not matter as much since, as we argue in Section 2.2, marital status exerts a much weaker impact on their portfolios.

2.4. Summary and testable implications

On the basis of the above extensions of the basic portfolio choice framework with background risk, we can present several testable hypotheses using data on household portfolios. First, the interaction between gender and marital status should affect portfolio

choice by making married women invest less in the risk free asset than single women, while marital status should matter less for men. Second, for women, the marital status gap should evolve with those forces that govern the evolution of background risk in the economy and society. We present empirical evidence to test these hypotheses in the next sections of the paper.

3. Socio-demographic trends and financial choices

3.1. Marriage, divorce and female labor supply in Italy

The decline of marriage and the increasing diffusion of divorce represent a common tendency in industrialized countries. Within this broader picture, the Italian society has experienced a particularly fast evolution, with a pronounced transformation of its family structure. Up to the 1960s, divorce was not even legal and Italy was still exhibiting a traditional family structure, if compared to other Western countries. The introduction of divorce legislation in 1970 was followed by a failed attempt to abolish it, with the support of the Roman Catholic church. In 1974 opponents of divorce called a referendum to outlaw it, but they did not achieve their goal. The original form of the legislation was very conservative and allowed couples to obtain a divorce only five years after their legal separation. Still, this legal innovation confirmed an emerging trend toward societal modernization and an ongoing evolution of traditional gender roles. Figure 1 reports the divorce hazard (i.e., the ratio of divorces over marriages) from 1974 to 2006. After a peak in the initial years, reflecting the existing backlog and the subsequent drop, the rate increases moderately through the 1980s. In 1987 the legislation went through an important reform which reduced the waiting period to three years, thus provoking a sudden jump of the divorce hazard, in turn followed by a temporary decline, even though it never returned to its pre-reform level. In fact, since 1995, a

quick increase occurs. Overall, these trends document a significant increase in marital instability, with a consequent increase in the risks of marriage breakdown which marks the end of the Italian traditionally stable family structure.³

Insert Figure 1 here

The role of women in society is directly influenced by women's position in the labor market. As illustrated in Figure 1, the Italian female employment rate is 0.27 in 1960. This is higher than in the other Mediterranean countries and below the US, the UK and France (see, e.g., Fernandez and Fogli, 2009, for an international comparison of female labor force participation rates). During the next decades, however, the Italian figures exhibit a steady increase, with the female employment rate reaching 0.47 in 2006. With reference to our sample period, however, we actually observe a decline in the early 1990s, which can be linked to the 1992 recession.

To sum up, Italy combines, on the one hand, the legacy of a very traditional view of gender roles within the family and, on the other, a very fast evolution away from this legacy. This suggests that marriage may indeed work, up to some point, as a safe asset, but also that this role may become less pronounced over time as marriage becomes riskier. Moreover, the post-war period witnesses an almost uninterrupted expansion of women's role in the labor market, driven in part by the same factors that determine the evolution of family structure just

³ The crude divorce rate (i.e., the number of divorces every 1000 individuals) follows a very similar pattern.

outlined. Indeed Figure 1 shows a positive correlation between divorce and female employment, a pattern which is common to most developed countries.⁴

3.2. Financial markets and household portfolios in Italy

In the 1993-2006 period covered by our investigation, household portfolios show a significant evolution in Italy, as described by Guiso and Jappelli (2002) and Brunetti and Torricelli (2010). Participation in the equity market increases sharply, with a parallel decline of transaction accounts and government bonds. These trends can be explained by a number of factors, including the evolution of the yield differential between stocks and bonds, the development of mutual funds, subsequent waves of privatization, reforms of the social security system, the lifting of capital controls in 1989 and the 2000 stock market boom. Moreover, the period under investigation exhibits significant developments along the gender and the marital status dimensions: women as financial decision makers register a substantial increase, while figures for marital status display a parallel increase in the number of single decision makers. Figure 2 reports the weighted sample percentage of households by gender and marital status.

The data clearly show that during the period under consideration the structure of the average Italian family changes considerably along the gender and status dimension. As for the latter, figures display a decline of the proportion of married individuals that make financial decisions and a parallel increase in singles, i.e., never married, separated/divorced and widowed (from 29% in 1993 to 37% in 2006). As for gender, women who are household

⁴ A notable exception is represented by the US, which have experienced a reversal since the mid-1980s, with a continuing rise in female labor force participation and a fall of divorce rates. See Neeman et al. (2008) for a discussion and a survey of the related literature.

financial heads (i.e., those who are in charge of financial decisions) register a substantial increase (from 28% in 1993 to 35% in 2006).

Insert Figure 2 here

Turning to the financial decisions of the household financial head, Figure 3 compares the rate of participation in risky financial assets in 1993-2006. Overall, participation increases considerably, with a peak between 2000 and 2002, reflecting the stock market boom and its subsequent crash. Moreover, the figure reveals a considerable gender and marital status gap in participation. Males generally participate more than females, both in 1993 and 2006, independently of their marital status. Likewise, independently of gender, married individuals participate more than non married. For males, the gap between married and single is moderate in the initial waves and intensifies in recent ones with the increase in participation. For females, the difference between married and single increases during the first part of the sample and then tends to decline in the last two waves.

Insert Figure 3 here

To sum up, the stylized facts we document confirm the relevance of both gender and marital status for portfolio choices and that these factors display an evolving impact during the period under consideration. In other words, the transformation of the family structure and the increasing participation of women into the labor market manifest themselves also in financial decisions.

4. Data

Our dataset spans over the 1993-2006 period and draws from the Historical Archive of the Bank of Italy Survey of Household Income and Wealth (SHIW)⁵, which specifically provides over that period seven waves (1993, 1995, 1998, 2000, 2002, 2004, 2006) and from Istat (the Italian National Institute of Statistics). The SHIW surveys households' financial portfolios from 1982, albeit only partially and intermittently: as a result, accurate information along the dimensions we focus on is available only from 1993. Therefore, we consider the waves from 1993 to 2006.

The SHIW basic sample unit is the household defined as “a group of cohabiting people who, regardless for their relationships, satisfy their needs by pooling all or part of their incomes”. The survey reports three different definitions for the head of the household, namely: (i) the person who is responsible for the financial and economic choices of the household (“declared” definition); (ii) the person who earns the highest income (“income” definition); and (iii) the reference point to establish the relationships among all members of the household (“Eurostat” definition). In contrast with household surveys for other countries, where the household head is defined on the basis of different attributes (e.g., highest income, or male gender), a distinctive feature of the Italian survey is that, by introducing the “declared” definition, it also provides specific information relative to the person making financial decisions. According to this definition, choices can be interpreted as specific to the financial decision-maker, independently of her/him being the main income earner. Thus, since we need to be sure that portfolio information is referred to the person who actually

⁵ In each wave, data are collected for around 8,000 households, for a total of 55,163 observations (for more details on the SHIW see <http://www.bancaditalia.it/statistiche/indcamp/bilfait>). From this sample, we drop 127 observations in which no information is provided on the financial assets allocation, so that our final sample is constitutes of 55,036 observations.

makes financial choices, in this paper we use the first definition when we refer to the household financial head.

For each household, the SHIW provides plenty of demographic information, of which we use the following: the number of household components, the number of children, as well as the age, level of education, gender and marital status of the financial head of the household. As far as marital status is concerned, the survey distinguishes among married, never married, separated/divorced and widowed. Since in what follows we are specifically interested in the implicit value of the asset marriage, we distinguish between married and non married financial heads, by creating a dummy variable `MARRIED` taking value 1 if the household financial head is married and 0 otherwise. Likewise, we construct a dummy variable named `MALE` capturing gender, which takes value 1 if the household financial head is male and 0 if female. Unsurprisingly, only a minority of married women declare themselves as the household heads.⁶

Beside demographic information, the SHIW also provides economic information about the households, including income, net wealth (real and financial assets net of financial liabilities) as well as the amounts (expressed in Italian lira until 2000 and in Euro thereafter) invested in a variety of financial assets. The survey collects information on financial portfolios at the household level, not at the individual one, and attributes financial decisions to the “declared” head of the household, as defined above. Given the focus of this paper on risky assets as opposed to non-risky ones, we first group financial assets into different classes according to their credit and market risk profiles.⁷ Then we cluster assets in three risk classes: “clearly

⁶ While it is true that some misreporting may be present, if anything we would expect underreporting, rather than overreporting, of the fraction of women that declare themselves to be in charge.

⁷ Since we focus on financial portfolios, we do not consider investment decisions in housing and other real assets, even though they enter our definition of wealth. The financial asset classification we employ neglects some sources of risk (e.g., liquidity), but is sufficient to the scope of the present analysis. A more rigorous

safe”, “fairly safe” and “risky”, with two main differences with respect to the Guiso and Jappelli (2002) risk classification. First, we move long-term government bonds from the risky to the fairly safe category. As argued by Guiso and Jappelli (2002), “*the large and increasing government debt leads investors to attach a non-zero probability of default even on short-term government bonds. But this has changed after the dramatic fiscal stabilization started in 1996*”. Based on this reduced risk-profile, the shift from risky to fairly safe assets appears reasonable. Second, while Guiso and Jappelli (2002) place life-insurances into the fairly safe category and gather all the remaining managed investments in the risky one, here all forms of managed investments are classified as fairly safe. The choice of Guiso and Jappelli (2002) stems from the observation that “*until 1995 [...] most funds were in stocks*”, but they admit that “*the availability of a large number of money market and balanced funds in the late ‘90s tends to blur our definition*”. Hence, considering also the high diversification that typically characterizes managed investments, we classify them as fairly safe. Since this paper focuses on the household decision to make a risky investment, we believe it is very important to define the class “risky” so as it contains only assets that are surely so. The presence into this class of assets which might not have a definitely risky feature would blur the participation decision and essentially overestimate it. To sum up, our risky assets class consists of stocks, corporate bonds and foreign assets.

The two most recent waves of the SHIW, 2004 and 2006, also provide information on household heads’ risk aversion, based on a subjective question in which the respondent is

classification is not possible because of lack of information. As an example, the risk profiles of government bonds may be high or low depending, among other things, on their time-to-maturity. The survey however does not provide any information about the duration of these instruments, so that all government bonds have to be placed in the same risk class. Nevertheless, this simplification seems consistent with the perceptions of the majority of households, which typically associate a comparable level of risk to all government bonds. For further details on assets’ risk classification see Brunetti and Torricelli (2010).

asked to indicate the characteristics of the preferred financial investments. This allows to rank individuals with respect to their risk aversion without having to assume a particular functional form for the utility function. On the basis of this information, we construct the dummy variable RISK-AVERSE which takes value 1 if the respondent answers with the most risk-averse choice (no risk for the capital, low returns), 0 otherwise.

We also use the available information about the household heads' employment status. More specifically, we create the dummy TENURE assuming value 1 if the head of the household has a tenured employment position, 0 otherwise. This information is only available from the 2000 wave. We also define a dummy for SELF-EMPLOYED, taking value 1 if he/she is self-employed, 0 otherwise. Finally, we create a household-specific variable which aims at capturing those marriages more likely to be unstable. Research on the determinants of marital instability shows the importance of socio-demographic disparity within the couple as a factor determining marital dissolution. Heaton (2002) and Teachman (2002) find that couples are more likely to divorce when they do not share the same education background, particularly when it is the wife who is more educated and that this effect is stable, or even increasing, over time.⁸ Thus we create the dummy variable named MARITAL INSTABILITY assuming value 1 if the wife has a higher education with respect to the husband, 0 otherwise.

We supplement our dataset with aggregate variables based on data provided by Istat.⁹ These variables are the divorce hazard, the crude divorce rate, the crude separation rate, the female labor force participation (FLFP) rate and the female employment rate, all computed at the regional level. The divorce hazard is the ratio of the number of divorces over the number

⁸ While these findings are based on US data, Istat (2008) and Butterworth et al. (2008) report similar conclusions for Italy and Australia, respectively.

⁹ Data are downloadable from <http://www.istat.it/lavoro/>.

of marriages at the regional level. The crude divorce (separation) rate is the number of divorces (separations) in each region over every 1000 residents. We employ the divorce hazard as our main measure of the aggregate background risk of divorce, since contrary to the crude divorce rate it takes into account both the increasing dynamics of divorce and the underlying decreasing dynamics of marriage. The female labor force participation rate equals the sum of women occupied and those actively looking for an occupation divided by the total female working-age population resident in the region, while the female employment rate corresponds to the ratio between the women occupied over the total female working-age (15-64) population in the region of residence.

Table A.1 in Appendix A provides a more detailed description of all the data and variables used while Table A.2 presents summary statistics referred to the whole pooled sample and to the initial and final waves, i.e., 1993 and 2006. We also present separate summary statistics for the male and the female subsamples.

5. Results

To test our hypotheses, we estimate a probit model for the decision to participate, i.e., to invest in risky assets. For this model, we run a set of pooled regressions with robust standard errors clustered at the regional level. We run two separate sets of regressions for the male and the female subsamples. All regressions always include a set of time and regional dummies, with the intermediate year 2000 and Piedmont taken as reference categories.

Insert Table 1 here

In order to provide a preliminary test of our first hypothesis, i.e., that the impact of marital status differs for men and women, we start from a basic specification where we regress the

decision to participate on the marital status dummy. Results in Table 1, columns 1, show that, for both subsamples, the marginal effect of the dummy for married household heads is highly significant and positive, suggesting that married household heads are more inclined to invest in risky assets than single ones. Moreover, the size of the effect is significantly larger for the female subsample,¹⁰ which indicates that the marital status gap is larger for women.

Next, in columns 2, we explore an extended specification including standard explanatory variables, i.e., household income and wealth, both entered with linear and quadratic terms and expressed in real terms, household characteristics (family size and number of children) and variables related to the household financial head (age and education, both by classes). We also include a set of interaction terms involving the time dummies and the marital status dummy, in order to investigate our second hypothesis, i.e., the presence of time variability in the impact of our key covariate. Adding these interactions amounts to test the hypothesis of marriage as a safe asset along a time dimension. The estimates of the extended specification show that, both for men and women, the propensity to invest in risky assets peaks at age 65-69 for men and 55-60 for women, even though the overall level of significance is lower for women.¹¹ There is also evidence of a non linear effect of income and wealth, even though the latter is weaker. Education exerts a positive impact on participation even though, for women, this monotonic effect is less marked at the extremes of the educational ladder. The regression results also indicate that large households are less likely to invest in risky financial assets, while the number of children has a positive impact for men only, possibly because for them this characteristic induces a longer time horizon and thus investment choices that are riskier

¹⁰ The null of equality of the two coefficients is rejected at the 10% level of significance.

¹¹ Most of the existing studies control for age by including this covariate in linear and quadratic terms. As a sensitivity test, we estimate an analogous specification and we do find evidence of a non linear effect, which suggests that middle-aged individuals display the highest participation. However, the age dummies specification we adopt allows to detect more accurately for which age class participation peaks.

and more rewarding over the long run. Overall, this evidence is broadly in line with intuition and previous results from the literature.

Turning to the marital status dummy, its marginal effect loses significance for men, while it retains it for women, suggesting that the differential behavior of married and single men is fully explained by standard covariates, while for women marital status still matters even after controlling for them. Moreover, while for men the marital status differential does not show any time variability, for women we find evidence of a hump-shaped time evolution: relative to our reference year, i.e., 2000, the interaction with time is insignificant for 1998, while it is significant for the adjacent years, with negative marginal effects whose absolute size increases with the distance from the intermediate years. In other words, the gap between married and single women tends to be lower at the beginning of the sample, peaks during the intermediate years and declines afterwards. Figure 4 visualizes the dynamics of the marital status gap for both genders. In sum, our results support both our first hypothesis, i.e., that the marital status gap is stronger for women and our second hypothesis, i.e., that the marital status gap is not time invariant for women.

Insert Figure 4 here

A set of additional regressions (see Appendix B) shows the results we obtain under an alternative definition of the risky asset class and a finer definition of the family structure. In Table B.1, using Guiso and Jappelli's (2002) definition for the dependent variable, we find that once again the marital status gap in the basic specification is higher for females and that its dynamics are only present for females, even though they are less evident than under our definition, since the alternative measure of asset riskiness is less precise. In Table B.2 we split singles among separated/divorced, widowed and never married, by introducing an appropriate set of redefined dummy variables. Our results suggest that, for women, a

distinction among the causes of non marriage does not make a difference for their choices: all unmarried women appear to behave similarly, independently of the circumstances that led them to this status.

Based on this evidence, we can conclude that our results are robust and support both our hypotheses.¹² The scope of the following section is to explore possible explanations of the observed differential dynamics of the marital status gap between men and women. We keep the specifications collected in Table 1 as the benchmark for all the subsequent variants.

6. The determinants of the marital status differential

In the effort to understand the determinants of the gender differences emerging from the data, both in terms of size and stability of the marital status gap, in the following discussion we explore three alternative avenues. First, we consider a set of aggregate background risk factors that can capture the evolution of gender roles in the family and society: namely, the increasing incidence of divorce and the expansion of female labor market participation. Then, we turn to individual characteristics that can also proxy for background risk. We first introduce an individual, rather than aggregate, measure of divorce risk. Next we consider the role of gender differences in risk aversion. Finally, we consider the individual position in the labor market.

¹² In an additional set of unreported regressions, we also introduce interactions between time and other variables, namely income and wealth, in order to gauge how their effect varies over time. While the interactions do show some significance, they do not reveal a clear-cut pattern and do not modify the behavior of the interaction between time and the marital status dummy. Furthermore, while in our probit regressions we report marginal effects evaluated at the means of the explanatory variables, our results do not change when we compute the mean marginal effects evaluated across all sample members. Finally, our results are also confirmed in ordinary least squares regressions.

6.1. Aggregate factors: Divorce hazard and female labor participation

To understand the emerging differences between the male and the female subsamples, in a further set of regressions which we present in Table 1, columns 3, we add to the previous covariates those aggregate background risk factors that capture the evolution of gender roles in the family and society, i.e., the rate of female labor force participation and the divorce hazard, both measured in the region of residence. We find that the first covariate exerts a different impact on men vs. women, since it increases men's propensity to invest while it is irrelevant for women's. The positive impact of this regressor for men could be explained by its high correlation with the local level of income and financial development, together with a higher influence of these factors for men. The divorce hazard has an insignificant effect for both subsamples. However, the inclusion of these additional factors cannot explain the evolution of the female marital status gap.¹³

6.2. Individual factors: Marital instability, risk aversion and employment status

We now turn to additional individual characteristics that can capture the impact of family structure and labor market structure. In Table 1, columns 4, we investigate the potential role of a granular, household-specific measure of marital instability, as an alternative to the regional divorce hazard previously introduced as an aggregate factor. Therefore, we substitute to the divorce hazard our measure of marital instability, i.e., a dummy taking value 1 if the wife holds a higher level of education than the husband, a factor which is commonly associated with a higher risk of divorce, since it signals a departure from the traditional

¹³ In a set of unreported regressions, we try alternative definitions of the same aggregate factors. We insert the female employment rate as an alternative to the female labor force participation rate and the separation rate and the crude divorce rate instead of the divorce hazard. All our previous results hold under these alternative specifications.

family model. Table A.2 shows that the fraction of household heads holding a higher educational level than the spouse increases over time both for male and female household heads and that the fraction is always much lower for females. The regression shows that this new measure does exert a significant effect on the participation decision for men only, suggesting a differential influence of divorce across genders. Nevertheless, once again all the previous conclusions regarding the time-varying impact of marriage still hold for women.¹⁴

Risk attitudes are potential, exogenous determinants of investment decisions, that can work through multiple channels as exposed in Section 2. The evidence suggesting that risk aversion tends to be higher for women and for single individuals is explained on the ground that risk attitudes are exogenous and innate individual characteristics that exhibit little variation over the time dimension. To explore this avenue, we exploit a measure of risk aversion which is available only in the SHIW two most recent waves, 2004 and 2006. Within our sample, women do appear to be more risk averse than men, since the weighted average of the risk aversion dummy is 45% for males against 55.7% for females (see Table A.2). The same holds for single vs. married household heads (54.4% against 45.4%). To be noticed, however, is that risk aversion turns out not to be time invariant, even over such a limited time span.¹⁵ Overall, the available evidence suggests that risk attitudes may actually be endogenous, or that they may vary with other covariates, or else that they are determined,

¹⁴ We also consider different measures of marital instability, namely, a dummy which equals 1 if the personal income of the wife is greater than the personal income of the husband and a dummy which equals 1 if the wife is working and the husband is not working. However, they do not modify our main conclusions.

¹⁵ For instance, the share of those who are willing to take the highest degree of risk decreases slightly from 2004 to 2006, while more household heads opt for the no risk option. If we focus on household heads surveyed in both waves, again we find that only 66% remain in their original category, while the remaining 34% give a different answer. In particular, moves from low to high risk aversion are more frequent than the opposite, both for men and women.

together with the decision to invest in risky assets, by a common third factor. Keeping this warning in mind, in Table B.3 we present a set of regressions including the dummy reflecting risk aversion, over the 2004-2006 subsample for which this measure is available. The risk aversion dummy, as expected, exerts a negative impact on the decision to participate, more strongly so for males. Focusing on our key covariates, we find that the marital status dummy is never significant for women. Since the regression is run over only two waves, the dynamics are only captured by a single interaction between time and the marital status dummy, which is not significant both for men and women. To sum up, while controlling for risk aversion highlights several new angles, the drastically reduced time span and the shortcomings of the available measure of risk aversion prevent us from finding an explanation of the differential evolution of the marital status gap for men vs. women.

Finally, we turn to individual characteristics that capture the household head's position in the labor market. In Table 2, we run a set of regressions which reproduce the same specifications of Table 1, but over a subsample of employed household heads. In the most parsimonious specification (columns 1), the marital status gap is still larger for women than for men. However, several important differences do emerge in the subsequent specifications. In columns 2, adding standard determinants no longer explains fully the marital status gap for men, while it nearly always does it for women. Thus, we observe a convergence between men and women once we limit our attention to working household heads. The same conclusion holds as far as the dynamics are concerned, because the interactions between time and the marital status dummy are now insignificant for both genders (with the only exception of the interaction with the initial year for women). Background risk variables lose significance even for men. The main conclusion is that, as long as the household head is employed, the evolution of participation decisions is fully explained by standard determinants other than gender and no residual dynamics is observed. To sum up, the differential evolution

of the marital status gap for men vs. women disappears for a subsample of employed household heads, which suggests that the pattern emerging from the full sample is driven by the behavior of those women who do not rely on labor income.¹⁶

In line with Cardak and Wilkins (2009), we focus on more specific institutional characteristics of the labor market and we also investigate the potential impact of other individual factors attaining the household head's labor market position. Among employed household heads, we distinguish between those holding a tenured position and those with no tenure, on the basis of information which is only available since 2000. In Table B.4 we add a dummy taking value 1 when the individual holds tenure and 0 otherwise, to the same set of regressions of Table 2 for the employed subsample, but over the 2000-6 subperiod only. The marginal effect of the dummy is absent for men, while it is surprisingly negative for women. Despite some differences emerge over this subsample, the time-varying behavior of the effect of marital status remains absent, as in the employed households regressions of Table 2. This shows that all working women appear to behave similarly, independently of the characteristics of their labor market positions.¹⁷

Insert Table 2 here

To sum up, we show that the time variability of the marital status gap for women tends to disappear for employed women. In other words, working women appear to align their

¹⁶ Unreported regressions over the unemployed subsample confirm that it displays patterns similar to those of the full sample.

¹⁷ In a set of unreported regressions, we also add a dummy taking value 1 if the household head is self-employed and 0 if he/she is an employee, but we obtain no additional insights since the dummy is always insignificant.

behavior to that of men's, suggesting that the evolution of the female marital status gap is driven by those women who do not work.

6.3. Discussion

We can interpret our results more broadly as follows. The initial rise and the subsequent decline of the female marital status gap are the joint product of two countervailing forces. The general tendency to the emancipation of all women, in the postwar period, brings about a continuing increase in female labor participation, as well as an increase in women's ability to make economic and financial decisions. As a consequence, we observe an increase in the fraction of married women, including housewives, who become in charge of financial decisions for the household. However, in the early 1990s, there is still a wide difference between married and single women, on at least two dimensions. While it is true that many married women are outside the labor force, they can count on a stable position within their marriage. As a result, their choices tend to differ sharply from those of single women. In other words, the difference between married and single women can indeed be attributed to the value of marriage as a sort of risk free asset, which makes married women more inclined to invest in risky assets. These developments represent our candidate explanation for the initial expansion of the female marital status gap, which reaches a peak around 1998-2000. Subsequently, female labor force participation keeps expanding, making a smaller and smaller proportion of married women depend on their husbands' income. Moreover, another new and opposing force comes into the picture. The previous decade shakes the foundations of family structure, with an increase in the number of divorces which gradually erodes the perception of marriage as a safe asset. This devaluation of marriage induces a convergence of married women to the same position of single women. Therefore, the eventual decline of the marital status gap can both be attributed to women's mobilization into the labor force and to

the decline of marriage. At the end of the process, married and single women find themselves in a more similar position, since they both work while neither enjoys the protection of a safe marriage. To sum up, coherently with the theoretical framework we develop in Section 2, we produce empirical evidence that marriage represents, for women, a sort of safe asset in the face of labor risk and also that the value of this asset, far from being time invariant, evolves over time. The explanation we suggest for this evolution rests on the analysis of the structure of family and society, as reflected by decline of marriage as a valuable safe asset in the face of increasing female labor force participation.

We are aware of the fact that there may be alternative explanations of our results. In particular, our interpretation of the evolution of the female marital status gap reflects the assumption that women make financial decisions independently of their husbands. This behaviour is actually consistent with the definition of household head provided by the data, as explained in Section 4. Moreover, it can be supported by a unitary household model where the household head is not influenced by the spouse in the making decisions over their pooled income. However, households' financial decisions may instead be based on the relative control of resources within the family and spouses may have different preferences, in particular toward risk. These considerations can be captured within bargaining models which explain the decision-making process of married couples.¹⁸ In our context, the implications of such a model would be that the higher propensity to invest in risky assets that we find for married women, if compared to single, could simply reflect the fact that their less risk averse husbands have some control over portfolio allocations, even if wives are officially in charge. However, this alternative interpretation would have to explain not only the marital gap, but also its time evolution. A possible explanation of the evolution we document, in a bargaining

¹⁸ See Lundberg and Pollak (1996) on a bargaining framework that allows spouses to have different preferences.

framework, could be that the marital status gap reflects the varying degree of control that husbands hold over their wives' decisions. According to this interpretation, the gap grows in the initial phase, as more married women take charge, but then decreases with the rising degree of independence of wives from their less risk adverse husbands. To conclude, even an interpretation in terms of a joint decisions model would reflect in practice the same societal trends that our first interpretation aims at explaining.

7. Conclusion

Based on a dataset drawn from the 1993-2006 Bank of Italy Survey of Household Income and Wealth, we study the joint impact of gender and marital status on financial decisions, its time evolution and the determinants of this evolution. Controlling for a number of observable characteristics, we show that married women have a higher propensity to invest in risky assets than single ones, while a marital status gap does not apply to men. These findings confirm our hypothesis that marriage may work as a sort of safe asset when women make portfolio decisions. Moreover, we present empirical evidence showing that the differential behavior of married vs. single women evolves over time, following a hump-shaped pattern, while no such pattern emerges for men. This confirms our second hypothesis that the female marital status gap is not time invariant. We also explore a number of possible explanations for the observed evolution, including aggregate and individual factors that capture the evolution of gender roles in the family and society, such as the increasing incidence of divorce and the expansion of female labor market participation. Our findings suggest that the evolution of the female marital status gap is driven by the role of those married women who are unemployed. The combination of two forces, women's continuing mobilization into the labor force in the postwar period and the decline of marriage in the past decade, can explain the initial rise and the subsequent decrease in the gap in the financial decisions of married and

single women. Thus we can conclude that the transformation of the structure of family and society shapes women's perception of marriage as a safe asset, as reflected by their financial decisions, with a decline in such a perception in more recent years as marriage becomes more risky.

More generally, our investigation leads us to conclude that the evolution of gender roles will continue to affect household financial decisions as well as macroeconomic aggregates. In particular, beside the increased incidence of divorce we focus on in this paper, we also witness a fall of formal marriages and a parallel increase of cohabitations, only few of which represent a preliminary step on the path to marriage. At the same, among marriages, we observe a huge increase in the proportion of non-religious ones. We plan to evaluate these factors in future work.

Acknowledgements

We would like to thank an anonymous referee, Steve Ball, Gianna Boero, Daniele Checchi, Davide Fiaschi, Tullio Jappelli, Michael Haliassos and participants at the 2009 CEPR European Summer Symposium in International Macroeconomics, the 9th SAET Conference on Current Trends in Economics and the Universities of Bologna and Pisa, for comments and suggestions.

References

- Barber, B.M., Odean, T., 2001. Boys will be boys: Gender, overconfidence and common stock investments. *Quarterly Journal of Economics* 116, 261-289.
- Brunetti, M., Torricelli, C., 2010. Population age structure and household portfolio choices in Italy. *European Journal of Finance* 16, 481-502.

- Butterworth, P., Oz, T., Rodgers, B., Berry H., 2008. Factors associated with relationship dissolution of Australian families with children. Social Policy Research Paper No. 37, Australian Government, Department of Families, Housing, Communities Services and Indigenous Affairs.
- Cardak, B.A., Wilkins, R., 2009. The determinants of household risky asset holdings: Australian evidence on background risk and other factors. *Journal of Banking & Finance* 33, 850-860.
- Christiansen, C., Joensen, J.S., Rangvid, J., 2010. Fiction or fact: Systematic gender differences in financial investments? Working paper.
- Croson, R., Gneezy, U., 2009. Gender differences in preferences. *Journal of Economic Literature* 47, 448-474.
- Cubeddu, L.M., Rios-Rull, J.-V., 2003. Families as shocks. *Journal of the European Economic Association* 1, 671-682.
- Del Boca, D., Pasqua, S., 2003. Employment patterns of husbands and wives and family income distribution in Italy (1977-98). *Review of Income and Wealth* 49, 221-245.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., Wagner, G.G., 2011. Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, forthcoming.
- Edlund, L., Pande, R., 2002. Why have women become more left-wing? The political gender gap and the decline in marriage. *Quarterly Journal of Economics* 117, 917-961.
- Fan, E., Zhao, R., 2009. Health status and portfolio choice: Causality or heterogeneity? *Journal of Banking & Finance* 33, 1079-1088.
- Fernandez, R., Fogli, A., 2009. Culture: An empirical investigation of beliefs, work and fertility. *American Economic Journal: Macroeconomics* 1, 146-177.

- Gollier, C., 2002. What does theory have to say about household portfolios? In Guiso, L., Haliassos, M., Jappelli, T. (Eds.), *Household Portfolios*. MIT Press: Cambridge.
- Guiso, L., Jappelli, T., 2002. Household portfolios in Italy. In Guiso, L., Haliassos, M., Jappelli, T. (Eds.), *Household Portfolios*. MIT Press: Cambridge.
- Heaton, T.B., 2002. Factors contributing to increasing marital stability in the United States. *Journal of Family Issues* 23, 392-409.
- Istat, 2008. *Evoluzione e Nuove Tendenze dell'Instabilità Coniugale*. Istat, Rome.
- Jianakopulos, N.A., Bernasek A., 1998. Are women more risk averse? *Economic Inquiry* 36, 620-630.
- Lott, J.R., Kenny, L.W., 1999. Did women's suffrage change the size and scope of government? *Journal of Political Economy* 107, 1163-1198.
- Love, D., 2009. The effect of marital status and children on savings and portfolio choice. *Review of Financial Studies* 23, 385-432.
- Lundberg, S.J., Pollak, R.A., 1996. Bargaining and distribution in marriage. *Journal of Economic Perspectives* 10, 139-158.
- Lupton, J.P., Smith, J.P., 2003. Marriage, assets and savings, in Grossbard-Shecht, S. (Ed.), *Marriage and the Economy: Theory and Evidence from Advanced Industrial Societies*. Cambridge University Press: Cambridge.
- Lusardi, A., Mitchell, O.S., 2008. Planning and financial literacy: How do women fare? *American Economic Review, Papers & Proceedings* 98, 413-417.
- Neeman, Z., Newman, A.F., Olivetti, C., 2008. Are career women good for marriage? Discussion Paper No. 167, Boston University - Institute for Economic Development.
- Pratt, J.W., Zeckhauser, R.J., 1987. Proper risk aversion. *Econometrica* 55, 143-154.
- Schmidt, L., Sevak, P., 2006. Gender, marriage and asset accumulation in the United States. *Feminist Economics* 12, 139-166.

- Schubert, R., Brown, M., Gysler, M., Brachinger, H.W., 1999. Financial decision-making: Are women really more risk-averse? *American Economic Review, Papers & Proceedings* 89, 381-385.
- Stevenson, B., Wolfers, J., 2007. Marriage and divorce: Changes and their driving forces. *Journal of Economic Perspectives* 21, 27-52.
- Sundén, A.E., Surette, B.J., 1998. Gender differences in the allocation of assets in retirement savings plans. *American Economic Review, Papers & Proceedings* 88, 207-211.
- Teachman, J.D., 2002. Stability across cohorts in divorce risk factors. *Demography* 39, 331-351.
- Zissimopoulos, J., Karney, B., Rauer, A., 2008. Marital histories and economic well-being. Working Paper 2008-180, Michigan Retirement Research Center.

APPENDIX A – Data description and summary statistics

Table A.1. Data description

VARIABLE	Description
SHIW DATA	
Source: http://www.bancaditalia.it/statistiche/indcamp/bilfait	
PARTICIPATION	Binary variable assuming value 1 in case of risky assets holdings in financial portfolios, 0 otherwise.
AGE	Integer variable assuming values between 16 and 104.
AGE-CLASS DUMMIES	Binary variables assuming value 1 if the age is within the relevant age-class (lower bound excluded, upper bound included), 0 otherwise. The following 5-year age-classes are considered: Less than 35, 35-40, 40-45, 45-50, 50-55, 55-60, 60-65, 65-69, 70 or more.
INCOME _{CURR}	Continuous variable representing household income at current values in thousand €.
WEALTH _{CURR}	Continuous variable representing household net wealth, defined as financial and real activities net of financial liabilities, at current values in thousand €.
INCOME	Continuous variable representing household income at 1995 value expressed in thousand €; obtained discounting INCOME _{CURR} by CPI with base 1995, as from Istat.
WEALTH	Continuous variable representing household wealth at 1995 value expressed in thousand €; obtained discounting WEALTH _{CURR} by CPI with base 1995, as from Istat.
FAMILY SIZE	Number of household components ranging between 1 and 9.
CHILDREN	Number of children in the household (no age limit, children living in the household) ranging from 0 to 7.
EDU	Categorical variable representing the highest education level achieved: 1 = no education 2 = primary school 3 = secondary school 4 = college 5 = graduate level 6 = post-graduate level.
MALE	Binary variable assuming value 1 for male, 0 for female.
MARRIED	Binary variable assuming value 1 for married, 0 otherwise, i.e., for never married, widowed or separated/divorced.
TENURE	Binary variable assuming value 1 for household heads holding a tenure position, 0 otherwise (i.e., temporary job).
SELF-EMPLOYED	Binary variable assuming value 1 for household heads being self-employed, 0 otherwise.
MARITAL INSTABILITY	Binary variable assuming value 1 for married couples in which the wife has a higher education with respect to the husband, 0 otherwise.
RISKFIN	Categorical variable representing the preferred risk profile of financial

investments:
 1 = high risk, high returns
 2 = reasonable risk, good returns
 3 = low risk, reasonable returns
 4 = no risk, low returns.

RISKAVERSION Binary variable set to 1 if RISKFIN = 4, 0 otherwise.

Istat DATA

Source: <http://www.istat.it/>

CPI	Consumer Price Index for whole collectivity.
MARRIAGES	Number of celebrated marriages at the regional level.
SEPARATIONS	Number of separations passed with sentence or validated without sentence during the year at the regional level.
DIVORCES	Number of divorces approved during the year at the regional level.
POPULATION	Total resident population at the regional level, in thousands.
DIVORCE HAZARD	Number of divorces over number of marriages at the regional level. Ranging between 2% and 36%.
DIVORCE RATE	Crude divorce rate at the regional level, computed as the number of divorces in each region every 1000 residents. Ranging between 1% and 15%.
SEPARATION RATE	Crude separation rate at the regional level, computed as the number of separations in each region every 1000 region residents. Ranging between 2% and 24%.
FLFP	Female labor force participation rate at the regional level, computed as the ratio of women occupied and those actively looking for an occupation over total female working-age population in the region. Ranging from 23% to 47%.
FER	Female employment rate at the regional level, computed as the ratio of women employed over total female working-age population in the region. Ranging between 15% and 45%.

OECD DATA

Source: <http://stats.oecd.org/wbos/Index.aspx?usercontext=sourceoecd>

FEMALE WORKING AGE POPULATION	Female population between 15 and 64 years of age, in thousands, since 1960.
FEMALE EMPLOYMENT	Employed women in thousands, since 1960.
FER	Female employment rate, computed as the ratio of employed women over female working-age population.

EUROSTAT DATA

Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

DIVORCE HAZARD	Number of divorces over number of marriages at the national level, available since 1974. Ranging between 3.5% and 20%.
----------------	--

Table A.2. Descriptive Statistics

Variables	Pooled Sample			Male			Female		
	1993	2006	Total	1993	2006	Total	1993	2006	Total
PARTICIPATION	0.063 (0.243)	0.113 (0.316)	0.106 (0.307)	0.079 (0.269)	0.138 (0.345)	0.124 (0.329)	0.024 (0.152)	0.067 (0.251)	0.069 (0.254)
PARTICIP _{GJ}	0.357 (0.479)	0.388 (0.487)	0.404 (0.491)	0.410 (0.492)	0.429 (0.495)	0.451 (0.498)	0.222 (0.415)	0.311 (0.463)	0.309 (0.462)
AGE	53.664 (15.898)	55.521 (16.208)	54.945 (16.129)	51.355 (14.796)	54.278 (15.134)	53.264 (15.033)	59.612 (17.055)	57.800 (17.789)	58.346 (17.662)
AGE ≤ 35	0.155 (0.362)	0.105 (0.307)	0.126 (0.332)	0.166 (0.372)	0.099 (0.299)	0.128 (0.334)	0.127 (0.333)	0.117 (0.322)	0.124 (0.329)
AGE 35-40	0.094 (0.291)	0.112 (0.315)	0.102 (0.303)	0.108 (0.310)	0.125 (0.331)	0.111 (0.315)	0.057 (0.232)	0.088 (0.283)	0.084 (0.278)
AGE 40-45	0.105 (0.307)	0.114 (0.318)	0.106 (0.308)	0.119 (0.324)	0.115 (0.320)	0.114 (0.318)	0.069 (0.254)	0.112 (0.316)	0.089 (0.285)
AGE 45-50	0.096 (0.295)	0.092 (0.288)	0.094 (0.291)	0.113 (0.316)	0.099 (0.298)	0.105 (0.307)	0.054 (0.226)	0.079 (0.270)	0.071 (0.257)
AGE 50-55	0.105 (0.306)	0.092 (0.289)	0.098 (0.297)	0.118 (0.323)	0.102 (0.302)	0.111 (0.314)	0.070 (0.255)	0.075 (0.263)	0.070 (0.255)
AGE 55-60	0.079 (0.270)	0.095 (0.293)	0.089 (0.285)	0.088 (0.284)	0.106 (0.308)	0.100 (0.300)	0.056 (0.230)	0.074 (0.262)	0.066 (0.249)
AGE 60-65	0.089 (0.285)	0.074 (0.263)	0.081 (0.272)	0.083 (0.275)	0.083 (0.276)	0.085 (0.279)	0.105 (0.306)	0.059 (0.235)	0.072 (0.258)
AGE 65-69	0.073 (0.260)	0.078 (0.268)	0.078 (0.269)	0.058 (0.233)	0.079 (0.270)	0.072 (0.259)	0.112 (0.315)	0.075 (0.264)	0.090 (0.287)
AGE ≥ 70	0.204 (0.403)	0.237 (0.425)	0.226 (0.418)	0.147 (0.354)	0.191 (0.393)	0.172 (0.378)	0.350 (0.477)	0.321 (0.467)	0.333 (0.471)
INCOME	22.687 (17.300)	25.732 (26.205)	23.823 (20.846)	25.352 (18.124)	28.866 (29.989)	26.395 (22.459)	15.820 (12.599)	19.986 (15.682)	18.619 (15.901)
WEALTH	139.177 (245.58)	201.268 (452.94)	159.895 (312.74)	160.610 (271.09)	229.062 (488.46)	181.600 (341.41)	83.953 (148.78)	150.306 (374.03)	115.984 (238.73)
FAMILY SIZE	2.894 (1.352)	2.540 (1.282)	2.689 (1.314)	3.216 (1.252)	2.783 (1.230)	2.979 (1.244)	2.063 (1.244)	2.095 (1.255)	2.101 (1.253)
CHILDREN	1.047 (1.070)	0.799 (0.979)	0.901 (1.018)	1.199 (1.080)	0.883 (1.005)	1.027 (1.042)	0.656 (0.939)	0.644 (0.910)	0.647 (0.918)
EDU = 1	0.105 (0.307)	0.054 (0.225)	0.082 (0.275)	0.069 (0.253)	0.031 (0.173)	0.051 (0.221)	0.199 (0.399)	0.096 (0.294)	0.145 (0.352)
EDU = 2	0.347 (0.476)	0.241 (0.428)	0.292 (0.455)	0.310 (0.463)	0.208 (0.406)	0.261 (0.439)	0.441 (0.497)	0.302 (0.459)	0.354 (0.478)
EDU = 3	0.276 (0.447)	0.286 (0.452)	0.273 (0.445)	0.315 (0.465)	0.314 (0.464)	0.304 (0.460)	0.174 (0.379)	0.235 (0.424)	0.208 (0.406)
EDU = 4	0.210 (0.407)	0.320 (0.467)	0.273 (0.446)	0.234 (0.423)	0.347 (0.476)	0.298 (0.457)	0.149 (0.356)	0.271 (0.445)	0.223 (0.417)

EDU = 5	0.060 (0.237)	0.094 (0.292)	0.077 (0.267)	0.069 (0.253)	0.093 (0.291)	0.082 (0.274)	0.035 (0.185)	0.095 (0.293)	0.068 (0.252)
EDU = 6	0.002 (0.050)	0.004 (0.067)	0.003 (0.052)	0.003 (0.052)	0.006 (0.079)	0.003 (0.058)	0.002 (0.043)	0.001 (0.033)	0.001 (0.036)
MARRIED	0.703 (0.457)	0.630 (0.483)	0.661 (0.473)	0.882 (0.322)	0.801 (0.399)	0.839 (0.368)	0.240 (0.427)	0.316 (0.465)	0.302 (0.459)
MALE	0.720 (0.449)	0.647 (0.478)	0.669 (0.471)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
DIVORCE HAZARD	4.246 (1.642)	7.804 (1.136)	6.446 (2.572)	4.177 (1.652)	7.821 (1.115)	6.341 (2.576)	4.424 (1.603)	7.773 (1.174)	6.659 (2.550)
DIVORCE RATE	0.084 (0.038)	0.191 (0.042)	0.145 (0.071)	0.083 (0.038)	0.192 (0.042)	0.142 (0.071)	0.088 (0.037)	0.190 (0.044)	0.151 (0.071)
SEPARATION RATE	8.617 (3.250)	14.229 (3.384)	12.227 (4.312)	8.500 (3.302)	14.283 (3.352)	12.032 (4.313)	8.916 (3.093)	14.132 (3.439)	12.623 (4.283)
FLFP	0.291 (0.066)	0.354 (0.080)	0.316 (0.082)	0.290 (0.066)	0.356 (0.080)	0.315 (0.082)	0.296 (0.066)	0.350 (0.081)	0.319 (0.082)
FER	0.339 (0.052)	0.386 (0.069)	0.362 (0.063)	0.338 (0.052)	0.388 (0.069)	0.361 (0.063)	0.342 (0.052)	0.384 (0.070)	0.364 (0.063)
TENURE	. (0.307)	0.895 (0.307)	0.908 (0.288)	. (0.305)	0.897 (0.305)	0.915 (0.279)	. (0.311)	0.891 (0.311)	0.891 (0.312)
SELF- EMPLOYED	0.177 (0.382)	0.156 (0.363)	0.161 (0.368)	0.222 (0.416)	0.196 (0.397)	0.203 (0.402)	0.063 (0.242)	0.083 (0.276)	0.076 (0.264)
MARITAL INSTABILITY	0.120 (0.325)	0.126 (0.332)	0.120 (0.325)	0.145 (0.352)	0.143 (0.350)	0.140 (0.347)	0.054 (0.226)	0.097 (0.296)	0.080 (0.271)
RISK AVERSION	. (0.500)	0.487 (0.500)	0.487 (0.500)	. (0.497)	0.447 (0.497)	0.450 (0.497)	. (0.496)	0.560 (0.496)	0.557 (0.497)
Obs.	7980	7768	55036	5932	4896	37528	2048	2872	17508

Notes: For additional details on the definition of the variables see Table A.1. All statistics are computed using sampling weights (pesofl2 in the SHIW). Standard deviations are reported in parenthesis.

APPENDIX B– Robustness

Table B.1. The determinants of the participation decision, 1993-2006:
An alternative definition of risky assets

	MALES				FEMALES			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
MARRIED	0.0997***	0.0483**	0.0504**	0.0407*	0.1784***	0.0840***	0.0848***	0.0988***
AGE 35-40		0.0435***	0.0429***	0.0441***		0.0268	0.0261	0.0258
AGE 40-45		0.0497***	0.0494***	0.0514***		0.0443**	0.0429**	0.0439**
AGE 45-50		0.0403***	0.0409***	0.0447***		0.0171	0.0173	0.0184
AGE 50-55		0.0251*	0.0258*	0.0318**		0.0512***	0.0503***	0.0525***
AGE 55-60		-0.0053	-0.0055	0.0030		0.0345*	0.0339*	0.0353*
AGE 60-65		0.0068	0.0064	0.0173		0.0032	0.0017	0.0046
AGE 65-69		-0.0201	-0.0203	-0.0089		-0.0070	-0.0090	-0.0056
AGE ≥ 70		-0.0689***	-0.0691***	-0.0567***		-0.0567***	-0.0572***	-0.0536***
INCOME		0.0083***	0.0083***	0.0081***		0.0101***	0.0100***	0.0099***
INCOME ² /1000		-0.0137***	-0.0137***	-0.0134***		-0.0313***	-0.0311***	-0.0309***
WEALTH		0.0004***	0.0004***	0.0004***		0.0005***	0.0005***	0.0005***
WEALTH ² /1000		-0.0000***	-0.0000***	-0.0000***		-0.0001***	-0.0001***	-0.0001***
FAMILY SIZE		-0.0200***	-0.0202***	-0.0182***		-0.0267***	-0.0273***	-0.0271***
CHILDREN		0.0105	0.0106	0.0085		0.0149	0.0154	0.0161
EDU = 2		0.1240***	0.1234***	0.1335***		0.0508***	0.0521***	0.0521***
EDU = 3		0.1965***	0.1958***	0.2085***		0.1245***	0.1260***	0.1287***
EDU = 4		0.2716***	0.2712***	0.2913***		0.1753***	0.1761***	0.1854***
EDU = 5		0.2702***	0.2698***	0.2934***		0.2209***	0.2228***	0.2355***
EDU = 6		0.3739***	0.3736***	0.3925***		0.1931*	0.2024**	0.2138**
1993*MARRIED		-0.0116	-0.0178	-0.0136		-0.0745**	-0.0732**	-0.0751**
1995*MARRIED		-0.0063	-0.0113	-0.0080		-0.0410	-0.0416	-0.0408
1998*MARRIED		0.0019	-0.0008	-0.0003		0.0151	0.0136	0.0159
2002*MARRIED		-0.0008	-0.0001	-0.0018		-0.0457*	-0.0446*	-0.0455*
2004*MARRIED		0.0191	0.0228	0.0197		-0.0370	-0.0347	-0.0376
2006*MARRIED		-0.0237	-0.0245	-0.0219		-0.0298	-0.0287	-0.0236
FLFP			1.0607*	1.2032**			1.1855*	1.2452*
DIVORCE								
HAZARD			0.4718				0.6106**	
MARITAL								
INSTABILITY				0.0538***				-0.0497***
Observations	37528	37528	37528	37528	17508	17508	17508	17508
Pseudo R-squared	0.1221	0.2288	0.2293	0.2298	0.1249	0.2472	0.2481	0.2482

Notes: Marginal effects of probit estimates with robust standard errors clustered at the regional level. The dependent binary variable is 1 if the household holds risky assets whereby this class is defined as in Guiso and Jappelli (2002). Each regression includes time and regional dummies. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table B.2. The determinants of the participation decision, 1993-2006:
A finer definition of marital status

	MALES				FEMALES			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
MARRIED	0.0271***	0.0086	0.0090	0.0056	0.0158***	0.0204***	0.0205***	0.0222***
SEPARATED-								
DIVORCED	0.0003	-0.0178**	-0.0177**	-0.0177**	-0.0090*	-0.0071*	-0.0071*	-0.0070*
WIDOW	-0.0095	0.0108	0.0110	0.0103	-0.0351***	-0.0036	-0.0037	-0.0033
AGE 35-40		0.0251***	0.0247***	0.0250***		0.0195***	0.0196***	0.0195***
AGE 40-45		0.0144**	0.0142**	0.0147**		0.0099*	0.0098*	0.0098*
AGE 45-50		0.0295***	0.0296***	0.0306***		0.0102*	0.0102*	0.0102*
AGE 50-55		0.0329***	0.0330***	0.0348***		0.0119**	0.0119**	0.0120**
AGE 55-60		0.0268***	0.0267***	0.0298***		0.0139***	0.0139**	0.0139***
AGE 60-65		0.0375***	0.0374***	0.0416***		0.0123*	0.0122*	0.0123*
AGE 65-69		0.0401***	0.0400***	0.0446***		0.0020	0.0018	0.0020
AGE ≥ 70		0.0173**	0.0171**	0.0216**		-0.0004	-0.0005	-0.0004
INCOME		0.0024***	0.0024***	0.0023***		0.0018***	0.0018***	0.0018***
INCOME ² /1000		-0.0038***	-0.0038***	-0.0037***		-0.0056***	-0.0056***	-0.0056***
WEALTH		0.0001***	0.0001***	0.0001***		0.0001***	0.0001***	0.0001***
WEALTH ² /1000		-0.0000***	-0.0000***	-0.0000***		-0.0000*	-0.0000*	-0.0000*
FAMILY SIZE		-0.0175***	-0.0176***	-0.0169***		-0.0090***	-0.0090***	-0.0089***
CHILDREN		0.0098**	0.0099**	0.0092**		0.0046	0.0046	0.0046
EDU = 2		0.1033***	0.1028***	0.1082***		0.0156*	0.0157*	0.0157*
EDU = 3		0.1614***	0.1608***	0.1676***		0.0406***	0.0406***	0.0410***
EDU = 4		0.2409***	0.2405***	0.2544***		0.0702***	0.0702***	0.0717***
EDU = 5		0.3246***	0.3237***	0.3488***		0.1155***	0.1156***	0.1190***
EDU = 6		0.3683***	0.3651***	0.3943***		0.0636	0.0644*	0.0679*
1993*MARRIED		-0.0003	-0.0015	-0.0006		-0.0228***	-0.0227***	-0.0228***
1995*MARRIED		-0.0110	-0.0118	-0.0109		-0.0168**	-0.0169**	-0.0169**
1998*MARRIED		0.0091	0.0084	0.0086		-0.0078	-0.0079	-0.0077
2002*MARRIED		0.0206	0.0207	0.0202		-0.0111**	-0.0111**	-0.0110**
2004*MARRIED		0.0211	0.0216	0.0211		-0.0130**	-0.0131**	-0.0130**
2006*MARRIED		-0.0022	-0.0019	-0.0017		-0.0151***	-0.0152***	-0.0149**
FLFP			0.5640***	0.5765***			0.1452	0.1342
DIVORCE								
HAZARD			0.0830				0.0553	
MARITAL								
INSTABILITY				0.0213***				-0.0042
Observations	37528	37528	37528	37528	17508	17508	17508	17508
Pseudo R-squared	0.0837	0.2163	0.2167	0.2175	0.1150	0.2468	0.2469	0.2470

Notes: Marginal effects of probit estimates with robust standard errors clustered at the regional level. Each regression includes time and regional dummies. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table B.3. The determinants of the participation decision, 2004-2006:
Risk aversion

	MALES				FEMALES			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
MARRIED	0.0271***	0.0310	0.0274	0.0241	0.0097	0.0032	0.0016	0.0009
AGE 35-40	0.1043***	0.1063***	0.1069***	0.1082***	0.0604***	0.0728***	0.0738***	0.0732***
AGE 40-45	0.0547***	0.0515*	0.0527*	0.0539*	0.0451***	0.0500***	0.0501***	0.0500***
AGE 45-50	0.0954***	0.1083***	0.1090***	0.1114***	0.0306***	0.0362**	0.0362**	0.0362**
AGE 50-55	0.0986***	0.1029***	0.1054***	0.1072***	0.0287**	0.0342	0.0342	0.0341*
AGE 55-60	0.0922***	0.0953***	0.0960***	0.0996***	0.0398***	0.0606***	0.0604***	0.0602***
AGE 60-65	0.1231***	0.1372***	0.1373***	0.1448***	0.0569***	0.0758***	0.0747***	0.0746***
AGE 65-69	0.1197***	0.1333***	0.1364***	0.1441***	0.0366***	0.0454**	0.0455**	0.0454**
AGE ≥ 70	0.0881***	0.0983***	0.0995***	0.1086***	0.0377***	0.0481***	0.0479***	0.0474***
INCOME	0.0020***	0.0019***	0.0020***	0.0019***	0.0017***	0.0019***	0.0019***	0.0019***
INCOME ² /1000	-0.0027***	-0.0027***	-0.0027***	-0.0026***	-0.0057***	-0.0064***	-0.0064***	-0.0064**
WEALTH	0.0001***	0.0002***	0.0002***	0.0002***	0.0001***	0.0001***	0.0001***	0.0001***
WEALTH ² /1000	-0.0000***	-0.0000***	-0.0000***	-0.0000***	-0.0000***	-0.0000***	-0.0000***	-0.0000***
FAMILY SIZE	-0.0131	-0.0164	-0.0168	-0.0158	-0.0050	-0.0033	-0.0035	-0.0035
CHILDREN	0.0048	0.0103	0.0106	0.0095	0.0004	-0.0009	-0.0007	-0.0008
EDU = 2	0.1496***	0.1949**	0.1944**	0.2017**	-0.0040	-0.0109	-0.0104	-0.0102
EDU = 3	0.2158***	0.2573***	0.2554***	0.2633***	0.0231*	0.0260	0.0259	0.0260
EDU = 4	0.2976***	0.3209***	0.3187***	0.3339***	0.0647***	0.0682***	0.0677***	0.0675***
EDU = 5	0.4124***	0.4227***	0.4213***	0.4453***	0.1117***	0.1044***	0.1031***	0.1021***
EDU = 6	0.2900***	0.2791**	0.2772**	0.3054**	0.1199	0.0890	0.0879	0.0869
2006*MARRIED	-0.0197*	-0.0174	-0.0115	-0.0143	-0.0041	0.0018	0.0041	0.0040
RISK AVERSE		-0.1119***	-0.1107***	-0.1108***	-0.0630***	-0.0628***	-0.0626***	
FLFP			2.3015***	3.4169***			1.1601	0.9998
DIVORCE								
HAZARD			-0.5143**				0.0766	
MARITAL								
INSTABILITY				0.0318*				0.0022
Observations	9781	6788	6788	6788	5894	3731	3731	3731
Pseudo R-squared	0.2104	0.2497	0.2516	0.2518	0.2141	0.2577	0.2581	0.2581

Notes: In columns 1, we reproduce the specification previously presented in Table 1, columns 2 for the entire 1993-2006 sample. Marginal effects of probit estimates with robust standard errors clustered at the regional level. Each regression includes regional dummies and a dummy for the year 2006.* significant at 10%; ** significant at 5%; *** significant at 1%.

Table B.4. The determinants of the participation decision, 2000-2006:
Job Tenure

	MALES					FEMALES				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
MARRIED	0.0200***	0.0212**	0.0239	0.0236	0.0183	0.0182***	0.0201	0.0446**	0.0441**	0.0551**
AGE 35-40	0.0440***	0.0356**	0.0353**	0.0348**	0.0355**	0.0314***	0.0591***	0.0595***	0.0579***	0.0598***
AGE 40-45	0.0246*	0.0172	0.0168	0.0168	0.0178	0.0226***	0.0430**	0.0435**	0.0430**	0.0442***
AGE 45-50	0.0459***	0.0424***	0.0419***	0.0418***	0.0433***	0.0205**	0.0375*	0.0373*	0.0373*	0.0377*
AGE 50-55	0.0445***	0.0264*	0.0260*	0.0260*	0.0291**	0.0193**	0.0386*	0.0395*	0.0384*	0.0416**
AGE 55-60	0.0439***	0.0044	0.0046	0.0042	0.0093	0.0278***	0.0296	0.0300	0.0288	0.0305
AGE 60-65	0.0664***	0.0311	0.0315	0.0306	0.0386	0.0288***	-0.0143	-0.0128	-0.0128	-0.0122
AGE 65-69	0.0663***	-0.0386	-0.0388	-0.0383	-0.0363	0.0188**	0.2192	0.2194	0.2234*	0.2224
AGE ≥ 70	0.0387**	0.0186	0.0215	0.0229	0.0349	0.0105				
INCOME	0.0025***	0.0048***	0.0048***	0.0048***	0.0046***	0.0020***	0.0058***	0.0057***	0.0057***	0.0056***
INCOME ² /1000	-0.0037***	-0.0200***	-0.0200***	-0.0199***	-0.0189***	-0.0064***	-0.0353***	-0.0345***	-0.0344***	-0.0340***
WEALTH	0.0001***	0.0002***	0.0002***	0.0002***	0.0002***	0.0001***	0.0001*	0.0001**	0.0001*	0.0001**
WEALTH ² /1000	-0.0000***	0.0000	0.0000	0.0000	0.0000	-0.0000*	0.0000	0.0000	0.0000	0.0000
FAMILY SIZE	-0.0129**	-0.0249***	-0.0242***	-0.0241***	-0.0225**	-0.0118***	-0.0162	-0.0150	-0.0150	-0.0147
CHILDREN	0.0041	0.0175*	0.0167*	0.0167*	0.0154	0.0066	0.0101	0.0090	0.0095	0.0087
EDU = 2	0.0953***	0.0944	0.0914	0.0923	0.0968	0.0211	0.9483***	0.9499***	0.9494	0.9500
EDU = 3	0.1674***	0.1289*	0.1264*	0.1275*	0.1384**	0.0547***	0.9795***	0.9817***	0.9806***	0.9819***
EDU = 4	0.2520***	0.1929***	0.1904***	0.1913***	0.2123***	0.0974***	0.8969***	0.9033***	0.8999***	0.9056***
EDU = 5	0.3276***	0.2605***	0.2567***	0.2580***	0.3007***	0.1624***	0.9883***	0.9889***	0.9887***	0.9892***
EDU = 6	0.2928***	0.2789**	0.2773**	0.2814**	0.3324**	0.1374**	0.9226	0.9226	0.9230***	0.9230***
TENURE		0.0194	0.0198	0.0200	0.0197		-0.0416**	-0.0423**	-0.0412**	-0.0436**
2002*MARRIED			0.0178	0.0180	0.0166			-0.0287	-0.0298	-0.0290
2004*MARRIED			0.0000	0.0002	-0.0003			-0.0205	-0.0189	-0.0209
2006*MARRIED			-0.0269	-0.0268	-0.0273			-0.0367	-0.0373	-0.0373
FLFP				0.6330	0.5881				-0.4104	-0.6347
DIVORCE HAZARD				0.0596					0.5336***	
MARITAL INSTABILITY					0.0375***					-0.0233
Observations	20141	8032	8032	8032	8032	11643	2922	2922	2922	2922
Pseudo R	0.2016	0.2020	0.2024	0.2026	0.2044	0.2256	0.1908	0.1920	0.1937	0.1935

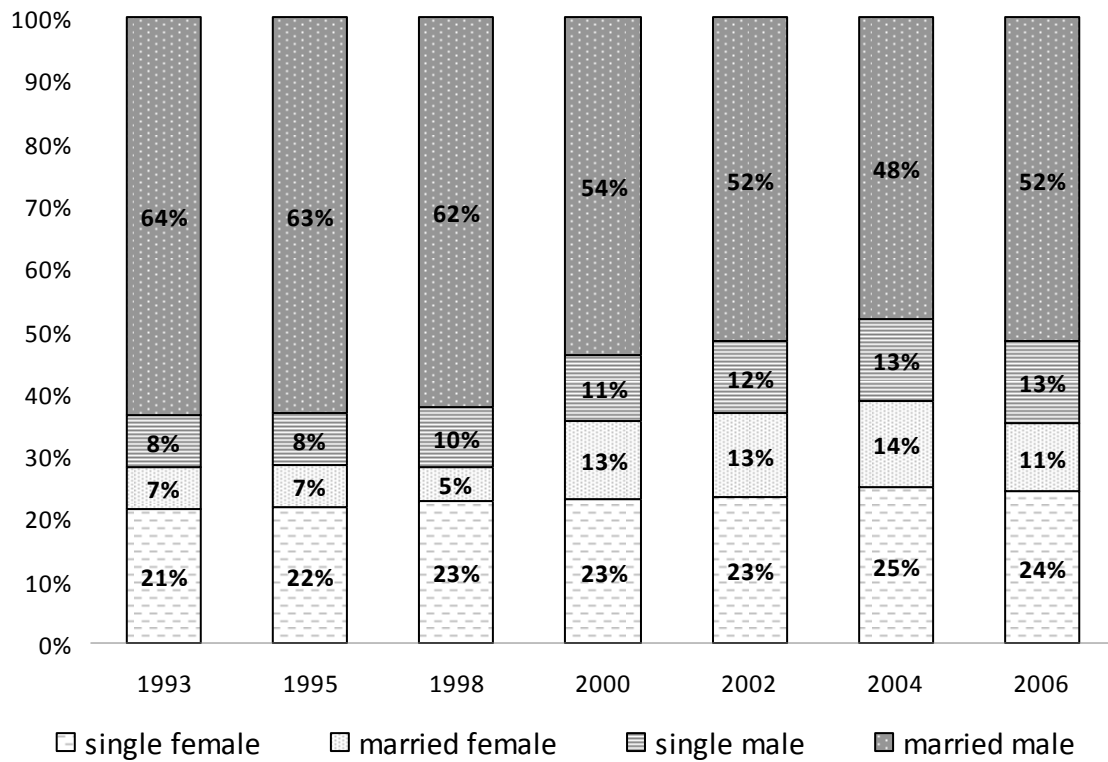
Notes: In columns 1, we reproduce the specification previously presented in Table 1, columns 2 for the entire 1993-2006 sample. Marginal effects of probit estimates with robust standard errors clustered at the regional level. Each regression includes also regional dummies and dummies for the years 2002, 2004 and 2006. * significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 1. Female employment rate and divorce hazard Italy, 1960-2006



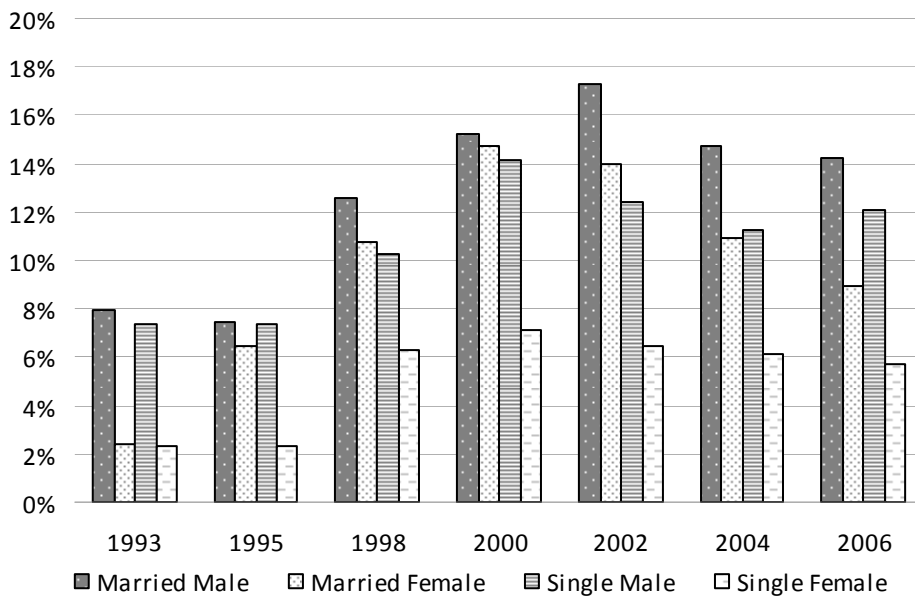
Note: Authors' elaborations based on data from Eurostat and OECD. The female employment rate (left scale) is computed as female employment over female working age population (OECD), while the divorce hazard (right scale) is defined the ratio between the number of divorces and the number of marriages (Eurostat).

Figure 2. Household financial heads by gender and marital status, 1993-2006



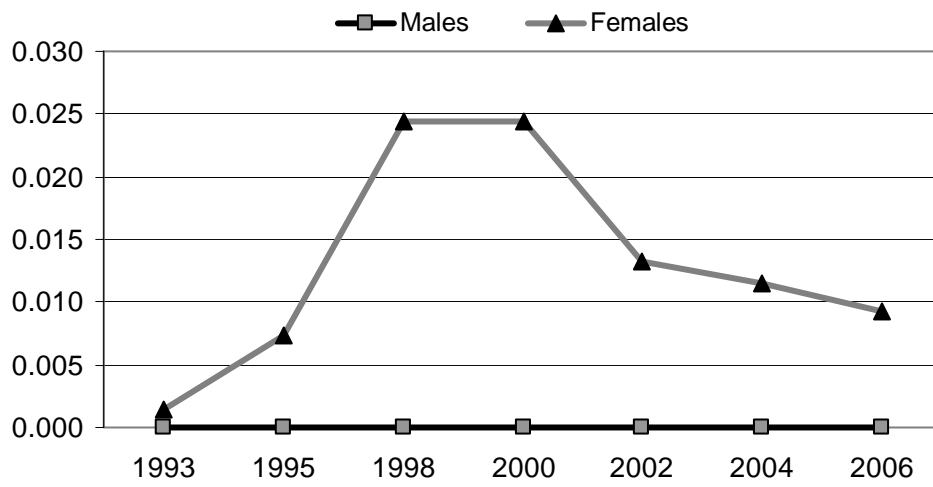
Note: The figure reports the weighted percentage of households by gender and marital status of the household financial head as from each SHIW wave available between 1993 and 2006.

Figure 3. Participation rate by gender and marital status, 1993-2006



Note: Percentage of households participating to the risky market by gender and marital status of the household financial head from each SHIW wave available between 1993 and 2006.

Figure 4. The marital status gap in the participation decision, by gender, 1993-2006



Note: The figure reports the total marginal effect of the married dummy with reference to specification 2 in Table 1.

Table 1. The determinants of the participation decision, 1993-2006

	MALES				FEMALES			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
MARRIED	0.0293***	0.0096	0.0099	0.0068	0.0421***	0.0244***	0.0246***	0.0261***
AGE 35-40		0.0241***	0.0238***	0.0241***		0.0185***	0.0186***	0.0186***
AGE 40-45		0.0132**	0.0130**	0.0135**		0.0088	0.0087	0.0087
AGE 45-50		0.0281***	0.0281***	0.0292***		0.0089*	0.0090*	0.0090*
AGE 50-55		0.0316***	0.0318***	0.0336***		0.0106**	0.0106**	0.0107**
AGE 55-60		0.0259***	0.0258***	0.0288***		0.0127**	0.0127**	0.0128**
AGE 60-65		0.0374***	0.0374***	0.0414***		0.0111*	0.0111*	0.0113*
AGE 65-69		0.0406***	0.0405***	0.0450***		0.0012	0.0010	0.0014
AGE ≥ 70		0.0192**	0.0190**	0.0234***		-0.0012	-0.0013	-0.0010
INCOME		0.0024***	0.0024***	0.0023***		0.0018***	0.0018***	0.0018***
INCOME ² /1000		-0.0038***	-0.0038***	-0.0037***		-0.0056***	-0.0056***	-0.0056***
WEALTH		0.0001***	0.0001***	0.0001***		0.0001***	0.0001***	0.0001***
WEALTH ² /1000		-0.0000***	-0.0000***	-0.0000***		-0.0000*	-0.0000*	-0.0000*
FAMILY SIZE		-0.0174***	-0.0175***	-0.0168***		-0.0083***	-0.0084***	-0.0083***
CHILDREN		0.0102***	0.0103***	0.0096**		0.0033	0.0034	0.0034
EDU = 2		0.1027***	0.1021***	0.1077***		0.0158*	0.0159*	0.0159*
EDU = 3		0.1602***	0.1596***	0.1665***		0.0408***	0.0409***	0.0413***
EDU = 4		0.2394***	0.2389***	0.2530***		0.0708***	0.0709***	0.0723***
EDU = 5		0.3218***	0.3209***	0.3462***		0.1174***	0.1175***	0.1207***
EDU = 6		0.3651***	0.3620***	0.3913***		0.0697*	0.0706*	0.0738*
1993*MARRIED		-0.0003	-0.0016	-0.0007		-0.0229***	-0.0229***	-0.0229***
1995*MARRIED		-0.0106	-0.0114	-0.0106		-0.0171**	-0.0171**	-0.0171**
1998*MARRIED		0.0093	0.0085	0.0087		-0.0079	-0.0080	-0.0078
2002*MARRIED		0.0199	0.0200	0.0195		-0.0111**	-0.0111**	-0.0110**
2004*MARRIED		0.0223	0.0228	0.0224		-0.0129**	-0.0130**	-0.0130**
2006*MARRIED		-0.0010	-0.0007	-0.0005		-0.0151***	-0.0151**	-0.0148**
FLFP			0.5645***	0.5771***			0.1493	0.1385
DIVORCE HAZARD			0.0830				0.0538	
MARITAL INSTABILITY				0.0214***				-0.0043
Observations	37528	37528	37528	37528	17508	17508	17508	17508
Pseudo R-squared	0.0837	0.2160	0.2164	0.2172	0.1064	0.2464	0.2466	0.2467

Notes: Marginal effects of probit estimates with robust standard errors clustered at the regional level. Each regression includes time and regional dummies.* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 2. The determinants of the participation decision, 1993-2006:

Employed household heads

	MALES				FEMALES			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
MARRIED	0.0295***	0.0249**	0.0253**	0.0210**	0.0543***	0.0307*	0.0306*	0.0352*
AGE 35-40		0.0303***	0.0300***	0.0302***		0.0383***	0.0375***	0.0379***
AGE 40-45		0.0167**	0.0165**	0.0169**		0.0239*	0.0236*	0.0237**
AGE 45-50		0.0342***	0.0343***	0.0356***		0.0144	0.0144	0.0144
AGE 50-55		0.0362***	0.0364***	0.0387***		0.0211	0.0201	0.0213
AGE 55-60		0.0224**	0.0224**	0.0261***		0.0103	0.0096	0.0102
AGE 60-65		0.0194	0.0191	0.0243*		-0.0146	-0.0153	-0.0148
AGE 65-69		0.0070	0.0067	0.0113		0.1207	0.1223	0.1237
AGE ≥ 70		0.0479	0.0481	0.0543*		0.0253	0.0260	0.0266
INCOME		0.0025***	0.0025***	0.0024***		0.0034***	0.0033***	0.0033***
INCOME ² /1000		-0.0038***	-0.0038***	-0.0037***		-0.0124***	-0.0123***	-0.0122***
WEALTH		0.0001***	0.0001***	0.0001***		0.0001***	0.0001***	0.0001***
WEALTH ² /1000		-0.0000***	-0.0000***	-0.0000***		-0.0000***	-0.0000***	-0.0000***
FAMILY SIZE		-0.0249***	-0.0248***	-0.0241***		-0.0078	-0.0078	-0.0076
CHILDREN		0.0169***	0.0168***	0.0164***		-0.0006	-0.0005	-0.0006
EDU = 2		0.1976**	0.1982**	0.2095***		0.9654	0.9654***	0.9657***
EDU = 3		0.2262***	0.2270***	0.2392***		0.9728***	0.9725***	0.9731***
EDU = 4		0.2971***	0.2979***	0.3182***		0.9092***	0.9086***	0.9107***
EDU = 5		0.4352***	0.4363***	0.4731***		0.9899***	0.9899***	0.9902***
EDU = 6		0.4897***	0.4895***	0.5298***		0.9341***	0.9342	0.9345
1993*MARRIED		-0.0092	-0.0101	-0.0095		-0.0528**	-0.0527**	-0.0529**
1995*MARRIED		-0.0240	-0.0246	-0.0240		-0.0350	-0.0354	-0.0357
1998*MARRIED		0.0044	0.0035	0.0034		0.0138	0.0133	0.0132
2002*MARRIED		0.0195	0.0198	0.0190		-0.0171	-0.0179	-0.0170
2004*MARRIED		0.0030	0.0030	0.0028		-0.0021	-0.0007	-0.0018
2006*MARRIED		-0.0132	-0.0125	-0.0130		-0.0125	-0.0131	-0.0126
FLFP			0.6765**	0.6872**			-0.3123	-0.3789
DIVORCE								
HAZARD			-0.0111				0.2895*	
MARITAL								
INSTABILITY				0.0274***				-0.0113
Observations	21356	21356	21356	21356	5001	5001	5001	5001
Pseudo R-squared	0.0792	0.1931	0.1935	0.1946	0.0845	0.1910	0.1918	0.1915

Notes: Marginal effects of probit estimates with robust standard errors clustered at the regional level. Each regression includes time and regional dummies.* significant at 10%; ** significant at 5%; *** significant at 1%.