



EIEF Working Paper 21/01

January 2021

**From Patriarchy to Partnership:
Gender Equality and Household Finance**

by

Luigi Guiso

(EIEF)

Luana Zaccaria

(EIEF)

FROM PATRIARCHY TO PARTNERSHIP: GENDER EQUALITY AND HOUSEHOLD FINANCE*

Luigi Guiso (EIEF) Luana Zaccaria (EIEF)

Abstract

We estimate a novel measure of gender norms on intra-household financial decision making by leveraging dramatic variation across Italian cohorts and regions in the gender of the spouse in charge of household finances that occurred over the last 30 years. We use these estimates to identify the effects of gender parity on household financial decisions. We find that more egalitarian norms increase household participation in financial markets, equity holdings and asset diversification. Egalitarian couples earn higher returns on investments which can raise wealth at retirement up to 15% compared to couples that strictly comply with patriarchal norms. This evidence suggests that gender roles in household financial management can have large economic costs. Consistent with this view, we show that patriarchal norms began receding in the early 1990s, when a pension reform made it too costly to comply with traditional roles.

Keywords: Household Finance, Social Norms, Gender Equality

JEL classification: D14, G11, G41

*Guiso: Einaudi Institute for Economics and Finance, luigi.guiso55@gmail.com. Zaccaria: Einaudi Institute for Economics and Finance, zaccaria.luana3@gmail.com (corresponding author). We are very grateful to Orazio Attanasio, Francesco D'Acunto, Raquel Fernandez, Anastasia Girshina, Jessica Pan and Tarun Ramadorai for very useful comments and discussions. We benefited from comments by participants at the CEPR European Conference on Household Finance (2020), Swedish House of Finance Annual Conference (2020), NBER Summer Institute Gender in the Economy Workshop (2020), Cultural Economics and Finance Conference (Trier, 2020), and the Gender and Economics Workshop (Luxembourg, 2019).

1 Introduction

Since Becker’s [1974, 1981] seminal work on households’ division of labor, the study of household decision making has been at the center of a vast literature (see Pollack[2011, 2013] and Chiappori and Lewbel [2015] for recent reviews). A key result of Becker’s theory is that family members specialize in different activities, such as market or home production, based on their individual comparative advantage. This is how, Becker argues, families exploit the benefits of division of labor and attain maximum consumption.

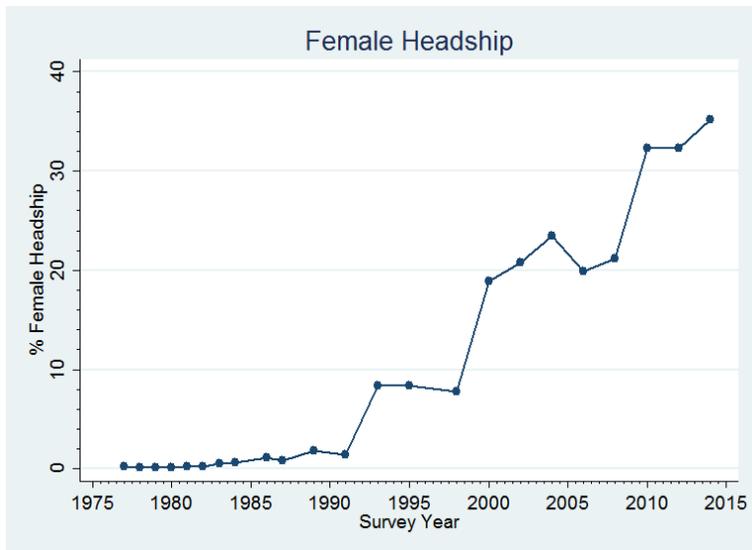
The division of tasks between household members, however, may also indicate social norms dictating who should do what, irrespective of comparative advantage. This may be so for the division of labor between genders, particularly with regard to the allocation to tasks that the social norms view as more “masculine” or “feminine.” For example, Akerlof and Kranton [2000] suggest that the larger share of domestic work allocated to women can be explained by the desire to comply with gender-specific social norms rather than efficiency considerations. Just as domestic work is perceived as feminine, financial matters are typically considered the domain of men (Barber and Odean [2001]), and “money chores”, such as financial planning and investing, are often allocated to the male spouse.¹ In this paper, we ask whether compliance with this gender norm can have material consequences on household welfare. If women are systematically excluded from household financial management not on the basis of their skills but because society views this task as “masculine,” then the decision process may yield sub-optimal financial choices, resulting in lower consumption compared to the Becker [1974] equilibrium outcome. We investigate this hypothesis by studying empirically the effect of gender norms on household financial decisions and outcomes.

To characterize gender norms in the domestic context, we examine the cross-regional and time-series changes in the gender of the economic decision-maker, the household head, as reported by the married or cohabiting household members in the Bank of Italy Survey of Households Income and Wealth (SHIW). Figure 1 below documents an extraordinary shift in

¹This has been attributed to the legacy of past laws excluding women from ownership of assets (Braunstein and Folbre [2001]), wrong or exaggerated perceptions on female cognitive abilities (Phelps [1972]), or the fact that decision making in risky environments primes male identity (D’Acunto [2020]).

decision making power from Italian men to their female spouses.

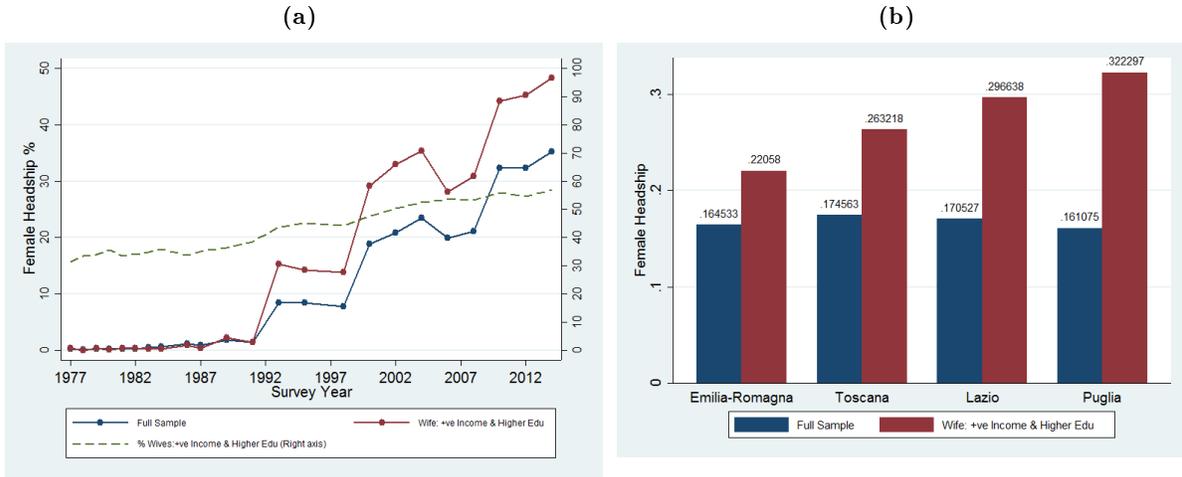
Figure 1: Female Headship in Two-Spouse Households



The share of married or cohabiting women in charge of household’s economic decision making increased from just 1% in the early 1990s to over 35% in 2014. Over a quarter century, Italian families moved slowly from a “patriarchy” equilibrium – where the man decides – to a “partnership”-type arrangement, where financial and economic headship is more equally assigned between spouses. This transformation can be partly explained by changes in relative comparative advantage. Increasing education levels and labor force participation have made women more familiar with market production and thus more suited to the task of household economic management. However, comparative advantage does not appear to be the only relevant factor. For example, until the early 90s, income-earning women with equal or higher education than their spouses (approximately 35% of the sample) were equally unlikely to be the household head as women with lower education and outside of the labor force (Figure 2a). By 2014, this gap in headship probability reached 15 percentage points, suggesting that comparative advantage became an important factor in headship allocation only in recent years. Moreover, even after the 1980s, the comparative advantage based on education and labor force participation affects female headship probability differently in different regions (Figure 2b). Thus, female headship appears to be related to generational and regional factors, or, in other

words, to household’s social context.

Figure 2: Female Headship, Education and Labor Force Participation



To formalize this intuition, we introduce a simple social conformism model à la Akerlof [1997]. In the model, married households decide who, between the husband and wife, should manage the family wealth. The choice trades off the allocation of decision power based on comparative advantage (e.g., financial skills), as in Becker [1974], against the pressure to conform to a local social norm. The local norm is shaped by the behavior of older cohorts in the region (the “reference group”) and can evolve slowly. This conceptual framework offers two main insights, on which we build our empirical analysis. First, it provides the basis for the identification of gender norms from observed variation in headship data at the cohort and region level. We use variation across cohorts and regions in this novel gender norm measure to study its relation with household financial behavior. Second, it suggests possible explanations for changes in gender norms. Namely, the tension between economic efficiency and importance of tradition characterizing the model suggests that household-level economic shocks that raise significantly the cost of conforming with the norm may induce a break with tradition and abandonment of “old” gender roles. If these shocks are broad enough to involve an entire generation, they might transform the prevailing gender social norms. We test this hypothesis in the context of a pension reform enacted in Italy in the early 1990s.

Following the empirical strategy suggested by our model, we estimate gender norms using

a linear probability model for female household headship. Controlling for a rich set of husband and wife comparative advantage measures, we quantify the variation in observed female headship due to societal common factors, as opposed to spousal characteristics, by means of combined cohort and region fixed effects. We use the estimated cohort-region effects on headship allocation as measures of social norms. Put differently, we identify “patriarchal” (“egalitarian”) communities as cohort-region clusters displaying systematically lower (higher) shares of female headship. Therefore, we characterize each cohort-region community by a comparative-advantage “adjusted” probability of female headship, which we henceforth refer to as spousal *Equality*. This methodology departs from previous research which gauges gender norms using data from social values surveys (e.g, the World Values Survey), allowing us to circumvent the limitations that these surveys present in the context of our analysis, such as the absence of specific questions on gender roles in family economic management and lack of data granularity (due to small sample size).

Next, we explore the relationship between our gender norms measure (*Equality*) and household financial behavior. We find that egalitarian norms significantly relate to important aspects of household investment behavior, with positive effect on participation in financial markets, equity holdings and asset diversification. Moreover, egalitarian norms increase the share of household income generated by financial investment, implying that gender parity can improve household welfare by inducing a more efficient financial decision making process.²

Our findings are consistent with the view that greater gender parity grants the role of decision maker to the spouse more suitable for the task, as suggested by our model, as well as fosters better collaboration between spouses (Ke [2020]). In particular, we find that the effects of *Equality* on participation in financial markets are stronger when spouses work in different sectors and are more time- constrained from professional or domestic obligations, suggesting that egalitarian norms facilitate attention cost sharing and the exploitation of information complementarities.³

²A large theoretical and empirical literature suggests that households incur significant utility losses due to lack of participation in financial markets and portfolio under diversification. See Guiso and Sodini [2013] and Gomes et al. [2020] for reviews.

³In this sense, spousal equality may attenuate rational inattention and the resulting portfolio inertia, re-

One potential concern with our results is that they may reflect the possible correlation between *Equality* and relevant unobservable (or omitted) variables related to women emancipation or other contemporaneous social and economic processes. For example, changes in gender norms may be linked to broader societal changes in trust and secularization levels, which have been shown to affect households' financial decisions (Guiso et al. [2004], Kumar et al. [2011]). Additionally, gender parity norms in households may mirror broader female emancipation. More emancipated societies typically offer women more and better job opportunities, allowing families to smooth labor income shocks to the two spouses and protect their aggregate income. Lower income risk may then induce positive effects on participation, equity holdings and asset diversification.⁴ As a placebo test, we repeat our analysis on a sample of households that *do not* have two spouses, for example, single adults with or without children. These households are exposed to broad societal changes but not to those affecting task allocation decisions between spouses. *Equality* has no significant effect on financial investments in this sample. We interpret this as evidence that other societal or income risk factors do not drive our findings.

We conclude our study by testing the hypothesis that, consistent with our theoretical framework, a significant economic shock may trigger the transformation of gender norms, by increasing the importance of economic efficiency versus tradition. We identify this shock with the 1992 pension reform in Italy, which sensibly reduced workers' future public pension benefits. As in Attanasio and Brugiavini [2003], we exploit the fact that households were affected differently by the reform, and show that affected households are more likely to switch to female headship. Thus, we provide evidence that a slow shift toward gender parity in the family can be hastened by policy reforms that reduce government safety net programs, such as pension reforms, increasing the importance of efficient financial decision making at the household level.

The rest of the paper proceeds as follows. Section (2) relates the study to the literature. Section (3) sets up a simple conceptual framework, providing the basis for our empirical

ducing inefficiency in portfolio allocations (Caplin and Dean [2015], Abel et al. [2007], Alvarez et al. [2012]).

⁴See for example Guiso et al. [1996] and Viceira [2001].

method to measure gender social norms in the domestic context and predict their effect on household financial choices. Section (4) describes the data. Section (5) shows how we measure the evolution of social norms, while Section (6) presents the main empirical results, discussed further in Section (7). Section (8) discusses the possible explanations for the drastic changes in social norms on family financial headship. Section (9) concludes the paper.

2 Related Literature

Our paper is related to several strands of the literature. First, it is related to the intra-household resources allocation literature, initiated by Becker [1974] (see the reviews of Chiappori and Lewbel [2015] and Donni and Chiappori [2011]). Differently from a large part of this literature which emphasizes optimal specialization, we allow the allocation of tasks between family members to also depend on the social norms prescribing gender-specific roles. In doing so, we expand the role of “extra-household environmental parameters” originally proposed by McElroy and Horney [1981] as factors external to the household unit (e.g., social attitude toward divorce) affecting the decision process. However, unlike the above study and the extensive subsequent literature on non-cooperative models (e.g., Lundberg and Pollak [1993]), we abstract from within-couple bargaining dynamics. This approach is based on our empirical evidence. If husbands and wives did indeed bargain over investment choices due to, for example, differences in risk aversion or optimism, the consequence of female empowerment would be lower participation in financial markets and safer allocations (see Olafsson and Thornquist [2018]). Our empirical results, however, support the view that equality increases both participation and diversification, thus improving the efficiency of household financial management. Moreover, Bertocchi et al. [2014] show that headship attribution among Italian households follows empirical patterns that are consistent with both non-cooperative and unitary models, with no clear evidence in favor of one single explanation.

Second, our paper contributes to the large recent literature on cultural norms, economic outcomes, and female emancipation, documenting both evolution and persistence in gender roles (see for example Fernandez [2007], Alesina et al. [2013], Bertrand et al. [2015]). Similar to

previous studies, we find that homogeneous social groups display a certain degree of attachment to traditional gender roles, allowing social norms to persist (Fernandez and Fogli [2009]), but we also document transitional dynamics in social norms across generations and geographical areas. This allows us to study cultural evolution and trace the abandonment of inherited social norms back to specific economic causes, namely Italy’s 1992 pension reform. We show that the impulse for social change may have economic roots, as people stop conforming to gender roles when this causes them to take a large financial toll.

Finally, and more directly, our work contributes to the growing literature on gender and finance (Barber and Odean [2001], Lusardi and Mitchell [2008], Adams and Ferreira [2009], D’Acunto et al. [2020]), and on culture and household investments (e.g. Guiso et al. [2008], Haliassos et al. [2016], D’Acunto et al. [2019]). As for our focus on household finance, the study most closely related is Ke [2020], which shows that financial sophistication (proxied by employment in the financial sector) positively affects households’ stock market participation, but the effects are more pronounced when sophistication is measured at the husband, rather than the wife, level. This result is consistent with gender identity norms constraining the influence of women over financial decision making. However, the question remains open of whether the same mechanism extends to households that do not include finance “experts” of either gender. For example, D’Acunto [2020] shows that decision making in risky environments primes male identity, which suggests that men pursuing finance careers may possess or develop higher attachment to patriarchal values. Moreover, financial sophistication may affect investment decisions differently for men and women for reasons unrelated to gender norms. These include differences in risk aversion, optimism, and overconfidence, as well as different priorities in the allocation of time across domestic tasks such as household financial management and child-care. We overcome these issues by directly relating households financial decisions to gender norms measured at the level of the social group of reference. This alleviates concerns over external validity and confounding factors, as norms apply to all individuals in the reference group, regardless of their occupation or financial sophistication. Finally, we contribute to the literature by providing evidence that the economic benefits of gender parity are sizable, as

measured by the effects of equality on financial returns.

3 A Simple Conceptual Framework

In our model, communities (or social groups) are defined as clusters of individuals sharing social norms on family governance. We refer to “patriarchal” communities as those where the social norm assigns decisional power (headship) to men independently of their characteristics. Egalitarian communities, instead, have no such strict gender-based power structure in place, and the role of decision maker is assigned based on skills and personal inclinations. If skills and inclinations in these communities are equally distributed across genders, female and male spouses will be equally likely to be in charge of household finances. Thus, as norms evolve from patriarchal to egalitarian, the bias that tilts headship towards male spouses attenuates. In other words, holding spousal attributes constant, prevailing social norms can be inferred by the average frequency of female headship observed in a social group.

The difference in headship allocation rules between egalitarian and patriarchal communities implies that social norms can affect the economic and financial outcomes of households by altering the selection of the main decision maker. To add structure to this intuition, we propose the following stylized conceptual framework.

Staged Financial Decision Making Let $G = 1 (= 0)$ denote the female (male) spouse. Each spouse G in household i is characterized by his or her financial ability level, $X_{i,G}$. $X_{i,G} \sim U[0, 1]$ is identically uniformly distributed across genders. We assume that financial decision making for household i in community z consists of two stages. In the first stage, the household grants headship to one of the two spouses, who becomes the financial manager (or household head). In the second phase, the household takes the financial decision (an investment, in our example), which is implemented by the designated financial manager. We examine the investment decision first, and then work backward to include household’s expectations of investment outcomes in the headship allocation problem.

Investment Decision At $t = 1$, the household takes action a ; that is, the family jointly decides whether to keep their savings in an accessible to all, easy to grasp, low-yield instrument (a bank deposit, D), which yields risk-free return r ($a = D$), or to invest in a sophisticated, high-yield, risky asset (a “stock”, S), setting $a = S$. The high-yield asset return depends on the household head’s skills $X_{i,H}$, and an investment opportunity κ that arises at $t = 1$. In particular, we assume that the average return on S equals $R > r$ if $X_{i,H} + \kappa > 0$, and zero otherwise. In other words, the sophisticated asset produces better returns than the risk-free deposit only when the designated manager has sufficiently high financial skills and a good investment opportunity. Thus, the household invests in risky assets only if $X_{i,H} + \kappa > 0$, and keeps savings in a bank deposit otherwise. Therefore, at $t = 0$, the expected return from financial investments is $Y_{i,H} = Pr(X_{i,H} + \kappa > 0)(R - r) + r$. Assuming $\kappa \sim U[-1, 0]$ we have

$$Y_{i,H} = X_{i,H}\lambda + r$$

where $\lambda = (R - r)$ is the return premium from investing in the sophisticated asset. Intuitively, the expected returns from financial investments increase with the financial skills of the manager.

Headship decision At $t = 0$, household i assigns headship to spouse G so as to maximize the following utility:

$$\alpha U_{i,G} - \beta (G - \bar{G}_z)^2. \tag{1}$$

The first term of Equation (1) corresponds to the “intrinsic” utility component. It depends on the expected returns of financial investments made by spouse G , $Y_{i,G}$, and a random variable $\eta_{i,G}$, so that $U_{i,G} = [X_{i,G}\lambda + r] + \eta_{i,G}$. The term $\eta_{i,G}$ is independent of $X_{i,G}$ and it is meant to capture unobservable personal attributes of spouse G that can affect utility but are unrelated to financial returns. For example, one spouse may be able to take care of family finances at lower personal cost because of his/her taste for control, or because of physical proximity of his/her workplace to a financial intermediary office. We assume that $\eta_{i,G}$ is independently,

normally distributed across spouses, and $\eta_{i,G} \sim N(0, \frac{1}{2})$.

The second term in Equation (1) accounts for the household's desire to conform to the social norm, $\bar{G}_z \in [0; \frac{1}{2}]$, prevailing in the reference community z .⁵ When $\bar{G}_z = \frac{1}{2}$, that is, with perfect egalitarian social norms, the term $\beta (G - \bar{G}_z)^2$ takes the same value for female ($G = 1$) and male ($G = 0$) spouses, making social conformism irrelevant to the choice of household head. In such case, all that matters is the relative fit of the spouses to manage household finances. On the other hand, in patriarchal communities ($\bar{G}_z = 0$), the utility loss associated with social pressure is minimized by setting $G = 0$, that is, by choosing the male spouse as the household head.

Parameter $\beta \in [0, 1]$ measures the intensity of discomfort caused by not conforming to predominant gender roles. Without loss of generality, we set $\alpha = 1 - \beta$. With the choice being binary, $G = 1$ maximizes utility if

$$(1 - \beta) (U_{i,1} - U_{i,0}) - \beta [1 - 2\bar{G}_z] > 0$$

We can write the difference $U_{i,1} - U_{i,0}$ as $(X_{i,1} - X_{i,0})\lambda + (\eta_{i,1} - \eta_{i,0}) = \Delta X_i \lambda + \epsilon_i$, where $\epsilon_i \sim N(0, 1)$. The probability of female headship for household i in community z is

$$Pr(G_i = 1) = Pr\left(\epsilon_i > -\Delta X_i \lambda + \frac{\beta}{(1-\beta)} [1 - 2\bar{G}_z]\right) = \Phi(\Delta X_i \lambda + C_z), \quad (2)$$

where $C_z = -\frac{\beta}{(1-\beta)} [1 - 2\bar{G}_z] \leq 0$ and $\Phi(\circ)$ is the cumulative normal distribution. Notice that C_z increases with \bar{G}_z , or, in other words, higher (lower) values of C_z imply more gender-neutral (patriarchal) norms. Moreover, norms and relative skills are substitutes, in the sense that, holding the probability of female headship constant, more progressive norms are associated with smaller comparative advantage.

Equation 2 provides the basis for our empirical estimation of a simple female headship model, where the probability of a household selecting the female spouse as head depends on the spouses' relative skills plus a component common to all community members, that is, the social norm. Defining and measuring the skills that are relevant for financial decision making

⁵This is a standard way to model conformity. See for example Akerlof [1997]

can be arduous, as some of the individual traits that are arguably important, such as cognitive abilities, are often not observable to researchers. One exception is Smith et al. [2010], who show that spouses’ cognitive traits, such as numeracy, are significantly correlated with household financial outcomes, even after controlling for education, occupation, and income. Interestingly, they also show that those same traits are relevant in determining who, between husband and wife, makes the financial decisions, lending support to our theory on headship allocation. Moreover, the effects of numeracy on decision making power are stronger for husbands than wives, suggesting the presence of a gender related bias in the allocation rule. We build on this intuition to produce an estimate of gender norms. Differently from Smith et al. [2010], however, we do not observe households cognitive abilities in our survey data. Therefore, in constructing the empirical analogue of equation 2, we assume that $X_{i,G} = A_{i,G} + Z_{i,G}$, where $A_{i,G}$ represents observable ability (e.g. education) and $Z_{i,G}$ represents unobservable traits (e.g. cognitive skills). We can then rewrite 2 as

$$Pr(G_i = 1) = \Phi(\Delta A_i \lambda_1 + \Delta Z_i \lambda_2 + C_z), \quad (3)$$

where C_z represents the degree of gender equality in community z .

We assume that cultural transmission occurs by imitation of role models living in close proximity. For each household, individuals from the previous generation living in the same location (e.g., parents, relatives, neighbors) may constitute the “reference group,” setting its inherited social norm. Thus, for household i , in cohort c and region r , we can rewrite \bar{G}_z as the average frequency of female headship among individuals belonging to the previous cohort in the same region, i.e. $\bar{G}_z = \bar{G}_{c-1,r}$. Therefore, we define communities as cohort-region clusters, that is $C_z = -\frac{\beta}{(1-\beta)} [1 - 2\bar{G}_{c-1,r}] \equiv C_{c,r}$. Consistent with this interpretation, in our empirical analysis, we estimate cultural factor C_z using cohort-region combined fixed effects.

An unbiased estimation of C_z requires unobservable *differences* in skills at the household level (ΔZ_i) to be uncorrelated with social norms at the community level. We discuss this assumption in Section 5.

Social Norm Effects on Investment Decisions The immediate implication of our model is that, through the selection process, gender norms should correlate positively (negatively)

with the skills of the male (female) financial manager and, consequently, with the probability of participating in the “sophisticated” financial market. Thus, an “outcome test” can be designed similar to that described by Becker [1993] in the context of racial discrimination in the credit market, where frictions in the selection process of individuals belonging to different groups (i.e., whites vs minorities) generate systematic differences in outcomes (such as default rates) that cannot be ascribed to observable characteristics. The reason is that, if a bias exists in favor of the privileged group, the selection threshold for the discriminated group should be relatively higher along dimensions that are observable to the loan officer (e.g. credit scores) and are correlated with outcomes.⁶ If these dimensions are not fully observable to the researcher and, therefore, cannot be perfectly controlled for in a regression setting, the bias can be inferred from the sign and significance of the coefficient of a variable indicating group identity. We can apply this very logic to our setting, with the exception that the group identity variable is continuous instead of categorical and measures the intensity of the distortion in the selection of the financial manager induced by norms. That is, using investment decisions as our relevant outcome, we can perform an outcome test that employs the unbiased estimate of gender norms, \hat{C}_z , as the main explanatory variable. Specifically, conditional on observing the gender of the household head G and the subset of abilities $A_{i,G}$ for both spouses, the probabilities of investing in sophisticated assets are as follows:

$$Pr(a_i = S | G_i = 1) = Pr\left(Z_{i,1} + \kappa \geq -A_{i,1} \mid Z_{i,1} > Z_{i,0} - \Delta A_i \frac{\lambda_1}{\lambda_2} - \frac{\hat{C}_z}{\lambda_2} - \frac{\epsilon_i}{\lambda_2}\right) \quad (4)$$

$$Pr(a_i = S | G_i = 0) = Pr\left(Z_{i,0} + \kappa \geq -A_{i,0} \mid Z_{i,0} > Z_{i,1} + \Delta A_i \frac{\lambda_1}{\lambda_2} + \frac{\hat{C}_z}{\lambda_2} + \frac{\epsilon_i}{\lambda_2}\right) \quad (5)$$

The equations above help clarify the empirical relationship between norms and investment decisions. A shift toward a gender-neutral social norm (that is, an increase in \hat{C}_z) has a negative effect on probability (4) and a positive effect on probability (5). In other words, the “bar” in terms of ability to become household head moves downward (upward) for women (men) as

⁶The intuition behind the outcome test can be effectively summarized with Becker’s discussion on discrimination toward black applicants in bank lending: “If banks discriminate against minority applicants, they should earn greater profits on the loans actually made to them than on those to whites.” (Becker [1993], p.389).

the norms become more egalitarian, with the expected utility from investment in risky assets decreasing (increasing) accordingly. It follows that the social norms measure \hat{C}_z is informative of unobservable *levels* of abilities of the household head ($Z_{i,G}$). For example, holding husband and wife’s observable abilities constant, a male head in a patriarchal community has lower unobservable skills, on average, than a male head in an egalitarian community. This is because he faces no “competition” in the selection process. Since investment choices are correlated with skills, egalitarian norms are positively (negatively) correlated with investment and financial performance of male-(female-)headed households, even after controlling for observable skills (e.g. education).

The effects of gender norms on household investments, however, can reach beyond the efficiency gains in the headship allocation rule. For example, it could be argued that gender norms affect the quality of investment opportunity κ . This happens if gender parity fosters collaboration between spouses, facilitating information and cost sharing, thus improving couples’ ability to screen investments. The effect of collaboration on household investment, i.e. the effect of an increase in κ , is positive for both male- and female-headed households. Thus, when we account for the possible effects of collaboration on investment behavior, our model predicts that the transition from patriarchy to partnership induces more participation in financial markets for male-headed households, while the effects on female-headed households remain ambiguous. Said differently, we expect the positive effects of gender parity on household finance to be more pronounced when we focus on male-headed households. Since in our sample the share of male headship is larger than that of female headship, we expect positive average effects when the gender of the household head is not controlled for.

Our empirical strategy builds on this conceptual framework. First, we estimate proxies for C_z , that is, measures of *Equality* between spouses, from phase one of the decision making process using survey responses on headship. We then regress investment decisions on estimated *Equality* (\hat{C}_z) to assess the overall effect of social norms about gender roles on household financial outcomes.

4 Data Sources and Data Description

Our main data source is the Italian Survey of Households Income and Wealth (SHIW) conducted by the Bank of Italy. The SHIW is a computer-assisted personal interviewing (CAPI) administered survey; each round interviews about 8,000 households representing the Italian population. It is run bi-annually with a rotating panel component: about half of the participants are re-interviewed in the next survey. It gathers exhaustive data on demographics, incomes, savings, wealth, and many other household economic and financial decisions aspects. Although the survey was started in the 1960s, we analyze the series beginning in 1991, as some of the data relevant to our analysis are provided from this year until the last wave in our sample, 2014. Our sample comprises about 8,000 households (20,000 individuals) in each survey-year, distributed over all twenty Italian regions. Importantly for our study, respondents are asked to identify the household head, defined as the person in charge of or more informed on the household economic management.⁷ Therefore, headship indicates a prominent (perhaps not exclusive) role in household financial decision making.

Figure 3 shows the distribution of surveyed households over time by household type: couple and non-couple households. The first type is defined as households with two married or cohabiting spouses. These households face the problem of allocating economic decision making between two individuals of opposite sex, and therefore they are the focus of our study. Non-couple households include single-person and other households (e.g., single mother with children). Couple households are the predominant type, although their number has decreased over time, from over 6,000 in 1991 (75% of the sample) to 4,735 in 2014 (60% of the sample), while single households almost doubled (from 1,231 to 2,394) during this period.

As stated in the introduction, the frequency of female headship among couple households has grown considerably over time, from less than 1% in 1991 to 35% in 2014. To explore this trend further, we allocate couple households in the sample to six cohorts with approximately

⁷The definition of household head slightly changed over the survey waves. Between 1991 and 2006, the interviewer is asked to identify the household head as the person in charge of household economic and financial management. In 2008, the definition is broadened to include, as a complement to the above, the person who is more informed of economic management. Since 2012, the expression household head is replaced with “reference person,” but the provided description of what the role entails remains unchanged.

the same number of observations by the household head's birth year. The median birth years for the cohorts are 1924, 1934, 1942, 1950, 1959, and 1969. Younger cohorts are less gender-biased in headship attribution, with the differences across cohorts becoming wider over time (Figure 4 a). Female headship was less than 6% for all cohorts in 1991. In 2014, the generation born around the year 1969 (aged around 45) reaches perfect headship balance, with 50% of households headed by female spouses. By contrast, the 1950 cohort shows 30% female headship the same year and 10% 20 years earlier (when its members were approximately 45 years old).⁸ The differences in headship dynamics across regions are equally important. Over the years headship shifts toward the female spouses in all regions, but at very different paces (Figure 4 b). In sum, female headship grows substantially across generations, but at speeds differing between regions.

Table 1 provides the summary statistics of relevant variables for the full sample. It also shows the same variables' mean values for the two sub-samples of male headed and female headed households, with the *t*-statistic of the difference between means across groups. We first present some family demographic characteristics. The median household consists of two adults (the spouses) and one child, although occasionally other adults, such as grandparents, live in the household (the average number of adults is 2.07). The average age of the two spouses is almost 53 years, and in 18% of households both spouses are retired. The median education score of the two spouses in a scale ranging from 1 to 6 is 3, where 1 is no education, 2 is primary school (5 years), 3 is middle school (8 years), 4 is high school (13 years), 5 is college (17 years), and 6 is post-graduate education. Home ownership is widespread, with 72% of households owning their residence, while cohabitation is not common, with only 2% of households not married. Interestingly, while the other demographic characteristics do not present striking differences between female- and male-headed families, cohabitation is more frequent (5%) in households headed by females.

Next, we examine some plausible measures for female comparative advantage. Some of these variables (such as education, income and individual wealth accumulated in the form

⁸These trends are essentially unchanged when we restrict the sample to households where the female spouse identifies as housewife.

of real estate ownership) directly relate to relative ability in market-related tasks. Others, like age, the indicator of whether the female spouse is a housewife, and weekly hours of non-domestic work, provide additional information on (market) experience and/or availability of spare time. On average, women earn 41% of their spouse's income, while working almost half of the weekly hours (10.34 vs 22.22). This is consistent with both lower labor market participation (43% of them are housewives) and lower hourly wages for women. Women are equally educated and slightly younger (age ratio 0.93) than their spouses. Additionally, women own 9% of the total household's real estate wealth as sole proprietor. As expected, women who head households differ from the rest of the female adults in that the ratio of their salaries with respect to their husbands' is considerably higher (89% versus 31%), although working approximately half the weekly hours as men in the sub-sample. This is because, while a large proportion (39%) of female heads are also housewives (with zero hours of non-domestic work), those in the labor force earn over 20% more than their husbands on average. Female heads are also more educated than their husbands (mean education ratio 1.06) and own, as sole proprietors, 16% of the total household real estate wealth on average.

Finally, female headship is more common than male headship in the Islands and, to a lesser extent, the North-Western regions. Thus, the diffusion of female headship does not simply follow geographical patterns of economic development, which divides the country into the richer North and less-developed South and Islands regions (Putnam et al. [1994], Felice [2014]).

To measure financial decisions, we rely on household wealth information obtained from the SHIW, with a focus on two main financial outcomes: participation in financial markets and returns on wealth. We define participation in financial markets as an indicator dummy that takes value 1 when a household holds wealth in at least one financial asset class other than bank deposits, that is, Italian government bonds, other fixed income, equity, shares of funds, and other securities (e.g., derivatives or structured products). We define returns on wealth in two ways: on financial wealth and on net worth. The first is the ratio of income from financial assets over financial assets, where financial assets include all of the asset classes listed above

plus bank deposits. The second is the ratio of income from both financial and real assets net of interests paid on debt (net capital income) over total assets minus liabilities, where total assets is the sum of financial and real assets. Table 2 shows the descriptive statistics of the participation rate in financial markets and in each asset class, the total number of asset classes held by households, and returns (in percentage points). The rate of participation of households in our sample is relatively low in the stock market (7%), but moderately high in the government or other fixed income market (respectively 15% and 7%). For comparison, while approximately 14% of households in the US hold stocks directly, only 9% (1%) of them hold savings (regular) bonds.⁹ Financial returns are approximately 3%, while the total net returns are significantly smaller at 0.53% on average.

5 Measuring Social Norms

5.1 Estimating Gender Norms

Following the framework outlined in Section 3, we define the social groups sharing similar gender social norms as cohort-region clusters of individuals.¹⁰ To estimate gender norms, we focus on couple households (two-spouse families, either married or cohabiting) and use the following linear specification of equation (3) for the probability of female headship:

$$G_{i,c,r} = \alpha + \Delta A_i \lambda_1 + \Psi_i \gamma + C_{c,r} + \epsilon_{i,c,r}, \quad (6)$$

where $G_{i,c,r} = 1$ if the household head is female and zero otherwise, and i , c , and r indicate the household, cohort, and region of residence, respectively. We use the income, education, and age female/male ratios, weekly hours of paid work for both spouses, and the proportion of real estate individually owned by the female spouse to capture the observable component of comparative advantage ΔA_i . Other controls in Ψ_i include the average age/average

⁹See <https://www.federalreserve.gov/publications/files/scf17.pdf>

¹⁰This strategy for the identification of relevant social groups is also consistent with Campbell [1958]’s concept of entitativity - the perception of a collection of individuals as a single entity. Campbell emphasized three determinants of entitativity: common fate (e.g. a tendency of the individuals in the group to experience similar outcomes), similarity (e.g. common ethnicity) and proximity (e.g. physical distance between individuals in the group). Cohort-regional clusters capture these dimensions.

education and occupation dummies of the two spouses, as well as family income and wealth decile dummies and household size, and a dummy variable that takes value 1 if the spouses are cohabiting and zero if they are married. We leverage the idea that social norms are transmitted across generations of individuals living in close proximity and are, therefore, cohort- and region-specific. Thus, $C_{c,r}$ is a cohort-region combined fixed effect that identifies norms at the social group level.¹¹

As discussed in Section 3, producing an unbiased estimator of $C_{c,r}$ requires unobservable differences in abilities between spouses to be independent of community norms. In particular, positive (negative) differences between wife and husband’s skills should not systematically correlate with egalitarian (patriarchal) norms. This assumption may be violated if patriarchal norms are associated with either lower unobserved average skills of the whole female population in the community, or with more assortative matching of couples along the dimension of unobserved ability. Specifically, assortative matching can arise in patriarchal communities if women with high ability level exit the marriage market in order to avoid the loss of utility due to poor financial management by the prospective (less skilled) husband. In this case, the independence assumption still holds if matching is based on characteristics that are observable to the potential spouses *before* marriage (e.g. education), rather than on abilities, such as predisposition for financial management, that are fully revealed to the spouses only *after* marriage, when the couple jointly faces the problem of how to invest family savings. While we cannot directly test the validity of the independence assumption, we present results that are consistent with it in section 7.1.

The estimation results of Equation 6 are presented in Table 3 column (1). All the proxies for differences in wife-husband relative characteristics are statistically highly significant. The share of real estate property owned solely by the female spouse, the income and the education ratios have, as expected, positive coefficients, whereas age ratio has a negative coefficient. Consistent with the findings of Bertocchi et al. [2014] on the positive relationship between headship and time availability, female headship appears to be negatively correlated with hours worked by

¹¹Giavazzi et al. [2014] use a similar methodology to study the evolution of a range of shared values and beliefs of different generations of US immigrants.

female spouse and positively correlated with hours worked by male spouse. Moreover, female headship is more common among cohabiting couples, and positively correlated with household size, that is, number of adults and children in the household. Finally, and most importantly for the goal of this study, the combined cohort and region fixed effects – our group-specific measure of social norm – are statistically significant and increase considerably the regression’s adjusted R -squared from 29% to 38% (see column (2) for comparison) – an improvement in model fit of more than 30%. This evidence supports the view that social norms are indeed relevant determinants of task and decision power allocation in the family. In other words, while the variation in comparative advantage between spouses partly explains the observed shift in financial decision power from males to females, it is by no means the only force. Changes in community-specific social norms are important in catalyzing the change.

The headship allocation rule may depend on relative bargaining power and some of the factors affecting bargaining power can be said to be external to the household, and cohort- and region-specific. If true, the relevance of cohort-region fixed effects could be due to differences in women’s bargaining position related to background factors, rather than social norms dictating gender roles. Previous studies (Majlesi [2016], Angrist [2002], Chiappori et al. [2002]) have identified labor opportunities for women (e.g., growth of service sector), single women income, and gender imbalances as relevant external factors. For example, a low proportion of females compared to men in a community improves the outside option of women in case of marriage dissolution, increasing their bargaining power in the current relationship. Ample employment opportunities for women due to a well-developed service sector may have similar effects. To explore this possibility, we replace $C_{c,r}$ with the region- and cohort-specific variables for size of service sector (measured in terms of employment), single women’s average income decile, and gender balance, that is, the ratio of women to men among adults of age between 20 and 60 years (see Table 3 column (3)). As these variables only marginally improve the goodness of fit, we conclude that region and cohort fixed effects must mostly capture the differences in social norms, rather than different outside options.

Our estimates of *Equality* have a mean of 10%, a median of 8%, and a standard deviation

of 21%, suggesting substantial heterogeneity in social norms across cohort-region groups.¹² Figure 5 shows the distribution of *Equality* across cohorts and regions. As expected, every region shows a general increasing trend toward a more gender-neutral social norm from older to younger cohorts, but there is also variation within-cohort across regions, which increases for younger cohorts. Thus, differences across regions in the level and dynamics of social norms are also relevant. Importantly, they are uncorrelated with economic development. For example, *Equality* consistently scores higher in the region of Sardinia, with a per capita GDP equal to approximately 70% of the national average, than in Piemonte and Veneto, regions with a GDP per capita well above the national average. Additionally, the *Equality* index shows similar dynamics across cohorts in the regions of Veneto and Calabria, despite Calabria’s GDP per capita being approximately half that of Veneto’s.

5.2 Alternative Approaches and Validation

Our methodology for measuring gender norms is guided by our theoretical framework. A potential alternative approach is to use available information on social values. Most previous empirical literature on the effects of social norms on economic outcomes uses beliefs expressed by individuals in surveys (e.g. the World Value Survey) on a variety of issues to identify and gauge cultural traits.¹³ In our context the use of survey questions to measure social norms is problematic. First, these surveys, do not contain explicit questions on people’s views about the allocation of economic management tasks within the household. One could overcome this problem using answers to questions that solicit the view of the respondent on how appropriate it is for women to seek professional or personal fulfillment outside the household. Still - and this is the second problem - such proxies may not be clean indicators of attitudes towards female participation in economic decision making. Some cultures, for example, “give women considerable power in making financial decisions within the family but simultaneously deprive

¹²To give a sense of this dispersion, our measure implies that when a couple from Sicily (in the South) born in 1942 (*Equality* 2%) is compared with a couple from Lombardy (in the North) born in 1959 (*Equality* 27%), we should expect the latter to be 25% more likely to be female-headed than the former, everything else being equal.

¹³See for example Knack and Keefer [1997], Guiso et al. [2003], Alesina and Giuliano [2010] among many others

them [...] of freedom of physical movement within the community or beyond” (Mason and Smith [2003]). Broadly speaking, women’s emancipation is a multidimensional phenomenon and its different facets may not correlate, even when measured at the individual level. For example, in her analysis of World Value Survey data, Fernandez [2007] finds “surprisingly low” correlation across individuals in the answers to two questions regarding the perception of women participation in the labor force. We find similar results using Italian data on questions related to family values from all available waves of the European Value Survey (EVS), (see Table 4). For instance, the majority of respondents who think that “when jobs are scarce men have more right to a job than women”, also believe, in a somewhat contradictory fashion, that “labor force participation does *not* affect a woman’s relationship with her children”. Such apparent inconsistencies pose the difficult problem of how to avoid arbitrariness in the choice of the specific question(s) to use as indicator of gender norms in family governance. Finally, because of small sample size datasets such the EVS do not provide the necessary granularity to reliably assess norms at the relevant reference group level - the combined cohort-region level in our case.

The advantage of our approach is that *Equality* measures gender social norms that are specific to economic management in the family and thus relevant for household financial decisions, which is the ultimate outcome of interest. The methodology does not require information on people’s beliefs as the norms are inferred from observed behavior and the property that the social norm is common to the relevant social group. Identification of the latter is based on theory-informed restrictions (people belonging to the same cohort and region).

This is not to say that gender equality, as captured by our measure, is completely independent of other aspects of norms regarding gender and family values. One expects some correlation between our measure and belief-based measures of gender roles in general. If so, we can use survey measures of beliefs to validate our measure. Accordingly, we compare *Equality* with answers to EVS questions related to gender norms and family values. In particular, we categorize norms by assigning value 1 if the respondent

- agrees or strongly agrees with the statement “Marriage is an outdated institution”, zero

otherwise

- disagrees or strongly disagrees with the statement “Women need children to be fulfilled”, zero otherwise
- approves if a woman wants to have a child as a single parent, but she doesn’t want to have a stable relationship with a man, zero otherwise

Because of limited sample size, we aggregate these variables at cohort and region mean levels separately, and plot them against average *Equality* in Figure 6. The patterns that emerge from this comparison reveal positive, though not perfect, correlation, lending support to our measure.

6 Gender Equality and Household Finance

6.1 Effects of Equality on Financial Investments and Returns

We now test whether *Equality* affects household financial choices. Table 5 shows the estimates of a linear probability model of financial market participation on spousal equality. The dependent variable is binary and takes value 1 if the household reports investing in financial assets other than bank deposits, such as stocks, bonds, mutual fund shares, and other securities. Controls include household income and wealth deciles, number of children and adults in the household, household head’s age and education, home ownership, and comparative advantage proxies (income, education, age female-to-male ratios, and proportion of female real estate ownership).¹⁴ We also include year, region, occupation of both spouses, and household head’s sector fixed effects. Because our main explanatory variable is generated, we correct the coefficient estimates standard errors using a two-stage bootstrapping procedure.¹⁵

¹⁴A large body of literature, both theoretical and empirical, explores how individual wealth (Calvet and Sodini [2014]), home ownership (Cocco [2004]), education, financial literacy and awareness (Van Rooij et al. [2011], Guiso and Jappelli [2005]) can explain households’ financial market participation.

¹⁵The bootstrap estimates of standard errors are constructed as follows. A random sample with replacement, stratified at the cohort-region level, is drawn from the couple-households set. Equation (1) is estimated on this random sample (first stage), and the corresponding OLS coefficients on cohort-region dummies are used as predictors for our outcomes of interest, such as investment in financial assets (second stage). Both stages are estimated on the same random sample. We repeat this procedure 1,000 times and store the OLS coefficients on

Our results show that *Equality* increases investments in financial assets. One standard deviation increase in *Equality* raises the probability of investing in capital markets by 3 percentage points – about 10% of the sample mean (column (1)). This effect remains stable in magnitude and highly significant when we exclude individuals older than 65 (column (2)). Therefore, our result is not driven by the documented hump-shaped participation profile peaking around retirement age (e.g. Fagereng et al. [2017]), which could generate differences between young (active) and old (retired) cohorts. Correlation with the other household-level controls is intuitive; wealthier, more educated and older households are more likely to invest their savings in the financial markets. The ratio of female-to-male income has a significant negative effect on investments. This suggests that while relatively higher labor income predicts women relative skills and therefore suitability for the role of head, it may also imply that a larger portion of total household income has lower potential future growth due to lower upward mobility in female labor markets. This in turn is associated with more cautious attitudes toward financial investment. We also find that cohabiting couples, while more likely to be female-headed (see Table 3), are less likely to invest in financial markets. The effect of cohabitation on financial choices may be due to limited commitment problems and weaker mutual insurance as compared to marriage.

Finally, in column (3), we interact *Equality* with a dummy variable that takes value 1 if the household is female-headed. As the coefficient on this interaction term is negative, the effects of gender social norms on investment choices are more pronounced for male spouses. This is in line with the predictions of our theoretical framework. Since in patriarchal communities headship is assigned to men regardless of their ability, the average ability of male heads must increase as norms become more progressive. Interestingly, the coefficient on the gender of the household head is not statistically significant, suggesting that the financial manager’s gender *per se* has no effect on investment decisions.

In Table 6 we investigate how gender norms affect investment in different asset classes and portfolio diversification. Our results show that one standard deviation change in our equality *Equality* and on controls. Standard deviations in the sample of 1,000 observations of coefficient estimates from the second stage regression are thus the bootstrap standard errors of the point estimates of these coefficients.

measure increases the probability of investing in either stocks or bonds by approximately 1 percentage point (column (1)-(3)), and the probability of investing in other securities by 0.02 percentage points (column (4)). We also find that the probability of contributing toward a pension plan increases by 2.8% (column (5)), and the average marginal effect on the number of different asset classes held in the portfolio is 0.32, compared to a sample mean of 1.4 (column (6)). This evidence suggests that gender-neutral social norms are associated with more investments across most asset classes as well as increased portfolio diversification.

A broader assessment of spousal equality effects on household financial decisions requires the analysis of investment outcomes as measured, for instance, by portfolio returns. Reliable measures of returns are limited by the cross-sectional nature of the SHIW and the short time dimension of its panel component. Keeping these data limitations in mind, we propose three different measures of financial performance. The first is the ratio of income from financial assets over total financial assets held at the end of the year (*Financial Return*). The second is the ratio of capital income over total assets (*Total Return*). The third is the ratio of net capital income over total net assets (*Total Net Return*). Income from financial investments includes returns from total financial assets, that is, securities plus bank deposits (or similar, e.g. postal deposits). Capital income is the sum of income from total financial and real assets (real estate), while net capital income is equal to capital income minus interest paid on debt. Total assets is the sum of real and financial assets, and total net assets is equal to total assets minus debt (net worth). Thus, these measures represent returns from investment in financial assets and (net) returns from investments in both financial assets and real estate. We measure these returns both in our pooled cross sections and the panel sample. In the panel, we average the returns by household to obtain more consistent investment performance measures. Table 7 shows the results of OLS regressions of the return measures on *Equality* and controls. The coefficient estimates are positive and significant, and range between 0.32 and 0.80. This implies that one standard deviation in *Equality* improves the performance of household portfolio by 7 to 16 basis points. At the sample average of households wealth and income this contributes to an increase in annual disposable income of about 1%. Over a working life of 40 years the average

family in the highest *Equality* cohort-region cluster would accumulate wealth at retirement that is 15% higher than that of a family in the lowest *Equality* cluster. This evidence supports the view that the financial well being of households improves with more balanced social norms on gender roles.

Our base line results are computed using a two-stage bootstrap procedure with random sample stratified at the cohort-region level. While this method addresses the problem of measurement errors, it may over-estimate coefficient significance in the second stage, due to, for example, error correlation at the cohort-region level, or at different levels of aggregation. We address these issues using three alternative methodologies based either on bootstrapping, two-stage estimation, or a combination of the two (see Appendix A). Each of these methodologies confirm the significance of our base line results.

6.2 The Role of Collaboration

Taken all together, the results illustrated above are consistent with the predictions of our theoretical framework, where we identify the differences in the headship allocation rule between patriarchal and egalitarian communities as the main economic mechanism linking gender norms to household finance. With gender parity, the spouse with higher ability is entrusted with the role of decision-maker, improving the outcomes of the decision-making process. Since abilities are not perfectly observable at the household level, larger values of our equality measure imply that, due to a more efficient headship allocation process, the average unobservable financial skills of the decision-maker are better than in communities with lower equality score, inducing more participation and higher financial returns.

As discussed in Section 3, the positive effects of gender parity on household financial decision making and investment performance can be further enhanced by collaboration between spouses. For example, let us assume that in an egalitarian culture the investment decision is shared between spouses. That is, the household head forms expectations on asset returns and risk based on his and his partner's information, and shares search, monitoring, and attention costs with her. When the culture is patriarchal, instead, women have no influence on

financial management. Thus, even when decision makers have identical ability, the investment decisions will be different in the two cultural “regimes.” This is because, when spouses collaborate, expectations are more informed (as spouses draw from different information sets), and monitoring and search costs are lower. Egalitarian households are therefore more likely to participate in financial markets, and do so more efficiently. They participate more because of reduced costs, and they are more efficient because they can condition their choice on more precise information with less binding attention constraints.¹⁶

Table 8 explores the mechanism described above. If *Equality* affects household financial decisions because it improves the collaboration between spouses, its effect should be larger when spouses can exploit information complementarities, for example, because they have different education levels or professional specialization. We regress participation in financial markets on *Equality* and its interaction terms with a dummy variable that takes value 1 if the spouse has higher education than the head (column (1)), a dummy variable that takes value 1 if the spouse is employed in the financial sector (column (2)), and a dummy variable that takes value 1 if the spouse is employed in the same sector as the household head (column (3)). All controls from the main regression are also included. Spouse’s education and occupation in the financial sector affect investment decisions, but have no significant interaction with *Equality*. However, if the spouse works in the same sector as the household head the effect of *Equality* weakens, suggesting that information complementarities can arise from different professional specialization.

Collaboration between spouses can also be valuable if it decreases the costs associated with financial decision making, such as attention costs, information acquisition, and financial assets monitoring costs. Therefore, we conjecture that the benefit of collaboration will be more relevant for household heads facing time constraints arising from either domestic or market-related duties, and when spouses can share costs. In order to test this hypothesis, we regress participation in financial markets on *Equality* and its interaction terms with the ratio of

¹⁶Social norms can also affect investment decisions if the two spouses are heterogeneous with respect to risk aversion. For example, if women are more risk averse than men, their inclusion in the financial decision-making process may hinder investments in risky assets. However, it is also possible that collaboration increases risk tolerance if sharing the responsibility of economic decisions with a partner makes individuals less conservative in their investment strategies.

spouse's and head's hours worked (column (4)), and with a dummy variable that takes value 1 if the couple has children. *Equality* has a larger effect if the non-head spouse works fewer hours than the head and hence can more easily share the decision-making burden. Moreover, the *Equality* effect mostly originates from couples with children, that is couples more constrained from more demanding domestic obligations.

7 Robustness

7.1 Omitted Variables and Placebo Tests

The evidence provided so far is consistent with the view that spousal equality improves household financial choices by relaxing the gender constraints on efficient assignment of within household decision-making responsibility, attenuating rational inattention problems, or by facilitating information pooling and risk management.

However, a skeptical may object that our equality measure may capture wider social or economic phenomena that potentially affect households' financial behavior but are unrelated to household governance. For instance, *Equality* may be correlated with a general increase in women's emancipation, heterogeneous across cohorts, which, by expanding job opportunities for women, may reduce female labor income uncertainty and promote investments by lowering background risk. Alternatively, *Equality* may be correlated with trust and secularization levels, which have been shown to affect households' financial decisions. In both these cases, however, we should observe similar positive effects of equality for *all* households, including single households, and, according to the background risk argument, especially for non-couple households headed by women, such as single mothers. Instead, Tables 9 and 10 show that *Equality* has no effect on the investment behavior and financial returns of households that *do not* include two spouses. Of course, non-couple households differ from couple-households in non trivial ways. For example, in the non-couple sample, pre-war cohorts are over-represented and baby-boomers (born between 1940 and the mid 1960s) are under-represented, tilting the average age of household heads up with respect to couple-households (61 versus 54). Addi-

tionally, non-couple households have lower income and wealth. Although in Tables 9 and 10 we control for age, income and wealth, it is possible that potential omitted variables such as trust and secularization only operate on a relatively younger and wealthier population. To account for this possibility, we repeat these robustness checks restricting the sample of non-couple households to households younger than 60 and to households with income higher than the median (unreported). The coefficients on equality are not significant, suggesting that the effects of equality on couple-households investments are not due to omitted factors.

Table 11 investigates further the possibility that *Equality* may be proxying for female labor market transformations and more predictable women income flows. We use financial markets participation as the outcome of interest, and we estimate the effects of *Equality* in four different sub-samples: single women (column (1)), couple households with housewives (column (2)), couple households belonging to cohort-region groups with above median employment in commerce and service industries (column (3)), couple households belonging to cohort-region groups with below median employment in commerce and service industries (column (4)).

Single women are presumably more exposed to female labor market uncertainty, but their investment behavior is not affected by our spousal equality measure (column (1)), suggesting that Equality does not relate to investments through its possible correlation with (omitted) indicators of female labor market development. Importantly, this evidence is also consistent with the assumption, discussed in Section 5, that female-male differences in unobservable abilities are independent of norms. If *Equality* was positively correlated with average unobservable ability of the female population, we would expect its coefficient in column (1) to be positive and significant. On the other hand, if women with high ability in patriarchal communities systematically opted out of the marriage market, the unobserved ability of single women (and their propensity to invest) should decrease with *Equality*. The lack of correlation between *Equality* and investments in this sample lends support to the independence assumption.

In column (2) of Table 11, we show that two-spouse households with female spouse as housewife display a relationship between equality and financial market participation identical to that of households where the female spouse is in the labor force, despite having no exposure

to female labor market uncertainty. Finally, we compute the proportion of workers employed in commerce and service sectors in each cohort-region cluster, and split the sample in clusters with above and below median employment in these sectors. Commerce and service typically offer more employment opportunities for women. If favorable terms in female labor markets are driving our results, we should observe the *Equality* effects fading in the sub sample with higher than average size of commerce and services industries. The results in columns (3) and (4) of Table 11 do not support this prediction.

7.2 Internal Migration

Our empirical measure of equality, as estimated with equation 6, implicitly assumes that the region of residence of the household is the physical space of social interaction and transmission of cultural norms. However, approximately 17% of spouses in our sample are internal migrants, i.e. born in an Italian region different from the one where they currently reside. It is possible that, at least to some extent, migrants conform to social norms from the region of origin rather than the region of residence (see Charles et al. [2020]). This possibility suggests two sets of considerations. The first is that the presence of migrants may generate spurious correlation between *Equality* and investment behavior. This may be because, if migrants have more conservative norms than natives, and holding constant natives' norms, our measure of equality in communities with a large share of migrants is lower, on average, than in communities of natives only. At the same time, migrants may participate less in financial markets (Haliassos et al. [2016]). To address this problem, we estimate *Equality* using the sample of natives only in each region and we add to our set of controls the dummy variable *Native* which takes value 1 if both spouses were born in the region where the household currently lives (Table 12 column 1). Coefficients are marginally smaller but not statistically different from our baseline results in Table 5 .

The second consideration related to internal migration is that, if migrants acquire their gender norms in the place of birth, we should observe stronger results by measuring *Equality* at the level of the region of origin rather than residence. On the other hand, if individuals

adapt to the norms of the region of residence, *Equality* of origin should not matter. In general, both may play a role and the “epidemiological” approach would help identify their role. In our context however, using this approach is problematic for two reasons. The first is that we have no information on the age at migration so we can not assess the extent to which individuals were exposed to cultural norms in one region or the other. The second, and more important, is that it is not clear whether norms are “transmitted” to the household through the female or the male spouse. In other words, whose gender role norms matter more when spouses have heterogeneous origins? To shed light on these issues, we measure *Equality* of movers based on either female spouse (*Equality (W)*) or male spouse (*Equality (M)*) region of birth. Focusing on the sub-sample of migrant wives and husbands, we then use these variables as additional controls to estimate the effects on market participation. In doing so, we are effectively assessing the relative importance of region-of-origin versus region-of-residence gender norms. Columns 2 and 3 of Table 12 show that region-of-origin *Equality* has a significant positive effect on financial markets participation when measured at the level of region of birth of wives but not husbands, suggesting that women are more strongly connected with the traditions of their birth place. These results, however, must be interpreted with caution. Region-of-residence and region-of-origin equality measures are highly correlated because within-cohort regional variation is relatively smaller in this sample as migrants tend to move across regions with similar norms. Moreover, one of the reasons migrants leave the birth place may be lack of affinity with the local social norms, and the choice of the region of residence can be similarly driven by compatibility between personal and host community values.

Finally, we use the equality measure based on the region of birth of the female spouse as in column 2, and extend the analysis to the full sample including native couples, using for the later the equality of residence (column 4). The coefficient of interest is positive and significant, and larger in magnitude with respect to the coefficient in our baseline analysis. This suggests that both inherited and current social environment matter in shaping individual behavior. However, due to the above mentioned lack of information on the age at migration and in the absence of a theoretical justification for selecting wives as the spouses whose norms are the

relevant ones, we choose the equality measure defined in Section 5, i.e. based on region of residence of the couple, as the most conservative one.

8 What Triggered the Trend in Female Headship?

The model in Section (3) implies that, since assigning decisional power purely on the basis of traditional gender roles entails consumption losses, households may abandon social norms when the economic cost of complying with them exceeds the comfort of conforming.¹⁷ Said differently, an economic shock, such as a drop in future expected income, may increase the relative importance of efficiency over tradition and redefine households “rules” in terms of allocation of financial management tasks between spouses. Thus, a change in households economic conditions can spur the transition from patriarchy to partnership. In this section, we show that such an impulse can be traced back to Italy’s pension system reform in the early 1990s. This reform was meant to guarantee long-term sustainability of the public pay-as-you-go pension system in response to a sustained drop in fertility, and it was implemented in stages. The first stage took place in 1992, and it considerably reduced expected public pension benefits, especially for younger workers, thus effectively shifting part of individual retirement planning and management from the government to private households.¹⁸ Attanasio and Brugiavini [2003] show that the saving rates of affected households increased in response to the 1992 regulatory changes and the expected reduction in pension wealth. We argue that the reform had broader effects on the importance that households place on the efficiency of the decision making process. In particular, lower pension benefits caused future consumption to depend more heavily on current individual financial decisions. Thus, we conjecture that the reform increased the cost of “misallocating” decisional power, and reduced incentives to comply with traditional norms that require men to be in charge regardless of their relative

¹⁷In a similar spirit, Ichino et al. [2019] use Swedish data to examine policy reforms that changed post-tax wages of husbands and wives, altering the cost of abiding to gendered norms in the division of household tasks. They interpret heterogeneous responses to these policies as reflecting differently binding gender roles norms across households.

¹⁸The reform was completed in three years with a new law that anchored the computation of benefits for the younger cohorts to lifetime pension contributions.

ability. In the notation of our conceptual framework, this is equivalent to a negative shock to β – the unit costs of not conforming to the predominant gender roles – or, equivalently, to an increase in the weight households assign to “intrinsic” utility. This shock propagates to later generations as the affected cohort becomes the reference group for younger ones, eventually silencing the preexisting social norm. We elaborate more formally on the implications of the model in terms of social norms dynamics in Appendix B.

To identify the effect of the reform, we exploit the fact that the new pension law predominantly applied to workers with less than 15 years of tenure as of the end of 1992. This implies that younger cohorts were in general more affected by the reform, but it also creates *within* cohort variation, depending on individual employment histories at the time of the reform. To isolate the impact of the reform, we use the SHIW waves of two years before (1989 and 1991) and two years after (1993 and 1995) the reform was enacted. This results in a sample of 15,461 couple households. For each household, we count how many members are affected by the reform, that is, how many members started working after year 1977 (15 years prior to the reform). We define the household as treated if at least one member is affected. Approximately 43% of the sample households are treated. Conditional on treatment, 68% of households have one member affected by the reform, 29% have two members affected, and the remaining 3% have more than two members affected. Treated households are on average younger (44 vs 49), and have more working adults (1.87 vs 1.15) and dependent children (1.57 vs 1.45). Moreover, treated households appear to have higher income but similar education levels (see Table 13). Interestingly, the treatment is not linearly decreasing in the age of the household head (see Figure 7). This is because middle-aged households (51 and older) are more likely to include employed young adults, who are most likely affected by the reform.

Table 14 presents the results of a difference-in-difference estimation where we explore the effects of the reform on households exposed to it. While our primary goal is to investigate the effects on female headship, we also examine the changes in households’ savings, spouses labor supply, and relative income. Significant responses to the reform along these additional margins would corroborate the view that changes in headship allocation rule following the reform, if

any, are indeed due to increased focus on household’s economic and financial management. We consider the following outcomes: female headship, expressed as a dummy variable that takes value 1 if the household head is the female spouse (column 1); saving rates (column 2); total weekly hours worked by the female (column 3) and male (column 4) spouse; and the female-to-male income ratio (column 5). Controls include education, income, and share of children and working adults relative to the total number of family members. We also include cohort, employment sector, and region fixed effects.¹⁹ We are interested in the coefficient of the interaction term between the variable *Post*, which takes value 1 in year 1993 and 1995 and zero in other years, and *Treated*, which takes value 1 if the household is affected by the reform. First, and most importantly, affected households are 2% more likely to be headed by the female spouse after the reform. We interpret this as evidence that, by effectively requiring more efficiency in financial management, the reform induced families to reconfigure the headship allocation rule moving away from traditional gender norms. Second, in line with Attanasio and Brugiavini [2003], we find that saving rates of treated households increased by 6% after the reform. We also find that both spouses increased their average weekly working hours, but with the effect more pronounced for women (1 hour increase) than men (0.7 hours increase), and the female-to-male income ratio increased by 3%, suggesting that the burden of compensating pension benefit losses with additional labor income was borne more by women than men.

The documented effect on female headship is not related to changes in bargaining power due to the relative increase of women earnings. When we include the female-to-male income ratio as a control variable in the regression, the coefficient of the interaction term $Post \times Treated$ drops only marginally to 1.7% (Table 15 column 1). However, consistent with the idea that the costs of patriarchal norms increase with women competitive advantage, the effects of the reform are more pronounced among households with income-earning wives (Table 15 column 2) and where wives have more education than their husbands (Table 15 column 3). Moreover, this coefficient is robust to including age (instead of cohort) fixed effects (Table 15 column

¹⁹For the purpose of this exercise we redefine cohorts on the basis of year of birth of the household head as follows: 1st cohort <1928, 2nd cohort 1929-1938, 3rd cohort 1939-1946, 4th cohort 1947-1954, 5th cohort >1955. Each cohort includes approximately 20% of sample households.

4), expressing the treatment in terms of share of affected family members (Table 15 column 5), and replacing the controls for children and working adults with numbers instead of shares (Table 15 column 6).

In sum, this exercise shows that the slow shift toward gender parity in the family can be hastened by policy reforms that reduce government safety net programs, such as pension reforms, thus increasing the importance of efficient financial decision making at the household level. This partly explains the sudden documented rise in female headship among Italian households in the 1990s.

9 Conclusions

Social norms on gender roles can have important effects on household finance, imposing significant economic costs. In particular, gender-biased norms can distort household decision-making process, compromising its efficiency. This happens when the economic decision-making power is assigned to the spouse based on the gender indicated by the norm as appropriate for the task (the male in patriarchal societies), rather than to the most skilled spouse. Moreover, patriarchal norms hinder collaboration between the spouses, by inhibiting women contribution to decision making. This prevents couples from leveraging information complementarities and sharing costs, thus inducing sub-optimal outcomes. These inefficiencies can persist for generations, as social norms are culturally transmitted. However, as we document in this paper, gender-biased social norms are not immutable.

We have drawn on Italian data and shown evidence that, over the quarter century since 1990, Italian households moved from a patriarchal to a partnership type of family governance, with younger cohorts in different regions evolving faster. We have used this unique variation in the degree of gender-biased social norms to make two contributions. First, we document the distortionary effects of gender-biased norms on household financial decisions, showing that, when women are dis-empowered, households participate less in financial markets and obtain lower income from capital. Second, we identify one of the forces that induce cultural change, and show that gender roles are abandoned when the economic costs of complying with them

exceed the benefit of conforming. A national reform that reduced public pension benefits was the shock that made patriarchal norms a “luxury” that younger generations could no longer afford. We show that this reform induced households to increasingly assign economic headship according to spouses’ relative skills. Our results suggest that, by relieving households of the responsibility for their future financial well-being, generous pay-as-you-go pension systems may have contributed to sustain and perpetuate male-biased social norms in the allocation of decision power within the family.

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Figure 3: Sample Size by Household Type and Survey Year

This figure displays the number of households in each survey year by household type. Two-spouses households consist of two adults of opposite sex married or cohabiting plus other members (e.g. children or parents). Non-couple households are households that do not include an adult couple, e.g., single-parent households.

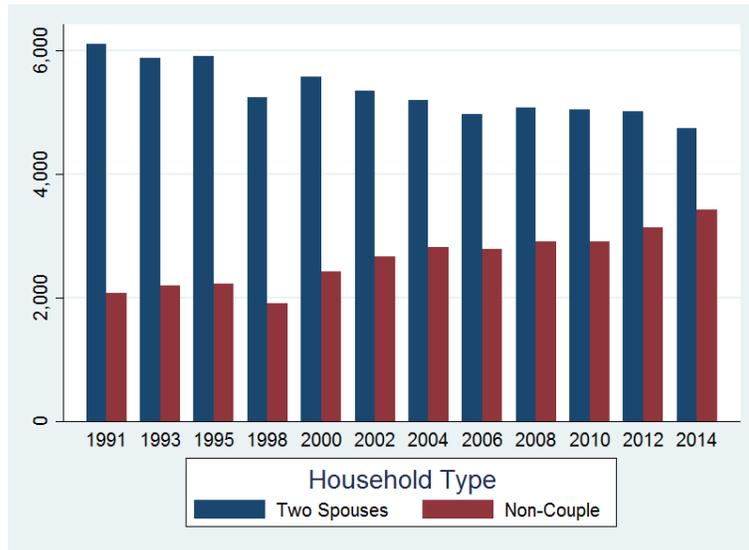


Figure 4: Female Headship by Cohort and Geographical Area

This figure displays the proportion of two-spouse households headed by the female spouse in each survey year by cohort of birth of the head (panel a) and geographical area (panel b). The legend in the upper panel indicates the median year of birth for each cohort. The legend in the lower panel indicates macro geographic Italian areas.

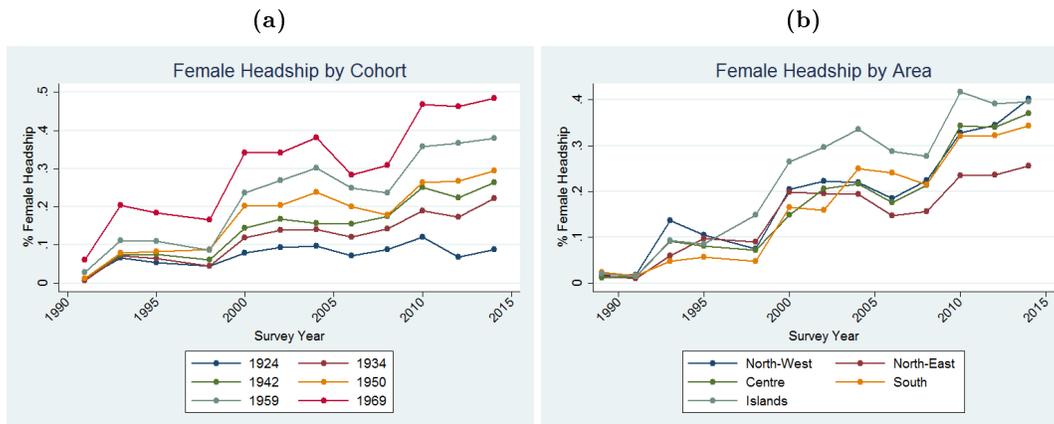


Figure 5: Social Norms: Estimates

Panels (a) and (b) of this figure show the point estimates for region-cohort fixed effects of the following regression: $FHead_{i,c,r} = X_i\beta + C_{c,r} + \epsilon_{i,c,r}$, where $FHead$ is a dummy variable that takes the value 1 if the head of household i is female, X_i are household level controls, c indicates cohort, and r indicates region.

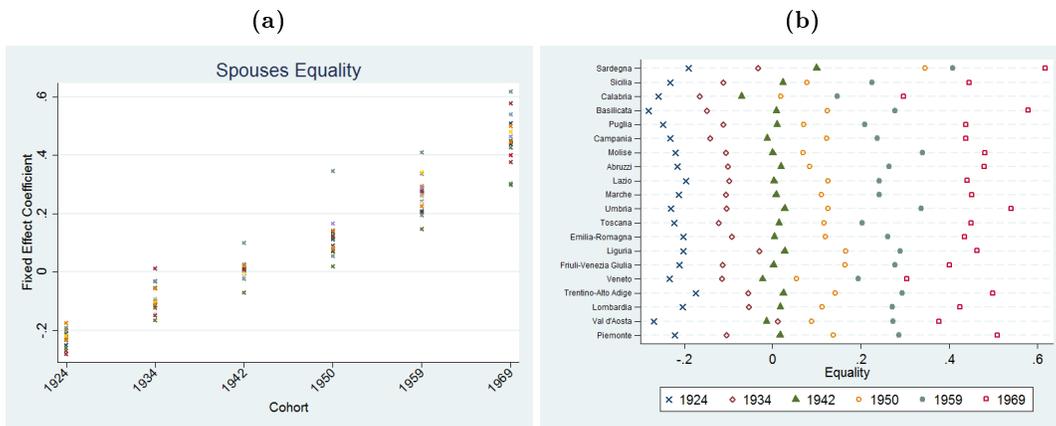


Figure 6: Equality Measure and European Value Survey Data

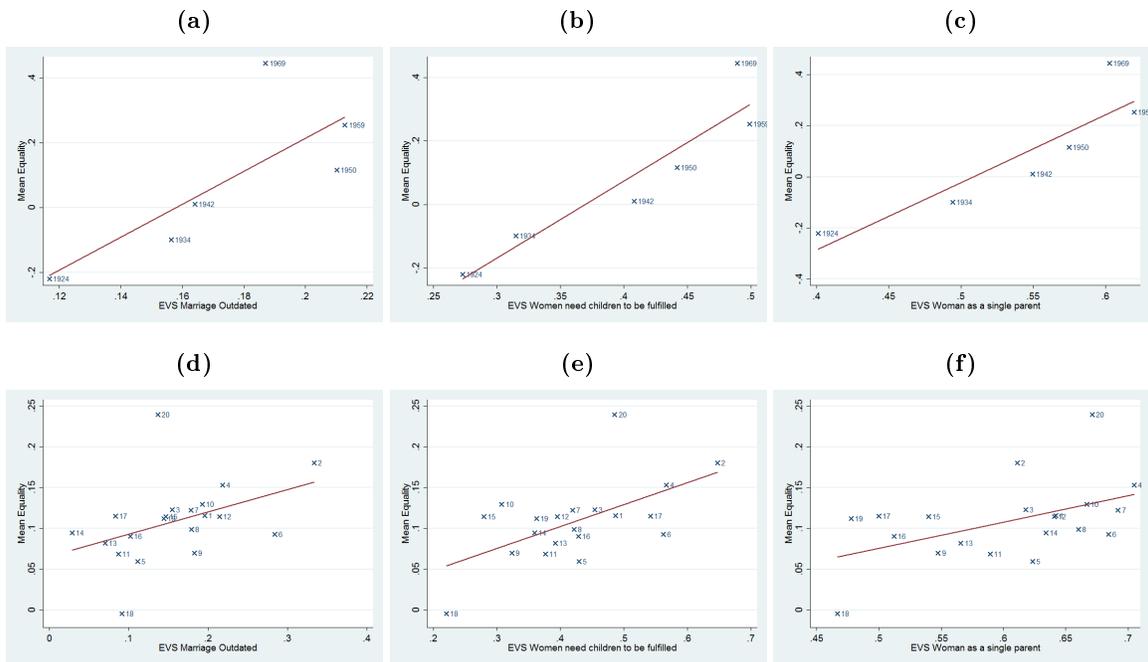


Figure 7: Pension Reform: Treated Households by Head's Age

This figure shows the distribution of treated households by age of household head. Treated households have at least one household member affected by the 1992 pension reform. The sample comprises two-spouse households in the 1989, 1991, 1993, and 1995 surveys.

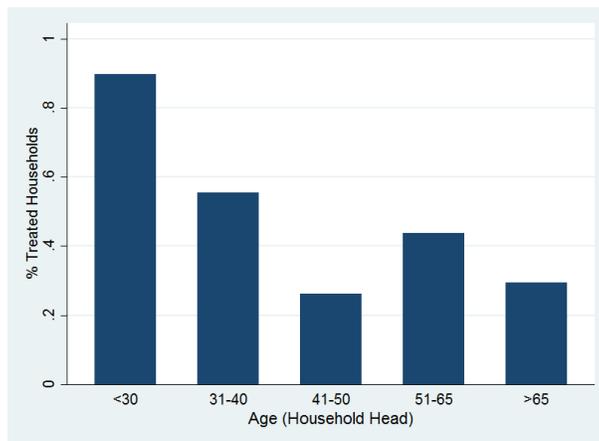


Table 1: Household Characteristics

This table shows summary statistics of two-spouse households characteristics in the full sample and by gender of household head. "NorthWest" indicates the fraction of households living in the regions of Liguria, Piemonte, Val d'Aosta, and Lombardia; "NorthEast" the fraction of households living in the regions of Veneto, Trentino-Alto Adige, Friuli Venezia Giulia, and Emilia Romagna; "Center" the fraction of households living in the regions of Toscana, Umbria, Lazio, and Marche; "South" the fraction of households living in the regions of Abruzzi, Molise, Campania, Puglia, Basilicata, and Calabria; "Islands" indicates the fraction of households living in the regions of Sicilia and Sardegna.

	Mean	Median	Min	Max	Mean:M Head	Mean:F Head	Δ t-stat	Obs
Demographic and Other Controls								
# Adults	2.07	2.00	2.00	9.00	2.07	2.09	-4.14	64085
# Children	1.16	1.00	0.00	7.00	1.16	1.14	2.50	64085
Avg Age	52.94	52.50	17.50	96.50	53.09	52.29	5.69	64085
Retired	0.18	0.00	0.00	1.00	0.19	0.17	4.36	64085
Avg Education	3.05	3.00	1.00	6.00	3.04	3.11	-7.53	64085
Home Owner	0.72	1.00	0.00	1.00	0.72	0.70	4.35	64085
Cohabiting Couple	0.02	0.00	0.00	1.00	0.02	0.05	-19.08	64085
Comparative Advantage Measures								
Education FtM ratio	1.00	1.00	0.17	4.00	0.99	1.06	-24.05	64042
Income FtM ratio	0.41	0.28	0.00	2.96	0.31	0.89	-115.78	63529
RE Female Ownership	0.09	0.00	0.00	1.00	0.08	0.16	-33.01	64085
Age FtM ratio	0.93	0.94	0.15	3.05	0.93	0.94	-5.22	64042
Female is Housewife	0.43	0.00	0.00	1.00	0.44	0.39	9.90	64085
Hours Worked F	10.34	0.00	0.00	121.85	10.00	11.80	-11.16	63860
Hours Worked M	22.22	33.23	0.00	138.46	22.08	22.85	-3.76	63959
Geographical Distribution								
NorthWest	0.23	0.00	0.00	1.00	0.23	0.25	-5.81	64085
NorthEast	0.20	0.00	0.00	1.00	0.21	0.16	10.39	64085
Centre	0.21	0.00	0.00	1.00	0.21	0.21	0.45	64085
South	0.24	0.00	0.00	1.00	0.25	0.22	6.31	64085
Islands	0.12	0.00	0.00	1.00	0.11	0.16	-14.30	64085

Table 2: Two-spouse Household: Investment in Financial Markets

The upper panel of this table shows the proportion of two-spouse households that participate in financial markets in general and in specific asset classes. The lower panel provides summary statistics for the number of different asset classes held, the ratio of financial income over financial assets, and the ratio of net capital income over total assets.

	Mean	p25	Median	p75	StDev	Obs
Participation						
Any Fin Asset Class	0.27	0.00	0.00	1.00	0.45	64085
Gov Bonds	0.15	0.00	0.00	0.00	0.36	64085
Other Fixed Income	0.07	0.00	0.00	0.00	0.25	64085
Stocks	0.07	0.00	0.00	0.00	0.26	64085
Funds	0.09	0.00	0.00	0.00	0.29	64085
Other Securities	0.00	0.00	0.00	0.00	0.02	64085
Summary Statistics						
Fin Asset Classes	1.44	1.00	1.00	2.00	0.76	17524
Fin Income/Fin Assets	3.08	1.19	2.76	4.40	2.25	55115
Net Capital Income/Total Assets	0.53	0.01	0.14	0.75	1.49	63166

Table 3: Determinants of Female Headship

This table reports estimates from the following regression: $FHead_{i,c,r} = \Delta A_i \beta + \Psi_i \gamma + C_{c,r} + \epsilon_{i,c,r}$, where $FHead$ is a dummy variable that takes the value 1 if the head of household i is female, ΔA_i is a vector of female-male differences in observable characteristics, Ψ_i is a vector of household-level controls, c indicates cohort, and r indicates region. Standard errors (in brackets) are clustered at the region level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	F_Head	F_Head	F_Head
Income FtM ratio	0.4196*** (0.0148)	0.4693*** (0.0149)	0.4651*** (0.0146)
RE Female Ownership	0.0939*** (0.0100)	0.1109*** (0.0130)	0.1097*** (0.0130)
Education FtM ratio	0.0157** (0.0073)	0.0350** (0.0128)	0.0366** (0.0134)
Age FtM ratio	-0.1950*** (0.0350)	0.0152 (0.0300)	-0.0113 (0.0344)
Cohabiting Couple	0.0706*** (0.0136)	0.0928*** (0.0147)	0.0923*** (0.0143)
Adults	0.0191*** (0.0043)	0.0131** (0.0046)	0.0149*** (0.0048)
Children	0.0064** (0.0025)	-0.0034 (0.0031)	-0.0051 (0.0031)
Avg. Education	-0.0248*** (0.0033)	0.0129*** (0.0041)	0.0093* (0.0047)
Avg. Age	0.0117*** (0.0008)	0.0013*** (0.0003)	0.0022*** (0.0004)
Hours Worked F	-0.0039*** (0.0003)	-0.0046*** (0.0004)	-0.0046*** (0.0004)
Hours Worked M	0.0022*** (0.0003)	0.0024*** (0.0003)	0.0025*** (0.0003)
Income Dec.	0.0017* (0.0009)	0.0022 (0.0014)	0.0029* (0.0016)
Wealth Dec.	-0.0027** (0.0010)	-0.0070*** (0.0014)	-0.0062*** (0.0013)
Commerce&Service			-0.0137 (0.1520)
Income Single F			-0.0212*** (0.0068)
Gender Balance			-0.7008* (0.3871)
Occupation M and F FE	Yes	Yes	Yes
CohortXRegion FE	Yes	No	No
N	63238	63238	61540
adj. R^2	0.381	0.287	0.291

Table 4: Gender Norms in the European Value Survey: Correlation of Traits

This table reports correlation coefficients across answers by the same individual to selected questions in European Value Survey (all waves, respondent located in Italy). The statement/questions examined are as follows. A: Women need children to be fulfilled. B: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work. C: Marriage is an outdated institution. D: If a woman wants to have a child as a single parent, but she doesn't want to have a stable relationship with a man, do you approve or disapprove? E: When jobs are scarce, men have more right to a job than women. Variables are recoded to take value 1 if the subject agrees or strongly agrees with B, C, and D, and disagrees or strongly disagrees with A and E (and zero otherwise).

	A	B	C	D	E
A: Woman needs children	1				
B: Working Mother	0.170	1			
C: Marriage is outdated	0.148	0.0611	1		
D: Woman as single parent	0.180	0.149	0.155	1	
E: Scarce jobs to men	0.162	0.215	0.0613	0.127	1

Table 5: Spousal Equality and Investment in Financial Assets

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the household holds wealth in at least one financial asset other than bank deposits. In column (2), we restrict the sample to households with head younger than 65. *Female Head* takes the value 1 if the household head is female. Standard errors (in parentheses) are computed with a 2-stages bootstrapping procedure for generated variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
Equality	0.1258*** (0.0263)	0.1334*** (0.0319)	0.1352*** (0.0268)
Equality X Female Head			-0.0333* (0.0187)
Female Head			0.0037 (0.0066)
Adults	-0.0400*** (0.0041)	-0.0404*** (0.0049)	-0.0400*** (0.0041)
Children	-0.0233*** (0.0018)	-0.0222*** (0.0020)	-0.0233*** (0.0018)
Education	0.0417*** (0.0022)	0.0396*** (0.0027)	0.0419*** (0.0022)
Age	0.0086*** (0.0009)	0.0123*** (0.0018)	0.0086*** (0.0009)
Age ²	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)
Wealth dec.	0.0463*** (0.0010)	0.0464*** (0.0011)	0.0463*** (0.0010)
Income dec.	0.0315*** (0.0009)	0.0299*** (0.0010)	0.0315*** (0.0009)
Home Owner	-0.1407*** (0.0047)	-0.1382*** (0.0053)	-0.1405*** (0.0047)
Hours Worked	-0.0014*** (0.0002)	-0.0013*** (0.0002)	-0.0014*** (0.0002)
Income FtM ratio	-0.0437*** (0.0039)	-0.0429*** (0.0046)	-0.0436*** (0.0043)
RE Female Ownership	0.0086 (0.0059)	0.0026 (0.0070)	0.0087 (0.0059)
Education FtM ratio	0.0029 (0.0051)	0.0049 (0.0064)	0.0030 (0.0051)
Age FtM ratio	-0.0023 (0.0183)	-0.0079 (0.0201)	-0.0039 (0.0183)
Cohabiting Couple	-0.0209** (0.0102)	-0.0297*** (0.0112)	-0.0204** (0.0102)
Region#Year FE	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes
adj. R^2	0.275	0.271	0.275
Observations	63457	47268	63457

Table 6: Spousal Equality, Asset Allocation and Diversification

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the household holds wealth in stocks (column (1)), government bonds (column (2)), other bonds (column (3)), assets other than stocks, bonds, or investment funds (column (4)), or pension funds (column (5)). Column (6) shows coefficient estimates for a Tobit regression of the number of different asset classes held by the household. The sample consists of all couple-households. Standard errors (in parentheses) are computed with a 2-stages bootstrapping procedure for generated variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Stocks	Gov. Bonds	Other Bonds	Other Securities	Pension Funds	#Asset Classes
Equality	0.0493*** (0.0156)	0.0595*** (0.0212)	0.0438*** (0.0157)	0.0042** (0.0017)	0.1390*** (0.0222)	1.1272*** (0.1667)
Adults	-0.0119*** (0.0023)	-0.0186*** (0.0038)	-0.0078*** (0.0025)	-0.0001 (0.0001)	-0.0115*** (0.0030)	-0.2549*** (0.0267)
Children	-0.0040*** (0.0011)	-0.0141*** (0.0014)	-0.0071*** (0.0010)	-0.0003** (0.0001)	0.0069*** (0.0014)	-0.1613*** (0.0105)
Education	0.0242*** (0.0014)	0.0179*** (0.0019)	0.0163*** (0.0014)	0.0001 (0.0002)	-0.0015 (0.0015)	0.2429*** (0.0115)
Age	0.0033*** (0.0005)	0.0040*** (0.0007)	0.0026*** (0.0006)	0.0002*** (0.0001)	0.0048*** (0.0007)	0.0586*** (0.0061)
Age ²	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0004*** (0.0000)
Wealth dec.	0.0166*** (0.0006)	0.0249*** (0.0008)	0.0159*** (0.0006)	0.0003*** (0.0001)	0.0045*** (0.0007)	0.2569*** (0.0052)
Income dec.	0.0090*** (0.0005)	0.0195*** (0.0007)	0.0081*** (0.0005)	-0.0000 (0.0000)	0.0080*** (0.0007)	0.2113*** (0.0056)
Home Owner	-0.0572*** (0.0030)	-0.0735*** (0.0042)	-0.0486*** (0.0028)	-0.0006*** (0.0002)	-0.0067* (0.0036)	-0.7130*** (0.0283)
Hours Worked	-0.0001 (0.0001)	-0.0013*** (0.0001)	-0.0002 (0.0001)	0.0000 (0.0000)	0.0003** (0.0001)	-0.0057*** (0.0010)
Income FtM ratio	-0.0218*** (0.0025)	-0.0224*** (0.0032)	-0.0140*** (0.0027)	-0.0004 (0.0003)	-0.0058** (0.0029)	-0.2093*** (0.0218)
RE Female Ownership	0.0144*** (0.0040)	-0.0076 (0.0051)	0.0060 (0.0039)	-0.0004 (0.0004)	0.0067 (0.0046)	0.0155 (0.0326)
Education FtM ratio	0.0105*** (0.0030)	0.0026 (0.0045)	0.0071** (0.0031)	0.0001 (0.0003)	-0.0082** (0.0036)	0.0376 (0.0339)
Age FtM ratio	0.0174 (0.0116)	-0.0306* (0.0156)	0.0188* (0.0111)	0.0003 (0.0013)	0.0002 (0.0152)	-0.0315 (0.1106)
Cohabiting Couple	-0.0015 (0.0067)	-0.0068 (0.0081)	-0.0141** (0.0060)	-0.0009*** (0.0002)	0.0008 (0.0088)	-0.1363** (0.0620)
Region#Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.127	0.175	0.102	0.004	0.124	
pseudo R^2						0.196
Observations	63457	63457	63457	63457	63457	63457

Table 7: Spousal Equality and Financial Returns

This table shows the coefficient estimates for a linear regression of the ratio of financial income over financial assets (columns (1) and (4)), the ratio of capital income over total assets (columns (2) and (5)), and the ratio of net capital income over total net assets (columns (3) and (6)). The sample consists of all two-spouse households in columns (1) to (3), and panel households in columns (3) to (6). In columns (3) to (6) the outcome variable is the household average across all survey years. Standard errors are bootstrapped in columns (1) to (3) and clustered at the region level in columns (3) to (6). *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	Full Sample			Panel Sample		
	Financial Return	Total Return	Total Net Return	Financial Return	Total Return	Total Net Return
Equality	0.319*** (0.0859)	0.431*** (0.0724)	0.632*** (0.129)	0.706*** (0.148)	0.576*** (0.173)	0.806** (0.354)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Region#Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.716	0.371	0.249	0.665	0.359	0.254
Observations	54775	62604	62747	10832	11560	11571

Table 8: Spousal Equality and Investments: The Role of Collaboration

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the household holds wealth in at least one financial asset other than bank deposits. *Spouse: higher Edu* is an indicator variable that takes value 1 if the non-head spouse has higher education than the household head. *Spouse: Fin. Sector* is an indicator variable that takes value 1 if the non-head spouse is employed in the financial sector. *Spouse: Same Sector* is an indicator variable that takes value 1 if the non-head spouse is employed in the same sector as the household head. *Hours Worked Ratio* is the ratio of hours worked by the household head over hours worked by the non head spouse. *Couple with Children* is an indicator variable that takes value 1 if there are children in the household. *X Var* indicates interaction terms of *Var* with *Equality*. Standard errors (in parentheses) are computed with a 2-stages bootstrapping procedure for generated variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
Equality	0.1283*** (0.0272)	0.1238*** (0.0269)	0.1362*** (0.0266)	0.1603*** (0.0288)	0.0844*** (0.0302)
X Spouse: Higher Edu	-0.0082 (0.0203)				
Spouse: Higher Edu	0.0152** (0.0060)				
X Spouse: Fin. Sector		0.0541 (0.1090)			
Spouse: Fin. Sector		0.0898*** (0.0327)			
X Spouse: Same Sector			-0.0535* (0.0273)		
Spouse: Same Sector			-0.0073 (0.0091)		
X Hours Worked Ratio				-0.0119* (0.0068)	
Hours Worked Ratio				-0.0021 (0.0016)	
X Couple with Children					0.0466*** (0.0163)
Other Controls	Yes	Yes	Yes	Yes	Yes
RegionYear FE	Yes	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.276	0.276	0.276	0.273	0.276
Observations	63457	63457	63457	34581	63457

Table 9: Effects of Equality on Investments of Non-Couple Households

This table shows coefficient estimates of the effects of equality on investment decisions of non-couple households. Column (1) shows the coefficient estimates for a linear regression of an indicator variable that takes value 1 if the household holds wealth in at least one financial asset other than bank deposits. Columns (2), (3), and (4) show coefficient estimates for a linear regression of an indicator variable that takes value 1 if the household holds wealth in stocks, bonds (either government or corporate), and other securities, respectively. The sample consists of all non-couple households. Standard errors (in brackets) are clustered at the region level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	Any Fin. Asset	Stocks	Bonds	Other Securities
Equality	0.0365 (0.0364)	0.0376 (0.0248)	-0.0011 (0.0279)	-0.0007 (0.0017)
Female Head	-0.0276*** (0.0042)	-0.0272*** (0.0054)	-0.0144*** (0.0047)	-0.0004** (0.0002)
Education	0.0223*** (0.0063)	0.0064*** (0.0022)	0.0139** (0.0058)	0.0001 (0.0002)
Age	0.0071*** (0.0015)	0.0017** (0.0007)	0.0043*** (0.0009)	0.0000 (0.0001)
Age ²	-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000 (0.0000)
Wealth dec.	0.0443*** (0.0055)	0.0121*** (0.0026)	0.0335*** (0.0043)	0.0001 (0.0001)
Income dec.	0.0353*** (0.0034)	0.0085*** (0.0012)	0.0277*** (0.0029)	0.0001 (0.0001)
Home Owner	-0.1201*** (0.0151)	-0.0399*** (0.0092)	-0.0896*** (0.0103)	-0.0004 (0.0004)
Other Controls	Yes	Yes	Yes	Yes
Region#Year FE	Yes	Yes	Yes	Yes
Occupation HH FE	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes
N	31485	31485	31485	31485
adj. R^2	0.265	0.094	0.194	0.005

Table 10: Effects of Equality on Financial Returns of Non-Couple Households

This table shows the coefficient estimates for a linear regression of the ratio of financial income over financial assets (columns (1) and (2)), the ratio of capital income over total assets (columns (3) and (4)), and the ratio of net capital income over total net assets (columns (5) and (6)). The sample consists of all non-couple households. Standard errors (in parentheses) are clustered at the cohort-region level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Financial	Financial	Total	Total	Total Net	Total Net
	Return	Return	Return	Return	Return	Return
	(Male Head)	(Female Head)	(Male Head)	(Female Head)	(Male Head)	(Female Head)
Equality	-0.149 (0.193)	-0.291 (0.185)	0.0168 (0.174)	-0.119 (0.160)	0.194 (0.345)	-0.308 (0.227)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Region#Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Occupation HH FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	8070	16136	9460	20787	9522	20865
adj. <i>R</i> ²	0.744	0.747	0.402	0.394	0.280	0.287

Table 11: Spousal Equality and Female Labor Market

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the household holds wealth in at least one financial asset other than bank deposits. In column (1), the sample includes only non-couple households with female heads younger than 65. In column (2), we restrict the sample to two-spouse households where the female spouse is a housewife. In columns (3) and (4), the sample includes only cohort-region clusters with employment above and below the median in share of commerce and service sectors respectively. Standard errors (in parentheses) are clustered at the region level in column 1. Standard errors in columns 2 to 4 are computed with a 2-stages bootstrapping procedure for generated variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1) Other, Female Head	(2) Two Spouses, Female Housewife	(3) Two Spouses, Low Comm&Service	(4) Two Spouses, High Comm&Service
Equality	-0.0222 (0.0358)	0.1351*** (0.0346)	0.1292*** (0.0328)	0.1283*** (0.0391)
Adults	-0.0344*** (0.0042)	-0.0350*** (0.0057)	-0.0300*** (0.0049)	-0.0533*** (0.0069)
Children	-0.0392*** (0.0033)	-0.0223*** (0.0022)	-0.0158*** (0.0021)	-0.0332*** (0.0029)
Education	0.0215*** (0.0029)	0.0420*** (0.0030)	0.0343*** (0.0027)	0.0504*** (0.0034)
Age	0.0060*** (0.0011)	0.0059*** (0.0012)	0.0065*** (0.0011)	0.0104*** (0.0014)
Age ²	-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0001*** (0.0000)
Wealth dec.	0.0427*** (0.0017)	0.0396*** (0.0013)	0.0364*** (0.0012)	0.0554*** (0.0015)
Income dec.	0.0342*** (0.0015)	0.0289*** (0.0012)	0.0237*** (0.0011)	0.0406*** (0.0014)
Home Owner	-0.1237*** (0.0075)	-0.1217*** (0.0061)	-0.1176*** (0.0062)	-0.1606*** (0.0074)
Hours Worked	-0.0013*** (0.0004)	-0.0012*** (0.0002)	-0.0011*** (0.0002)	-0.0017*** (0.0003)
Income FtM ratio		-0.0225** (0.0098)	-0.0337*** (0.0049)	-0.0492*** (0.0058)
RE Female Ownership		-0.0012 (0.0091)	0.0134* (0.0076)	0.0035 (0.0097)
Education FtM ratio		-0.0015 (0.0066)	0.0006 (0.0059)	0.0053 (0.0088)
Age FtM ratio		0.0050 (0.0254)	-0.0476** (0.0242)	0.0402 (0.0285)
Cohabiting Couple		-0.0018 (0.0171)	-0.0130 (0.0137)	-0.0225 (0.0159)
Region#Year FE	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes
adj. R^2	0.247	0.271	0.250	0.261
Observations	21567	27288	32177	31280

Table 12: Internal Migration and the Effects of Equality

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the household holds wealth in at least one financial asset other than bank deposits. The dummy variable *Native HH* takes value 1 if both spouses were born in the region where the household currently lives. *Equality* is measured on the sample of natives only. *Equality (W)* and *Equality (M)* are measured at the level of region of birth of the female and male spouse respectively. In columns 2 and 3 the sample comprises internal migrants only. Standard errors (in parentheses) are clustered at the cohort-region level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
Equality	0.1166*** (0.0354)	-0.0042 (0.0986)	0.2066* (0.1166)	
Native	0.0393*** (0.0072)			0.0356*** (0.0074)
Equality (W)		0.1608** (0.0767)		0.1477*** (0.0349)
Equality (M)			0.0439 (0.0952)	
Other Controls	Yes	Yes	Yes	Yes
Region#Year FE	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes
<i>N</i>	63457	9746	10344	60537
adj. <i>R</i> ²	0.277	0.243	0.238	0.277

Table 13: Pension Reform: Treated vs Control Households

This table shows mean values and standard deviations for selected characteristics of treated and control households. Treated households have at least one household member affected by the 1992 pension reform. The sample consists of two-spouse households in the 1989, 1991, 1993, and 1995 surveys.

	Control	Treated	Total
Education (Couple Avg.)	2.929 (0.952)	3.072 (0.976)	2.990 (0.965)
Income Decile	5.934 (2.660)	7.016 (2.461)	6.394 (2.632)
# Children	1.449 (1.083)	1.571 (0.988)	1.501 (1.046)
# HH Memebers in Labor Force	1.153 (0.651)	1.873 (0.804)	1.459 (0.803)
Age (Couple Avg.)	48.75 (11.72)	44.17 (12.80)	46.80 (12.40)

Table 14: Pension Reform: Effects on Headship, Savings, Hours Worked, and Income Ratio

This table shows the coefficient estimates for a linear regression of savings (column (1)), hours worked by female spouse (column (2)), hours worked by male spouse (column (3)), ratio of female spouse income over male spouse income (column (4)), and female headship (column (5)). *Post* is an indicator variable that takes the value 1 after the pension reform, that is, in years 1993 and 1995. *Treated* is an indicator variable that takes value 1 if at least one household member is affected by the reform. The sample consists of two-spouse households in the 1989, 1991, 1993, and 1995 surveys. Robust standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
	F Headship	Savings	Hours Worked (F)	Hours Worked (M)	Income Ratio F-t-M
Post X Treated	0.0210*** (0.0069)	0.0574** (0.0253)	1.0303* (0.5343)	0.6863* (0.3552)	0.0266* (0.0136)
Post	0.0146*** (0.0042)	-0.0950*** (0.0145)	-0.7306** (0.3552)	0.1514 (0.2367)	-0.0054 (0.0086)
Treated	-0.0312*** (0.0049)	0.0609*** (0.0167)	0.4565 (0.4584)	-2.6508*** (0.2846)	-0.0039 (0.0111)
Education (Couple Avg.)	-0.0060** (0.0026)	-0.1010*** (0.0099)	1.0696*** (0.1643)	-0.3414*** (0.1213)	0.0309*** (0.0046)
Income Decile	0.0033*** (0.0009)	0.1302*** (0.0047)	2.1011*** (0.0631)	0.5526*** (0.0487)	0.0349*** (0.0016)
% Children	-0.0657*** (0.0168)	-0.3250*** (0.0741)	-7.9434*** (0.9088)	8.1553*** (0.7671)	-0.3991*** (0.0290)
% HH Memebers in LF	-0.1135*** (0.0303)	-0.3766*** (0.1445)	5.3660*** (1.8839)	15.5673*** (1.7123)	-0.2561*** (0.0569)
Cohort (HH Head) FE	Yes	Yes	Yes	Yes	Yes
Sector (HH Head) FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
<i>N</i>	15461	15393	15331	15413	15375
adj. <i>R</i> ²	0.098	0.131	0.227	0.654	0.114

Table 15: The Effect of Pension Reform on Headship: Robustness

This table shows the coefficient estimates for a linear regression of female headship. *Post* is an indicator variable that takes value 1 after the pension reform, that is, in years 1993 and 1995. *Treated* is an indicator variable that takes the value 1 if at least one household member is affected by the reform. The sample consists of two-spouse households in the 1989, 1991, 1993, and 1995 surveys. In columns 2 and 3 we restrict the sample to households with an income-earner wife and where the wife has higher education than the husband respectively. Robust standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Post X Treated	0.0169*** (0.0061)	0.0237** (0.0112)	0.0354** (0.0172)		0.0182*** (0.0062)	0.0160*** (0.0060)
Post X Treated Share				0.0698*** (0.0141)		
Income FtM ratio	0.1628*** (0.0079)	0.1716*** (0.0126)	0.1234*** (0.0173)	0.1644*** (0.0079)	0.1637*** (0.0079)	0.1601*** (0.0089)
% Children	0.0052 (0.0163)	0.0237 (0.0269)	-0.0962* (0.0513)	-0.0052 (0.0160)	0.0074 (0.0165)	
% HH Memebers in LF	-0.0764*** (0.0286)	-0.0498 (0.0494)	-0.1746* (0.0951)	-0.0647** (0.0287)	-0.0952*** (0.0293)	
# Children						0.0067*** (0.0020)
# HH Memebers in LF						0.0077* (0.0043)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cohort (HH Head) FE	Yes	Yes	Yes	Yes	No	Yes
Age (HH Head) FE	No	No	No	No	Yes	No
Sector (HH Head) FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	15375	8022	2495	15375	15375	15375
adj. <i>R</i> ²	0.182	0.193	0.178	0.183	0.183	0.182

Appendix A

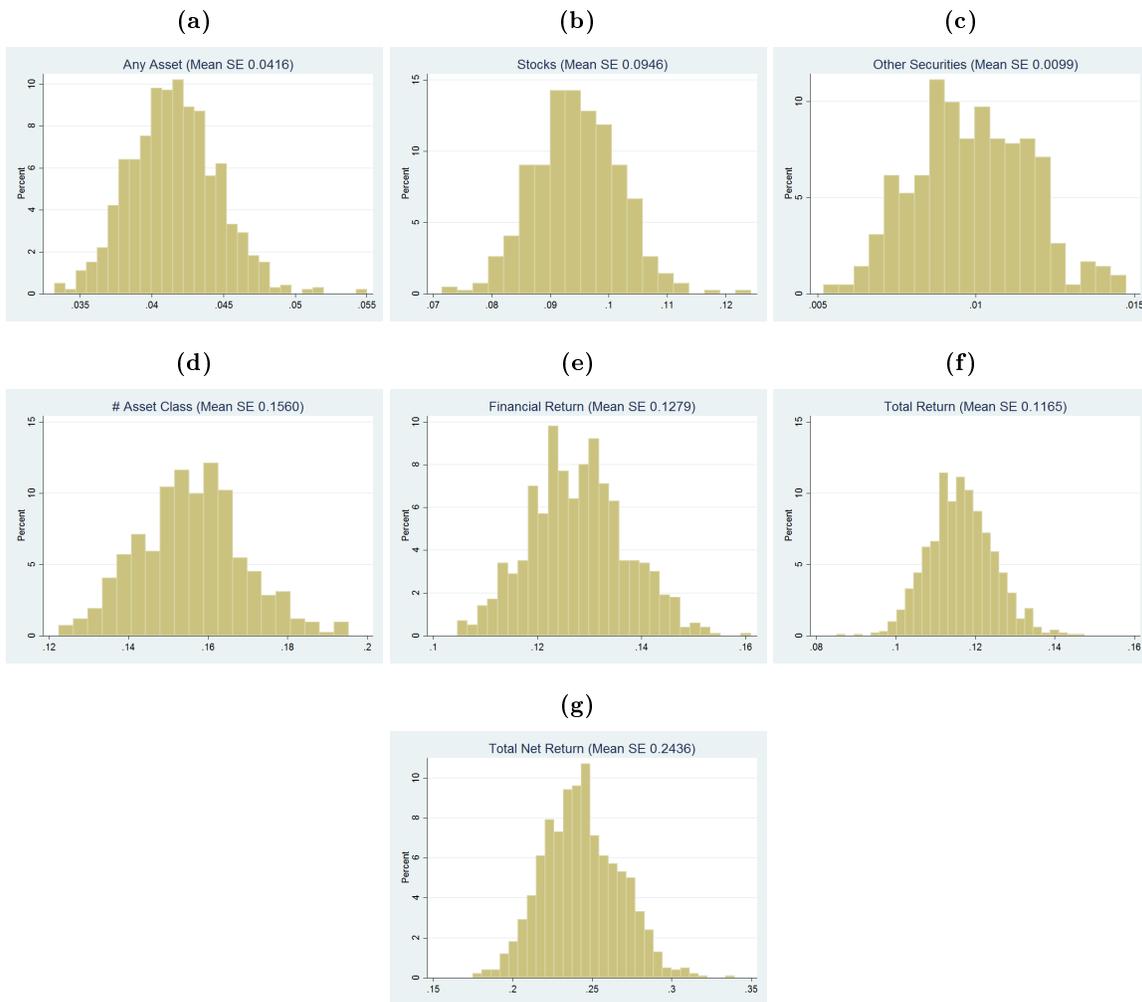
Our base line results are computed using a two-stage bootstrap procedure with random sample stratified at the cohort-region level. While this method addresses the problem of measurement error, it cannot control for potential error correlation at the cohort-region level, or at different levels of aggregation, in the second stage. We address this issue in various ways. First, we use a two-stage bootstrap procedure where the random sample drawn during each replication is a bootstrap sample of region-cohort clusters. Second, we use a standard two-steps estimation procedure where cohort-region fixed effects from the first stage (*Equality*) are used as regressor in the second stage. Standard errors in the second stage are clustered at the cohort-region, region, and year level. Third, we use a two-stage bootstrap procedure where samples are unconstrained and randomly drawn with replacement, and errors are clustered at the cohort-region level in the second stage. In the Table A1 below we report standard errors of the *Equality* coefficient computed with the first two methods for the regressions in Table 5 (column 1 only), Table 6, and Table 7 (columns 1 to 3). In Figure A1 we show the distribution of clustered standard errors computed at each iteration in the third method.

Table A1: Equality Coefficient Standard Errors

	Any Asset	Stocks	Other Security	# Asset Classes
2S Bootstrap Cluster= Cohort-Region	0.0382	0.0828	0.00830	0.129
Cluster= Cohort-Region	0.0350	0.0808	0.0077	0.1302
Cluster= Region	0.0301	0.0803	0.0078	0.1120
Cluster= Year	0.0249	0.0702	0.0085	0.0836

	Financial Return	Total Return	Total Net Return
2S Bootstrap Cluster= Cohort-Region	0.107	0.106	0.215
Cluster= Cohort-Region	0.1032	0.0989	0.2190
Cluster= Region	0.0946	0.0934	0.2680
Cluster= Year	0.1616	0.0625	0.1636

Figure A1: Cohort-Region Clustered Standard Errors Distribution



Appendix B

Assuming X_i is randomly distributed across cohorts and regions and taking expectations across households in cohort c and region r in equation 2, we can write average female headship as follows:

$$\bar{G}_{c,r} = E_i \left[\Phi \left(\Delta X_i \lambda - \frac{\beta}{(1-\beta)} [1 - 2\bar{G}_{c-1,r}] \right) \right]$$

The expression above implies the existence of a long-run equilibrium gender norm G^* , which depends on the level of β .²⁰ Therefore, exogenous changes to parameter β can affect the behavior of both current and future generations, and the speed of the transition toward the long-run equilibrium. Section 8 provides evidence that a shock to the relative importance of intrinsic utility versus social conformism due to welfare reforms in the early 1990s is partly responsible for the significant shift toward domestic gender parity.

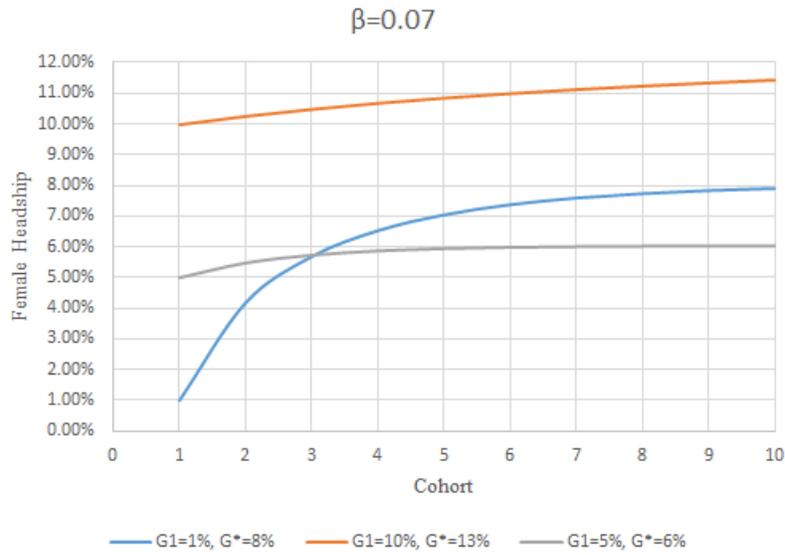
This formulation of the model can rationalize convergence patterns across subgroups but it can hardly explain the persistence of subgroups in the population with their own norms and values. It is possible, however, to introduce sufficient heterogeneity to match observed patterns. Average differences in wife-husband relative characteristics (X) may vary across regions and evolve over time, constantly affecting current average and long term equilibrium norms. For example, a change in the male-female education gap may affect aggregate current female headship ($\bar{G}_{c,r}$), equilibrium norms (G^*), and next generation individual households' female headship probability (through past norms). Additionally, the compliance with social norms expressed by the previous generations may decay over time, for instance because for younger generations the cost of conforming with tradition and giving up individual utility grows larger. Therefore, β may be cohort specific and become smaller over time, leaving the allocation rule increasingly dependent on spouses characteristics. The pace of the decay may also be region specific, depending, for example, on the strength of community ties and on the intensity of social interaction between generations within regions. In Figure A2 we use the

²⁰The equilibrium solves the fixed point problem $G^* = E_i \left[\Phi \left(\Delta X_i \lambda - \frac{\beta}{(1-\beta)} [1 - 2G^*] \right) \right]$

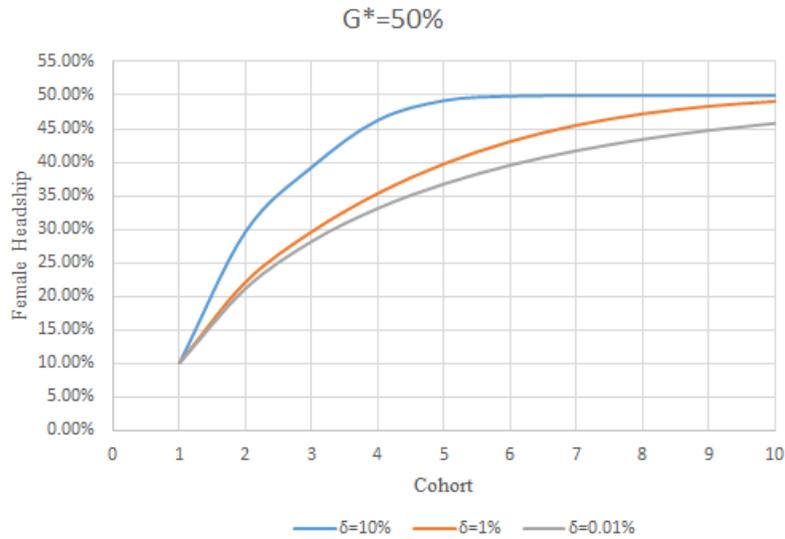
model to simulate female headship patterns across cohorts.

Figure A2: Model Simulation: Norm Dynamics over Time

(a) Norms Dynamics with Constant β



(b) Norm Dynamics with Decreasing β



The upper panel shows dynamics of cohort average female headship under different initial norms (G_1) and different steady state rules (G^*), but invariant β . For simplicity we assume X is constant across households within the same group. In the lower panel we assume $\beta_c = \frac{1}{2} - \delta \times c$,

with $c \in [1; \infty)$ indicating the cohort and $\delta > 0$ controlling the speed of decay, and $X_i \lambda = 0$ for all households such that the long term gender norm is $1/2$. Heterogeneity in social norms across cohorts can be explained by initial inherited norms, and by the level and the dynamics of the importance of tradition (β) and of the distribution of wife-husband relative characteristics (X). Overall, the model can rationalize the very different trajectories in the regional time series of female headship that we observe in the data.