From Patriarchy to Partnership: Gender Equality and Household Finance

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Abstract

Using Italian survey data, we document a marked shift in household financial decision-making power from men to women. The share of wife-headed households increased from almost zero in the early 1990s to over 35% in recent years. This reflects a slow but steady social norm transformation that changed family governance from a patriarchal system to an egalitarian one. We use the variation of social norms across cohorts and regions to identify the effects of gender equality onhouseholds' financial decisions. We find that less male-biased norms have a positive effect onhouseholds' participation in financial markets, equity holdings, and asset diversification; these effects are stronger when the benefits from information and cost sharing between spouses are larger. Importantly, equality increases returns from financial investments. Taken all together, this evidence suggests that gender roles in household financial management can have large economic costs. Consistent with this, we show that the patriarchal system began to be abandoned when a pension reform in the early 1990s made it too costly for the younger cohorts.

Keywords: Household Finance, Social Values, Gender Equality

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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.

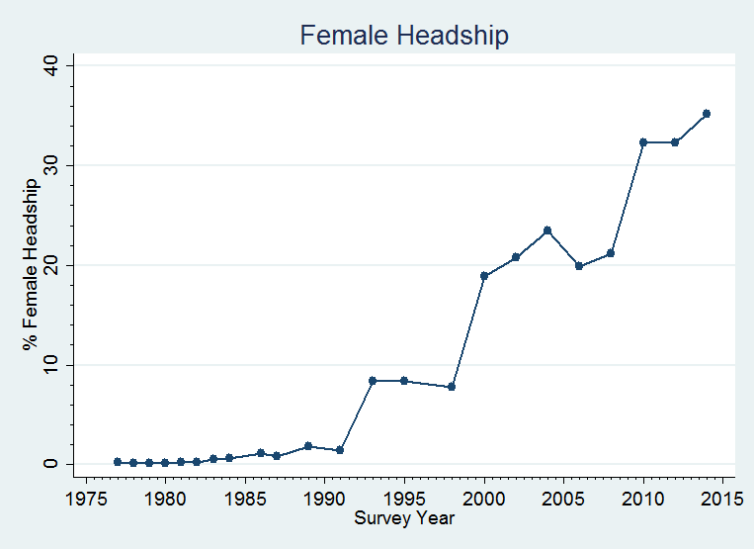
The division of tasks between household members, however, may also indicate social norms dictating who should do what, irrespective of comparative advantage. This may be so for the division of labor between genders, particularly with regard to the allocation to tasks that the social norms view as more "masculine" or "feminine." For example, Akerlof and Kranton [2000] suggest that the larger share of domestic work allocated to women can be explained by identity considerations, that is the desire to comply with gender-specific social norms, rather than efficiency considerations. Just as domestic work is perceived as more "feminine," financial matters are typically considered the domain of men (Barber and Odean [2001]). This may be 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]). Whatever be the origin of this gender norm, its compliance 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 household decisions may yield sub-optimal financial choices, resulting in lower consumption compared to the Becker [1974] equilibrium outcome.

This paper studies the effect of gender norms on household financial decisions and outcomes.[1] To characterize gender norms in the domestic context, we begin by examining the

[1] An emerging strand of financial literature argues that social norms shape preferences and inform decisions in a similar fashion for households belonging to the same group. For example, using administrative data on migrants to Sweden, Haliassos et al. [2016] conclude that there exist "statistically significant differences in financial behavior across culture groups," where "culture groups" are broadly defined based on migrants' country of origin. DAcunto et al. [2019] show that, in Germany, demand for financial services is lower in areas

cross-sectional 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). The following figure documents an extraordinary shift in decision making power from Italian husbands to their wives.

Figure 1: Female Headship in Two-Spouse Households



The share of married women heading household's financial (and economic) decision making increased from just 1% to over 35% over a period of just 24 years.

Importantly, population trends conceal significant cohort and region-specific dynamics. At each point in time, younger cohorts are more frequently woman-headed than older cohorts. Moreover, younger cohorts show on average a more rapid shift from males to females, toward more gender parity in household decision making. By 2014, husbands and wives born in the 1970s or later had the same chances of being indicated as the heads of their households. For over a quarter century, the Italian society moved slowly from a "patriarchy" equilibrium -– where the man decides – to a "partnership" or "equality" model (as we label it henceforth). However, female headship increased at significantly different speeds across the twenty Italian regions.

To rationalize the observed female headship patterns across regions and cohorts, we intro-

where historical antisemitism was higher, compared to otherwise similar areas.

duce 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 savings. 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 these novel gender norm measures to study their relation with household financial behavior. Second, it suggests possible explanations for cultural changes. Namely, the tension between economic efficiency and importance of tradition characterizing the model suggests that household-level economic shocks that raise the cost of conforming may induce a break with tradition and abandonment of "old" gender roles. If these shocks are large 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.

We first estimate 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 a systematically lower (higher) share of female headship. Therefore, we characterize each cohort-region community by an "adjusted" probability of female headship, which we henceforth refer to as spousal *Equality*. We confirm that our *Equality* measure correlates with the household behaviors consistent with a more gender-balanced approach inallocating economic tasks to female and male spouses. Indeed, in panel data we find that husbands and wives exposed to egalitarian norms alternate the responsibility of economic decision making more frequently, with women, who are generally less knowledgeable of financial matters (Lusardi and Mitchell [2008]), showing stronger

incentives to acquire financial skills to meet the headship responsibility.

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 paritygrants the role of decision maker to the spouse more suitable for the task, as well as fosters better collaboration between spouses (Ke [2020]). In particular, collaboration can affect investments because financial decision making requires time and strategic thinking, and teams behave more efficiently than individuals (Bornstein and Yaniv [1998], Charness and Sutter [2012]). Collaboration can be especially valuable if the spouses access different information sets and exploit complementarities, as well as share costs (such as investment attention costs). In this sense, spousal equality may attenuate rational inattention and the resulting portfolio inertia (Caplin and Dean [2015], Abel et al. [2007]; Alvarez et al. [2012]), reducing inefficiency in portfolio allocations. 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 gender egalitarian norms facilitate attention cost sharing and the exploitation of information complementarities.

One may argue that our results reflect the possible correlation between *Equality*, general trends in women emancipation, and 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 between the

[2]A 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.

two spouses and protect their aggregate income. Lower income risk may then induce positive effects on participation, equity holdings and asset diversification.[3] 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. This sample is exposed to broad societal changes but not to those affecting power relations 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. Rather, the effects we document reflect a change in social norms regulating the allocation of economic decision power between spouses.

We conclude our study by testing the hypothesis that a significant economic shock may kick-start the transformation of gender roles. We identify this shock with the 1992 pension reform in Italy2, 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 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 Sections (6) and (7) present the main empirical results, discussed further in Section (8). Section (9) discusses the possible explanations for the drastic changes in social norms on family financial headship. Section (10) 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 Chiap-

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

pori 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.

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]). Additionally, we can also document transitional dynamics in social norms across generations and geographical areas. Thus, we can study cultural evolution and trace the abandonment of inherited social norms back to specific economic causes, such as welfare reforms. 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]), particularly to a recent strand examining gender differences in relation to social norms (DAcunto et al. [2020], D'Acunto [2020]). 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) has a different effects on the probability of households investing in the stock market depending on whether it is measured at the husband or the wife level. In particular, wives' sophistication has lower impact on this probability compared to husbands' sophistication, which is consistent with gender identity norms constraining the influence of women over financial decision making. Unlike Ke [2020], we propose a methodology that identifies gender norms by exploiting variation over time and across cohorts in household headship. We then relate our measure of gender norms directly to household investment behavior. Thus, the interpretation of our results does not rely on the differential effects specific to one determinant of the investment decision, that is, financial sophistication. This allows us to broaden Ke [2020]'s results. We show that gender parity increases the financial market participation of all households, regardless of individual spousal attributes. Importantly, we provide 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 have no such strict gender-based power structure in place. Rather, the role of decision maker in a fully egalitarian social group is assigned based on skills and personal inclinations. Skills and inclinations in these communities are equally distributed across genders, with female and male spouses equally likely to be in charge of household finances. In partially egalitarian communities, instead, gender norms still bias headship toward male spouses. In other words, holding spousal attributes constant, prevailing social norms can be inferred by the average frequency at which female headship is 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 tilting the selection of the main decision maker. To add structure to this intuition, we propose

the following stylized conceptual framework.

3.1 Model

Let $G = 1\,(= 0)$ denote the female (male) spouse. Each spouse G in household i is characterized by his or her financial skills level, $X_{i,G}$. Financial skills affect the outcome of financial investment decisions, and may depend on observable (e.g., education) and unobservable (e.g., cognitive abilities) characteristics. $X_{i,G} \sim U\,[0,1]$ is identically 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 decision maker (or household head). In the second phase, the household head makes the financial decision (an investment in our example). 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 $t = 1$, household head H takes action a; that is, he or she decides whether to keep the family 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 decision maker's financial skills $X_{i,H}$ and an investment opportunity κ that arises at $t = 1$. In particular, we assume that the 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 decision makers have sufficiently high financial skills and a good investment opportunity. Thus, the decision maker invests in risky assets only if $X_{i,H} + \kappa > 0$, and keeps the household 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. The expected returns from financial investments increase in the financial skills of the decision maker.

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

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

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, inclinations, and more freedom from domestic or market work. We assume that $\eta_{i,G}$ is independently, normally distributed across spouses, and $\eta_{i,G} \sim N\left(0, \frac{1}{2}\right)$.

The second term in Equation (1) accounts for the household's desire to conform to the social norm, $\bar{G}_z \in \left[0; \frac{1}{2}\right]$, prevailing in the reference community z.[4] When $\bar{G}_z = \frac{1}{2}$, that is,with perfect egalitarian social norms, the term $\beta \left(G - \bar{G}_z\right)^2$ 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

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

binary, $G = 1$ maximizes utility if

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

.

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

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

where $C_z=-\frac{\beta}{(1-\beta)}\left[1-2\bar{G}_z\right]<0$ 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.

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 and a component common to all community members, that is, the social norm.

Social Norm Effects on Investment Decisions Unbiased social norms on gender roles can affect financial choices through the removal of constraints in the headship assignment rule above. To see this, consider the following probabilities of investing in sophisticated assets conditional on the gender of the household head:

$$Pr\left(a=S \mid G=1\right)=Pr\left(X_{i,1}+\kappa\geq 0 \mid X_{i,1}>X_{i,0}-\frac{C_z}{\lambda}-\frac{\epsilon_i}{\lambda}\right) \tag{3}$$

$$Pr\left(a=S \mid G=0\right)=Pr\left(X_{i,0}+\kappa\geq 0 \mid X_{i,0}>X_{i,1}+\frac{C_z}{\lambda}+\frac{\epsilon_i}{\lambda}\right) \tag{4}$$

A shift toward a gender-neutral social norm (that is, an increase in C_z) has a negative effect on probability (3) and positive effect on probability (4). In other words, the "bar" in terms of ability to become household head moves downward (upward) for women (men) as

the norms become more egalitarian, with the expected utility from investment in risky assets decreasing (increasing) accordingly. Everything else equal, changes in C_z have the same effect, in absolute terms, on probabilities 3 and 4. To understand the overall effects of equality on investment choices of all households across different communities, we can write the average unconditional probability of investing in risky assets as

$$Pr\left(a=S\right)=Pr\left(G=1\right)\left[Pr\left(a=S\mid G=1\right)-Pr\left(a=S\mid G=0\right)\right]+Pr\left(a=S\mid G=0\right)$$

,

where both $Pr\left(G=1\right)$ and $Pr\left(a=S\mid G=0\right)$ are increasing in C_z (see Equations 2 and 4). Since $E\left(\epsilon_i\right)=0$ and $X_{i,G}$ is identically distributed across genders, we have that $Pr\left(a=S\mid G=1\right)\geq Pr\left(a=S\mid G=0\right)$, and the whole expression above is increasing in C_z. Thus, everything else equal, households in "egalitarian" communities are more likely to invest in sophisticated assets. Intutively, since ability has a positive effect on investments in risky assets, and headship in egalitarian communities is allocated to the more able of the spouses, equality raises participation in the financial markets and improves portfolio performance.

3.2 Cultural Transmission and Gender Norm Dynamics

In this model, cultural factor C_z reflects both the traditional gender norms ($\bar{G}_z$) and relative importance of social conformism with respect to household intrinsic utility ($\frac{\beta}{(1-\beta)}$). Although we do not estimate these two components separately in the empirical analysis, we elaborate on their interpretations here. 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. $\bar{G}_z=\bar{G}_{c-1,r}$. In other words we assume that cultural transmission occurs by imitation of role models living in close proximity. Therefore, we define communities as cohort-region clusters, that is $C_z=-\frac{\beta}{(1-\beta)}\left[1-2\bar{G_{c-1,r}}\right]\equiv C_{c,r}$.

Consistent with this interpretation, in our empirical analysis, we estimate cultural factor C_z using cohort-region combined fixed effects.

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

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

. The expression above implies the existence of a long-run equilibrium gender norm G^*, which depends on the level of β.[5] 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 9 below 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.

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.

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

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 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.[6] Therefore, headship indicates a prominent (perhaps not exclusive) role in financial decision making.

Figure 2 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. Figure 3 documents significant cohort and regional differences in female headship. We allocate couple households in the sample to six cohorts with approximately 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 3a). 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%

[6]The 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 an alternative 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.

20 years earlier (when its members were approximately 45 years old). [7] The differences in headship dynamics across regions are equally important. Over the years headship sifts toward the female spouses in all regions, but at very different paces (Figure 3b). In sum, female headship grows substantially across generations, but at speeds differing between regions. In the next section, we rely on this double source of variation to pin down the prevailing social norms in cohort-regional clusters.

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 in market-related tasks. On average, wives earn 41% as much as their husbands do, although working almost half of the weekly hours (10.34 vs 22.22), consistent with both lower labor market participation 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, and 43% of them are housewives. As expected, women who head households differ from the rest of the female adults in that the ratio of their

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

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 due because, while a large proportion (39%) of female heads are also housewives (with zero hours of non-domestic work), those who are not housewives 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 and returns. 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 in two ways, financial returns and total net returns. 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 (net capital income)over total assets, where total assets is the sum of financial and real assets. Table 2 gives 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.[8] Financial returns are approximately 3%, while the total net returns are significantly smaller at 0.53% on average.

[8]See https://www.federalreserve.gov/publications/files/scf17.pdf

5 Measuring Social Norms on Spousal Equality

Following the framework outlined in Section 3, we define the communities sharing similar social norms as cohort-region clusters. To estimate model (2), we focus on couple households (two-spouse families, either married or cohabiting) and use the following linear specification:

$$G_{i,c,r} = \alpha + X_i\lambda + C_{c,r} + \epsilon_{i,c,r}, \tag{5}$$

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, respectively. We use the income, education, and age female/male ratios and the proportion of real estate individually owned by the female spouse as proxies for differences in wife-husband relative characteristics, to capture the observable component of comparative advantage in managing household savings. Other controls in X_i include the average age, average education, occupation dummies, income and wealth deciles, household size, weekly hours of paid work for both spouses, and a dummy variable that takes value 1 if the spouses are cohabiting and zero if they are married. In estimating the social norm C_z, we make no attempt to separate the two components $\bar{G}_z$ (inherited traditional gender norms) and β (strength of conformism) discussed above, but use the idea that social norms on the allocation of decisional power are cohort- and region-specific. $C_{c,r}$ is a cohort-region combined fixed effect that identifies norms at the social group level.[9]

The estimation results of Equation 5 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. Female headship appears to be negatively correlated with hours worked by 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. This evidence is consistent with the

[9] Giavazzi 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.

allocation rule hinging on relative skills, abilities and availability of spare time. 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. This is also consistent with a large body of the literature across several social sciences fields showing that gender norms, inside and outside the household, reflect cultural backgrounds even when individual factors such as education and job opportunities are accounted for (Kan and Laurie [2018], Fernandez and Fogli [2009], Jejeebhoy and Sathar [2001]). 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, 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. To give a sense of this dispersion, our measure implies that when a couple from Sicily (in the very 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. Figure 4 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. The differences between regions in the level and dynamics of social norms are also relevant. Importantly, they are uncorrelated with economic development. For any cohort, *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 (Panel b).

6 Testing Intuitive Implications

Before studying the effect of *Equality* on households investment decisions, we discuss evidence on two intuitive implications of the emergence of less male-biased social norms.

Effects on changes in headship.First, we analyze the effect of social norms on changes in headship within the same family. Social norms granting spouses equality imply that headship depends only on the spouses' relative fitness to manage household finances. Hence, random changes in circumstances can more easily flip the headship from one year to the next in households of groups with higher *Equality*. To test this prediction, we extract the panel component of our sample, which consists of approximately 10,000 unique couple-households interviewed more than once (3.9 times on average), and study whether the family head gender

changes from one survey year to the next. We observe at least one headship change in 17% of the sample; among the households reporting a switch, 20% experience changes more than once. Most often (73% of total observations), headships switch from male to female. Table 4 shows ordinary least square (OLS) estimates of the occurrence (column 1)) and the number (column 2)) of switches *in the same household*; both are positively and significantly correlated to our spousal equality measure. Moreover the probability of both male-to-female (column 3)) and female-to-male (column 4)) headship switch increases with spousal equality. Taken together, this evidence suggests that gender-balanced social norms make headship less sticky, or, said differently, spousal equality is associated with less rigid gender roles.

Effects on women financial literacy If the financial management of households is less tied to male-biased social norms, financial decision making tends to lose its connotation of "masculine" task, raising the chances of women replacing men in headship, as documented above. In turn, as in Becker (1974), this should raise the incentive of women in high *Equality* communities to acquire specific skills in financial management and become familiar with the basic concepts of financial investment. To test this implication, we use the answers to two specific financial literacy questions asked in the SHIW. The first assesses people's ability to distinguish between real and nominal returns, and the second to understand the benefits of diversification. These questions were included in the 2006, 2008 and 2010 survey waves. The exact wording is as follows

> *Inflation*: Imagine you deposited 1.000 euro on a saving account and that the interest rate on this account was 1% per year, with no management fees. Imagine that inflation was 2% per year. After 1 year, when you withdraw your funds, will you be able to buy the same amount of goods that you are able to buy today with the money in this account? (i) Exactly the same; (ii) Less than today; (iii) More than today; (iv) Do not know/ Refusal.
>
> *Diversification*: Which one of the following investment strategies involves more risk of losing money? (i) Investing in securities issued by one single company;

(ii) Investing in securities issued by many different companies; (iii) Do not know/ Refusal.

For each question, we define a dummy variable *Literacy* which takes value 1 if the household provides the correct answer, and zero otherwise. We also compute the *Total Literacy Score*, that is, a variable that takes value zero if the household provides incorrect answers to both questions, 1 if the household provides the correct answer for only one of the two questions, and 2 if the household provides the correct answer for both questions. We regress *Literacy* and *Total Score* on gender of the household head, *Equality,* and an interaction term between these two variables. This is the coefficient of interest; if *Equality* boosts incentives of women to acquire financial knowledge, it should be positive. We control for demographics (education, age, age squared), and wealth and income decile, as well as an indicator variable that takes value 1 if the household is currently investing in financial assets. As expected, all the controls are significantly and positively correlated with literacy, as in Van Rooij et al. [2011]. As Table 5 illustrates, women in general are less knowledgeable about financial matters. This "literacy gap", however, shrinks as our equality measure increases, supporting the view that gender-balanced social norms encourage women to invest in financial education because they are more likely to take the lead in household financial decisions.

7 Spousal Equality and Household Finance

We now test whether *Equality* affects household financial choices. Table 6 shows the estimates of a linear probability model of financial market participation on spousal equality. The dependent variable is a binary variable that 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).[10] 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.[11] 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 (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, older, smaller 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 makes women more skilled and therefore suitable 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. Moreover, cohabiting couples are more likely to be female-headed (see Table 3) and 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. Finally, in column (3), we show that the coefficient of a dummy variable that takes value 1 if the household is female-headed is not statistically significant, confirming that the decision maker's gender *per se* has no effect on investment decisions.

In Table 7 we investigate whether, conditionally on participating in capital markets, house-

[10] A 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.

[11] The bootstrap estimates of standard errors are constructed as follows. A random sample with replacement 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 *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.

holds in more egalitarian communities are more likely to invest in stocks and securities other than fixed income and fund shares, and in a larger number of asset classes. Our results show that one standard deviation change in our equality measure increases the probability of investing in stocks by 5 percentage points (as much as 70% of the sample mean, column (1)), the probability of investing in other securities by 1% percentage point (column (2)), and the number of different asset classes in portfolio by 0.08, compared to a sample mean of 1.44 (column (3)). This evidence suggests that gender-neutral social norms are associated with more sophisticated investments as well as increased portfolio diversification.[12]

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 returns and performance attribution measurements 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 two financial performance measures. The first is the ratio of income from financial assets over total financial assets held at the end of the year. The second is the ratio of net capital income over total assets. Income from financial investments includes returns from total financial assets, that is, securities plus bank deposits (or similar). Net capital income is the sum of income from total financial and real assets (real estate) minus interest paid on debt. Total assets is the sum of real and financial assets. Thus, the two measures represent returns from investment in financial assets and net returns from investments in both financial capital and real estate, respectively. We measure these returns both in our pooled cross sections and panel sample. In the panel, we average the returns by household to obtain more consistent investment performance measures. Table 8 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 0.71 for returns on financial assets and 0.53 and 0.68 for net returns on total asset. This implies that one standard deviation in *Equality* improves the performance of household portfolio by 7 to 14 basis points. At the sample average of households wealth and income this contributes to an increase in annual disposable income of about 1%. This

[12]We also find a positive relationship between *Equality* and investment in pension funds but no significant effect on contributions toward life or health insurance plans (unreported).

evidence supports the view that the financial well being of households improves with more balanced social norms on gender roles.

7.1 Mechanisms

In our model, we emphasize the differences in the headship allocation rule between patriarchal and egalitarian communities as the 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, our results are consistent with this interpretation. Specifically, larger values of our equality measure imply that, due to a more efficient headship allocation rule, 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.

However, there are at least two additional explanations for the relation between gender norms and investment decisions that generate identical predictions. The first explanation hinges on 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 (Ke [2020]). 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 to 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 attention constraints. [13]

[13] Social 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

The second explanation is based on the idea that gender parity can be strongly correlated with the transformation of the family structure from extended –that is, including close relatives– to "nuclear", that is, consisting only of couples with their dependent children (Burgess [1926]). Weaker extended family ties may imply less reliance on relatives outside the household for financial help, increasing the importance of efficiently managing household savings.[14]

Table 9 explores the two mechanisms 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 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

tolerance if sharing the responsibility of economic decisions with a partner makes individuals less conservative in their investment strategies.

[14]The influence of family ties on economic outcomes is documented by Alesina and Giuliano [2010]

Equality effect mostly originates from couples with children, that is couples more constrained from more demanding domestic obligations.

Finally, we explore the role of extended family ties by interacting *Equality* with a variable that takes value 1 if the household reports giving financial help to family or friends (and zero otherwise), which we interpret as a proxy for the intensity of family (and community) ties. The coefficient of this interaction term is not statistically different from zero (column (6)), suggesting that social norms that empower women affect investment choices independently of the strength of informal financial safety nets. Moreover, it can be argued that networks of relatives are stronger the closer family members live. To account for this we add to our controls a dummy variable that takes value 1 if both spouses were born in the region of current residence. Again, the coefficient for *Equality* is substantially unaffected in its magnitude and significance (column (7)).

8 Robustness

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. In this section we investigate whether our results are driven by mechanisms working through channels unrelated to household governance.

For instance, our equality measure may capture wider social or economic phenomena that potentially affect households' financial behavior. *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. Similarly, *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, Table 10 shows that *Equality* has no effect on the investment behavior of households that do not include two spouses.

Table 11 investigates further the possibility that *Equality* may be proxying for female labor market transformations and more predictable women income flows. 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)). Moreover, 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 (column (2)), 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.

9 What Has Triggered the Trend in Female Headship?

Our evidence suggests that, starting in the early 1990s, households increasingly moved away from the dominant patriarchal norms, with younger generations moving first and faster. What was it that triggered this change? The model in Section (3) implies that because assigning decisional power purely on the basis of traditional gender roles entails consumption losses, households abandon social norms when the economic cost of complying with them exceeds the comfort of conforming. Here, 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 consider-

ably 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.[15] 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 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.

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,

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

treated households appear to have higher income but similar education levels (see Table 12). Interestingly, the treatment is not linearly decreasing in the age of the household head (see Figure 5). 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 13 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.[16] 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 both spouses increasing 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 increasing by 3%, suggesting that the burden of compensating pension benefit losses with additional labor income was borne more by women

[16]For 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.

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 14 column 1). Moreover, this coefficient is robust to including age (instead of cohort) fixed effects (Table 14 column 2), expressing the treatment in terms of share of affected family members (Table 14 column 3), and replacing the controls for children and working adults with numbers instead of shares (Table 14 column 4).

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.

10 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 whose gender is indicated by the norm as appropriate for the task (typically the male), rather than 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 in 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 wellbeing, 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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References

Andrew B Abel, Janice C Eberly, and Stavros Panageas. Optimal inattention to the stock market. *American Economic Review*, 97(2):244–249, 2007.

Renée B Adams and Daniel Ferreira. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 2009.

George A Akerlof. Social distance and social decisions. *Econometrica*, 1997.

George A Akerlof and Rachel E Kranton. Economics and identity. *The Quarterly Journal of Economics*, 2000.

Alberto Alesina and Paola Giuliano. The power of the family. *Journal of Economic Growth*, 2010.

Alberto Alesina, Paola Giuliano, and Nathan Nunn. On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics*, 2013.

Fernando Alvarez, Luigi Guiso, and Francesco Lippi. Durable consumption and asset management with transaction and observation costs. *American Economic Review*, 102(5):2272–2300, 2012.

Josh Angrist. How do sex ratios affect marriage and labor markets? evidence from america's second generation. *The Quarterly Journal of Economics*, 2002.

Orazio P Attanasio and Agar Brugiavini. Social security and households' saving. *The Quarterly Journal of Economics*, 2003.

Brad M Barber and Terrance Odean. Boys will be boys: Gender, overconfidence, and common stock investment. *The quarterly journal of economics*, 116(1):261–292, 2001.

Gary S Becker. A theory of social interactions. *Journal of political economy*, 82(6):1063–1093, 1974.

Gary S Becker. A treatise on the family. *NBER books*, 1981.

Marianne Bertrand, Emir Kamenica, and Jessica Pan. Gender identity and relative income within households. *The Quarterly Journal of Economics*, 2015.

Gary Bornstein and Ilan Yaniv. Individual and group behavior in the ultimatum game: are groups more rational players? *Experimental Economics*, 1998.

Elissa Braunstein and Nancy Folbre. To honor and obey: Efficiency, inequality, and patriarchal property rights. *Feminist Economics*, 2001.

Ernest W Burgess. The family as a unity of interacting personalities. *The family*, 7(1):3–9, 1926.

Laurent E Calvet and Paolo Sodini. Twin picks: Disentangling the determinants of risk-taking in household portfolios. *The Journal of Finance*, 2014.

Andrew Caplin and Mark Dean. Revealed preference, rational inattention, and costly information acquisition. *American Economic Review*, 105(7):2183–2203, 2015.

Gary Charness and Matthias Sutter. Groups make better self-interested decisions. *Journal of Economic Perspectives*, 26(3):157–76, 2012.

Pierre-André Chiappori and Arthur Lewbel. Gary becker's a theory of the allocation of time. *The Economic Journal*, 125(583):410–442, 2015.

Pierre-Andre Chiappori, Bernard Fortin, and Guy Lacroix. Marriage market, divorce legislation, and household labor supply. *Journal of Political Economy*, 2002.

Joao F Cocco. Portfolio choice in the presence of housing. *The Review of Financial Studies*, 2004.

Francesco D'Acunto. Identity and choice under risk. *Available at SSRN 3466626*, 2020.

Francesco DAcunto, Marcel Prokopczuk, and Michael Weber. Historical antisemitism, ethnic specialization, and financial development. *The Review of Economic Studies*, 2019.

Francesco DAcunto, Ulrike Malmendier, and Michael Weber. Gender roles and the gender expectations gap. *NBER Working Paper*, 2020.

Olivier Donni and Pierre-André Chiappori. Nonunitary models of household behavior: a survey of the literature. *Household Economic Behaviors*, 2011.

Andreas Fagereng, Charles Gottlieb, and Luigi Guiso. Asset market participation and portfolio choice over the life-cycle. *The Journal of Finance*, 2017.

Emanuele Felice. *Perché il Sud è rimasto indietro*. Il Mulino, 2014.

Raquel Fernandez. Women, work, and culture. *Journal of the European Economic Association*, 5(2-3):305–332, 2007.

Raquel Fernandez and Alessandra Fogli. Culture: An empirical investigation of beliefs, work, and fertility. *American Economic Journal: Macroeconomics*, 1(1):146–77, 2009.

Francesco Giavazzi, Ivan Petkov, and Fabio Schiantarelli. Culture: Persistence and evolution. *NBER Working Paper No. 20174*, 2014.

Francisco Gomes, Michael Haliassos, and Tarun Ramadorai. Household finance. *CEPR Discussion Paper No. DP14502*, 2020.

Luigi Guiso and Tullio Jappelli. Awareness and stock market participation. *Review of Finance*, 2005.

Luigi Guiso and Paolo Sodini. Household finance: An emerging field. *Handbook of the Economics of Finance*, 2013.

Luigi Guiso, Tullio Jappelli, and Daniele Terlizzese. Income risk, borrowing constraints, and portfolio choice. *The American Economic Review*, 1996.

Luigi Guiso, Paola Sapienza, and Luigi Zingales. The role of social capital in financial development. *American economic review*, 94(3):526–556, 2004.

Michael Haliassos, Thomas Jansson, and Yigitcan Karabulut. Incompatible european partners? cultural predispositions and household financial behavior. *Management Science*, 2016.

Shireen J Jejeebhoy and Zeba A Sathar. Women's autonomy in india and pakistan: the influence of religion and region. *Population and development review*, 27(4):687–712, 2001.

Man-Yee Kan and Heather Laurie. Who is doing the housework in multicultural britain? *Sociology*, 52(1):55–74, 2018.

Da Ke. Who wears the pants? gender identity norms and intra-household financial decision making. *Available at SSRN: https://ssrn.com/abstract=2909720*, 2020.

Alok Kumar, Jeremy K Page, and Oliver G Spalt. Religious beliefs, gambling attitudes, and financial market outcomes. *Journal of Financial Economics*, 102(3):671–708, 2011.

Shelly Lundberg and Robert A Pollak. Separate spheres bargaining and the marriage market. *Journal of Political Economy*, 1993.

Annamaria Lusardi and Olivia S Mitchell. Planning and financial literacy: How do women fare? *American Economic Review*, 98(2):413–17, 2008.

Kaveh Majlesi. Labor market opportunities and women's decision making power within households. *Journal of Development Economics*, 2016.

Marjorie B McElroy and Mary Jean Horney. Nash-bargained household decisions: Toward a generalization of the theory of demand. *International Economic Review*, 1981.

Arna Olafsson and T Thornquist. Bargaining over risk: The impact of decision power on household portfolios. *Working Paper*, 2018.

Edmund S Phelps. The statistical theory of racism and sexism. *The American Economic Review*, 1972.

Robert A Pollak. Allocating time: Individuals' technologies, household technology, perfect substitutes, and specialization. *NBER Working Paper No. 17529*, 2011.

Robert A Pollak. Allocating household time: when does efficiency imply specialization? *NBER Working Paper No. 19178*, 2013.

Robert D Putnam, Robert Leonardi, and Raffaella Y Nanetti. *Making democracy work: Civic traditions in modern Italy*. Princeton university press, 1994.

Maarten Van Rooij, Annamaria Lusardi, and Rob Alessie. Financial literacy and stock market participation. *Journal of Financial Economics*, 2011.

Luis M Viceira. Optimal portfolio choice for long-horizon investors with nontradable labor income. *The Journal of Finance*, 56(2):433–470, 2001.

Figure 2: 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.

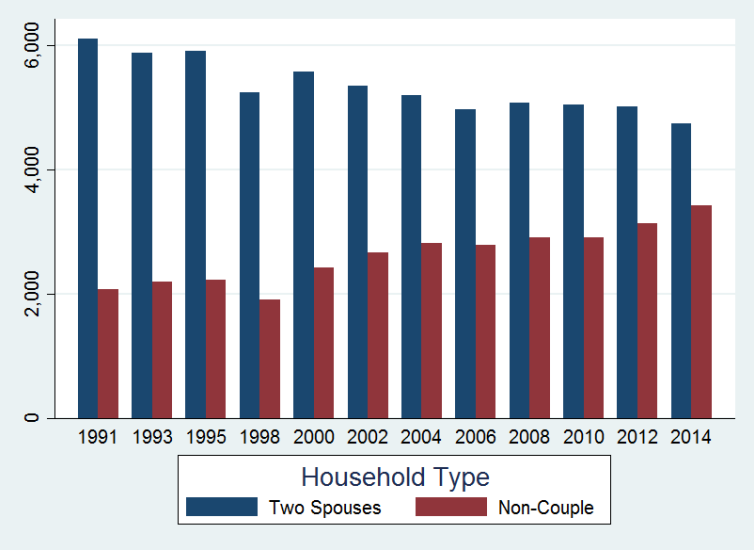
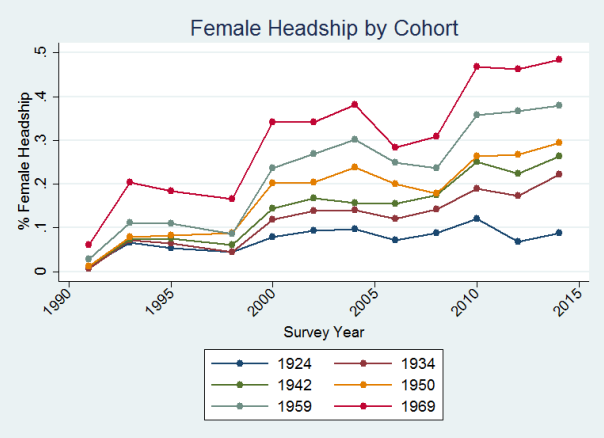
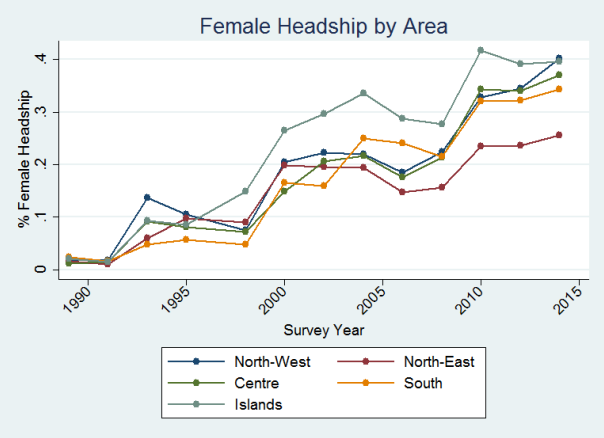


Figure 3: Female Headship by Cohort and Area

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 geographic area (panel (b)). The legend in panel (a) indicates the median year of birth for each cohort. The legend in panel (b) indicates macro geographic Italian areas.



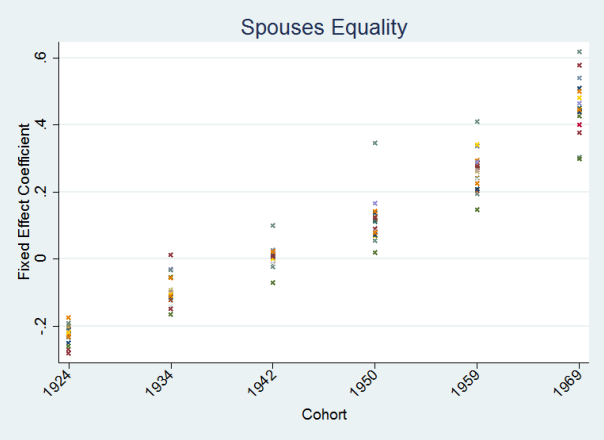
(a)



(b)

Figure 4: Social Norms: Estimates

Panel (a) of this figure shows 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. Panel (b) shows the estimates of these fixed effects across cohorts for selected regions. The blue lines correspond to coefficient values, while the green and the red lines indicate the 95th and 5th percentiles of estimate distribution, respectively.



(a)

(b)

Figure 5: 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.

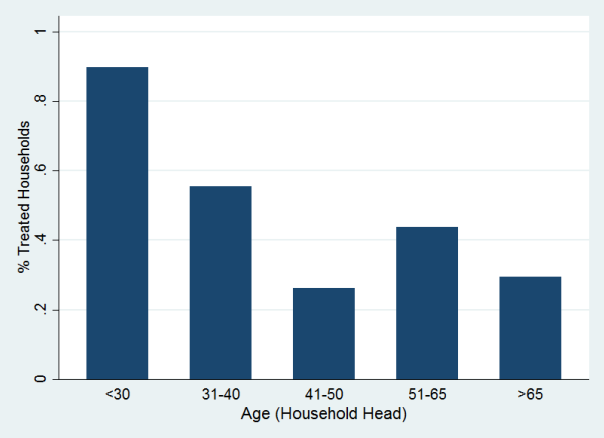


Table 1: Household Characteristics

This table illustrates the characteristics of two-spouse households 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 indicates the fraction of households living in the regions of Veneto, Trentino-Alto Adige,Friuli Venezia Giulia, and Emilia Romagna. Center indicates the fraction of households living in the regions of Toscana, Umbria, Lazio, and Marche. South indicates 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
# 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
Income FtM ratio	0.41	0.28	0.00	2.96	0.31	0.89	-115.78	63529
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
Education FtM ratio	1.00	1.00	0.17	4.00	0.99	1.06	-24.05	64042
Age FtM ratio	0.93	0.94	0.15	3.05	0.93	0.94	-5.22	64042
RE Female Ownership	0.09	0.00	0.00	1.00	0.08	0.16	-33.01	64085
Female is Housewife	0.43	0.00	0.00	1.00	0.44	0.39	9.90	64085
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
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: $FHead_{i,c,r} = X_i\beta + C_{c,r} + \epsilon_{i,c,r}$, where $FHead$ is a dummy variable that takes the value 1 if the head of household i is female, X_i is a vector of household-level controls, c indicates cohort, and r indicates region. Standard errors (in brackets) are clustered at the region level.

	(1) F_Head	(2) F_Head	(3) F_Head
Income FtM ratio	0.420***	0.469***	0.465***
	(0.0148)	(0.0149)	(0.0146)
RE Female Ownership	0.0939***	0.111***	0.110***
	(0.00996)	(0.0130)	(0.0130)
Education FtM ratio	0.0157**	0.0350**	0.0366**
	(0.00732)	(0.0128)	(0.0134)
Age FtM ratio	-0.195***	0.0152	-0.0113
	(0.0350)	(0.0300)	(0.0344)
Cohabiting Couple	0.0706***	0.0928***	0.0923***
	(0.0136)	(0.0147)	(0.0143)
Adults	0.0191***	0.0131**	0.0149***
	(0.00427)	(0.00460)	(0.00484)
Children	0.00639**	-0.00337	-0.00509
	(0.00250)	(0.00308)	(0.00310)
Avg. Education	-0.0248***	0.0129***	0.00931*
	(0.00331)	(0.00414)	(0.00473)
Avg. Age	0.0117***	0.00132***	0.00223***
	(0.000830)	(0.000320)	(0.000436)
Hours Worked F	-0.00388***	-0.00462***	-0.00458***
	(0.000350)	(0.000391)	(0.000406)
Hours Worked M	0.00216***	0.00242***	0.00247***
	(0.000296)	(0.000340)	(0.000342)
Income Dec.	0.00170*	0.00221	0.00290*
	(0.000932)	(0.00139)	(0.00162)
Wealth Dec.	-0.00266**	-0.00698***	-0.00621***
	(0.00102)	(0.00143)	(0.00130)
Commerce&Service			-0.0137
			(0.152)
Income Single F			-0.0212***
			(0.00682)
Gender Balance			-0.701*
			(0.387)
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

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Spousal Equality and Headship Alternation

Column (1) shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household reports a change in gender of the household head in at least one of the interviews. The unit of observation is the household. Column (2) shows coefficient estimates for the number of household gender changes reported by the focal household. The unit of observation is the household. Column (3) shows coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household reports a change in gender of the household head from male to female. The unit of observation is the household-year. Column (4) shows coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household reports a change in gender of the household head from female to male. The unit of observation is the household-year. *#Interviews* is the total number of observations for the focal household in the panel. Δ indicates changes with respect to the previous interview.

	(1) Headship Switch, by Household	(2) # Headship Switch, by Household	(3) Headship Switch, Male to Female	(4) Headship Switch, Female to Male
Equality	0.107***	0.129***	0.0408**	0.0341***
	(0.0184)	(0.0243)	(0.0189)	(0.0116)
#Interviews	0.0321***	0.0532***		
	(0.00174)	(0.00296)		
Age			-0.00176***	0.000392**
			(0.000300)	(0.000189)
Education (avg.)			-0.0123***	-0.00168
			(0.00180)	(0.00118)
Income dec.			0.00171**	0.000178
			(0.000719)	(0.000491)
Wealth dec.			-0.00141**	-0.000351
			(0.000581)	(0.000405)
Δ Children			0.00243	-0.00220
			(0.00298)	(0.00211)
Δ Income Ratio FtoM			0.183***	-0.0685***
			(0.00621)	(0.00416)
Δ Hours Worked: F			-0.00175***	0.000768***
			(0.000160)	(0.000103)
Δ Hours Worked: M			0.00120***	-0.000471***
			(0.000115)	(0.0000799)
Year [a)] fe	Yes	Yes	Yes	Yes
Occupation M and F fe	No	No	Yes	Yes
Sector HH fe	No	No	Yes	Yes
N	10274	10274	28215	28215
adj. R^2	0.063	0.078	0.174	0.049

[a)] *Year* refers to year of the household's first interview in columns (1) and (2), and to interview years in columns (3) and (4)
Robust standard errors in parentheses. Errors clustered at household level in columns (3) and (4)
* p<0.05, ** p<0.01, *** p<0.001

Table 5: Spousal Equality and Financial Literacy

Column (1) shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household answers correctly to the interviewer's question on the concept of inflation. Column (2) shows coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household answers correctly to the interviewer's question on the concept of diversification. Column (3) shows coefficient estimates for a linear regression of a variable that takes the value 0 if the focal household answers incorrectly to both questions, 1 if the focal household answers correctly to only one question, and 2 if the focal household answers correctly to both questions . *Female Head* takes the value 1 if the household head is female. *Investor*? takes the value 1 if the household is currently investing in financial assets. *X Female Head* indicates an interaction term between *Equality* and *Female Head*.

	(1) Literacy: Inflation	(2) Literacy: Diversification	(3) Total Literacy Score
Female Head	-0.0885***	-0.0644***	-0.146***
	(0.00716)	(0.00917)	(0.0122)
Equality	0.0982*	0.0614	-0.0279
	(0.0516)	(0.0708)	(0.0907)
X Female Head	0.115***	0.0735**	0.163***
	(0.0267)	(0.0288)	(0.0422)
Education	0.0568***	0.0539***	0.105***
	(0.00367)	(0.00396)	(0.00687)
Age	0.0139***	0.00585***	0.0167***
	(0.00167)	(0.00224)	(0.00207)
Age^2	-0.000122***	-0.0000637***	-0.000183***
	(0.0000122)	(0.0000168)	(0.0000160)
Wealth dec.	0.00791***	0.00495***	0.0115***
	(0.00142)	(0.00164)	(0.00271)
Income dec.	0.0116***	0.0140***	0.0271***
	(0.00155)	(0.00171)	(0.00301)
Investor?	0.0831***	0.128***	0.206***
	(0.00674)	(0.00896)	(0.0135)
Region fe	Yes	Yes	Yes
N	19920	15928	15928
adj. R^2	0.171	0.171	0.255

Bootstrapped standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 6: 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 focal 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.

	(1)	(2)	(3)
Equality	0.126***	0.133***	0.126***
	(0.0263)	(0.0319)	(0.0262)
Adults	-0.0400***	-0.0404***	-0.0400***
	(0.00412)	(0.00488)	(0.00412)
Children	-0.0233***	-0.0222***	-0.0233***
	(0.00177)	(0.00195)	(0.00177)
Education	0.0417***	0.0396***	0.0417***
	(0.00216)	(0.00273)	(0.00216)
Age	0.00864***	0.0123***	0.00864***
	(0.000888)	(0.00177)	(0.000888)
Age^2	-0.0000658***	-0.000105***	-0.0000659***
	(0.00000701)	(0.0000200)	(0.00000701)
Wealth dec.	0.0463***	0.0464***	0.0463***
	(0.000953)	(0.00106)	(0.000952)
Income dec.	0.0315***	0.0299***	0.0315***
	(0.000876)	(0.000988)	(0.000877)
Home Owner	-0.141***	-0.138***	-0.141***
	(0.00474)	(0.00532)	(0.00474)
Hours Worked	-0.00140***	-0.00128***	-0.00141***
	(0.000187)	(0.000194)	(0.000189)
Income FtM ratio	-0.0437***	-0.0429***	-0.0428***
	(0.00389)	(0.00457)	(0.00425)
RE Female Ownership	0.00859	0.00256	0.00878
	(0.00588)	(0.00700)	(0.00591)
Education FtM ratio	0.00286	0.00492	0.00284
	(0.00515)	(0.00641)	(0.00514)
Age FtM ratio	-0.00226	-0.00786	-0.00239
	(0.0183)	(0.0201)	(0.0183)
Cohabiting Couple	-0.0209**	-0.0297***	-0.0208**
	(0.0102)	(0.0112)	(0.0102)
Female Head			-0.00225
			(0.00559)
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

Bootstrapped standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 7: Spousal Equality, Equity Investment and Diversification

This table shows the coefficient estimates for a linear regression of an indicator variable that takes the value 1 if the focal household holds wealth in stocks (column (1)) or assets other than stocks, bonds, or investment funds (column (2)). Column (3) shows coefficient estimates for a linear regression of the number of different asset classes held by the focal household. The sample consists of households that hold wealth in at least one financial asset other than bank deposits.

	(1) Stocks	(2) Other Securities	(3) #Asset Classes
Equality	0.204***	0.0149**	0.340***
	(0.0622)	(0.00734)	(0.109)
Adults	-0.0134	-0.000529	-0.0260
	(0.00970)	(0.000616)	(0.0160)
Children	0.000859	-0.000990**	-0.0292***
	(0.00418)	(0.000472)	(0.00731)
Education	0.0515***	0.000197	0.0856***
	(0.00449)	(0.000541)	(0.00780)
Age	0.00743***	0.000718***	0.0129***
	(0.00221)	(0.000267)	(0.00391)
Age^2	-0.0000391**	-0.00000478***	-0.0000710***
	(0.0000161)	(0.00000177)	(0.0000275)
Wealth dec.	0.0222***	0.000688***	0.0696***
	(0.00211)	(0.000213)	(0.00337)
Income dec.	0.0179***	-0.000258	0.0507***
	(0.00206)	(0.000174)	(0.00353)
Home Owner	-0.0713***	-0.000723	-0.215***
	(0.0107)	(0.000665)	(0.0171)
Hours Worked	0.00107***	0.0000487	0.0000510
	(0.000407)	(0.0000430)	(0.000743)
Income FtM ratio	-0.0307***	-0.00108	-0.0818***
	(0.00744)	(0.000892)	(0.0143)
RE Female Ownership	0.0224**	-0.00151	0.0118
	(0.0113)	(0.00129)	(0.0217)
Education FtM ratio	0.0424***	0.000178	0.0845***
	(0.0132)	(0.00146)	(0.0232)
Age FtM ratio	0.0351	-0.000277	0.0887
	(0.0430)	(0.00568)	(0.0798)
Cohabiting Couple	0.0195	-0.00277***	-0.0173
	(0.0235)	(0.000900)	(0.0407)
Region#Year FE	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes
adj. R^2	0.136	0.034	0.149
Observations	17468	17468	17468

Bootstrapped standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 8: Spousal Equality and Financial Returns

This table shows the coefficient estimates for a linear regression of the ratio of financial income over financial assets (column (1)), the ratio of net capital income over total assets (column (2)), the household average ratio of financial income over financial assets (column (3)), and the household average ratio of net capital income over total assets (column (4)). The sample consists of all two-spouse households in columns (1) and (2), and panel households in columns (3) and (4).

	Full Sample		Panel Sample	
	(1) Financial Income/ Financial Assets	(2) Net Capital Income/ Total Assets	(3) Financial Income/ Financial Assets	(4) Net Capital Income/ Total Assets
Equality	0.319***	0.527***	0.706***	0.680**
	(0.0859)	(0.0899)	(0.148)	(0.242)
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
adj. R^2	0.716	0.308	0.665	0.291
Observations	54775	62604	10832	11560

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 9: 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 focal 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. *Help Given* is an indicator variable that takes value 1 if household reports providing financial help to family or friends. *Local* is an indicator variable that takes value 1 if both spouses are born in the same region the household resides. *X Var* indicates interaction terms of Var with *Equality*.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equality	0.128***	0.124***	0.136***	0.160***	0.0844***	0.126***	0.120***
	(0.0272)	(0.0269)	(0.0266)	(0.0288)	(0.0302)	(0.0302)	(0.0268)
X Spouse: higher Edu	-0.00825						
	(0.0203)						
spouse_h_edu	0.0152**						
	(0.00597)						
X Spouse: Fin. Sector		0.0541					
		(0.109)					
spouse_fin		0.0898***					
		(0.0327)					
X Spouse: Same Sector			-0.0535*				
			(0.0273)				
same_sect			-0.00735				
			(0.00905)				
X Hours Worked Ratio				-0.0119*			
				(0.00684)			
hours_ratio				-0.00205			
				(0.00159)			
X Couple with Children					0.0466***		
					(0.0163)		
X Help Given						-0.0153	
						(0.0230)	
help						0.0474***	
						(0.00624)	
Local							0.0390***
							(0.00401)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RegionYear FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation M and F FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.276	0.276	0.276	0.273	0.276	0.275	0.277
Observations	63457	63457	63457	34581	63457	51733	63457

Bootstrapped standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 10: Effects of Equality on Non-Couple Households

Column (1) shows the coefficient estimates for a linear regression of an indicator variable that takes value 1 if the focal household holds wealth in at least one financial asset other than bank deposits. The sample consists of all non-couple households. Columns (2) and (3) show coefficient estimates for a linear regression of an indicator variable that takes value 1 if the focal household holds wealth in stocks and assets other than stocks, bonds, or investment funds, respectively. The sample consists of all non-couple households that hold wealth in at least one financial asset other than bank deposits. Column (4) shows coefficient estimates for a linear regression of the number of different asset classes held by the focal household. The sample consists of non-couple households that hold wealth in at least one financial asset other than bank deposits.

	(1) Any Fin. Asset	(2) Stocks	(3) Other Securities	(4) #Asset Classes
Equality	0.0365	0.0871	-0.0128	0.282*
	(0.0364)	(0.114)	(0.0130)	(0.136)
Female Head	-0.0276***	-0.102***	-0.00133*	-0.0820***
	(0.00424)	(0.0176)	(0.000757)	(0.0194)
Hours Worked	-0.00120***	0.000777	-0.000123	-0.00119
	(0.000225)	(0.000902)	(0.0000857)	(0.00150)
Adults	-0.0324***	-0.0359***	-0.000387	-0.0488**
	(0.00625)	(0.0119)	(0.000675)	(0.0174)
Children	-0.0401***	-0.00296	-0.000373	-0.0536***
	(0.00741)	(0.00655)	(0.000774)	(0.0136)
Education	0.0223***	0.0169	0.000454	0.0275***
	(0.00630)	(0.0100)	(0.000849)	(0.00698)
Age	0.00713***	0.00222	-0.000260	0.00769*
	(0.00149)	(0.00244)	(0.000461)	(0.00428)
Age^2	-0.0000562***	-0.0000195	0.000000449	-0.0000487
	(0.00000931)	(0.0000139)	(0.00000223)	(0.0000292)
Wealth dec.	0.0443***	0.0249***	0.000423	0.0636***
	(0.00548)	(0.00472)	(0.000393)	(0.00896)
Income dec.	0.0353***	0.0106***	-0.000155	0.0387***
	(0.00336)	(0.00226)	(0.000365)	(0.00399)
Home Owner	-0.120***	-0.0888***	-0.00216	-0.196***
	(0.0151)	(0.0204)	(0.00184)	(0.0273)
RegionYear FE	Yes	Yes	Yes	Yes
Occupation HH fe	Yes	Yes	Yes	Yes
Sector HH FE	Yes	Yes	Yes	Yes
N	31485	6013	6013	6013
adj. R^2	0.265	0.127	0.090	0.140

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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 focal household holds wealth in at least one financial asset other than bank deposits. In column (1), we restrict the sample to 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), we restrict the sample to cohort-region clusters with employment above and below the median in commerce and service sectors.

	(1) Other, Female Head	(2) Two Spouses, Female Housewife	(3) Two Spouses, Low Comm&Service	(4) Two Spouses, High Comm&Service
Equality	-0.0222	0.135***	0.129***	0.128***
	(0.0351)	(0.0354)	(0.0345)	(0.0415)
Adults	-0.0344***	-0.0350***	-0.0300***	-0.0533***
	(0.00446)	(0.00557)	(0.00482)	(0.00673)
Children	-0.0392***	-0.0223***	-0.0158***	-0.0332***
	(0.00331)	(0.00212)	(0.00204)	(0.00294)
Education	0.0215***	0.0420***	0.0343***	0.0504***
	(0.00295)	(0.00301)	(0.00265)	(0.00332)
Age	0.00601***	0.00594***	0.00647***	0.0104***
	(0.00115)	(0.00125)	(0.00108)	(0.00149)
Age^2	-0.0000528***	-0.0000392***	-0.0000426***	-0.0000792***
	(0.00000806)	(0.0000105)	(0.00000876)	(0.0000115)
Wealth dec.	0.0427***	0.0396***	0.0364***	0.0554***
	(0.00172)	(0.00139)	(0.00123)	(0.00146)
Income dec.	0.0342***	0.0289***	0.0237***	0.0406***
	(0.00149)	(0.00119)	(0.00112)	(0.00136)
Home Owner	-0.124***	-0.122***	-0.118***	-0.161***
	(0.00741)	(0.00652)	(0.00573)	(0.00730)
Hours Worked	-0.00134***	-0.00122***	-0.00109***	-0.00171***
	(0.000391)	(0.000248)	(0.000223)	(0.000298)
Income FtM ratio		-0.0225**	-0.0337***	-0.0492***
		(0.00963)	(0.00502)	(0.00582)
RE Female Ownership		-0.00122	0.0134*	0.00350
		(0.00947)	(0.00739)	(0.00951)
Education FtM ratio		-0.00146	0.000642	0.00531
		(0.00633)	(0.00598)	(0.00884)
Age FtM ratio		0.00500	-0.0476**	0.0402
		(0.0251)	(0.0225)	(0.0291)
Cohabiting Couple		-0.00175	-0.0130	-0.0225
		(0.0183)	(0.0133)	(0.0158)
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

Bootstrapped standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 12: Pension Reform: Treated vs Control Households

This table shows the 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	3.072	2.990
	(0.952)	(0.976)	(0.965)
Income Decile	5.934	7.016	6.394
	(2.660)	(2.461)	(2.632)
# Children	1.449	1.571	1.501
	(1.083)	(0.988)	(1.046)
# HH Memebers in LF	1.153	1.873	1.459
	(0.651)	(0.804)	(0.803)
Age (Couple Avg.)	48.75	44.17	46.80
	(11.72)	(12.80)	(12.40)

Table 13: Pension Reform: Effects on Savings, Hours Worked, Income, and Headship

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.

	(1) F Headship	(2) Savings	(3) Hours Worked (F)	(4) Hours Worked (M)	(5) Income Ratio F-t-M
Post X Treated	0.0210***	0.0574**	1.030*	0.686*	0.0266*
	(0.00686)	(0.0253)	(0.534)	(0.355)	(0.0136)
Post	0.0146***	-0.0950***	-0.731**	0.151	-0.00539
	(0.00417)	(0.0145)	(0.355)	(0.237)	(0.00856)
Treated	-0.0312***	0.0609***	0.457	-2.651***	-0.00388
	(0.00492)	(0.0167)	(0.458)	(0.285)	(0.0111)
Education (Couple Avg.)	-0.00601**	-0.101***	1.070***	-0.341***	0.0309***
	(0.00256)	(0.00986)	(0.164)	(0.121)	(0.00461)
Income Decile	0.00329***	0.130***	2.101***	0.553***	0.0349***
	(0.000926)	(0.00474)	(0.0631)	(0.0487)	(0.00165)
% Children	-0.0657***	-0.325***	-7.943***	8.155***	-0.399***
	(0.0168)	(0.0741)	(0.909)	(0.767)	(0.0290)
% HH Memebers in LF	-0.113***	-0.377***	5.366***	15.57***	-0.256***
	(0.0303)	(0.144)	(1.884)	(1.712)	(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
N	15461	15393	15331	15413	15375
adj. R^2	0.098	0.131	0.227	0.654	0.114

Robust standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 14: Pension Reform: Effects on Headship

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.

	(1) F Headship	(2) F Headship	(3) F Headship	(4) F Headship
Post X Treated	0.0169***		0.0182***	0.0160***
	(0.00610)		(0.00623)	(0.00604)
Post X Treated Share		0.0698***		
		(0.0141)		
% Children	0.00520	-0.00519	0.00745	
	(0.0163)	(0.0160)	(0.0165)	
% HH Memebers in LF	-0.0764***	-0.0647**	-0.0952***	
	(0.0286)	(0.0287)	(0.0293)	
# Children				0.00668***
				(0.00201)
# HH Memebers in LF				0.00775*
				(0.00432)
Other Controls	Yes	Yes	Yes	Yes
Cohort (HH Head) FE	Yes	Yes	No	Yes
Age (HH Head) FE	No	No	Yes	No
Sector (HH Head) FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
N	15375	15375	15375	15375
adj. R^2	0.182	0.183	0.183	0.182

Robust standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Appendix A

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 ($\dot{G}^*$), 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. Similarly, the aggregate distribution of wife-husband relative characteristics may depend on region-specific assortative mating habits or emigration patterns. We can therefore interpret the social norm C_z as specific to social groups identified by individual cohort and location.

In Figure **??** we use the model to simulate female headship patterns across cohorts. 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, as we show in the next section.