

Is it a boy or a girl? Newborn gender and household portfolio decisions

by

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Abstract

This paper analyzes the role of newborn gender in household investment decisions. Parenting a new baby is associated with a reduction of cash and an increase of the share of financial wealth allocated to longer term investments. The reallocation is however gender-heterogeneous: the increase in the share of financial wealth allocated to risky assets when parenting a girl is reduced for households parenting a new baby boy. The effect is driven by the first child. Our results suggest that household investment decisions are affected by the newborn gender. While the reallocation happening after the birth of a baby is optimizing as it increases both portfolio diversification and return, there is no evidence of a positive effect of gender-driven financial decisions.

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1. Introduction

The investment behavior of households is often inconsistent with the optimal behavior predicted by normative models. Household sub optimal choices in the use of financial markets may be explained by mistakes, due for example to a low financial education [1, 2, 3], by preferences concerning decision-making under risk [4, 5] or by systematic behavioral biases, such as tendency to shun the stock market, hold domestic equities, stick with the status quo potentially ignoring profitable investment opportunities, or hold under-diversified portfolios [6, 7, 8, 9].

From a policy perspective, it is important to understand household financial choices in investing as they have a direct impact on family economic conditions and opportunities, affect resources available for children care and education and may influence their professional choices. Early and systemic policy interventions, particularly in the education systems, and in financial education, but also those aimed at changing cultural norms and tackling stereotypes, are crucial to address the determinants of the ability of households to follow the precepts of standard financial theory when they have a new baby and avoid biases being further accentuated as kids grow.

This paper contributes to the understanding of the determinants of the ability of households to follow the precepts of standard financial theory by investigating a potential systematic behavioral bias, which so far has received little attention in the literature: household investment bias driven by children gender. Specifically, we ask whether the gender of newborns relates to the share of financial wealth held in several asset categories. We answer this question using data from Italy in the period 2006-2016.

Gender bias affects several aspects of life. Gender-biased hiring has been alleged for many occupations. For example, in symphony orchestras, the blind audition procedure fostered impartiality in hiring and increased the proportion of women in orchestras [10]. Recent evidence suggests that gender bias also influences compensation [11]. Although women

participation in the top executive ranks recently increased, their relative compensation did not increase accordingly and female top managers still face a pay gap in listed companies [12]. In fact, the gender pay gap includes, but it is not limited to, lawyers, university faculty, engineers and physicians [13, 14, 15, 16].

There is also some indirect evidence from recent work in finance that supports gender bias. The 2018 report for the 2020WOB shows that half of the companies in the Russell 3000 Index have one or no women on their boards.¹ Women are also underrepresented on boards in STEM and finance industries [17]. Venture capital firms hire few female partners although greater gender diversity improves deal and fund performances [18, 19]. Similar evidence has been found in the mutual fund industry where female managers receive fewer funds and are less likely to be promoted than male fund managers [20, 21]. Using data from a leading peer-to-peer lending platform in China, [22] show evidence of the existence of a gender gap that discriminates against female borrowers who have to provide a higher rate of return to lenders to achieve a funding probability comparable to their male peers. Likewise, [23] show that first-time borrowers matched with opposite-sex officers are less likely to return to the same lender for a second loan, pay higher interest rates, receive smaller and shorter-maturity loans but do not experience higher arrears. Finally, [24], using European data, show that female-run firms are less likely to file a loan application, as they seem to be less confident of a positive outcome. As a consequence, firms with women managers obtain less bank financing.

Aside from affecting behavior in the workplace, gender bias also influences household behavior. Specifically, economic and applied psychology research has found that parental gender bias influences the economic condition of the family. In disadvantaged families, fathers of sons support their families more than fathers of daughters [25]. A first-born son is significantly more likely to be living with his father, compared with a first-born daughter, and this has consequences for children: first-born son families have higher income and lower poverty rates [26]. In addition, parents exhibit systematic biases when forced to choose

¹https://www.2020wob.com/sites/default/files/2020WOB_GDI_Report_2018_FINAL.pdf

between spending on sons and daughters. Mothers consistently favor daughters, whereas fathers, who are usually the higher income earners and responsible for families' investment decisions, consistently favor sons [27].

While there exist a significant literature in finance that investigates potential determinants for the household investment behavior, this literature has not focused on understanding the impact of gender bias on the ability of households to follow the precepts of standard financial theory. Household finance literature attributes deviation from normative models in portfolio allocation to three determinants: preferences concerning decision making under risk, information regarding financial concepts, and socioeconomic status [28]. According to the first determinant, household investment choices are often inconsistent with the standard allocation model because they are related to risk aversion [29, 30, 31, 32], ambiguity aversion [33], uncertainty [34, 35], and inertia [36]. In addition, unsophisticated investors, holding lower information on financial concepts, and households with lower stock market competence retrench from investing in stocks and hold under-diversified portfolios [37, 33, 1]. Finally, the socioeconomic status explanation suggests that household investment decisions relate to several demographic characteristics, personality traits, non standard preferences, income, and financial wealth. Health, age, race, gender, marital status explain differences in individual portfolio composition [38, 39, 40]. Household socioeconomic background is also related to the way they learn from new financial information and use them to make investment decisions [28].

In this paper we take advantage of the birth of a child as a natural experiment to examine whether gender bias influences household investment behavior. One may claim that the decision to have a child is not entirely exogenous, thus there may be unobserved variables that affect both such decision and investment choices. First, this may be true for the *decision* to have a child, but it does not necessarily hold for the *actual* parenthood. Second, the gender of the newborn is undoubtedly exogenous, thus, by looking at newborn gender, we confront possible endogeneity concerns and offer causal evidence on the effect that having a baby boy

rather than a baby girl produces on investment choices.

We find that when having a child, households reduce the share of financial wealth held in liquidity, such as cash. Portfolio reallocation in gender specific: the financial wealth moved away from cash when the newborn is a girl is used to increase the share of longer term investments. This reallocation, especially toward risky assets, is significantly lower when the newborn is a boy.

Extensive literature suggests an impact of the birth order on parental care and investment. In line with this literature, we find that the effect of newborn gender on portfolio allocation is driven by firstborn children. Also, it emerges above all after the Euro area sovereign debt crisis.

Even if due to a bias related, for example, to stereotypes, the different reallocation driven by newborn gender may be a rational and optimizing response. To check this we look at the effect that it has on portfolio diversification and portfolio return, and check whether it is implemented only by certain types of investors. When looking at portfolio choice in terms of overall diversification, we find that the birth of a baby, regardless of gender, increases households' portfolio diversification. The same happens for portfolio return. Thus, there is no evidence of a positive effect on performance and diversification of gender-driven financial decisions. Moreover, the lower reallocation towards risky assets after the birth of a boy is carried out by households having higher levels of education and financial education.

We are aware that we cannot control for all potential confounding variables but we are confident to have a rich set of controls ranging from household structure and members' predetermined characteristics to education, financial education, income and risk attitudes. Our results are also robust when restricting the sample to households with a positive financial asset value or to households observed both before and after the birth event; when excluding foreign couples that might drive the results if their culture leads them to treat boys and girls differently and when controlling for financial liabilities.

Decisions on the allocation of the wealth of the family affect current and future economic

conditions of the household. Our results, showing that such decisions are systematically different after the birth of a son or a daughter, imply that children of a different gender will have access to different care, education and careers. Parents may decide to modify their portfolio allocation in terms of time horizon of the investments after the birth of a baby for several reasons. It may be argued that a cultural effect has been picked up, as Italian parents can be worrying more about their baby girls compared to other cultures. Even if we cannot re-run the analysis with an alternative data set of another country, we lean towards other explanations, given recent evidence suggesting a shift of preference to have sons over daughters ([26]; [41]). One possible explanation that emerges in our paper is that households take their financial decisions under the influence of gender stereotypes on the role of sons and daughters in their adulthood. Across cultures, the bias against daughters has been closely tied to women's second-class status. Sons have been more likely to be successful, carry on the family name and earn money to support family members in old age. Daughters may be considered more in need of protection and financial help in the future while sons may be pushed more towards financial independence, better education and highly qualified jobs.

Our results point to the importance of tackling gender bias on such beliefs and implementing measures that change attitudes, behaviours and children self-perception in order to stop carrying the bias forward to future generations.

The rest of the paper is organized as follows. Section 2 briefly reviews the related literature. Section 3 describes the data and methodology. Section 4 presents the main results. Section 5 investigates whether households have an optimizing behaviour. Section 6 includes a range of robustness tests. Finally, Section 7 concludes.

2. Related literature

Our contribution to the literature is threefold. Most directly we contribute to the academic debate on the ability of households to follow the optimal behavior predicted by normative models. We propose that the inconsistent investment behavior can, perhaps, be

explained by parental gender bias. Second, on the same line, we add to the recent social science literature which has demonstrated the importance of the family environment for an individual's behavior - namely we show that biases related to the gender of children affect parents' behavior. Third, we offer a new empirical evidence to the literature exploring the impact of birth order on parental care and investment.

Empirical analyses of the investment behavior of households indicate that observed choices are often inconsistent with standard asset allocation models. The greatest failure is perhaps the fact that the majority of individuals do not hold fully diversified portfolios [42]. Many explanations have been proposed, relating investment choice to risk aversion and investment opportunities, to resources available to the household (total wealth and income) as well as to demographic characteristics (age, race, gender, marital status) of household's members [43, 38, 39].

In a comprehensive review, [9] show heterogeneity of household behavior, even when confronted with the same decision problem. This evidence opens up the debate of whether households' sub optimal choices are the result of mistakes or systematic behavioral biases. Recent findings support the first view: more sophisticated (especially more educated and richer) households seem to behave closer to the prescriptions of normative models [6]. We provide unique evidence in support of the behavioral biases view by documenting that households make financial decisions under the influence of gender bias. Furthermore, since gender bias works toward a lower allocation of wealth to risky assets, our findings may represent an additional explanation for households' low level of stock market participation.

Our work also contributes to the growing literature on the role played by personal relationships in affecting decision making. We study how the gender of children influences parents' decision making process in financial matters. Prior work primarily evaluates how parents impact their children by instilling certain values in them [44, 45]. Some emerging work has suggested that the opposite may also be important: children may shape their parents [46]. Congressperson's propensity to vote liberally, particularly on reproductive rights

issues, increases when parenting daughters [47]. In business, companies' investment policies change when the CEO has a daughter [46, 18]. Judges with daughters consistently vote on gender issues supporting women's rights more than judges who have only sons [48]. The subtle treatment effects that prior research has shown to influence politics, business and the legal courts also plays a role here in causing parents to be more consistent with the optimal investment behavior predicted by normative models. A potential explanation is that having a baby girl seems to reduce parental gender bias.

Third, our study is related to the literature tying the birth order to parental care and investment. Traditionally, research investigates the drivers of intra-familial disparities in parental investment and, consequently, on economic success across siblings. The findings indicate that firstborns have higher levels of schooling, earnings, IQ, cognitive ability, lower incidence of teenage pregnancy, and receive more parental supervision [49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59]. A wide range of explanations has been put forward, like for instance differences in endowments, the nature of parental preferences or financial and parental time constraints which create unequal distribution of resources across birth order [60, 49, 59, 61].

We add to this strand of literature by proving that not only the distribution of time or resources but also household financial decisions differ depending on whether the change in the family composition is due to the firstborn child or to the birth of other children.

3. Data and Methodology

In this section, we first describe the data set that we use in our analysis reporting summary statistics of our sample. Then, we detail the methodology used to empirically identify the effect of newborn gender on household portfolio choice.

3.1. Data

Data used in this paper come from the SHIW², a nationally representative survey that has been conducted by the Bank of Italy every 2 years since 1977. The SHIW provides detailed information on the personal and demographic characteristics of the individuals of each household (status in household, gender, age, nationality, educational qualifications, marital status and region of residence), on their working activity (employment status, type of occupation, industry, number of work experiences, type of contract, average weekly hours of work, earnings and wealth) and, of particular interest for our analysis, on their total wealth and on the allocation of their wealth expressed as the ownership and the amount held in a quite comprehensive set of financial assets (e.g bank or postal deposits, certificates of deposit, T-bills and T-bonds, bonds issued by Italian and foreign firms, money market funds and ETF, shares in companies and so on). For these reasons, the SHIW satisfies the characteristics that a high-quality data set on investment strategies should have, as suggested by [6] and [9].

We consider six waves ranging from 2006 to 2016. We start from the 2006 wave because we wish to gather data on households on comparable standards and only starting from this year the SHIW provides adjusted data on the amount held at the end of the year in each form of savings.

We then narrow our sample to households that have a new baby in the time span 2006-2016 and restrict our analysis to such households observed both in the wave in which they had the baby and in the previous wave. For example, if one household has a child with year of birth 2013 or 2014, it is classified as having a new baby in the wave 2014 and the observation of the household is included in the sample both in the wave 2014 and 2012.³ We end up with a sample of 471 observations, 266 having a new baby and 205 corresponding to

²The detailed questionnaire, the data and further details regarding the Survey on Household Income and Wealth are available on the website of the Bank of Italy, <http://www.bancaditalia.it/statistiche/indcamp/bilfait>.

³We exclude from the sample all households having more than a child in the same wave and all households having a child in consecutive waves.

the same families in the wave before of that of the baby birth (see the section *Methodology* for an explanation of the identification strategy and sample characteristics). Of these, 143 babies were boys and 123 girls.

Conducting an analysis of portfolio decisions requires to identify the asset categories from which the investor chooses [38]. A typical strategy is to collapse financial assets into three classes, 'safe', 'medium risky', and 'risky' [62], although [38] allocate tangible wealth among four asset classes consisting of safe assets, bonds, risky assets, and retirement accounts and several researches construct as many as eight to ten categories [63]. We use a five-way classification scheme consisting of cash, safe assets, bonds, retirement benefits and risky assets. Cash includes bank or postal deposits, such as current accounts, saving accounts or deposit books. Safe assets contain certificates of deposit, repos, postal savings certificates and Italian government bonds, such as T-bills, T-certificates and T-bonds. Bond has categories such as bonds issued by Italian firms and banks, money market funds and ETF, debt funds and foreign government securities. Retirement benefits include personal retirement plan or supplementary pension fund; state pension is excluded.⁴ Risky assets have categories such as stocks, shares of unlisted companies, shares in companies limited by shares - srl, shares of partnerships, mutual funds or ETF in equities and in foreign currencies, foreign equities, other foreign securities and other financial assets such as derivative securities, royalties. An additional category, physical assets, consists of real assets and represent "vehicles" and "real estate" wealth. This is quite similar to [38] approach, except that they combine checking

⁴Background risks are important assets in household portfolios. Expectations of a high state pension may affect the propensity to invest in retirement benefits and more generally in risky assets. The expectations for households in the sample under scrutiny is however of a low state pension. The head of household is on average 38.9 years old and has a high school diploma (13 years of education) that is households in the sample were born in mid-'70s and started to work in mid-'90s. In Italy, the state pension system underwent deeply reforms in the '90s. In particular, the Dini reform (Law 335/95) changed the mechanism to compute state pensions: pensions are now based on the cumulative contributions paid by workers. Due to the recent characteristics of the Italian labour market, which combines high unemployment and short-term contracts, the demographic trends and the delays in implementing state pension reforms, the state pension of those who started to work after 1996 (the year the reform was implemented) or had less that 18 years of contributions at that time, is reduced by more than 20 percent as compared to the previous generations. In fact the Dini reform pushed younger generations towards higher investments in retirement benefits.

and savings accounts, and T-bills into one category. Even if some arbitrariness is involved in aggregating financial assets into relatively homogeneous groups that are suitable for investigation, the choice to separate cash and safe assets in our statistical analysis takes into consideration the specific use of cash in finance in Italy. Italian households use cash as a payment instrument rather than as substitute for safe investment as compared to other European countries of a similar size.⁵

We look at financial decisions in terms of the share of total net worth held in each asset, that we denote as %. First we compute the value of financial assets as the sum of the wealth held in the above described five financial asset classes, the value of the wealth held in physical assets and the value of the total worth as the sum of financial assets' value and physical assets' value. Then we compute the share of financial assets' value held as cash, safe assets, bonds, retirement benefits and risky assets on one hand, and the share of total worth invested in physical rather than financial assets on the other. The reallocation of wealth among asset classes implies active choices by investors. Furthermore, for the majority of asset classes, active reallocation is not prevented by penalties for early withdrawal, as it is the case for CDs in the US.⁶

In order to check whether an eventual reallocation across asset classes driven by the gender of the newborn is indeed a rational/optimal behaviour, we also look at portfolio choice in terms of overall diversification and return. With the aim to investigate portfolio diversification, we use the Herfindahl-Hirschman (HH) concentration index [66] and create a measure of diversification as $1 - (HHindex/10.000)$. We then replace the obtained value with 0 for households having no financial wealth and create a categorical variable (*DIV INDEX*) having value 0 when the measure of diversification is 0; value 1 when the measure of

⁵In 2019 the number of payments with cards amounted to 3.7 billion in Italy as compared to 6.3 billion in Germany, 14.6 billion in France, and 24.7 billion in the UK [64]. In 2018, credit card payments totaled 44.7 billion in the US [65].

⁶In Italy, penalties for early withdrawal are significant for retirement benefits. Due to the lower fraction of wealth invested in retirement benefits as compared to the investment required to compensate adverse demographic and labour trends, recent reforms of the Italian pension system strongly favoured investment in retirement benefits, by introducing tax benefits and penalties for early withdrawals.

diversification is positive but smaller than 0.5 and value 2 when the measure of diversification is greater than or equal to 0.5.

The conventional wisdom in the professional investment community seems to be that investors with a long time horizon should invest more heavily in stocks than investors with a short time horizon. This notion is based on the assumption that human capital is a large proportion of total wealth when one is young, and eventually decreases as one ages. According to this, diversification might be less important for relatively young investors. However, the conventional wisdom may not apply to broad classes of individuals who face substantial human-capital risk early in their careers. For such individuals, the opposite policy may be optimal, that is to start out with a relatively low fraction of the investment portfolio in stocks and increase it over time [67]. More diversification at the expense of a lower share of risky assets, thus, might be a good thing for a household early on in life. Further evidence shows that the risky share of financial wealth tends to vary little with age, although the specific empirical pattern is subject to controversy [68]. Summarizing evidence from several countries, [69] argue that the age profile of the risky share is relatively flat.

Thus, besides overall diversification we also compute portfolio return. For each asset class, we have downloaded monthly data on the value of the corresponding index, computed the monthly return and converted this return into an annual return. Then, we have computed portfolio return as the weighted average of each asset's return.⁷

For the sake of simplicity, we have divided our control variables into three main categories. We select our controls following [32], [31], and [38]. The first category, households composition, includes: whether the household in the year of the observation has a new baby and whether the new baby is a boy; the number of members of the family and the share

⁷For each asset class we use as a benchmark a relevant index provided by Bloomberg; specifically we have used: BTPGR10 for cash, GBOTG12M for safe assets, I02087 for bonds, EREPIIT for retirement benefits, and FTSEMIB for risky assets. Our results are robust if we consider different indexes, that is for safe GTITL10Y Govt or ITALY T-BILL AUCTION GROSS 12 MONTH - MIDDLE RATE; for bonds I02087EU Index or LBEATREU Index; for risky ITLMS Index or ITMC Index with and without dividends and FTSEMIB Index with dividends.

of women in the household; the exact year of birth of the new baby⁸; whether s/he is the first child; the number of children⁹; the age¹⁰ of the head of household, defined as the major income earner, and whether the head of the household is a woman.

Second, we control for education by including the highest level of education of household's members and their financial education, computed as the first component of a principal component analysis of two indicators of financial education, that is whether the household has a credit card and whether she uses the home banking service. In the final category we have income and attitudes, that is the net income of the household, its squared value, the share of income earners in the household, the amount of net wealth, whether the head of household is employed¹¹, the attitude towards financial risk and whether the parents of the head of household are alive. Definitions of the variables are provided in Appendix A.

Table 1 presents the descriptive statistics of the selected dependent and independent variables over the sample period.

<Insert Table 1 about here>

Looking at the asset classes, on average about 81 per cent of household total worth is invested in real estates and durables. Of the remaining 20 per cent, more than a half is invested in cash. It is worth noticing that 66 households state to have no financial wealth, 29 of these households state this for both the waves that we consider. For this reason, the sum of the shares invested in the five financial asset classes does not add up to one. If we

⁸Giving birth to the baby either in the year before or in the same year of the wave might be different for the reported asset allocation as it might involve more/less chance and/or reason to re-allocate household's assets.

⁹The number of children adds further information on family resources available for investments, on the planning horizon of investments, and on portfolio allocation because of different preferences within households [70].

¹⁰Age has been extensively studied in the life-cycle portfolio investments literature (see among others [71, 72, 73, 74, 75]). The risky share of financial wealth tends to vary little with age, although the specific empirical pattern is subject to controversy [68]. Summarizing evidence from several countries, [69] argue that the age profile of the risky share is relatively flat. In a recent work, [68] document a double adjustment as households age: a rebalancing of the portfolio composition away from stocks as they approach retirement and stock market exit after retirement. Portfolio choices may thus be influenced by the age of the head of the household.

¹¹Unemployed households are exposed to unemployment risk that increases their effective risk aversion [76].

exclude the observations with zero total wealth invested in financial assets (95), we see that, on average, households with a positive value of financial assets invest 86.5%, 2.9%, 2.6%, 4.5%, and 3.5% in cash, safe assets, bonds, retirement benefits and risky assets, respectively. We take this aspect into account in our robustness tests when we exclude households without any financial asset. We also report the average amount invested in each asset class: €7,210, €1,440, €813, €563, €1,143 in cash, safe assets, bonds, retirement benefits and risky assets, respectively. The average wealth invested in financial assets is €11,170 while it is €144,916 in physical assets.

In terms of portfolio diversification, 83 per cent of sample households hold portfolios that are not diversified at all; 13.6 per cent of households hold portfolios with diversification index positive but smaller than 0.5 and the remaining households hold portfolios with diversification index greater or equal to 0.5. Portfolio return instead ranges from -8.5% to 86.5% and is on average 0.3%.

As for household features, Italian families are on average formed by 3 members, almost evenly balanced by gender and have on average 1 child. A new baby is present in almost 57 per cent of the households sample, and the newborn is a boy in the 54 per cent of cases. About 57 per cent of new babies is born in the year before the survey's year (e.g. for the 2010 wave the year of birth is 2009) and the remaining is born in the same year of the survey. The gender distribution of the children is similar between years: about 53.5 per cent of babies born in the same year of the wave and 54 per cent of babies born in the year before are males. About 44 per cent of new babies are the first child in the household. Heads of household, defined as the major income earners, are on average almost 38 years old and about 17 per cent of them are women.

The high school diploma is on average the highest level of education attained by household members since the maximum number of years that on average they spent at school is 13. Financial education ranges from -0.986 to 2.144 and reports low level on average.

Almost 55 per cent of household's members earn an income, which consists, on average,

of about €30,000 per year. Net wealth is on average €145,500. The head of the household is usually employed (94 per cent of the sample) and 91 per cent has parents alive. The average propensity to financial risk is based on the answer to the question "In managing your financial investments, would you say you have a preference for investments that offer:" and ranges from 0 (if the answer is: "low returns, with no risk of losing the invested capital") to 4 (if the answer is: "very high returns, but with a high risk of losing part of the capital"). On average it is close to zero (0.76) and it scores 3 as maximum value. The average investor in the sample is risk averse. However, it is slightly less risk averse than the Italian population since the average propensity to financial risk in the full 2006-2016 panel is about 0.6.

3.2. Methodology

We provide causal evidence on the role of having a newborn and his gender on household portfolio decisions by adopting a staggered difference-in-difference (DID) approach which is a "generalized" DID approach that accommodates treatment exposures in multiple groups and multiple time periods [77]. As explained in the *Data* section, we consider 6 waves of the SHIW and our "treatment", that is the birth of a new baby, can happen for any household in any of the 6 waves. For treated households, we then study heterogeneity in the new birth effect driven by the gender of the new baby. Thus, we estimate the following model:

$$Y_{it} = \beta_0 + \beta_1 NEWBABYBORN_{it} + \beta_2 NEWBABYBORN * BOY_{it} + \beta_3 X_i + \beta_4 T_t + \beta_5 C_{it} + \epsilon_{it}$$

where Y_{it} is the value of the outcome variable for household i in year t ; $NEWBABYBORN_{it}$ is a variable indicating whether the household i has a baby in year t ; $NEWBABYBORN * BOY_{it}$ is the interaction variable between the birth of the baby and his gender to test a differentiated effect of boys and girls; X_i are household fixed effects; T_t are time fixed effects; C_{it} is the vector of our control variables; ϵ_{it} is an error term assumed to be independently distributed from our controls.

In all regressions, standard errors are clustered at the household level to allow for flexible error correlation structure within households. Our staggered DID approach compares changes in the outcome variable subsequent to the baby birth - in case of a new baby boy or a new baby girl - with changes experienced by households without a newborn during the corresponding years. With this identification strategy, we aim to separate the effect of newborns from other factors potentially affecting portfolio choice.

We include household and time fixed effects because our setting involves multiple treatment groups and time periods [78]. Thus, household and time fixed effects control for fixed differences between treated and control households and for aggregate fluctuations. Treated households are those having a baby (266 households) while control households (205 households¹²) are those without a new baby as of a particular time [79, 80]. It is worth noticing that we need such a control group because the identification strategy relies upon the comparison between households having or not a new baby as of a particular time. This allows us to get causal evidence on the effect of a birth in the household. However, since the birth itself is not necessarily an exogenous event and since our research question is on gender effects, within treated households, we then distinguish between those having a baby boy and those having a baby girl. Therefore, we investigate what happens when the household has a new baby girl (compared with not having a new baby) and, likewise, how household's investment behaviour changes when the household has a new baby boy (compared with not having a new baby). The comparison of the two effects allows us to study the existence, magnitude and characteristics of gender-driven differences in household portfolio allocation.

Our parameter of interest is β_2 . An estimated coefficient significantly different from zero indicates that the gender of the newborn matters and portfolio choices are different when the new baby is a boy. β_1 represents the effect on our outcome variable of having a new

¹²Control households are 205 instead of 266 because 61 households had their baby in 2006, so for them we do not have the "before" status. In the robustness section, we test the robustness of our identification strategy by running the same estimates on the *clean* sample, that is by excluding all observations for which we do not have a before/after the birth event.

baby girl while the (linear) combination of the two parameters represents the effect of a new baby boy on the household portfolio choice. C_{it} , the vector of our control variables allows us to mitigate the effect of correlated omitted variable bias.

When applying the staggered DID approach, we cannot test for pre-treatment parallel trends as we do in the special case of the DID (where there is a unique change timing that affects a treatment group but not a control group) because the variable "post" is not uniquely defined. To reassure the reader that the common trends assumption is fulfilled, in Appendix B we report Probit estimates of the effect of our covariates on the probability of having a new baby (Table B1 column 1). All estimated coefficients are insignificant when applying either Bonferroni's, Holm's or Sidak's method for adjusting p-values for multiple testing (column 2), so we may be reassured that households are indeed similar. Also, since we look at the gender of the new baby claiming that it is exogenous, as a check of this claim, in column 3 we investigate if any of our controls has a statistically significant effect on the probability of having a male child instead of a female. Again, none of the regressors is found to exert a significant effect when adjusting p-values for multiple testing using either Bonferroni's, Holm's or Sidak's method (column 4) so unobserved heterogeneity between families with a male child and families with a female child should not be a concern.

4. Newborn gender and household financial decision

4.1. Shares of assets

Following [38], in this section we study investment choice by considering changes in the share of financial wealth invested in five different asset classes, that is cash, safe assets, bond, retirement benefits and risky assets, and in the share of total wealth that the household decides to invest in physical rather than in financial assets.

In Table 2 we estimate a basic specification of our model for our six dependent variables by including only a limited set of explanatory variables to control for household's characteristics and financial conditions.

<Insert Table 2 about here>

We find that household decision on how to allocate their wealth among financial assets when a new baby enters in the family is influenced by the gender of the newborn. Baby girls significantly reduce the share of liquid assets represented by cash by 0.41 while this effect lessens when the new baby is a boy (the interaction has p-value=0.136 while the final effect for a boy is -0.27, p-value=0.032). The additional financial wealth moved away from cash when the newborn is a girl is used to increase the share of longer term investments. The decision to reallocate cash in favour of longer term investments in case of a new baby girl is not taken when the new baby is a boy. In particular, the birth of a boy significantly offsets the effect for risky assets. The reallocation among the other assets is of similar magnitude but does not carry statistical significance. Our findings are in line with [81] who finds that having only a female child increases the probability of holding stocks.

<Insert Table 3 about here>

Having a baby usually changes parents' planning horizons. The portfolios of households with and without children may differ because the former expect to have to support their children until they are financially independent and/or to receive financial support from them on a later moment, whereas the latter have to support themselves if they live long. [82] reports that Italian families have kids in their 30s (the average age at which women and men have kids is 31.89 and 34.45 years old, respectively), and that 65 per cent of kids aged 25-29 and 30 per cent of kids aged 30-34 live with their parents. Our finding is consistent with the view that households with longer planning horizons tend to devote a smaller share of their portfolios to cash and a larger share in other types of assets with longer holding period [38].

However, our results seem also to suggest that gender biases could play a role in affecting financial decision making in households. A long literature has documented parental differential treatment of daughters and sons [83, 84, 85, 86]. This differential treatment may also result from biases, like, for instance, stereotypes on the urgency of protecting daughters, gender discrimination or the adoption of gender roles which define appropriate conduct for

men and women [48, 45, 44, 87, 88].¹³ According to this literature, the birth of a baby boy may result in the promotion of boys' autonomy and financial independence, as they are expected to have larger earnings opportunities as adults, whereas in case of the birth of a baby girl parents need larger financial assets in the future, both as a sort of dowry for the daughter and to support themselves when they grow old.¹⁴

When biases affect the capacity to process relevant information, household portfolio choices may depart from the behavior predicted by standard allocation models, as in the case of households with a new baby boy. Previous work has made significant progress in deciphering the underlying forces behind investors' behavioral biases (see, among others, [90]).¹⁵ In section 5 we will investigate if the observed gender bias in portfolio allocation following the birth of a baby negatively affects household's resources or it is an optimizing behaviour.

As far as control variables are concerned, we find interesting results. The household composition is an important determinant of portfolio allocation [70, 40, 39, 69]. Having a new baby changes household composition because it increases the number of family members. However, such an increase may happen also for other reasons, such as a new partner or a parent/relative moving into the family. In order to separate the birth of a new baby from such confounding effect, in all the specifications we control for the number of family members which may impact portfolio allocation because of different preferences within households [70]. We find that a new member in the family, like for instance a partner or a relative moving in, increases the percentage of financial wealth held as cash by 0.12.

Besides changing the number of components, the birth of a new baby also changes the

¹³Gender roles are shared expectations of men's and women's attributes and social behavior and are internalized early in development [89].

¹⁴It is unlikely that investors in the sample feel the need to protect a girl more than a boy because they are more risk averse. If that is the case we would expect them to invest in safe assets more than in risk assets if they want to protect a girl in the future. In fact, investors in the sample are less risk averse than the Italian population.

¹⁵In addition, the literature on organizational architecture suggests that the decision effectiveness has its explanation in the individual's behavior as well as his capacity to produce, process and exchange information and knowledge, necessary for efficient decision making to take place [89, 91].

gender composition of the household. This change as well may happen for different reasons thus to control for changes in the gender composition of the family not related to the gender of the newborn, we also include among controls the fraction of women in the household (*% FEMALES*). When women represent a larger share of the household components, the share of financial wealth invested in cash increases (+0.50) as opposed to the share of financial wealth invested in risky assets, which decreases by 0.13. This finding is in line with recent literature: women are considered more risk-averse on average [92, 93] and less overconfident [94].

The facts that women are more likely live longer than men and that Italian wives are typically younger than their husbands imply that wives may have more incentive to save for old age than do husbands [70].¹⁶ Furthermore, gender specific factors may influence portfolio choices [94, 76]. To account for possible differences in investment behavior due to gender we control for the presence of a female major income earner (*FEMALE HEAD OF HOUSEHOLD*). Indeed, we find that when the head of household is a female the share held as cash is significantly lower (-0.23) and the share invested in risky assets significantly bigger (+0.1).

Income and wealth have been highlighted as important drivers for portfolio allocation. Household socioeconomic background is related to the way they learn from new financial information and make investment decisions [28]. Little financial wealth combined with young age leads household to hold under-diversified portfolios that are concentrated in a small number of assets [95, 5]. Moreover, stock market participation and the propensity to acquire additional assets are highly dependent on whether liquidity and safety needs are met [96, 29]. In particular, an investor is more likely to add some risky assets to his or her portfolio when safety needs have been met. The higher the level of net wealth, the more likely the household is to have met precautionary motives.

Then we include among our controls *NET WEALTH* and find that households with a

¹⁶According to [82], in Italy the life expectancy at birth is 84.9 years for women and 80.6 years for men.

higher amount of total net wealth hold less cash and invest on longer term investments like risky assets and physical assets.

In Italian family structures, parents generally provide financial support and safety net long after their children moved out. On one hand, this has the positive effect of allowing households with worse financial conditions to meet essential needs; on the other hand, this may work as a disincentive to improve the own financial situation because of the backup option provided by parents. To account for the effect that these two potential mechanisms at work when parents are alive may have on the portfolio decisions of households, we include in our specification *PARENTS ALIVE* and find that it significantly reduces the share allocated to risky assets.

Table 3 reports the estimates of our model where we include the full set of controls. Even when we control for the full set of household's characteristics available in our data, we find that the gender of the newborn affects household decision on how to allocate their wealth among financial assets after the birth of a new baby.

<Insert Table 3 about here>

While having a baby girl produces decisions consistent with what predicted by standard models, that is decreases the share of liquid assets and increases the share of longer term investments (the effect is diluted by the presence of households with 0 financial wealth but becomes statistically significant and bigger in magnitude when these households are excluded from the analysis, see Table 14), having a boy makes households behaving differently by reducing the extent of such a reallocation and in particular by halving the share of wealth allocated to risky assets with a statistically significant difference.

Our result that household investment behavior is shaped by whether or not the family has a boy is in line with the recent literature supporting the view that children may shape their parents' behavior [46, 48, 47]. Also, following [18], having a baby girl reduces any pre-existing bias that the household has towards women, and this leads to higher financial awareness.

As far as control variables are concerned, besides the effects already emerging in Table 2, it is worth to comment the effect of financial risk attitudes. Several empirical studies have included risk attitude as an explanatory variable in their models studying portfolio composition [97, 98, 99]. Recent literature discusses the effect risk attitude has on the probability of holding a particular combination of assets [29]. Our results of a higher share of cash and a lower share of physical capital for households with a higher level of financial-risk propensity seem counterintuitive but they are driven by the years of the global financial crisis and, as we will see in section 4.3, households behave differently in those years.

4.2. Firstborn versus other children

In this section we dig deeper into our research question by investigating if our findings of a shift towards longer term investments when the newborn is a girl rather than a boy depend on the birth order.

We investigate this possibility by splitting our total sample into two subsamples: one including only firstborn children and the other including all other children who are not firstborn. Of course, given the smaller sample sizes, our coefficients are less precisely estimated, but even so suggestive of household behavior.

In Table 4 we report our estimates of the impact of newborn gender on household investment by considering only the subsample of firstborn children. We have 213 observations corresponding to 116 newborns, 60 boys and 56 girls.

<Insert Table 4 about here>

Despite the small sample size, we find that when the first baby is a boy there is a statistically significant reduction of the share held in longer term risky investments and a reallocation towards bonds. Interestingly, a gender difference following the birth of the first child emerges for the share of total net worth held in physical assets: while this decreases after the birth of a girl, the effects is significantly attenuated by the birth of a baby boy. The reduction in physical assets is consistent with previous literature: housing equity is a

key component of retirement assets, thus it can be temporarily reduced to meet the need for cash due to the birth of a child [3, 100].

In Table 5, instead, we report our estimates of the impact of newborn gender on household investment by considering only the subsample of children who are not firstborn. We have 258 observations corresponding to 150 newborns, 83 boys and 67 girls.

<Insert Table 5 about here>

Data on household decision to allocate wealth among the six asset classes show that, following the birth of another child, there is still a reduction in the share held as cash, but there is no longer evidence of different allocation of financial wealth depending on the gender of the new child. It is important to draw attention to the fact that all the coefficients in Table 5 are estimated controlling for the gender of the first child (which is in the household fixed effects).

Overall, we find that the evidence of an effect of newborn gender on the share of financial wealth held in several asset categories is driven by firstborn children. We would have liked to move our investigation even further, but more detailed analyses are unfeasible due to the small sample size.

4.3. Euro area sovereign debt crisis

In this section we investigate whether the effect of newborn gender on household portfolio allocation was different following global financial crisis of 2007-2008 that impacted Italian banks and, as a consequence, the real economy and after the shock of the 2011 Euro area sovereign debt crisis.

With this aim, we run our full specifications first by keeping only the 2008 and 2010 waves (Table 6, 170 observations corresponding to 90 newborns, 45 boys and 45 girls), that is the years of the global financial crisis and then by restricting the sample starting from the 2012 wave to check whether our results hold after the 2011 Euro area sovereign debt crisis (Table 7, 188 observations corresponding to 115 newborns, 64 boys and 51 girls).

In Table 6, we find that during the global financial crises, after the birth of a baby, households have reduced the share of wealth held as physical assets. As regards their financial wealth, they have increased the share allocated to retirement benefits, an effect significantly bigger when the newborn is a boy.

<Insert Table 6 about here>

One possible explanation lays in the fact that the crisis has increased uncertainty about the future and this concern might have been more salient for households with a newborn. Also, this reallocation might have been encouraged by the tax-advantage of retirement benefits compared to other long-term investments, such as mutual funds or equity. Literature has widely proved that taxation impacts investment decisions and retirement savings (see, among others [101]). In Italy the favourable treatment is particularly relevant. Investment in retirement benefits is deductible up to €5,164.57. Capital gain are taxed at 20%, whereas other long term financial investments are usually taxed at 26% [102]. With increasing household size, as resources are finite, households seem more likely to invest in tax-advantaged retirement benefits.

When looking at the period post Euro area sovereign debt crisis (Table 7), our results confirm that a new baby reduces the share of wealth held as cash and a new baby boy reduces the share invested in risky assets.

<Insert Table 7 about here>

5. Is gender-driven reallocation an optimizing behaviour?

In the previous section we have shown that household portfolio allocation after the birth of a new baby is influenced by its gender. In particular, while households parenting a female reallocate towards risky assets, the birth of a baby boy reduces the share allocated to longer term risky investments. This effect is driven by first born children and emerges above all after the Euro area sovereign debt crisis.

We have interpreted this finding as evidence of gender bias as alternative explanations

such as risk aversion seem less plausible. In this section we enquire whether the bias driven by newborn gender is indeed a rational response leading to an optimizing behaviour. We do this in three steps. First, we look at household financial decisions in terms of overall portfolio diversification. The hypothesis is that if diversification is higher after the birth of a boy, then the observed behaviour departing from the predictions of normative models is indeed optimizing as it implies households diversifying more their portfolio.

Higher diversification does not necessarily translates into higher returns. Thus, as a second step, we look at the effect of newborn gender on portfolio return. Here the hypothesis is that the reduction in the share of risky investments after the birth of a boy is an optimal response if it translates into a higher portfolio return.

Finally, to support the idea of a bias, instead of mistakes in portfolio allocation decisions, we estimate our model separately for households with high and low education and financial education levels. In fact, if our results are due to mistakes, then more sophisticated (more educated) households should not show the same behavior as they should make decisions closer to the prescriptions of normative models.

5.1. *Portfolio diversification*

After having investigated portfolio choice on a more detailed basis, in this section we look at the effect of newborn gender on portfolio diversification. In Table 8 we present our estimates considering as dependent variable our *Div Index*. First, we investigate heterogeneous effects according to the gender of the newborn in our main sample (column 1). Then, we analyse the role of any birth order effect on portfolio diversification (columns 2 and 3).¹⁷

<Insert Table 8 about here>

We find that having a new baby on average increases the magnitude of portfolio diversification regardless of gender (column 1). Also, the effect is driven by firstborns (column 2).

¹⁷We could not study also the role of the crisis because due to discontinuous region we could not estimate our model.

These results suggest that, when having a baby, households are influenced by a simple and basic principle of financial theory, that is to hold a diversified portfolio to avoid concentrating risk in one or few (possibly correlated) assets [103]. However, the reallocation carried out when the new baby is a boy is not necessarily optimizing as it does not affect/increase overall diversification.

5.2. *Portfolio return*

Household bias driven by the gender of the newborn may indeed be beneficial if it allows to get a higher portfolio return. We investigate this in Table 9 where we estimate our model with the full set of controls in the full sample (column 1); among firstborns (column 2); among other children (column 3); in the period of the global financial crisis (column 4) and after the 2011 Euro area sovereign debt crisis (column 5).

<Insert Table 9 about here>

We find that financial decisions made after the birth of a baby significantly increase household portfolio return by about 13 percentage points. However, the gender of the new baby does not significantly affect portfolio returns.

The positive effect on returns is present both for the first child and for the other children but is larger in magnitude for the former. Moreover, it is present both during the global financial crises and after the Euro area sovereign debt crisis. We find evidence of a bigger effect of baby boys in the period of the global financial crisis possibly because in that period households with a new baby boy reallocated a higher share of their portfolio to retirement benefits which experienced high returns.

Thus, apart from the years 2008-2010 where having a baby boy significantly increased portfolio return, looking at return seems also to suggest that the different financial choices made after the birth of a boy are not beneficial for the household.

5.3. Education and Financial Education

A large amount of literature has reported the important effect of education on household portfolio choice [76, 104]. Unsophisticated investors retrench from trading risky securities and shift their portfolios to safer assets [37]. Education should help to gain information and build confidence for investors. As a consequence we may argue that educated households are less risk averse. Particularly, financial education supports the growth in knowledge and information specifically related to financial decisions [105, 28, 1]. Households with lower stock market competence are more ambiguity-averse, and hold under-diversified portfolios [33].

In Tables 10 and 11 we estimate our model on the six asset classes by splitting the sample into households in the top quartile of the financial education distribution (Table 10 - high financial education) and the remaining households (Table 11 - low financial education). Data show that our main findings of a smaller increase in the share of wealth allocated to risky assets after the birth of a baby boy are driven by households with high financial education. Thus, it is less likely that household behaviour is driven by mistakes.

<Insert Table 10 about here>

<Insert Table 11 about here>

Likewise, in Table 12 we consider only households in the top quartile of the distribution of our variable *HIGHEST EDUCATION*, while in Table 13 we consider only the remaining households. Again we find support for the gender bias interpretation *versus* possible mistakes because the smaller reallocation towards risky assets after the birth of a boy is driven by households with a high level of education.

<Insert Table 12 about here>

<Insert Table 13 about here>

Looking at the level of education is also important because our main result of wealth moved away from cash towards longer term investments may be capturing household decision

to save for college costs and the education sought for children is correlated with parents' education [106, 107]. If the reallocation is driven by educational concerns, we should not find any difference according to the newborn's gender or, if anything, we should find the opposite effect, given households' tendency to invest more on sons than daughters [44, 83, 84, 85, 86]. Moreover, this should be less of a concern in Italy as its educational system is mostly made of state owned universities which entail relatively low costs for households.

6. Robustness

We run the following additional tests.

6.1. *Positive financial wealth*

66 households state to have no financial wealth, 29 of these households state this for both the waves that we consider. In Table 14, we check the robustness of our results to the exclusion of observations with zero total wealth invested in financial assets (95).

We find that, even when excluding such households, the birth of a baby induces a reduction of wealth held as cash. If the baby is a girl, most of this wealth is reallocated to risky assets. Instead, if the baby is a boy, the share moved to risky assets is significantly lower.

<Insert Table 14 about here>

6.2. *Share of total wealth*

In our main analysis, we have studied portfolio choice dividing total wealth into wealth held as physical assets and wealth held as financial assets. Then, we have computed the share of financial wealth invested into each financial asset to create our dependent variables related to the allocation of financial wealth.

In Table 15 we check the robustness of our results to a different computation of our dependent variables: for each asset class, we compute the share of total asset value that households invest into it. We confirm our evidence that having a baby boy reduces the share

of wealth allocated to risky assets. Results are robust and bigger in magnitude if we exclude households with zero financial asset value as in Table 14.

<Insert Table 15 about here>

6.3. *Singletons*

In order to test our identification strategy, we run our full regressions excluding all households for which we do not have two observations, one before and one after the birth of the baby (that is all households having a new baby in the 2006 wave). In this way we obtain a cleaner and smaller sample. We examine the impact of newborn gender on this subsample in Table 16. In all models we include the full set of controls, household and time fixed effects and we cluster standard errors at the household level. Our results hold.

<Insert Table 16 about here>

6.4. *Geographical provenance*

Another possibility is that geographical provenance affects household portfolio choices. Geographical provenance may be seen as a proxy of cultural background and ethnicity whose differences in wealth and asset ownership are well documented in the existing literature. [108] note that white households are more likely to either have received or expect to receive some type of inheritance, which may increase their chances of owning any given asset type. Also, [109] finds that some black and Hispanic households do not save because of social network pressure to share any such savings. [110] find that households whose head is white non-Hispanic or one of the other minority groups have higher ownership rates of all asset types relative to black and Hispanic households. Individuals from financially underdeveloped Native American reservations show worse consumer credit behaviour [101].

To investigate this possibility, in Table 17 we run our estimates of the effect of newborn gender on portfolio choices by removing from the sample all observations where the head of household and her/his relevant other do not hold Italian citizenship. We have 382 observations corresponding to 219 newborns, 126 boys and 93 girls.

<Insert Table 17 about here>

The estimates ran in the restricted sample confirm our main result that having a new baby reduces the share of financial wealth held as cash and that a baby boy reduces the reallocation towards risky assets as compared with a having a baby girl.

6.5. *Net income and net wealth*

In this section we run some robustness tests on the main variables used to control for household financial conditions: income and net wealth.

First, in Table 18 we see that our results are robust when excluding net income from our controls. We test this because the two controls of financial conditions are strongly positively correlated (corr= 0.491, p-value=0.000).

<Insert Table 18 about here>

Having the same absolute level of income or wealth leads of course to different decisions depending on the number of people that use such income. In our estimates we take this into account by controlling for the number of household members. However, in Table 19 we show that our results are also robust when we insert among our controls net income and net wealth per capita instead of their absolute level.

<Insert Table 19 about here>

Finally, in Table 20 we add among our controls an indicator of the value of liabilities to banks and financial companies. This variable is on average about €23,500. Our results are robust. As far as the new control is concerned, a higher value of financial liabilities reduces the share held as cash.

<Insert Table 20 about here>

7. **Conclusions**

This paper shows the existence of a strong relationship between the gender of a new baby and household investment choices. Even after controlling for household composition, and a

variety of socio-economic characteristics, households parenting a boy attenuate the choice of increasing the share allocated to risky assets, compared to households that are parenting a girl. Thus, households with a girl newborn seem to behave closer to the prescriptions of normative models: they invest more on a longer time horizon as opposed to households with a baby boy. When digging deeper into the birth order effect, we find that the evidence of an effect of newborn gender on the share of financial wealth held in several asset categories is driven by firstborn children. Our results are driven by the post Euro area sovereign debt crisis period. During the global financial crisis, households behaved slightly differently by increasing the share allocated to retirement benefits, especially after the birth of a boy.

We suggest that our results can be explained by the presence of gender bias deriving, for example, by gender stereotypes on children's financial wealth and independence in their adulthood. This bias can be an explanation of household suboptimal choices. To investigate this, we look at portfolio diversification and return and find that both increase after the birth of a baby, regardless of its gender. Thus, gender driven reallocation does not positively affect diversification and performance. Also, it does not seem to be driven by mistakes as this behaviour emerges above all among more sophisticated investors.

Financial choices made when kids are in their early childhood may reflect parents' expectation on their children's future job opportunities, wealth and support to the family of origin. Gender bias on such beliefs will both lead to sub optimal choices in the use of financial markets, with direct consequences on adult children economic conditions and opportunities, and shape children self-perception thus actualizing the bias and carrying it forward to future generations. This observation could be relevant in sustaining policy interventions that aim to reach gender equality in the family.

In contrast to prior work, we focus on Italy because the size of the industry is relevant. At the end of 2016, according to the Bank of Italy's Survey on Household Income and Wealth (SHIW) and to the Federal Reserve's Survey of Consumer Finances, the mean net worth of Italian families amounted to €125.8 thousand compared with \$97.3 thousand of US families.

Italian households bear some specificity which derive from the cultural, economic and legal environment in which their investment decisions are taken [9]. They invest a larger share of wealth in illiquid assets, typically real estate and durables. 69 per cent of Italian households own their primary residence. Italian households also show a lower participation rate in financial markets. Only 3.5 per cent of Italian families invest in stocks. The lower participation rate in financial markets can be partially explained by Italian households' low financial sophistication. According to [111] Italian households assigning a budget for investment and actually making financial decisions amount to about 30 per cent; only 27 per cent of Italian households set long term financial goals and strive to achieve them. Despite Italy's particular features, the implications of the Italian study can be mostly generalized to other bank-based financial systems (such as Germany, France and Japan) that show strong similarities in terms of households' asset allocation.

Table 1 Descriptive Statistics

	<i>No. Of Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
<i>Dependent Variables: Asset classes</i>					
<i>% CASH</i>	471	.691	.433	0	1
<i>% SAFE ASSETS</i>	471	.023	.120	0	.699
<i>% BOND</i>	471	.020	.110	0	1
<i>% RETIREMENT BENEFITS</i>	471	.036	.159	0	1
<i>% RISKY ASSETS</i>	471	.028	.130	0	.984
<i>% PHYSICAL ASSETS</i>	471	.809	.278	0	1
<i>CASH</i>	471	7,210.309	11,766.53	0	102,604.9
<i>SAFE ASSETS</i>	471	1,440.476	11,140.34	0	200,000
<i>BOND</i>	471	812.504	4,898.245	0	50,000
<i>RETIREMENT BENEFITS</i>	471	563.257	3,192.573	0	45,000
<i>RISKY ASSETS</i>	471	1,143.231	6,474.332	0	56,000
<i>PHYSICAL ASSETS</i>	471	144,915.7	173,227.1	0	1415,000
<i>FINANCIAL ASSETS</i>	471	11,169.78	22,458.96	0	237,500
<i>DIV INDEX</i>	471	.200	.473	0	2
<i>RETURN</i>	471	.003	.082	-.085	.865
<i>Households composition variables</i>					
<i>NEW BABY BORN</i>	471	.565	.496	0	1
<i>BOY</i>	266	.538	.500	0	1
<i>No. FAMILY MEMBERS</i>	471	3.437	1.224	1	8
<i>% FEMALES</i>	471	.495	.183	0	1
<i>BIRTH YEAR BEFORE SURVEY</i>	266	.571	.496	0	1
<i>FIRST CHILD</i>	266	.436	.497	0	1
<i>No. CHILDREN</i>	471	1.372	1.110	0	6
<i>AGE HEAD OF HOUSEHOLD</i>	471	37.732	7.192	22	84
<i>FEMALE HEAD OF HOUSEHOLD</i>	471	.174	.380	0	1
<i>Education variables</i>					
<i>HIGHEST EDUCATION</i>	471	12.790	3.304	5	18
<i>FINANCIAL EDUCATION</i>	471	.115	1.188	-.986	2.144
<i>Financial and employment condition and attitudes variables</i>					
<i>NET INCOME</i>	471	2.966	1.600	0	8.799
<i>NET INCOME SQUARED</i>	471	11.358	11.687	0	77.417
<i>% INCOME EARNERS</i>	471	.548	.260	.125	1
<i>NET WEALTH</i>	471	14.548	23.594	-4.35	278.1
<i>EMPLOYED HEAD OF HOUSEHOLD</i>	471	.936	.244	0	1
<i>FINANCIAL RISK</i>	471	.762	.795	0	3
<i>PARENTS ALIVE</i>	471	.909	.288	0	1

The table reports the summary statistics for the six asset classes (cash, safe assets, bond, retirement benefits, risky assets and physical assets) used as dependent variables in terms of share, portfolio diversification and return. It also reports our control variables divided into three main categories: households composition, education, and financial and employment condition and attitudes. Definitions of the variables are provided in Appendix A.

Table 2 The impact of newborn gender on household investment

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.4077*** (0.1232)	-0.0666 (0.0413)	0.0486 (0.0425)	0.1038 (0.0717)	0.0461 (0.0650)	-0.1030 (0.1056)
<i>NEW BABY BORN * BOY</i>	0.1393 (0.0931)	-0.0402 (0.0377)	0.0200 (0.0294)	-0.0421 (0.0564)	-0.0499* (0.0286)	0.0374 (0.0704)
<i>No. FAMILY MEMBERS</i>	0.1249* (0.0694)	0.0024 (0.0296)	-0.0394 (0.0283)	-0.0027 (0.0435)	0.0005 (0.0239)	0.0896 (0.0750)
<i>% FEMALES</i>	0.5020* (0.2559)	-0.1797 (0.1243)	0.0200 (0.0634)	-0.1479 (0.1392)	-0.1326* (0.0679)	0.1572 (0.1864)
<i>FEMALE HEAD OF HOUSEHOLD</i>	-0.2342*** (0.0826)	-0.0294 (0.0279)	0.0077 (0.0296)	0.0162 (0.0394)	0.0959** (0.0475)	-0.0181 (0.0606)
<i>NET WEALTH</i>	-0.0030*** (0.0011)	0.0006 (0.0005)	0.0000 (0.0004)	-0.0000 (0.0005)	0.0019*** (0.0006)	0.0018* (0.0011)
<i>PARENTS ALIVE</i>	0.0531 (0.0927)	0.0062 (0.0358)	0.0170 (0.0225)	-0.0002 (0.0501)	-0.0757* (0.0446)	0.0600 (0.0543)
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.078	0.101	0.006	0.012	0.097	0.031

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). It includes as control variables household and time fixed effects plus the set of control variables reported in the table. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 3 The impact of newborn gender on household investment

	% CASH	% SAFE ASSETS	% BOND	% RETIREMENT BENEFITS	% RISKY ASSETS	% PHYSICAL ASSETS
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.4902*** (0.1695)	-0.0773 (0.0565)	0.0068 (0.0311)	0.0719 (0.1052)	0.1036 (0.0754)	-0.1156 (0.1381)
<i>NEW BABY BORN * BOY</i>	0.1218 (0.0920)	-0.0329 (0.0343)	0.0213 (0.0306)	-0.0353 (0.0611)	-0.0563* (0.0319)	0.0307 (0.0696)
<i>No. FAMILY MEMBERS</i>	0.0355 (0.0746)	0.0233 (0.0364)	-0.0247 (0.0285)	0.0101 (0.0533)	0.0024 (0.0328)	0.0372 (0.0672)
<i>% FEMALES</i>	0.5413** (0.2412)	-0.1825 (0.1199)	0.0229 (0.0647)	-0.1336 (0.1598)	-0.1507** (0.0743)	0.1699 (0.1831)
<i>BIRTH YEAR BEFORE SURVEY</i>	-0.0371 (0.0701)	0.0036 (0.0176)	0.0408** (0.0198)	0.0165 (0.0357)	0.0020 (0.0250)	-0.0158 (0.0482)
<i>FIRST CHILD</i>	-0.0042 (0.0888)	0.0271 (0.0208)	-0.0052 (0.0263)	0.0518 (0.0531)	-0.0188 (0.0288)	0.1096* (0.0633)
<i>No. CHILDREN</i>	0.2398** (0.0959)	-0.0460 (0.0434)	0.0164 (0.0206)	0.0138 (0.0607)	-0.0444 (0.0441)	0.0442 (0.1033)
<i>AGE HEAD OF HOUSEHOLD</i>	0.0070 (0.0049)	-0.0026 (0.0025)	0.0017 (0.0012)	0.0031 (0.0030)	-0.0024 (0.0022)	0.0095 (0.0061)
<i>FEMALE HEAD OF HOUSEHOLD</i>	-0.2020*** (0.0743)	-0.0384 (0.0308)	0.0080 (0.0273)	0.0231 (0.0411)	0.0907** (0.0447)	0.0184 (0.0580)
<i>HIGHEST EDUCATION</i>	0.0234 (0.0331)	-0.0108* (0.0058)	0.0031 (0.0035)	-0.0082 (0.0139)	0.0016 (0.0043)	-0.0055 (0.0233)
<i>FINANCIAL EDUCATION</i>	-0.0218 (0.0393)	0.0208** (0.0093)	0.0055 (0.0145)	0.0204 (0.0187)	-0.0163 (0.0157)	0.0276 (0.0189)
<i>NET INCOME</i>	0.0717 (0.0611)	-0.0098 (0.0189)	-0.0101 (0.0168)	-0.0186 (0.0316)	0.0258 (0.0211)	0.0781 (0.0550)
<i>NET INCOME SQUARED</i>	-0.0016 (0.0066)	-0.0010 (0.0023)	-0.0010 (0.0018)	-0.0001 (0.0044)	-0.0026 (0.0029)	-0.0092* (0.0053)
<i>% INCOME EARNERS</i>	0.0063 (0.2565)	-0.0356 (0.0520)	0.0570 (0.0541)	0.2253* (0.1327)	-0.0045 (0.0421)	0.2506 (0.1969)
<i>NET WEALTH</i>	-0.0038*** (0.0011)	0.0007 (0.0005)	0.0003 (0.0005)	0.0001 (0.0005)	0.0021*** (0.0006)	0.0018* (0.0010)
<i>EMPLOYED HEAD OF HOUSEHOLD</i>	0.2425 (0.1768)	-0.0308 (0.0252)	0.0181 (0.0147)	0.0320 (0.0355)	-0.0081 (0.0196)	-0.0936 (0.1055)
<i>FINANCIAL RISK</i>	0.0731** (0.0332)	-0.0135 (0.0106)	0.0024 (0.0126)	-0.0066 (0.0128)	-0.0103 (0.0097)	-0.0430** (0.0215)
<i>PARENTS ALIVE</i>	0.0389 (0.0863)	0.0051 (0.0360)	0.0134 (0.0206)	-0.0029 (0.0509)	-0.0773* (0.0428)	0.0439 (0.0535)
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.123	0.138	0.030	0.020	0.096	0.087

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). It includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 4 The impact of newborn gender on household investment - First Child

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.5856** (0.2915)	-0.0919 (0.1208)	0.0309 (0.0628)	0.3658 (0.2393)	0.2103* (0.1242)	-0.4880*** (0.1742)
<i>NEW BABY BORN * BOY</i>	-0.0750 (0.1165)	-0.0426 (0.0500)	0.0793* (0.0470)	-0.0179 (0.0853)	-0.0949* (0.0498)	0.1507* (0.0784)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	213	213	213	213	213	213
Adjusted R-squared	0.158	0.187	0.162	0.041	0.189	0.163

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only firstborn children. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 5 The impact of newborn gender on household investment - Other Children

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.5670** (0.2405)	-0.0603 (0.0398)	0.0243 (0.0502)	0.0040 (0.0651)	0.0208 (0.0407)	0.0230 (0.1841)
<i>NEW BABY BORN * BOY</i>	0.2455 (0.2069)	0.0484 (0.0320)	-0.0678 (0.0661)	-0.1008 (0.0854)	-0.0158 (0.0341)	-0.2040 (0.1771)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	258	258	258	258	258	258
Adjusted R-squared	0.192	0.167	-0.005	0.118	0.141	0.168

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only children who are not firstborn. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 6 The impact of newborn gender on household investment - Global financial crisis

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.2726 (0.4510)	0.0003 (0.0003)	0.0484 (0.0553)	0.1595** (0.0741)	-0.0250 (0.0336)	-0.6024** (0.2586)
<i>NEW BABY BORN * BOY</i>	-0.2156 (0.3572)	0.0006 (0.0004)	-0.0429 (0.0564)	0.3017** (0.1481)	0.0197 (0.0308)	0.0270 (0.2381)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	170	170	170	170	170	170
Adjusted R-squared	0.376	0.966	0.098	0.191	0.924	0.436

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only the 2008 and 2010 waves. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 7 The impact of newborn gender on household investment - Euro area sovereign debt crisis

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.6835** (0.2983)	-0.0760 (0.1029)	0.1224 (0.1073)	0.2172 (0.2155)	-0.1214 (0.1259)	0.0164 (0.3703)
<i>NEW BABY BORN * BOY</i>	0.1356 (0.1496)	0.0095 (0.0503)	0.1304** (0.0568)	-0.0710 (0.1036)	-0.1353** (0.0519)	0.0920 (0.1277)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	188	188	188	188	188	188
Adjusted R-squared	0.226	0.155	0.323	0.098	0.298	0.112

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only the waves starting from 2012. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 8 The impact of newborn and of newborn gender on investment diversification

	DIV INDEX		
		First Child	Other Children
	(1)	(2)	(3)
<i>NEW BABY BORN</i>	0.7158*	6.6899***	0.5454
	(0.4346)	(1.1443)	(0.5104)
<i>NEW BABY BORN * BOY</i>	-0.0678	-0.1705	0.2098
	(0.3183)	(0.4445)	(0.4720)
Controls	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
No. of Obs.	471	213	258

The table reports the results of the effects of the gender of a new baby on the aggregate index of investment diversification. It estimates a random effects ordered probit model. Model 1 is estimated on the full sample. Model 2 is estimated only on the sample of firstborn children. The sample of Model 3 includes only children who are not firstborn. The table includes as control variables time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 9 The impact of newborn gender on portfolio return

	RETURN				
		First Child	Other Children	2008-2010	Post 2010
	(1)	(2)	(3)	(4)	(5)
<i>NEW BABY BORN</i>	0.1292*	0.3094*	0.1005***	0.0409***	0.3610***
	(0.0743)	(0.1877)	(0.0340)	(0.0153)	(0.1364)
<i>NEW BABY BORN * BOY</i>	-0.0492	-0.0437	-0.0808	0.0961***	-0.0782
	(0.0465)	(0.0613)	(0.0635)	(0.0365)	(0.0740)
Controls	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	213	258	170	188
Adjusted R-squared	0.083	0.175	0.142	0.547	0.232

The table reports the effect of the gender of a new baby on portfolio return. Model 1 is estimated on the full sample. Model 2 is estimated only on the sample of firstborn children. The sample of Model 3 includes only children who are not firstborn. Model 4 is on the 2008 and 2010 waves while Model 5 includes only the waves starting from 2012. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 10 The impact of newborn gender on household investment - High Financial Education

	% CASH	% SAFE ASSETS	% BOND	% RETIREMENT BENEFITS	% RISKY ASSETS	% PHYSICAL ASSETS
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	0.0184 (0.4317)	-0.2702 (0.2155)	-0.0180 (0.1390)	-0.1031 (0.2101)	0.2407* (0.1287)	-0.0136 (0.1760)
<i>NEW BABY BORN * BOY</i>	0.0742 (0.1410)	-0.0343 (0.0719)	0.0922* (0.0526)	0.0811 (0.0984)	-0.1074*** (0.0375)	0.0195 (0.0851)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	131	131	131	131	131	131
Adjusted R-squared	0.295	0.375	0.287	0.265	0.398	0.336

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households in the top quartile of the distribution of our financial education variable. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 11 The impact of newborn gender on household investment - Low Financial Education

	% CASH	% SAFE ASSETS	% BOND	% RETIREMENT BENEFITS	% RISKY ASSETS	% PHYSICAL ASSETS
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.3684* (0.2158)	0.0525 (0.0519)	-0.0109 (0.0107)	-0.1064 (0.0824)	0.0677* (0.0349)	-0.1217 (0.2145)
<i>NEW BABY BORN * BOY</i>	0.1210 (0.1114)	-0.0717 (0.0490)	0.0024 (0.0118)	0.0028 (0.0501)	-0.0077 (0.0285)	-0.0660 (0.1159)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	340	340	340	340	340	340
Adjusted R-squared	0.169	0.216	-0.007	0.107	0.201	0.159

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households with low financial education. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 12 The impact of newborn gender on household investment - High Education

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	0.1627 (0.4303)	-0.3306** (0.1327)	-0.0293 (0.0807)	-0.1617 (0.2080)	0.3423** (0.1485)	0.1212 (0.2416)
<i>NEW BABY BORN * BOY</i>	-0.0255 (0.1537)	0.0096 (0.0489)	0.0837 (0.0735)	0.0654 (0.0637)	-0.1730*** (0.0653)	0.0697 (0.1061)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	135	135	135	135	135	135
Adjusted R-squared	0.359	0.487	0.176	0.312	0.317	0.439

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households in the top quartile of the distribution of our education variable. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 13 The impact of newborn gender on household investment - Low Education

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.5302** (0.2389)	-0.0316 (0.0674)	0.0289 (0.0553)	0.1966 (0.1294)	-0.0300 (0.0622)	-0.2626 (0.1890)
<i>NEW BABY BORN * BOY</i>	0.1870 (0.1222)	-0.0399 (0.0443)	0.0186 (0.0292)	-0.1082 (0.0846)	-0.0151 (0.0286)	0.0462 (0.0941)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	336	336	336	336	336	336
Adjusted R-squared	0.073	0.185	0.083	0.019	0.192	0.125

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households with low education. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 14 The impact of newborn gender on household investment - Only Positive Financial Asset value

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.2782*	-0.1181	0.0078	0.1778	0.2107*	-0.0906
	(0.1612)	(0.0827)	(0.0473)	(0.1399)	(0.1070)	(0.1373)
<i>NEW BABY BORN * BOY</i>	0.1354	-0.0269	0.0237	-0.0512	-0.0810**	0.0677
	(0.0910)	(0.0412)	(0.0387)	(0.0711)	(0.0380)	(0.0631)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	376	376	376	376	376	376
Adjusted R-squared	0.122	0.183	0.044	0.056	0.162	0.128

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households with positive financial asset value. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 15 The impact of newborn gender on household investment - Shares of Total Asset value

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.0724	-0.0096	-0.0024	0.0715	0.0181	-0.1156
	(0.1028)	(0.0173)	(0.0054)	(0.0670)	(0.0151)	(0.1381)
<i>NEW BABY BORN * BOY</i>	0.0168	-0.0099	0.0016	-0.0365	-0.0181**	0.0307
	(0.0680)	(0.0096)	(0.0043)	(0.0428)	(0.0088)	(0.0696)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.060	0.043	0.004	0.054	0.078	0.087

The table reports the effect of the gender of a new baby on the share of total wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and to physical rather than financial assets (Model 6). The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 16 The impact of newborn gender on household investment - No Singletons

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.4902*** (0.1703)	-0.0773 (0.0568)	0.0068 (0.0312)	0.0719 (0.1056)	0.1036 (0.0758)	-0.1156 (0.1387)
<i>NEW BABY BORN * BOY</i>	0.1218 (0.0924)	-0.0329 (0.0345)	0.0213 (0.0308)	-0.0353 (0.0614)	-0.0563* (0.0321)	0.0307 (0.0699)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	410	410	410	410	410	410
Adjusted R-squared	0.485	0.304	0.035	-0.096	0.058	0.470

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample includes only households for which we have two observations. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 17 The impact of newborn gender on household investment - Without foreign couples

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.4871** (0.2308)	-0.1801* (0.0958)	0.0268 (0.0492)	0.2484 (0.1607)	0.1972 (0.1299)	-0.4419*** (0.1380)
<i>NEW BABY BORN * BOY</i>	0.1082 (0.1072)	-0.0248 (0.0404)	0.0175 (0.0362)	-0.0579 (0.0683)	-0.0746* (0.0398)	0.1106* (0.0602)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	382	382	382	382	382	382
Adjusted R-squared	0.133	0.173	0.050	0.078	0.140	0.202

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample excludes foreign couples. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 18 The impact of newborn gender on household investment - Without Net Income

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.5220*** (0.1768)	-0.0666 (0.0559)	0.0183 (0.0336)	0.0830 (0.1024)	0.1034 (0.0734)	-0.1089 (0.1380)
<i>NEW BABY BORN * BOY</i>	0.1219 (0.0929)	-0.0313 (0.0337)	0.0230 (0.0306)	-0.0346 (0.0607)	-0.0536* (0.0309)	0.0409 (0.0704)
<i>NET WEALTH</i>	-0.0033*** (0.0010)	0.0005 (0.0005)	0.0001 (0.0005)	-0.0001 (0.0005)	0.0021*** (0.0005)	0.0017 (0.0011)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.112	0.129	0.018	0.018	0.097	0.082

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The table includes as control variables household and time fixed effects plus the full set of our control variables except net income. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 19 The impact of newborn gender on household investment - With Net Income and Net Wealth Per capita

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.5159*** (0.1749)	-0.0660 (0.0551)	0.0300 (0.0367)	0.0885 (0.0983)	0.0815 (0.0730)	-0.1184 (0.1372)
<i>NEW BABY BORN * BOY</i>	0.1244 (0.0911)	-0.0315 (0.0340)	0.0202 (0.0298)	-0.0347 (0.0610)	-0.0498* (0.0297)	0.0381 (0.0710)
<i>NET INCOME PC</i>	0.0622 (0.0530)	-0.0054 (0.0207)	-0.0277 (0.0187)	0.0048 (0.0341)	0.0175 (0.0338)	-0.0583* (0.0297)
<i>NET WEALTH PC</i>	-0.0107*** (0.0033)	0.0018 (0.0016)	0.0016 (0.0014)	0.0005 (0.0013)	0.0049** (0.0019)	0.0046* (0.0026)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.119	0.131	0.027	0.016	0.089	0.081

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The table includes as control variables household and time fixed effects plus the full set of our control variables with net income and net wealth expressed as per capita levels. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Table 20 The impact of newborn gender on household investment - With Financial Liabilities

	<i>% CASH</i>	<i>% SAFE ASSETS</i>	<i>% BOND</i>	<i>% RETIREMENT BENEFITS</i>	<i>% RISKY ASSETS</i>	<i>% PHYSICAL ASSETS</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>NEW BABY BORN</i>	-0.4682*** (0.1697)	-0.0782 (0.0577)	0.0025 (0.0309)	0.0660 (0.1083)	0.0971 (0.0715)	-0.1207 (0.1373)
<i>NEW BABY BORN * BOY</i>	0.1141 (0.0930)	-0.0325 (0.0345)	0.0228 (0.0305)	-0.0332 (0.0618)	-0.0540* (0.0314)	0.0325 (0.0693)
<i>LIABILITIES</i>	-0.0134* (0.0075)	0.0005 (0.0028)	0.0026 (0.0018)	0.0036 (0.0037)	0.0040 (0.0034)	0.0031 (0.0050)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	471	471	471	471	471	471
Adjusted R-squared	0.134	0.137	0.034	0.022	0.103	0.087

The table reports the effect of the gender of a new baby on the share of financial wealth allocated to the five asset classes (cash in Model 1, safe assets in Model 2, bond in Model 3, retirement benefits in Model 4, risky assets in Model 5) and on the share of total wealth allocated to physical rather than financial assets (Model 6). The sample adds among controls financial liabilities. The table includes as control variables household and time fixed effects plus the full set of our control variables. In all estimates standard errors (reported in parentheses) are clustered at the household level. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Definitions of the variables are provided in Appendix A.

Appendix A. Table A1 - Variable definitions

<i>Name</i>	<i>Definition</i>
<i>% CASH</i>	Share of financial assets held in cash, defined as bank or postal deposits (current, saving accounts or deposit books)
<i>% SAFE ASSETS</i>	Share of financial assets held in safe assets, defined as certificates of deposit, repos, postal savings certificates, and Italian government bonds, such as T-bills, T-certificates and T-bonds
<i>% BOND</i>	Share of financial assets held in bond, defined as bonds issued by Italian firms and banks, money market funds and ETF, debt funds and foreign government securities
<i>% RETIREMENT BENEFITS</i>	Share of financial assets held in retirement benefits which include personal retirement plan or supplementary pension fund; state pension is excluded
<i>% LIFE INSURANCE</i>	Share of financial assets held in life insurance. It contains cash value life insurance but does not include insurance policies that provide a supplementary pension, such as individual pension plans
<i>% RISKY ASSETS</i>	Share of financial assets held in risky assets: stocks, shares of unlisted companies, shares in companies limited by shares - srl, shares of partnerships, mutual funds or ETF in equities and in foreign currencies, foreign equities, other foreign securities and other financial assets such as derivative securities, royalties
<i>% PHYSICAL ASSETS</i>	Share of total net worth held in real estate and in transport equipment (durables)
<i>DIV INDEX</i>	Diversification index created computing $1 - (HHindex/10.000)$, where HH is the Herfindahl-Hirschman (HH) concentration index [66]; replacing the value obtained with 0 for households having no financial wealth and creating a categorical variable having value 0 when the value obtained above is 0; value 1 when the value is positive but smaller than 0.5 and value 2 when the value is greater than or equal to 0.5.
<i>RETURN</i>	For each asset class a relevant index provided by Bloomberg is used as a benchmark. Specifically: BTPGR10 for cash, GBOTG12M for safe assets, I02087 for bonds, EREPIIT for retirement benefits, and FTSEMIB for risky assets.

Continued on next page

Appendix A. Table A1 - Variable definitions - Continued

<i>Name</i>	<i>Definition</i>
<i>NEW BABY BORN</i>	Dummy variable which takes the value of 1 if household has a new baby; 0 otherwise
<i>BOY</i>	Dummy variable which takes the value of 1 if household has a new baby boy; 0 otherwise
<i>No FAMILY MEMBERS</i>	Number of components of the family
<i>% FEMALES</i>	Number of females/total number of family members
<i>BIRTH YEAR BEFORE SURVEY</i>	Dummy variable which takes the value of 1 if the new baby is born in the year before the year of the survey; 0 if the year of birth of the new baby is the same year of the survey
<i>FIRST CHILD</i>	Dummy variable which takes the value of 1 if the new baby is the first child and 0 otherwise
<i>No CHILDREN</i>	Number of children
<i>AGE HEAD OF HOUSEHOLD</i>	Age of the head of household, defined as the major income earner
<i>FEMALE HEAD OF HOUSEHOLD</i>	Dummy variable which takes the value of 1 if the head of household, defined as the major income earner, is a woman
<i>HIGHEST EDUCATION</i>	The highest level of education in the family among the following: primary school certificate; lower secondary school certificate; vocational secondary school diploma (3 years of study); upper secondary school diploma; 3-year university degree/higher education diploma; 5-year university degree; postgraduate qualification
<i>FINANCIAL EDUCATION</i>	Principal component analysis of two indicators of financial education, that is whether the household has a credit card and whether she uses the home banking service
<i>NET INCOME</i>	Household net income expressed as Net Income/10,000
<i>NET INCOME SQUARED</i>	Square value of household net income
<i>% INCOME EARNERS</i>	Number of income earners/total number of family members
<i>NET WEALTH</i>	Household net wealth expressed as Net Wealth/10,000
<i>EMPLOYED HEAD OF HOUSEHOLD</i>	Dummy variable which takes the value of 1 if the head of household, defined as the major income earner, is employed
<i>FINANCIAL RISK</i>	Household propensity to financial risk. It is based on the answer to the question 'In managing your financial investments, would you say you have a preference for investments that offer:' and ranges from 0 (if the answer is: low returns, with no risk of losing the invested capital) to 4 (if the answer is: very high returns, but with a high risk of losing part of the capital)
<i>PARENTS ALIVE</i>	Dummy variable which takes the value of 1 if parents of the principal respondent are alive; 0 otherwise
<i>LIABILITIES</i>	Household liabilities to banks and financial companies expressed as Liabilities/10,000

The table defines the variables used in the study. The source of the data is [112].

Appendix B. Table B1 - Probit estimates

	<i>NEW BABY BORN</i>	<i>p-value</i> Sidak Holm Bonferroni	<i>NEW BABY MALE BORN</i>	<i>p-value</i> Sidak Holm Bonferroni
	(1)	(2)	(3)	(4)
<i>No. FAMILY MEMBERS</i>			0.2034 (0.1928)	0.999 1.000 1.000
<i>% FEMALES</i>	-0.0849 (0.2791)	1.000 1.000 1.000		
<i>BIRTH YEAR BEFORE SURVEY</i>			0.0596 (0.1677)	1.000 1.000 1.000
<i>FIRST CHILD</i>			-0.3637 (0.2549)	0.958 1.000 1.000
<i>No. CHILDREN</i>			-0.3024 (0.2276)	0.979 1.000 1.000
<i>AGE HEAD OF HOUSEHOLD</i>	0.0151 (0.0070)	0.400 0.346 0.503	-0.0159 (0.0131)	0.992 1.000 1.000
<i>FEMALE HEAD OF HOUSEHOLD</i>	-0.1589 (0.1322)	0.985 1.000 1.000	-0.3176 (0.2175)	0.948 1.000 1.000
<i>HIGHEST EDUCATION</i>	-0.0162 (0.0143)	0.992 1.000 1.000	0.0739 (0.0309)	0.276 0.320 0.320
<i>FINANCIAL EDUCATION</i>	-0.0245 (0.0479)	1.000 1.000 1.000	-0.0129 (0.0795)	1.000 1.000 1.000
<i>NET INCOME</i>	0.0720 (0.0477)	0.895 1.000 1.000	0.0300 (0.0771)	1.000 1.000 1.000
<i>No. INCOME EARNERS</i>	0.0006 (0.0863)	1.000 0.994 1.000	-0.0937 (0.1696)	1.000 1.000 1.000
<i>NET WEALTH</i>	0.0015 (0.0023)	1.000 1.000 1.000	0.0003 (0.0037)	1.000 1.000 1.000
<i>EMPLOYED HEAD OF HOUSEHOLD</i>	-0.1721 (0.2369)	1.000 1.000 1.000	-0.2000 (0.3658)	1.000 1.000 1.000
<i>FINANCIAL RISK</i>	0.0250 (0.0721)	1.000 1.000 1.000	-0.0480 (0.1060)	1.000 1.000 1.000
<i>PARENTS ALIVE</i>	0.2631 (0.2042)	0.971 1.000 1.000	0.0045 (0.2934)	1.000 0.988 1.000
Time FE	Yes		Yes	
No. of Obs.	471		266	
Pseudo R-squared	0.074		0.044	

The table reports the effect of our control variables on the probability of having a new baby (column 1) and, for households having a new baby, on the probability that the baby is a boy (Column 3). Columns 2 and 4 report p-values adjusted for multiple testing using Sidak's (line 1), Holm's (line 2) and Bonferroni's (line 3), method. In all estimates standard errors (reported in parentheses) are clustered at the household level.

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