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ABSTRACT

When Mothers Out-Earn Fathers: Effects on Fathers' Decisions to Take Paternity and Parental Leave*

This study investigates the influence of the male breadwinner norm on fathers' decisions regarding childcare responsibilities. We study the complex interplay between economic factors and gender norms in shaping the division of household labor within families by analyzing the impact a breadwinning mother has on fathers' choices regarding paternity leave (fully subsidized) and parental leave (partially or not subsidized). We exploit administrative data, provided by the Italian National Security Institute (INPS), including demographic and working characteristics of both parents together with information on the use of paternity and parental leave by fathers in the 2013-2023 period. We find that, in line with the "doing gender" hypothesis, when the leave is fully subsidized, as for paternity leave, fathers are less likely to engage in childcare when their wives earn more than they do. In contrast, this dynamic does not apply in cases of parental leave, where the economic costs of aligning with the gender norm are substantial. The effects we find are robust when replacing the actual probability of there being an out-earning mother with the potential probability and are amplified by the salience of the gender identity norm.

JEL Classification: D10, J12, J16

Keywords: paternity leave, parental leave, gender identity norms

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1. Introduction

Although women have achieved important gains in labor market outcomes in recent decades, income inequality between men and women is still considerable: women in the EU earned 12.7% less per hour than men on average in 2021 and this gender pay gap had barely changed in the last decade (European Commission, 2022). Inequality in partners' contributions to household income has important consequences for many couple's decisions, including the division of unpaid domestic work. In 2016, 92% of women in the European Union took care of their children daily, compared with 68% of men. In Italy, the average time dedicated to unpaid work each day is 3h08' higher for women than for men (ISTAT, 2019).

To explain the persistence of gender gaps in occupational choices, earnings and domestic and childcare chores, researchers have recently focused attention on the role played by gender identity norms in dictating appropriate behavior for individuals based on their gender. These norms traditionally designate the role of *breadwinners,* those responsible for the financial needs of the family, to fathers and the role of *caregivers,* those with the main responsibility for domestic chores, to mothers. These norms penalize deviations from prescribed behavior and influence rewards tied to economic decisions (Akerlof and Kranton, 2000).

According to the "doing gender" framework (West & Zimmerman, 1987), individuals tend to adopt behaviors tailored to their gender identity. Thus, when a woman's earnings surpass those of her male partner, she diverges from the traditional homemaker role and often tries to compensate for this departure by shouldering a more substantial portion of the childcare responsibilities and household chores (Brines, 1993, 1994). Similarly, men who deviate from the conventional breadwinner role tend to decrease their engagement in domestic tasks. This phenomenon, known as the "gender deviance neutralization hypothesis", is in contrast with the prediction of the comparative advantage and marital specialization models (Becker, 1965, 1991), whereby the division of both paid and unpaid work should hinge upon the income potential of each partner, designating the partner with the highest income potential, whether it be the husband or the wife, as the primary breadwinner and ascribing most of the chores related to parenthood to the partner who has the lowest opportunity cost in terms of forgone expected earnings.

In this paper, we investigate whether the "gender deviance neutralization hypothesis" affects fathers' behavior in terms of childcare responsibility and, if so, whether the impact varies with the economic costs of adhering to gender identity norms. More specifically, we examine whether the mother

being the primary breadwinner affects the father's decision to take paternity leave and influences how parental leave is distributed in couples who choose to use this family support.

Our research examines the complex interplay between economic factors and gender norms in shaping the division of household labor within families. We hypothesize that couples may prioritize traditional gender roles, especially when the costs of doing so are small (or not immediate) and the social consequences of deviating from these roles are significant. Conversely, when the economic costs of adhering to gender norms are substantial (and immediate and easily calculated by the partners), childcare responsibilities might be shared in accordance with economic rationale, disregarding traditional gender roles.

We test our hypothesis by leveraging specific features of the Italian welfare system, where, after childbirth, fathers can take both a fully paid paternity leave and a partially (or not at all) paid parental leave. Paternity leave does not entail any immediate economic cost, as it is fully paid, and is not transferable to the mother. Despite this, only about 60% of fathers in Italy made use of paternity leave in 2023. Since the direct economic consequences for the family of the father's taking or not taking paternity leave are the same, this low uptake might, at least partially, be related to social stigma, whereby fathers feel that taking paternity leave is socially unacceptable or not masculine as caregiving is predominantly seen as the mother's responsibility. This sentiment may be exacerbated in families where the traditional male breadwinner model is reversed because the mother earns more than the father. In such cases, avoiding taking paternity leave might be a way for fathers to reassert traditional gender roles within the couple. The decision to take paternity leave or not might also involve the consideration of other costs, for example fathers taking the leave might appear less committed to their jobs and this could potentially hinder their career progression. However, such costs should not vary on the basis of whether the father is the primary or secondary earner in the household.

In contrast to paternity leave, parental leave in Italy is available to either parent and is only partially paid. For children of 6 years of age or under, the parent taking the leave receives 30% of his/her average daily wage, while, if children are aged between 6 and 12, the leave is unpaid. Given these regulations, the financial cost to the family is minimized when the leave is taken by the lower-earning member of the couple. In Italy (just as in many other developed countries), the second earner is predominantly (in about 70% of couples) the wife and this may contribute to the very low take up of parental leave by fathers. The remaining couples, those characterized by having a breadwinner mother, face an important trade-off: the violation of the male-as-the-breadwinner norm might still induce fathers to try to rebalance

traditional gender roles by avoiding taking the leave (Bittman et al., 2003; Brines, 1993, 1994; Hochschild and Machung, 1989; Greenstein, 2000), but the decision to allocate the leave to the primary earner implies a direct and more significant economic cost for the family. Consequently, this raises the question of whether traditional gender roles are more influential than economic factors in determining the division of household chores within heterosexual couples or whether economic motives might outweigh gender identity norms.

The dynamics described above are presented more formally in two simple models, which describe the choice of whether to take paternity and parental leave, and empirically tested using various data sources provided by the Italian Social Security Institute (INPS). These data allow us to identify, for the period 2013-2023, both the number of eligible fathers who take paternity leave and how parental leave is allocated within couples. By controlling for a rich set of demographics and working characteristics of the father, the mother and the child, we find that, when the couple has a new child, the father is significantly less likely to take-up paternity leave if the mother out-earns the father. Nevertheless, when examining parental leave, we see that parents tend to allocate it to minimize immediate economic losses rather than to conform to gender identity norms: when the mother earns more than the father, increasing the relative costs associated with her taking leave, the probability that the father will take parental leave increases.

The effects are robust when we replace the actual probability of having an out-earning mother with the potential probability computed by constructing a potential income distribution drawn from the earnings distribution of employed women in the mother's demographic group, as in Bertrand et al. (2015) and Galván (2022).

In addition, we find that the higher the salience of the gender identity norm (measured by the share of women in the municipal council, the probability of having a female mayor and the average level of acceptance of traditional gender norms as indicated by answers to a question from the World Value Survey), the stronger the negative effect of gender deviance neutralization on fathers' decisions to take-up paternity leave and the lower the weight of economic factors in the likelihood that fathers will take-up parental leave when there is an out-earning mother.

The paper is structured in 8 parts. Section 2 discusses how our work relates to the existing literature. Section 3 describes the institutional context. Section 4 presents a simple theoretical model reflecting our assumptions. Section 5 explains the methodology. In Section 6, we describe the data and present the descriptive statistics. Section 7 shows our results. Section 8 is the conclusion.

2. Contribution to the Literature

Our work contributes to three strands of the literature. First, we expand on the emerging literature that studies how gender norms drive individuals' behavior. According to this literature, gender norms are internalized during socialization and influence many decisions, including the division of paid and unpaid work in heterosexual couples. Several studies observed that women who earned more than their husbands tended to perform more household chores (Bittman, et al., 2003 in Australia; Evertsson & Nermo, 2004 in the United States) or a greater share of household tasks (Greenstein, 2000 in the United States) compared to women whose husbands earned more or had similar incomes. This phenomenon was notable because it contradicted traditional expectations that higher earning individuals would contribute less to household labor and corroborated the gender deviance neutralization hypothesis.

In a seminal paper, Bertrand et al. (2015) indicate gender identity norms, specifically the traditional roles of men as primary earners and women as primary caregivers, as the explanation for the discontinuity in the relative income distribution within married couples in the United States at the point where the wives start earning more than their husbands.[2] They suggest that when women's roles shift from being that of a female caregiver to that of a female breadwinner, they react by reducing their labor supply in an attempt to avoid gender role reversals in earnings.[3]

Using data on couples' labor supply in both formal and informal employment sectors in Uruguay, Galván (2022) shows that the greater the likelihood of a wife's earning more than her husband is, the lower her probability of participating in formal employment and the higher the amount of housework she does are. By using data on US couples, Galván (2021) shows that, after the arrival of the first child, housework increases considerably faster for women who are the main breadwinners, that is the presence

[2] The same approach has been applied to study the relative income distribution between spouses in different countries. Doumbia and Goussé (2021) find evidence of a significant discontinuity at the 50% threshold in the distribution of a wife's relative income in Canada. Codazzi et al. (2018) and Sprengholz et al. (2022) find evidence of a discontinuity in Brazil and Germany, respectively. On the other hand, Hederos Eriksson and Stenberg (2022) do not find any discontinuity in Sweden and both they and Binder and Lam (2020) question the existence of the discontinuity in the United States by highlighting the role of the presence of same-income earners, which creates a mass point at the 0.5 threshold, and suggesting that the continuity test should be made on data sets with a very large number of observations and after dropping same-income earners. See also Kuehnle et al. (2021).

[3] Zinovyeva and Tverdostup (2021) show evidence of a drop of the same magnitude as in the United States (0.5) in the distribution of households according to the female share of total earnings in Finland. However, instead of a gender identity norm, they provide an alternative explanation: the discontinuity emerges as a result of the presence of co-working spouses declaring the same income (mostly self-employed individuals or couples who work within the same firm) and it is associated with an increase in the relative earnings of women, rather than a decrease as predicted by the norm.

of children prompts women to try to offset the violation of the male-as-the-breadwinner norm by conforming more to the female-child-rearing norm.[4]

Finally, gendered expectations also seem to affect other decisions that influence household income; for example, Giommoni and Rubolino (2022) study an Italian policy that grants a large tax credit to the main earner in a couple when the second earner reports income below a given threshold and find large bunching at the tax credit cutoff point among second-earner women, but no effect among second-earner men.

We contribute to this literature by showing that when competing economic motives in the form of immediate losses come into play, the gender norm may be less salient and the desire to compensate for its violation less pronounced. In addition, while most of the literature looks at the behavior of mothers, we focus on fathers.

Second, we add to the literature analyzing family policies aimed at enhancing fathers' participation in child care through paid and unpaid leave. This literature typically shows that leave has small or no effects on gender inequality. For instance, Kleven et al. (2020) examine the joint impact of parental leave and child care subsidies in Austria on reducing gender inequality in the labor market and find that both policies had virtually no impact. By using Norwegian register data and analyzing two parental leave reforms, Cools et al. (2015) find that, while a paternal leave quota increases the share of men taking paternity leave, it does not change the traditional allocation of parents' labor supply. Ekberg et al. (2013) find that the introduction of a paternity-leave quota in Sweden did not significantly affect the long-term wages and employment of either fathers or mothers. On the other hand, Rege and Solli (2013) find that this type of quota in Norway negatively affected fathers' future earnings, suggesting an increase in their childcare involvement.

Our study offers new evidence on the use of paternity and parental leave in Italy, showing that gender identity norms, triggered by the mother's relative income power with respect to the father's, negatively affect the father's decision to take paternity leave and contribute to childcare. However, when the economic cost of adhering to traditional gender norms becomes particularly high, as it does with partially subsidized parental leave, fathers in households where the mother is the primary breadwinner are more likely to take the leave.

[4] Using data from China, Zhao et al. (2022) investigate the relationship between gender identity norms and wives' relative income within households. They show a negative correlation between both husbands' and wives' traditional gender identity and the wife's relative income.

As a third contribution, our research offers new insights into the child penalties literature that studies the impact of parenthood on parents' labor market outcomes and identifies parenthood as a pivotal point in relative earnings, with mothers experiencing a sharp drop in labor-force participation, working hours and wage rates (Angelov et al. 2016; Kleven et al. 2019; Sieppi and Pehkonen, 2019; de la Vega, 2022).

Family policies are designed to directly influence the economic outcomes of both men and women in the labor market. Specifically, the introduction of quotas for fathers with newborn children in parental leave programs aims to alter fathers' behavior by encouraging them to become more involved in childcare responsibilities, thereby also influencing mothers' labor market outcomes. We show that the likelihood of allocating parental leave to the father increases when there is a trade-off between the immediate reduction in the contractual salary of the spouse taking parental leave and the costs associated with deviating from traditional gender norms in households where there are breadwinner mothers. This shift may contribute to reshaping societal norms and attitudes regarding gender roles. Indeed, if this greater involvement of fathers in childcare can initiate a virtuous cycle that diminishes the salience of gender norms over time, it might also lead to a reduction in the child penalties faced by mothers.

3. Institutional context

In Italy, there are three main policies to support parents and facilitate the reconciliation of work and family life: maternity leave[5], paternity leave and parental leave. In our paper, we focus on the last two policies as they involve fathers.

Paternity leave is a leave to be used by male dependent workers[6] in the period between the two months prior to the expected date of birth and the five months following the event of birth, adoption, foster care or temporary placement. Such leave for the employed father was established on an experimental basis for the years 2013-2015 (Law n. 92, 2012) as a measure aimed at generating a more equitable distribution of child care between men and women and at establishing an early bond between father and child. Initially, the duration of the leave was set at a single day, but, following various legislative interventions, it was gradually lengthened until it reached the current duration of 10 days.[7] Paternity leave is a father's

[5] Maternity leave is a five-month period of mandatory leave from work acknowledged to female workers. During the period of maternity leave, the worker is entitled to receive an allowance equal to 80% of the average global daily wage calculated on the basis of the last pay period prior to the start of the maternity leave, usually the last month of work preceding the month in which the leave begins.

[6] While paternity leave was introduced in 2013 for workers employed in the private sector, this leave was only made available to workers employed in the public sector from August 2022.

[7] In detail, the duration of the leave was increased to 2 days in 2016, to 4 in 2018, to 5 in 2019, to 7 in 2020 and to 10 in 2021.

autonomous right and, therefore, it cannot be transferred to the mother. For the days of paternity leave, the father is entitled to receive a daily allowance equal to 100% of his salary.

Parental leave is an optional period of time off work available to parents (D.Lgs. n. 151/2001) aimed at offering them the opportunity to care for their child. It is an individual entitlement that lasts six months per parent for a total period between the two parents that cannot exceed ten months[8] unless the working father abstains from work for a period of at least three months, in which case, the total length of the leave can be extended to eleven months. The father can extend his leave for up to seven months.[9]

Parental leave can be taken at any time within the first 12 years of the child's life[10] and can be taken as a single leave period or multiple leave periods.

When taking parental leave, parents are entitled to a compensation equal to 30% of their average daily pay, calculated on the basis of their pay in the month preceding the beginning of the period of leave, for a maximum total period (mother and/or father) of six months if the leave is taken in a defined child age range (in the period considered by our analysis, this age range was 0-3 years from 2013 to 2014 and 0-6 years from 2015). If parental leave is taken when the age of the child is outside this range, the parent taking the leave is not entitled to any compensation. Given the partial or null compensation associated with parental leave, the cost deriving from taking the leave (reduced or null earnings) is minimized if the leave is claimed by the parent with lower earnings.

4. Theoretical model

We represent the decision to take paternity and parental leave through simple models that highlight the role of the parents' relative incomes.

We assume that the father, as a benevolent household head, maximizes the family's utility, which includes the well-being of all family members (Becker, 1974). Considering that paternity leave is fully subsidized, it will only be taken if the utility the family so gains exceeds the utility it would receive if it were not taken:

$$w_F + w_M + B - \beta max\left(\frac{w_M}{w_F} - 1; 0\right) - c \geq w_F + w_M$$

[8]This total period can even be used by parents simultaneously, but this solution is rarely adopted.

[9] Single employed parents (fathers or mothers) can claim parental leave for a maximum continuous or partial period of ten months.

[10] The same rights as natural parents are extended to dependent workers who are adoptive or foster parents. In this case, parental leave can be claimed within the first 12 years of the child's entry into the family, regardless of the age of the child at the time of adoption or foster care.

where w_F and w_M are the monthly earnings of father and mother, respectively; B is the benefit the family receives from the father's staying at home with the child; $\beta max\left(\frac{w_M}{w_F} - 1; 0\right)$ is the cost of deviating from the gender norm which only comes into play if there is a breadwinner mother in the couple, and increases with the relative income capacity of the mother depending on β, the sensibility to gender norms. *c* represents any other source of cost that arises when the father takes the leave, but is not related to the relative earning capacity of the mother.

It is easy to show that in couples where the mother earns less than the father, the probability of taking the leave does not depend on the relative income of the mother, but only on *B* being higher than *c*. Instead, when gender identity norms are activated by there being displaced roles within the couple because the mother is the breadwinner, the father's likelihood of taking paternity leave decreases as the relative income capacity of the mother increases at a rate that depends on his sensitivity to gender norms.

Regarding parental leave, we consider how it is allocated between the partners in couples that have decided to make use of this benefit. As before, the decision is made to maximize family utility, which, in this case, entails a comparison of the household utility when the father takes the leave and when the mother takes it:

$$w_F + w_M + B_F - \gamma w_F - \beta max\left(\frac{w_M}{w_F} - 1; 0\right) - c_F \geq w_F + w_M + B_M - \gamma w_M - c_M$$

where γw_F and γw_M represent the economic cost of taking parental leave, that is the reduction (partial or full) in monthly earnings due to the days of leave, with $0 < \gamma \leq 1$. The benefits of staying at home with the child (*B*) are assumed to differ as a consequence of whether it is the mother or the father who takes the leave. The same applies to any other source of cost due to leave taking behavior (*c*), which is not connected with the relative earning capacity of the mother.

It is easy to show that the leave will be taken by fathers only if:

$$B_F - B_M \geq \beta max\left(\frac{w_M}{w_F} - 1; 0\right) + \gamma(w_F - w_M) + (c_F - c_M)$$

Therefore, in couples where the mother earns less than the father, an increase in the share the mother contributes to household income increases the probability that the leave will be taken by the father. On the other hand, in households where there is a breadwinner mother, the effect of the mother's contributing a higher share to household income on the probability that the leave is taken by the father depends on the trade-off between the cost of deviating from the gender norm and the immediate economic cost due to leave taking.

5. Methodology

In order to investigate how gender identity norms, which assign the role of *caregiver* to the mother and the role of *breadwinner* to the father, can affect couples' decisions after childbirth and whether this effect varies together with the economic costs deriving from observing these norms, we study how the relative income power within a couple affects both the father's decision to take paternity leave and the allocation of parental leave to the father in couples who have decided to use this family support.

We estimate the following model:

$$Y_{it} = \beta_0 + \beta_1\, Mother\ earns\ more\ than\ father_{it} + \beta_2 X_{it} + \beta_3 F_{it} + \beta_4 M_{it} + u_{it} + \lambda_t + \varepsilon_{it} \qquad [1]$$

where Y_{it} is our outcome variable which represents the probability that the father *i* will take paternity leave in year *t* or, alternatively, the probability that, in a couple using parental leave, the father *i* will claim it in year *t*; $Mother\ earns\ more\ than\ father_{it}$ is a dummy equal to one for couples where the mother out-earns the father and zero otherwise; X_{it} is a vector of control variables relating to the demographic characteristics of the children, the father and the mother (gender and age of the children[11], age and nationality of the father and the mother and residence of the father[12]); F_{it} and M_{it} are vectors of control variables for the father and mother's working characteristics, respectively, (monthly earnings / household income, full-time employment, permanent contract, blue collar and mother's firm-size dummies).[13] We also include fixed effects, u_{it}, for the firm that employs the father, which allow us to address endogeneity issues arising from fathers from a household with a breadwinner mother being selected into particular firms. The inclusion of father's firm fixed effects implies that we exploit any variation in a mother's relative earning capacity which may occur when fathers work in the same firm. λ_t are fixed effects for the year and month of childbirth in the paternity leave estimates year and month of leave claiming fixed effects in parental leave estimates. ε_{it} is an error term. In some specifications, we enrich the model by also considering the mother's share of household income.

It is important to clarify that we do not use the actual monthly earnings of the mother and father to calculate their relative economic power within the couple, as these earnings are influenced by contingent

[11] We only control for the age of the child in parental leave estimates because paternity leave is limited to the first five months following childbirth.
[12] The residence of the father typically coincides with that of the mother.
[13] Our results are robust if we consider father's and mother's working characteristics in *t-1*.

situations, such as the use of parental leave. Instead, we take advantage of a unique feature in our dataset that provides information on contractual earnings, that is the wage a worker would receive if she/he worked the hours specified in her/his labor contract with the employer. This contractual wage may be lower or higher than actual earnings, depending on factors such as leave or sickness-related absences, overtime work. Throughout the paper, the term "earnings" refers to the contractual wage.

Our parameter of interest is β_1 which represents the change in the probability that a father will take paternity leave when his female partner earns more than him. A positive value of the coefficient indicates that when the mother out-earns the father, he is willing to contribute to childcare by taking leave, while a negative coefficient indicates that when the gender norm is violated because the mother has the breadwinner role in the household, the father's probability of taking the leave diminishes. A negative coefficient on β_1 is consistent with the gender deviance neutralization hypothesis, while a positive coefficient would be consistent with the Becker comparative advantage model.

The use of father's and mother's income to compute whether the mother out-earns the father may bias our estimates if unobservable variables that determine selection in the marriage market also affect fathers' propension to contribute to child care. For example, a man who marries a woman with higher employment and earnings perspective may be less sensitive to gender role norms and, therefore, more inclined to take leave and help the mother in her career choices even without concurrent earning losses. This would result in an upward bias in our estimates, potentially diminishing the negative effect expected under the gender neutralization assumption or amplifying the positive effect in line with Becker's comparative advantage theory. However, it may also be the case that men who marry women with higher earnings are more inclined to leave responsibility roles to the other member of the couple. This entails not only choosing a partner who earns more, but also leaving the roles that involve responsibility, including childcare, to the partner. In this case, we would observe a downward estimation bias in our estimates.

In order to address this issue, we compute the probability that a female's earnings would exceed the father's by using the same methodology adopted by Bertrand et al. (2015) and Galván (2022). We consider all of the women employed in the private sector with positive earnings and assign each woman to a demographic group defined by age (six groups: 18-25, 26-33, 34-41, 42-49, 50-57 or 58-65), nationality (Italian, foreign), area of residence (north, center or south) and year. Then, for $p \in \{5, \dots, 95\}$, we define y_i^p as the p^{th} percentile of earnings among working woman in the mother's demographic group in the year of child birth when studying paternity leave and in the year of leave claiming for parental leave. Using these values, we construct the probability that the mother earns more than the father as

$\Pr MotherMore_i = \frac{1}{19}\sum_p 1_{\{y_{iM}^p > y_{iF}^o\}}$, where y_{iF}^o is the father's observed monthly earnings, and estimate the following model:

$$Y_{it} = \beta_0 + \beta_1 PrMotherMore_{it} + \sum_{p=1}^{19} \beta_2^p Mother\ y^p{}_{it} + \beta_3 X_{it} + \beta_4 F_{it} + \beta_5 M_{it} + \lambda_t + u_{it} + \varepsilon_{it} \quad [2]$$

where $Mother\ y^p{}_{it}$ are earnings in the mother's demographic group in each 5th percentile from the 5th to 95th and M_{it} does not include the mother's monthly earnings. In order to remove any possible source of endogeneity, we include in F_{it} the father's monthly earnings in *t*-1 instead of using the concurrent value. In some specifications, we also add a control for the median of the mother's predicted income interacted with the father's monthly earnings in *t-1*.

6. Data and descriptive statistics

Our analysis is based on various data sources which are provided by the Italian Social Security Institute (INPS). Since we are going to study both paternity leave take-up and allocation of parental leave within the couple, we focus on two samples, one for each type of policy. The first one is composed of fathers eligible to take paternity leave from 2013 to 2023, while the second sample is composed of couples who used parental leave at least once in a given year over the same period.

6.1 Paternity leave

To identify men who became fathers from 2013 to 2023, we use INPS data on the Universal Child Allowance (AUU), a benefit introduced in 2022 which was aimed at all families with children under the age of 21, regardless of their income.[14] Thanks to the very high take-up of this benefit (over 90% for families with children aged less than 10), we can consider this dataset to be a faithful register of the birth rate in Italy over the sample period under scrutiny. Using this dataset, which provides information on the identification code of the mother and the father together with information on the children's year and month of birth, we identify the population of parents in each year starting from 2013 to 2023. Then, in order to identify the subset of working fathers who are employed in the private sector and eligible for paternity leave, we use INPS data on the universe of labor contracts taken from the UNIEMENS modules,

[14] The level of family income (and wealth) defines the amount received.

which all Italian firms in the non-agricultural private sector with at least one employee have to fill in and communicate to the Social Security Institute on a monthly basis.

This subsample represents the population of eligible fathers, who numbered about 2,1 million in the period considered in our analysis. However, we need information on the couple in order to investigate the impact of relative income. Therefore, we integrate our dataset with information relating to the labor market outcomes of mothers. Since we only have information on the mother if she is employed in the non-agricultural private sector, our sample is composed of 925,688 observations pertaining to couples whose members are both employed in the non-agricultural private sector. Each couple is observed in the years in which their children were born, so implying that, if there is only one newborn child in the timeframe from 2013 to 2023, the couple appears in our dataset once, while, in a case of more children, we have a number of observations equal to the number of children.[15] About 58% of fathers included in our sample had only one newborn child in the period considered.

Using yearly administrative data, we get information on monthly theoretical earnings for each worker in a given couple (mother and father) as defined by the worker labor contract, type of contract (full time or part-time, fixed-term or open ended), qualification, firm size and firm Ateco 2007 sector.[16] The data also include information on the date of birth of each worker, her/his citizenship and municipality of residence and the birth date and gender of each child.

The sample is further restricted to couples in which both partners are between 18 and 65 years of age and to individuals with positive monthly earnings who have worked at least 4 months during the year.[17] Moreover, we have excluded 1% of the most extreme values at the bottom and at the top of the earnings distribution in order to reduce the effect of spurious outliers. We have also only considered leave taken for the first child.[18]

The resulting dataset is enriched with information on paternity leave take-up. This information is represented by a binary variable (*Paternity Leave*), which takes the value of one if the father took paternity leave for a child born in a given year and zero otherwise.[19]

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[15] We consider only one observation for twins as the birth year is the same.
[16] For each worker, we select his or her main job in a given year, defined as the one with the highest number of days worked.
[17] Only 9% of the fathers in our sample have worked fewer than 12 months during the year, while this percentage increases to 11% for mothers. As a consequence, our estimates do not qualitatively change when we restrict the sample to just couples working the full year.
[18] In section 7.3, we show that results are robust when considering all children.
[19] Since paternity leave can be requested within five months of the child's birth, for fathers who had children from August onwards, we checked whether they took leave within the following year. If they did, we assigned a value of one to our binary variable for the year of the child's birth.

Finally, we have restricted attention to the observations for which we have all the main variables used in the analysis and we end up with a sample of 492,778 observations.

Table 1 reports descriptive statistics of the sample used in our analysis of paternity leave. The take-up of paternity leave is about 60%, on average with values that increased from 26% in 2013 to 74% in 2023. As regards demographic characteristics, fathers in our dataset are about 35 years old on average, while mothers are typically younger with an average age of 32. About 8% and 10% of fathers and mothers, respectively, are not native Italian.[20]

<Table 1>

When examining parents' working conditions, we observe that 54% of fathers hold blue-collar jobs, compared with about 30% of mothers. In addition, fathers are more likely to hold a full-time position than mothers (89% against 64%) and each parent has a similar likelihood of holding a permanent contract (89.5% against 91.5%). Average monthly earnings of fathers are around 386 euro higher than those of mothers (1,846 against 1,460).[21]

To understand how the use of paternity leave relates to the mother's "relative income capacity", we consider the share the mother contributes to household income, which is 0.44 in our sample on average. Then, we build the dummy variable *Mother earns more than father,* which takes the value of one when the mother's monthly earnings exceed that of her partner and zero otherwise. About 31% of the fathers considered in our sample belong to a couple with an out-earning mother.

Finally, we compute the probability that the mother earns more as explained in section 5 (*PrMotherMore*) and find that it is 0.23 in our sample on average.

Descriptive statistics highlight the prevalence in Italy of the traditional household model, in which the male partner assumes the role of primary breadwinner. Figure 1 depicts the density distribution of couples in our sample based on mothers' household income share: there is a marked reduction in density when the share exceeds 0.5 and this may suggest an aversion to deviating from the societal gender norm.

[20] Approximately 80% of the fathers in our sample reside in central or northern Italy.

[21] We therefore measure a 21 percent gender gap in monthly earnings. To understand potential selection issues deriving from the specific sample of couples with both members employed in the private sector, we compute the same statistic from Labor Force Survey data, which record self-reported *net* monthly earnings, top coded at 3,000 euros. We find a 20 percent gender pay gap between mothers and fathers employed in the non-agricultural private sector. The difference with administrative social security data is likely a consequence of using net, instead of gross, earnings and, more importantly, top coding. The share of fathers with top coded earnings is more than double that of mothers, likely biasing downwards the estimated gender pay gap.

We obtain a very similar distribution when excluding same-income earners, who only represent 0.5% of the couples in our sample.

<Figure 1>

6.2 Parental leave

To identify couples who took advantage of parental leave in the 2013-2023 period, we use data from the Italian Social Security Institute (INPS) on applications for parental leave allowances. These data collect identification codes for the parent applying for the leave, the date on which the leave is taken, the date of birth of the child (which we use to compute his or her age), the child's identification code and the identification code of the other parent.

We use this information to create a yearly dataset in which we build a variable that denotes whether, in that given year, both parents took at least one day of parental leave or whether the leave was used exclusively by the mother or by the father. In about 84% of cases, the leave was taken by the mother, in about 6% by the father and in the remaining 10% of cases by both parents in the course of the year. We consider as a dependent variable a dummy variable (*Parental leave*), which takes the value of one if the father used parental leave at least once during the year (i.e. when the leave was taken by both parents or exclusively by the father) and zero if the leave was used exclusively by the mother.

As for the dataset on fathers eligible for paternity leave, for the dataset of couples using parental leave, we exclude couples in which one of the partners is younger than 18 or older than 65. Likewise, we exclude 1% of the most extreme values at the bottom and at the top of the earnings distribution in order to reduce the effect of spurious outliers. In addition, we exclude couples in which one of the partners has worked less than 4 months during the year. Finally, we restrict the attention to leave taken for the first child and to couples for which we have all the main variables used in the analysis, so ending up with a sample composed of 1,263,324 couples who took advantage of parental leave during the 2013-2023 period.[22]

[22] The larger number of observations in this sample, as compared with the sample used to study paternity leave, is due to the fact that paternity leave can only be used in the year of the child's birth, while parental leave can be used over a number of years. About 35% of couples used parental leave in only one of the years covered by our dataset, 23% in two different years, 15% in three years, 11% in four years and the remaining 15% in more than four years.

The data at hand allow us to build the same variables described in the previous sub-section, whose descriptive statistics are reported in Table 2.

<Table 2>

As shown in Table 2, in about 14.7% of the cases, parental leave is used by a man, implying that the management of children in Italian families is still mostly entrusted to mothers. The average age of children for whom the leave is used is of about 37 months. Fathers in this sample are on average about 40 years old, while mothers have an average age of about 37. Only 8% of fathers and 9.8% of mothers applying for parental leave are not native Italians. About 50% of fathers are employed in blue-collar jobs, while this percentage drops to 25% for mothers. In addition, fathers are more likely to hold a full-time position than mothers (92.5% against 58%) and almost as likely to hold a permanent contract (93% against 96%). Fathers' average monthly earnings are around 549 euro higher than mothers' (2,139 against 1,590 euros monthly). In 27% of the couples included in this sample, the mother earns more than the father.

Figure 2 plots the density distribution of the couples in our sample on the basis of mother's share of household income. Similarly to the evidence from the paternity leave sample, we observe a drop in density that occurs once the share exceeds 0.5.

<Figure 2>

7. Breadwinner Mothers and Fathers' Childcare Responsibilities: Paternity and Parental Leave Utilization

In this section, we report results from OLS estimates. In each table, the first set of estimates considers the population of fathers eligible for fully compensated paternity leave with the aim of looking at the effect of the couple's relative earnings on the probability that the father will take this type of leave. Instead, the second set of estimates (on the right of each table) uses the sample of couples that have taken advantage of the partly / not at all subsidized parental leave to examine the interplay of economic factors and gender norms by studying how the relative income capacity of the mother affects the probability that parental leave will be taken by the father.

7.1 Main Results

In Table 3, we estimate several specifications of model [1]. Columns (1)-(4) report results obtained by estimating a Linear Probability Model for the likelihood that the father will take paternity leave when the mother's earnings are higher than his own. In each specification, we include year and month of the child's birth dummies, region of residence fixed effects and the father and mother's personal and work characteristics. We include monthly earnings in column (1) and household income in columns (2) to (4). In all specifications we also include father's firm fixed effects.[23]

<Table 3>

In column (1), besides the full set of controls, we include among the regressors just the dummy variable for couples in which the mother earns more than the father. We find that in couples where the breadwinner gender norm is violated because the mother earns more than the father, the out-earned father is about 1.6 percentage points less likely to take paternity leave.

In column (2), we enrich our specification by also controlling for the share of household income contributed by the mother. The effect of our main variable of interest remains qualitatively the same even though its magnitude diminishes. In addition, we find that the likelihood of taking paternity leave decreases as the income power of the mother increases: for a 10 percentage point increase in the share of household income contributed by the mother, the father becomes about 0.5 percentage points less likely to contribute to childcare by taking paternity leave.

In column (3), we also include among controls the interaction between the share of household income contributed by the mother and the dummy indicating whether the mother out-earns the father in order to study whether there is non-linearity in the relationship. We confirm our evidence that the probability of taking paternity leave diminishes as the share of household income contributed by the mother increases and find that this effect is significantly greater in households where the mother out-earns the father.

Finally, in column (4), in order to better model the non-linearity of the effect, we control for deciles of the distribution of the mother's share of household income, leaving the first decile as reference

[23] The estimated models are able to explain about 14% of the variability observed in the data, so indicating that the variables considered represent relevant factors in the decision-making, but also that there are other aspects that we do not observe, but which play an important role in explaining the phenomenon under examination.

category. Figure 3 depicts the predicted probability of paternity leave based on this model specification.[24] Data support our theoretical prediction by showing that a father's likelihood of contributing to childcare by taking paternity leave is pretty stable as the mother's share of household income increases, but is lower than 50%. On the other hand, we observe a marked reduction in households where the mother contributes a larger share of the income and out-earns the father (from the 8th decile).

<Figure 3>

Overall, our findings about fathers' decisions to take paternity leave suggest that, when gender identity norms are questioned by "displaced" roles within the couple, parents allocate childcare in such a way as to neutralize such deviance and, thus, fathers become significantly less likely to take paternity leave. However, the decision about taking fully subsidized leave may hinge upon the fact that a father's choice to take the leave or not does not produce immediate economic consequences while there is an immediate loss deriving from not conforming to the norm when taking the leave. Hence, parents' decisions may differ when the costs of deviating from gender norms are compared with other immediate economic costs arising when taking this leave.

To delve into the interplay between economic factors and gender norms in shaping the division of household labor within families, we focus on the partly (or not at all) subsidized parental leave. During the period considered in our analysis, parental leave in Italy was either partially subsidized (30% of the wage) or not subsidized at all. Consequently, the wage loss for the family is smaller when leave is taken by the lower-earning partner. Given this specific feature, the cost of incorrectly allocating parental leave is immediate and increases with the couple's wage gap. This implies that the tendency to neutralize the deviation from the traditional gender norm (which says that the mother should earn less than the father), by the mother's taking on more childcare responsibilities, is counteracted by the economic cost the family incurs if the higher-earning mother takes the leave.

In columns (5) to (8) of Table 3, we replicate the specifications from the first four columns using the parental leave sample.[25] Therefore, our outcome variable is a dummy variable that takes the value of one

[24] Whiskers represent 95% confidence intervals. X-axis labels represent the range of mother's household income share that corresponds to each decile.

[25] Instead of controlling for the year of the child's birth (which typically coincides with the year in which paternity leave was taken, given that it must be used within five months of the child's birth, see Section 3), we control for the age of the child and the year in which parental leave was used.

when, in a given year, the father uses parental leave and zero when parental leave is used exclusively by the mother.

We find that, when the mother earns more than the father, the probability that the father will take parental leave increases by about 0.3 percentage points (column 5). This positive and statistically significant correlation remains stable and increases in magnitude when we control for the share of income earned by the mother which, in turn, positively affects the likelihood of fathers contributing to childcare by taking leave (column 6). Interestingly, not only are fathers significantly more likely to take-up the leave as the share of income contributed by the mother increases, but this effect is significantly amplified when the mother out-earns the father (column 7). When using controls for the decile of the mother's share of income (column 8), we see that the positive effect becomes particularly relevant from the 8th decile of the distribution of mother's share of household income, which corresponds to about 50%. This is clearly shown by Figure 4, which supports our theoretical predictions: the predicted probability of father's taking parental leave increases as the mother's share of income increases. There is a noticeable increase at the 8th decile, after which the probability of the father taking parental leave stabilizes, though it continues to show a slight positive trend. This indicates that when the mother earns more than the father, gender identity norms associated with the mother being the primary earner are counterbalanced by the economic incentives for fathers to take the leave.

<Figure 4>

All results are robust if we include dummies for mother's sector of activity among controls (results not reported and available upon request).

All in all, findings from the analysis of the allocation of parental leave within the couple reveal that, when the cost of deviating from the gender norm is weighted with immediate economic losses arising from the wage cut for the parent taking the leave, the "doing gender" framework does not prevail and parents make their decisions on work childcare allocation by mainly trying to minimize household economic losses.

In Table 4, in order to check the robustness of our results, we consider an alternative indicator of income named ISR (Indicatore della Situazione Reddituale). This is the sum of the total income of all members of the family unit and the income deriving from movable assets, net of specific deductions,

expenses or allowances.[26] This indicator includes not only wages earned in the private sector, but also income from any other work activity. This allows us to account for situations where one member of the couple earns additional income outside the private sector. We compute the mother's household income share by subtracting the father's earnings from the ISR indicator and dividing the result by the ISR and we define *Mother earns more than father* as a dummy which takes the value of 1 if the mother's household income share is higher than 0.5. As in Table 3, the first four specifications refer to fathers' decisions to take paternity leave while the last four columns refer to parental leave.

<Table 4>

Our main results are also confirmed when using this alternative measure of relative income: when the gender norm is violated and the mother earns more than the father, the father is less likely to use paternity leave and childcare responsibilities are borne more by the mother in an attempt to neutralize gender norms deviance. However, when aligning with the gender norm entails bearing higher economic costs, represented by immediate wage cuts for the parent taking parental leave, *money trumps gender* and fathers are more likely to take the leave.

7.2 Dealing with selection and endogeneity issues

In this section, we test the robustness of our results to bias arising from possible endogeneity of the income variables used in the analysis. In Table 5, we estimate three specifications of model [2]. In the first specification, we only control for the probability that the mother earns more and this is computed as explained in Section 5. In the second specification, we include among controls the earnings in the mother's demographic group in every 5th percentile from the 5^{th} to 95^{th} and, following Bertrand et al. (2015) and Galván (2022), in the third specification we also add as a control variable the median of the mother's predicted income interacted with the father's monthly earnings in t-1. The first three columns present the results for paternity leave and the last three columns for parental leave.

[26] This indicator is derived from applications for the Universal Child Allowance (UCA), which we used as a registry of children born during the period under investigation. The amount of economic support that families receive through the UCA depends on their economic circumstances, assessed using the ISEE (Indicatore della Situazione Economica Equivalente), a means-testing tool that evaluates the economic situation of individuals and families. The ISEE is a composite indicator that considers household income, real estate and financial wealth, adjusted for household composition and the presence of disabled members. For our analysis, we utilize the ISR (Indicatore Situazione Reddituale), a component of the ISEE that represents the household's income indicator without any adjustments.

<Table 5>

We find that our results are robust when we control for endogeneity issues by replacing the actual relative income of parents with potential earnings: a 10 percentage points increase in the probability that a mother could earn more than the father reduces the likelihood that the father would take paternity leave by around 1- 1.3 percentage points while it increases the likelihood that the father would take parental leave by about 0.9 percentage points.

Table 6 shows that our results are robust when we cluster standard errors at the mother's demographic group level.[27] Qualitatively, the same results are found when we replace mother's characteristics with mother's demographic group fixed effects (results not reported and available upon request).

<Table 6>

7.3 Robustness checks

In Table 7, we replicate in several subsamples the same specification as in columns (2) and (5) in Table 5, which control for potential endogeneity in earnings. In columns (1) and (6), we restrict the sample to households where both parents held permanent contracts and worked for at least 10 months in the year the paternity/parental leave was utilized. This restriction aims to exclude situations (22% in Paternity leave and 14% in Parental leave samples) where one or both parents had a lower likelihood of being entitled to the leave due to insufficient duration of work. Instead, in columns (2) and (7), we exclude the year 2020, when the Covid-19 pandemic introduced more flexible working conditions and additional policies to support parents. Our results hold in both subsamples.

<Table 7>

In columns (3), (4), (8) and (9), we estimate our model separately for fathers with and without a degree. In fact, one could argue that the lower likelihood that fathers earning less than their partner will take paternity leave and the greater concern about economic losses when deciding on parental leave allocation may stem from differences in education. Fathers with lower education may be less aware of available policies supporting parents after childbirth and so use them less. They may also be more

[27] Results are also robust when clustering standard errors at the mother's demographic group and dropping singletons.

concerned about the income losses when deciding on parental leave allocation, potentially driving the positive coefficients we observe. As shown in Table 7, our results indicate that educational differences do not drive our findings. The effects remain statistically significant across both subsamples for both paternity and parental leave.

Finally, in columns (5) and (10), we extend our analysis of the choice of taking paternity and parental leave to all children by removing the first child restriction and show that the choices taken by households with only one child are similar to those observed when children who are not the firstborn are also considered.

7.4 Gender norms and the trade-off with immediate economic losses

The main assumption of the paper, and of the literature on the effect of parents' relative income capacity, is that an out-earning mother is interpreted by parents as a violation of the male breadwinner gender norm and that this, in turn, triggers a reaction intended to neutralize such deviance. If this is the case, then one would expect the out-earning mother effect to be amplified in circumstances where the gender norm is more salient and reduced in less conservative environments. In this section, we corroborate the role of gender norms that are triggered by higher relative earnings of the mother by studying whether the effects we observed vary according to the prominence of the gender identity norm.

We consider three indicators of the salience of the gender identity norm in the environment in which the parents live: the average share of women in the municipal council of the couple's town of residence (*Share Women*), the average probability of having a female mayor in the couple's town of residence (*Female Mayor*), and the average level of agreement with the World Values Survey statement "a man's job is to earn money, a woman's job is to look after home and family" in the couples region of residence (*Conservative*). An increase in *Share Women* and *Female Mayor* represents a reduction in the salience of the gender identity norm while a higher agreement with the above statement (a higher value of *Conservative*) represents an increase in the salience of the gender norm.[28]

In Table 8, we replicate the same specification as in Table 5, columns (2) and (5), thus controlling for potential endogeneity in earnings, and study whether the effect of the probability that the mother will earn more than the father differs as a consequence of the salience of the gender identity norms, as represented by the three indicators described above. In the first three specifications, we look at the effect

[28] *Share Women* takes a mean value of 0.32 in the Paternity leave and 0.33 in the Parental leave samples. *Female Mayor* is 0.31 and 0.33 on average and *Conservative* is 0.36 and 0.35 on average in the Paternity leave and Parental leave samples, respectively.

on the father's decision to take paternity leave while, in the last three columns, we look at the couple's decision to allocate parental leave to the father.

<Table 8>

Data on paternity leave show that the negative effect of having an out-earning mother on the father's decision to take paternity leave decreases significantly as the gender norm becomes less salient, as indicated by the increasing share of women in the municipal council (column 1). Likewise, when the parents' environment is more conservative (column 3), the negative effect of violating the gender norm on the father's decision to take paternity leave increases significantly. On the other hand, the gender of the mayor (column 2) does not seem to affect paternity leave decisions in households with an out-earning mother.

Similarly, when looking at a couple's decision to allocate parental leave to the father, we find that, the lower salience of the gender identity norm, as represented by higher *Share Women* and *Female Mayor,* significantly increases the likelihood of fathers' taking parental leave when the mother earns more than the father, while *Conservative* environments negatively affect fathers' use of parental leave (columns 4, 5 and 6). Thus, when gender identity norms are less prominent, the choice of which parent will take leave is more likely to focus on economic costs to minimize the household's financial losses.

8. Concluding remarks

The economic literature has shown that the birth of a child has a significant impact on individuals' trajectories in the labor market, particularly for women and especially in societies with traditional gender roles. Among other prescriptions, such roles predict that fathers are the primary breadwinners with responsibility for providing for the family's economic needs, while women predominantly take on caregiving roles within the household. These social norms can influence women's economic choices directly or indirectly, often affecting women's economic outcomes through decisions made by their male partners.

In this paper, we consider father's decisions to take on childcare responsibilities by taking leave from work and study how such choices are influenced by the relative earning power of the mother.

Several factors may contribute to explaining fathers' low take up of the leave. For example, fathers may consider leave taking as a signal of low commitment to their jobs and might prefer not to take the leave in order to avoid hampering their career opportunities. On the other hand, some fathers might not be fully aware of their right to leave or how to apply for it. However, the weight of such factors in the decision to take leave should not vary according to whether the father is the primary or secondary earner in the household.

Low leave take-up by fathers might also be due to their encountering social stigma or feeling that taking paternity leave is less masculine and/or socially unacceptable, as caregiving responsibilities are still predominantly viewed as the mother's duty. These considerations may be magnified in cases where the mother has greater earning power. Indeed, traditional gender roles are displaced in couples where the mother out-earns the father and the desire to neutralize such deviance may affect a father's decision to contribute to childcare regardless of economic considerations. We suggest that, in couples where the mother out-earns the father, fathers might prioritize re-establishing traditional gender roles when deciding whether to take leave if the social consequences of deviating from these roles are evident, particularly when the economic costs of doing so are not immediately apparent. Conversely, when the economic costs of adhering to gender norms are immediate and easily measured by the partners, childcare responsibilities might be divided on the basis of economic reasoning, rather than traditional gender roles.

To delve into the complex interplay between economic factors and gender norms in a father's decision to take on childcare responsibilities, we take advantage of specific features of the Italian welfare system, which, after a child's birth, permits fathers to take both fully paid paternity leave and partially (or not at all) paid parental leave. We use administrative data on Italian workers provided by the National Social Security Institute which allow us to have information on parents applying for paternity leave and/or parental leave. The data at hand also allow the gathering of information on the working characteristics of both parents, which enables us to measure their relative income power within the couple. We focus on couples with children born after 2013 and then we consider the period from 2013 to 2023, during which fathers had both the possibility to apply for paternity leave (introduced in 2013) and/or parental leave (introduced in 2001).

Our findings reveal that fathers in couples where the mother earns more are significantly less likely to take paternity leave. As paternity leave is fully subsided, this implies that fathers are less likely to take advantage of the possibility to spend time with their newborn child in households with a *breadwinner* mother, even though this does not entail any wage cost. In contrast, we find that couples using parental leave are more likely to allocate it to the male partner when the mother earns more than the father does because allocating it to the lower-income earner within the couple is the choice which minimizes wage loss within the household.

These findings are robust to a series of controls that account for the demographic characteristics and working conditions of both parents and remain significant even when controlling for bias arising from the potential endogeneity of income variables.

We interpret our findings as evidence of a complex interplay between gender identity norms that are triggered by the presence of an out-earning mother and economic motives represented by immediate economic losses. When the breadwinner norm is violated, fathers are more inclined to reduce their contribution to caregiving responsibilities, so leaving this role to the mother, who is traditionally

responsible for home production, in order to restore a gender equilibrium. On the other hand, when the cost of violating the gender norm is weighted with immediate losses due to a wage cut for the parent taking parental leave, economic motives prevail and the father is more likely to take the leave so as to minimize losses to household earnings. This interpretation is supported in the data by evidence which shows that, as the prominence of gender identity norms increases (as indicated by the proportion of women in the municipal council, the likelihood of there being a female mayor and average beliefs as evaluated on the basis of responses to a World Value Survey question), the negative impact of gender deviance neutralization on fathers' decisions to take paternity leave becomes greater. Additionally, the influence of economic factors on fathers' likelihood of taking parental leave when their partner earns more diminishes as these norms become more salient.

Table 1. Descriptive Statistics. Fathers eligible for the paternity leave

Variable	Obs	Mean	Std. Dev.	Min	Max
Paternity leave	492778	0.598	0.490	0	1
Mother earns more than father	492778	0.306	0.461	0	1
Mother's Household Income Share	492778	0.441	0.123	0.122	0.769
Probability mother earns more	492778	0.234	0.233	0	1
Father monthly earnings	492778	1.846	0.817	0.252	5.621
Father immigrant background	492778	0.084	0.278	0	1
Father age	492778	34.808	5.514	19	65
Father blue collar	492778	0.542	0.498	0	1
Father full time	492778	0.890	0.313	0	1
Father permanent contract	492778	0.895	0.306	0	1
Father firm size	492778	3937.796	17763.472	1	157153
Mother monthly earnings	492778	1.460	0.673	0.149	4.171
Mother immigrant background	492778	0.102	0.303	0	1
Mother age	492778	32.300	4.767	18	62
Mother blue collar	492778	0.298	0.457	0	1
Mother full time	492778	0.643	0.479	0	1
Mother permanent contract	492778	0.915	0.278	0	1
Mother firm - small	492778	0.344	0.475	0	1
Mother firm - medium	492778	0.240	0.427	0	1
Mother firm - big	492778	0.416	0.493	0	1
Son	492778	0.514	0.500	0	1
Household Income	492778	3.307	1.265	0.417	9.716

Sources. Administrative data from the Italian Social Security Institute

Table 2. Descriptive Statistics. Couples using parental leave

Variable	Obs	Mean	Std. Dev.	Min	Max
Parental leave	1263324	0.147	0.354	0	1
Mother earns more than father	1263324	0.272	0.445	0	1
Mother's Household Income Share	1263324	0.429	0.124	0.106	0.792
Probability mother earns more	1263324	0.217	0.220	0	1
Father monthly earnings	1263324	2.139	0.998	0.398	7.361
Father immigrant background	1263324	0.080	0.271	0	1
Father age	1263324	40.036	6.145	20	65
Father blue collar	1263324	0.495	0.500	0	1
Father full time	1263324	0.925	0.264	0	1
Father permanent contract	1263324	0.933	0.250	0	1
Father firm size	1263324	4983.027	19710.719	1	157153
Mother monthly earnings	1263324	1.590	0.734	0.250	4.646
Mother immigrant background	1263324	0.098	0.297	0	1
Mother age	1263324	37.459	5.492	19	65
Mother blue collar	1263324	0.254	0.435	0	1
Mother full time	1263324	0.582	0.493	0	1
Mother permanent contract	1263324	0.961	0.193	0	1
Mother firm - small	1263324	0.199	0.399	0	1
Mother firm - medium	1263324	0.195	0.396	0	1
Mother firm - big	1263324	0.606	0.489	0	1
Son	1263324	0.484	0.500	0	1
Child age (months)	1263324	37.182	35.948	3	143
Household income	1263324	3.729	1.445	0.664	11.950

Source. Administrative data from the Italian Social Security Institute

Table 3. Mother's relative earnings and father's probability of taking paternity and parental leave. OLS estimates

	Paternity leave				Parental leave			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother earns more than father	-0.016***	-0.004*			0.003***	0.015***		
	(0.002)	(0.002)			(0.001)	(0.001)		
Mother's Household Income Share (IS)		-0.054***	-0.039***			0.137***	0.138***	
		(0.010)	(0.010)			(0.005)	(0.005)	
Mother earns more*Mother IS			-0.017***				0.025***	
			(0.004)				(0.002)	
Mother IS- 2 dec				0.001				0.004***
				(0.003)				(0.001)
Mother IS- 3 dec				-0.004				0.007***
				(0.003)				(0.001)
Mother IS- 4 dec				-0.002				0.014***
				(0.003)				(0.001)
Mother IS- 5 dec				-0.003				0.021***
				(0.003)				(0.001)
Mother IS- 6 dec				-0.001				0.027***
				(0.003)				(0.002)
Mother IS- 7 dec				0.001				0.039***
				(0.003)				(0.002)
Mother IS- 8 dec				-0.001				0.057***
				(0.004)				(0.002)
Mother IS- 9 dec				-0.008**				0.060***
				(0.004)				(0.002)
Mother IS- 10 dec				-0.037***				0.067***
				(0.004)				(0.002)
Observations	492778	492778	492778	492778	1263324	1263324	1263324	1263324
R^2	0.144	0.144	0.144	0.145	0.069	0.067	0.067	0.067

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time and having a permanent contract. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies. Columns (1) and (5) also control for father and mother's monthly earnings while the remaining specifications control for household income.

Table 4. Mother's relative earnings and father's probability of taking paternity and parental leave. Alternative measure of income

	Paternity leave				Parental leave			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother earns more than father (ISR)	-0.040***	-0.040***	-0.033***	-0.033***	0.025***	0.025***	0.007***	0.007***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Mother income share (ISR)		-0.000		-0.000		-0.000		-0.000
		(0.000)		(0.000)		(0.000)		(0.000)
ISR	0.000***	0.000***			-0.000***	-0.000***		
	(0.000)	(0.000)			(0.000)	(0.000)		
Household Income			0.009***	0.009***			-0.020***	-0.020***
			(0.002)	(0.002)			(0.001)	(0.001)
Observations	175500	175500	175500	175500	408894	408894	408894	408894
R^2	0.044	0.044	0.044	0.044	0.093	0.093	0.093	0.093

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time and having a permanent contract. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies.

Table 5. Potential relative earnings and father's probability of taking paternity and parental leave. OLS estimates

	Paternity leave			Parental leave		
	(1)	(2)	(3)	(4)	(5)	(6)
Probability mother earns more	-0.108***	-0.124***	-0.126***	0.090***	0.090***	0.091***
	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)
Mother y^p	NO	YES	YES	NO	YES	YES
Median of mother's earning* Father's monthly earnings (t-1)	NO	NO	YES	NO	NO	YES
Observations	492778	492778	492778	1263324	1263324	1263324
R^2	0.145	0.147	0.147	0.065	0.065	0.065

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time, having a permanent contract and father's monthly earnings at t-1. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies.

Table 6. Potential relative earnings and father's probability of taking paternity and parental leave. SE clustered at the mother's demographic group.

	Paternity leave			Parental leave		
	(1)	(2)	(3)	(4)	(5)	(6)
Probability mother earns more	-0.108***	-0.124***	-0.126***	0.090***	0.090***	0.091***
	(0.008)	(0.009)	(0.010)	(0.008)	(0.008)	(0.008)
Mother y^p	NO	YES	YES	NO	YES	YES
Median of mother's earning* Father's monthly earnings	NO	NO	YES	NO	NO	YES
Observations	492778	492778	492778	1263324	1263324	1263324
R2	0.692	0.693	0.693	0.396	0.397	0.397

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time, having a permanent contract, and father's monthly earnings at t-1. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies.

Table 7. Robustness to different sample specifications. OLS estimates

	Paternity leave					Parental leave				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Both parents working at least 10 months	Excluding year 2020	Graduated fathers	Non graduated fathers	All children	Both parents working at least 10 months	Excluding year 2020	Graduated fathers	Non graduated fathers	All children
Probability mother earns more	-0.070***	-0.121***	-0.141***	-0.125***	-0.116***	0.106***	0.097***	0.123***	0.079***	0.093***
	(0.006)	(0.005)	(0.013)	(0.006)	(0.004)	(0.003)	(0.003)	(0.006)	(0.003)	(0.002)
Observations	382629	443135	97043	395735	849145	1083205	1080213	234654	1028670	1653703
R^2	0.150	0.152	0.114	0.156	0.146	0.042	0.070	0.040	0.070	0.061

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time, having a permanent contract, and father's monthly earnings at t-1. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies. All estimates include also *Mother* y^p.

Table 8. Gender norms and the trade-off with immediate economic losses. OLS estimates

	Paternity leave			Parental leave		
	(1)	(2)	(3)	(4)	(5)	(6)
Probability mother earns more	-0.161***	-0.124***	-0.087***	0.053***	0.088***	0.112***
	(0.015)	(0.006)	(0.017)	(0.008)	(0.003)	(0.009)
Share Women	-0.020			-0.002		
	(0.013)			(0.007)		
Share Women*Probability mother earns more	0.114***			0.113***		
	(0.043)			(0.022)		
Female mayor		0.002			-0.005***	
		(0.002)			(0.001)	
Female mayor**Probability mother earns more		0.001			0.007**	
		(0.007)			(0.003)	
Conservative 5			0.120*			0.046
			(0.072)			(0.038)
Conservative 5 # Probability mother earns more			-0.105**			-0.064**
			(0.045)			(0.025)
Observations	492778	492778	492778	1263324	1263324	1263324
R^2	0.147	0.147	0.147	0.065	0.065	0.065

Standard errors are robust to heteroskedasticity and clustered at the father level. Significance at the 10 percent level is represented by *, the 5 percent level by **, and the 1 percent level by ***. Estimates on paternity leave include dummies for year and month of childbirth and estimates on parental leave include dummies for the year and month of leave claiming. All estimates include father's firm fixed effects and region of residence dummies. Controls for child characteristics include gender and, for parental leave estimates, the age of the child. Father and mother characteristics include age and nationality. Father work characteristics include being blue collar, working full-time, having a permanent contract, and father's monthly earnings at t-1. Mother work characteristics include being blue collar, working full-time, having a permanent contract and firm size dummies. All estimates include also *Mother* y^p.

Appendix B: FIGURES

Figure 1. Density distribution of mother's household income share: paternity leave

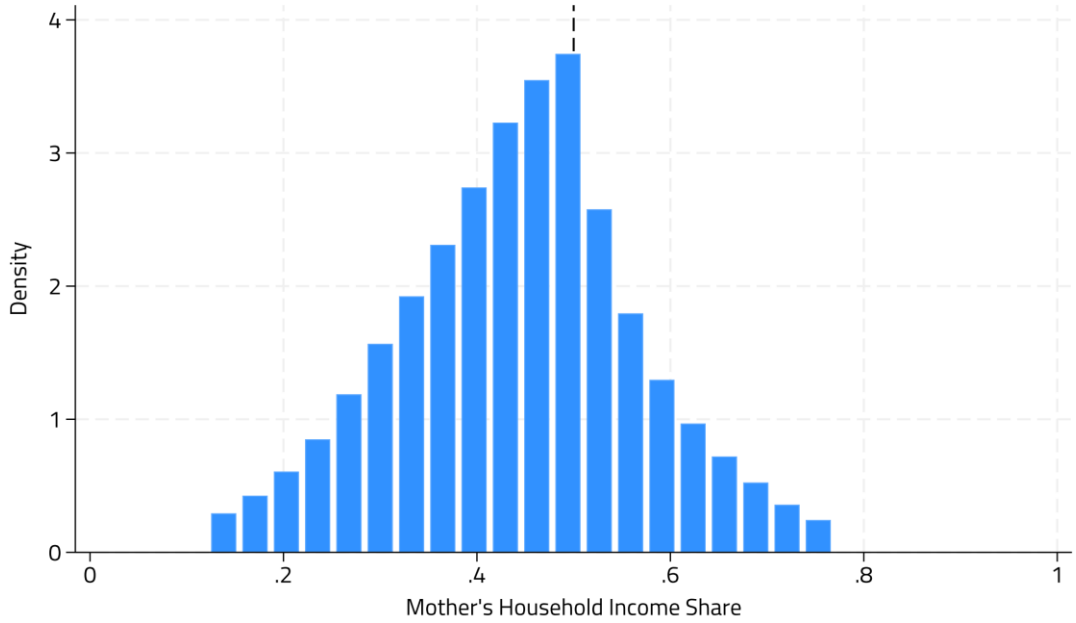


Figure 2. Density distribution of mother's household income share: parental leave

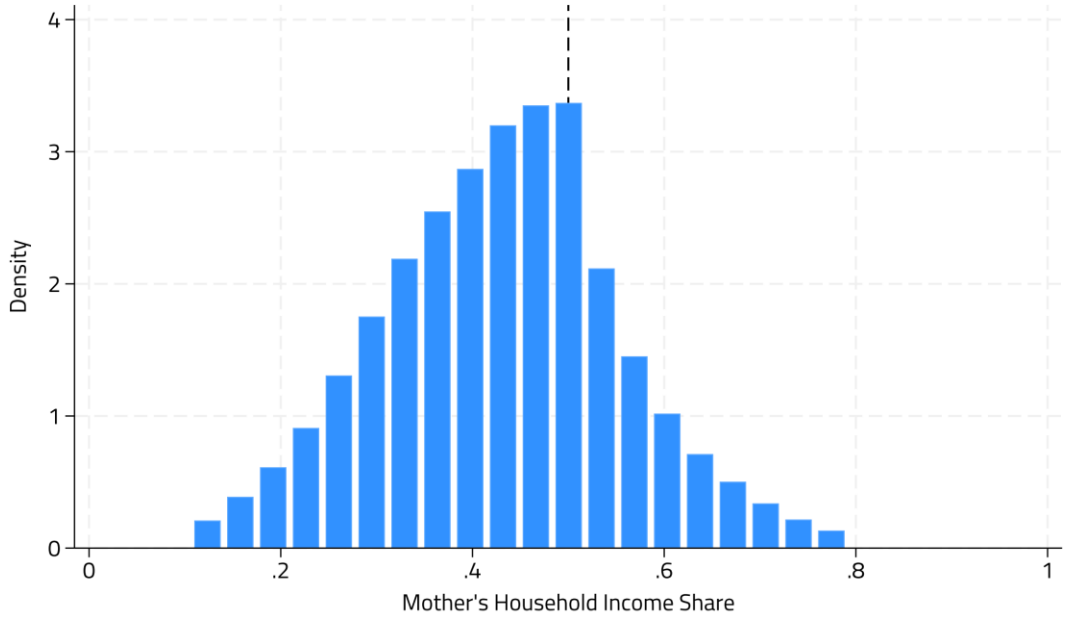


Figure 3. Mother's relative earnings and father's predicted probability of taking paternity leave

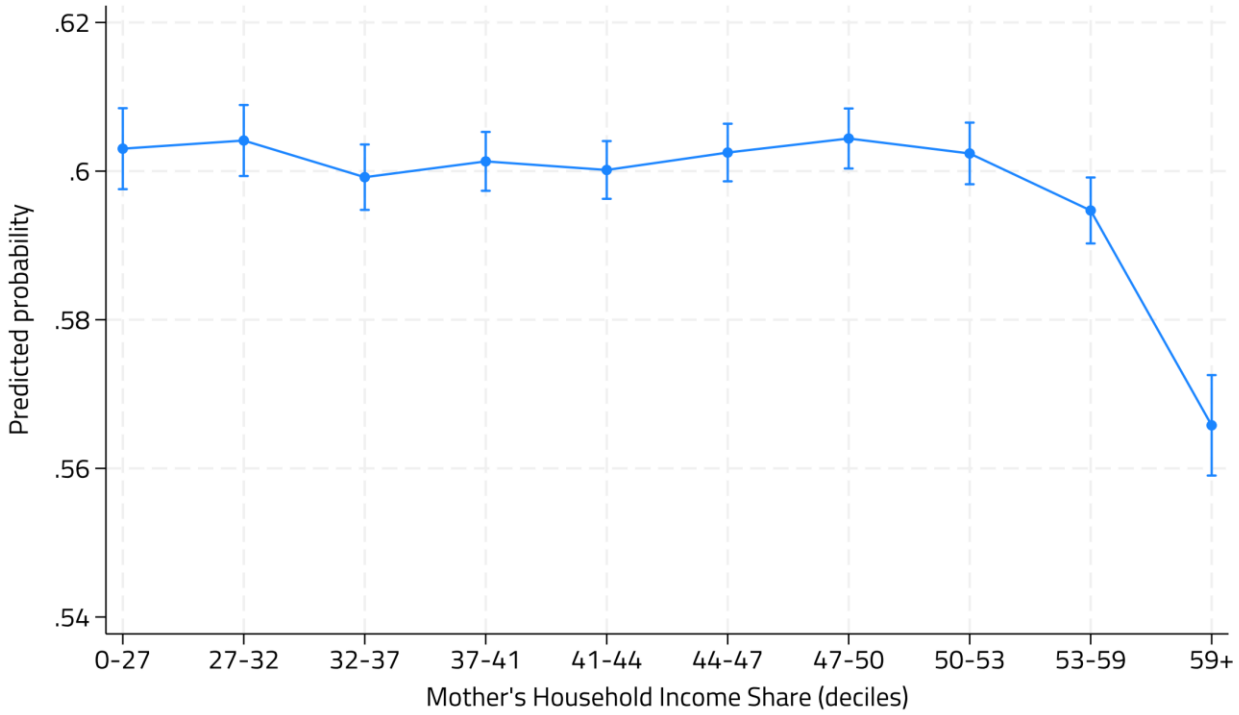
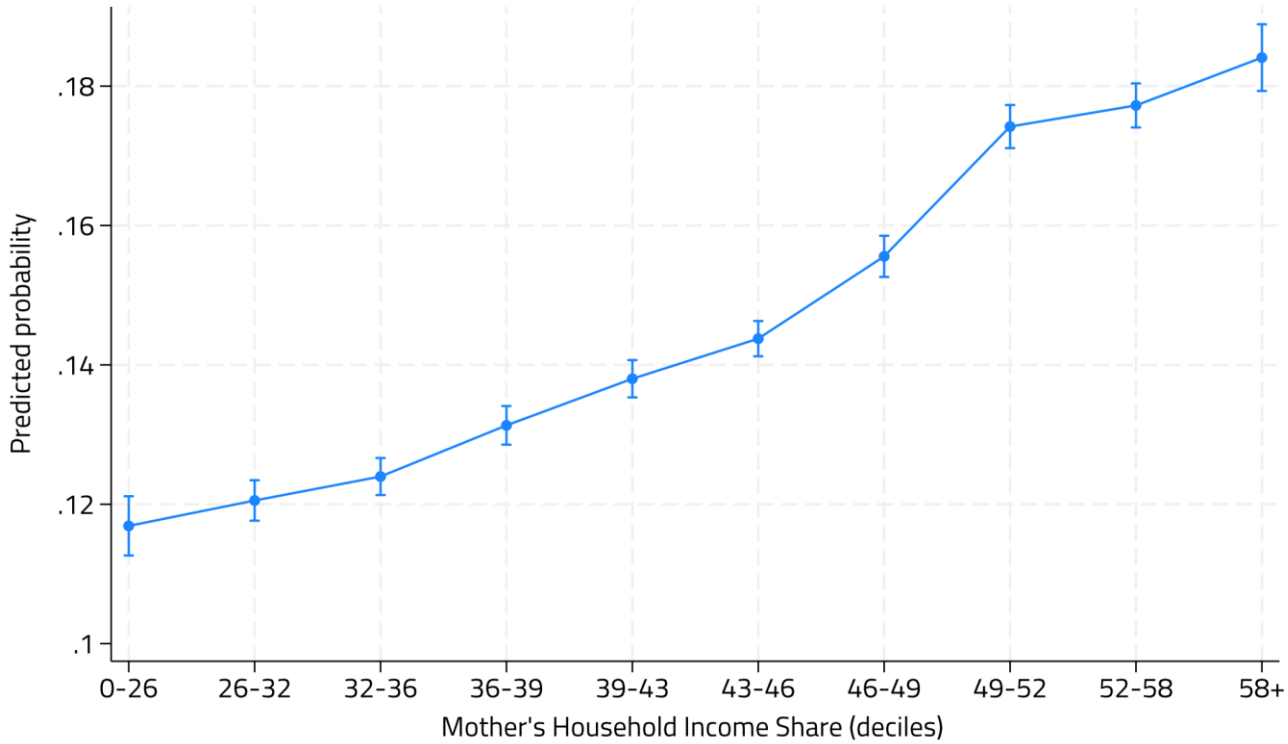


Figure 4. Mother's relative earnings and father's predicted probability of taking parental leave



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