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Gender identity and quality of employment

Estefanía Galván *

Resumen

Estudios para países de altos ingresos han demostrado que la prescripción social de que un hombre debe ganar más que su esposa frena el desempeño de la mujer en el mercado laboral, lo que demuestra la importancia de las normas de identidad de género para explicar las persistentes brechas de género. Utilizando datos de parejas en Uruguay para el período 1986-2016, este artículo analiza las respuestas a la norma social de hombre proveedor, investigando el papel de la informalidad laboral como un mecanismo adicional de respuesta a las normas de género. Mis resultados muestran que cuanto mayor es la probabilidad de que la mujer gane más que su esposo, es menos probable que esta se emplee en un trabajo formal, lo que proporciona evidencia de que las normas de género afectan no solo la cantidad de oferta laboral (es decir, la participación en la fuerza laboral y las horas de trabajo), sino también la calidad de los trabajos en los que se emplean las mujeres. Además, también identifico efectos significativos de la norma en los hombres: aquellos con ingresos potenciales más bajos que sus esposas reaccionan a la norma auto-seleccionándose en trabajos formales mejor remunerados. No considerar estos efectos llevaría a subestimar las consecuencias de las normas de género en las desigualdades del mercado laboral en el contexto de los países en desarrollo.

Palabras clave: identidad de género, normas sociales, informalidad, oferta laboral, trabajo doméstico.

Código JEL: D13, J16, J22

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Abstract

Studies for high-income countries have shown that the prescription that a man should earn more than his wife holds back women's performance in the labour market, evidencing the importance of gender identity norms in explaining persistent gender gaps. Using data on couples in Uruguay for the period 1986-2016, this paper analyses behavioural responses to the male breadwinner norm, investigating the role of job informality as an additional mechanism of response to gender norms. My results show that the higher the probability that the wife earns more than her husband, the less likely she is to engage in a formal job, providing evidence that gender norms affect not only the quantity of labour supply (i.e. labour force participation and hours of work), but also the quality of jobs in which women are employed. Moreover, I also identify meaningful effects of the norm on men: those with lower potential earnings than their wives react to the norm by self-selecting into better-paid formal jobs. Not considering these effects would lead to underestimate the consequences of gender norms on labour market inequalities in the context of developing countries.

Keywords: gender identity, social norms, informality, labour supply, housework.

JEL Classification: D13, J16, J22

1 Introduction

After decades of progress, substantial gender inequalities are still a persistent characteristic in both developed and developing countries, and the process of convergence has slowed down (Goldin, 2014; Blau and Kahn, 2017; Gasparini and Marchionni, 2017). While the reduction in the disparities between men and women in traditional human capital factors have played an important role in the narrowing of the gender gaps in pay and employment levels, these factors explain relatively little of the remaining differences, as women now exceed men in educational attainment and have greatly reduced the experience gap (Blau and Kahn, 2017; Kleven and Landais, 2017). In this context, recent work has started to consider additional factors such as gender norms that might limit further convergence in labour market outcomes between men and women. If prevailing social norms such as "the male should earn more than his wife" have behavioural consequences through the decisions taken by women in the labour market, then understanding their effects is important to explain the causes of the remaining gender inequalities.

Although previous research has found evidence that the male breadwinner norm plays an important role in affecting women's labour market outcomes, studies on the topic tend to analyse the impact in terms of quantity of employment (i.e. labour force participation and hours worked) within a narrow context: high-income countries.[1] However, we know much less about the effects of gender norms in terms of the quality of employment. This study contributes to fill this gap by providing evidence on informality as an additional channel through which gender norms affect female labour market outcomes. Job informality is a large concern in middle- and low-income countries and tends to be associated with low-productivity jobs, as well as with employment in small-scale activities and no access to labour rights. In this setting, women may self-select into these jobs with poorer working conditions so as to avoid gender role reversal in earnings. Also, by focusing on the quality of employment as an additional adjustment channel to gender norms, I extend the analysis considering the neglected question of whether men also change their behaviour to conform to the norm.

Uruguay, a somewhat atypical country in Latin America (LA), offers an interesting setting to study this mechanism. On one hand, its labour market has some characteristics associated with developing countries, like the coexistence of high-productivity formal jobs with low-productivity informal sectors, which allow to explore other mechanisms of adjustment to gender norms in addition to those analysed for high-income countries. On the other hand, it was the first country in LA to close the educational gender gap (Ñopo, 2012), and where many women's rights were first approved.[2] These relative gains for women

[1] See for example Bertrand et al. (2015); Hederos-Eriksson and Stenberg (2015); Ichino et al. (2019); Lippmann et al. (2020) among others. An exception to this is Codazzi et al. (2018) for Brazil.

[2] For example, divorce was legalized in 1907. To put this in context, in Argentina the divorce law was legalized in 1987 and the last country in which it was legalized in Latin America was Chile, in 2004. The educational gender gap in Uruguay closed for cohorts born in 1940. In Argentina and Brazil it happened for cohorts born around 1950-1951 and in Panama and Venezuela around 1955 (Ñopo, 2012: p.24). Also, Uruguay emerges as a special case where women provide the highest

are important because they increase the cost of complying with gender identity norms. By definition, the prescription of the male as main breadwinner would be of no practical relevance in a world where a woman could never earn more than her partner, but, as women increase their education and upgrade their jobs, the consequences of avoiding gender role reversal within the couple become more evident. Although this might lead us to think that Uruguay exhibits advanced attitudes toward gender roles, the World Value Survey indicates that 41% of the women agree or strongly agree with the statement *"If a woman earns more money than her husband, it's almost certain to cause problems"* (WVS 1996),[3] which intends to capture agreement with the male breadwinner norm. Also, despite women have higher educational levels than men, the gender gap in earnings is still about 28% (21.4% when considering only full-time workers).[4]

To analyse behavioural responses to the male breadwinner norm, I closely follow Bertrand et al. (2015)'s methodological approach, in which a measure of the probability that the wife earns more than her husband is used as predictor of the effect of the norm on different labour market outcomes. I use data from a representative household survey for Uruguay for the period 1986-2016. In these data the respondents are actually asked whether the job in which they are employed is registered in the social security (i.e. it is formal) or not, an information that is not usually available in labour force surveys for high-income countries, and that allows me to investigate whether gender norms affect men's and women's employment in formal versus informal jobs.

My results show that the higher the probability that the wife earns more than her husband, the less likely she is to be employed in a formal job. She is also less likely to participate in the labour market and, conditional on employment, she works fewer hours. Overall this means that women with higher potential earnings than their husbands reduce their labour supply and engage in informal jobs, so as to avoid deviating from their secondary-earner role at home. I find that the coefficients for the less educated women are always higher than for the more educated ones, suggesting that they are more likely to respond to traditional gender norms compared to the latter. Also, those who earn more than their partners spend more time doing housework, which can be interpreted as a way to compensate for the deviation to the norm. Additionally, I find that men also react to norms. The more likely it is that the husband earns less than his wife, the more likely he is to self-select into registered employment and jobs that pay above the average earnings in his group.

The finding that moving to or remaining in an informal job can be a relevant channel of adjustment to gender norms in middle-income countries is consistent with studies that show that in these context

percentage of total labor income of households, in a context where women's contributions are less than 40% for all LA countries in 2012 (ECLAC 2014, p. 197).

[3]This is close to the 38% found for the US respondents in 1995, reported in Bertrand et al. (2015). For 2011, 26.5% of the respondents in Uruguay agree with the statement.

[4]Own calculations based on 2014 Household Survey microdata (*Encuesta Continua de Hogares*, INE)

of weaker labour market institutions, the woman is the household member most likely to react on the informality margin (e.g. Galiani and Weinschelbaum (2012) and Bergolo and Galván (2018)). The mechanism that I suggest is that, as informal jobs are less well-paid and less regulated than registered jobs, they would allow women to remain in the labour market but working fewer hours, compatible with their secondary earner role at home, but with poorer working conditions.

This paper makes two main contributions. First, by focusing on job informality as a relevant channel to adjust to gender norms, it provides an alternative framework to study the role of gender norms on developing countries. Behavioural responses to norms are typically identified in terms of intensive and extensive margins of labour supply (Bertrand et al., 2015; Hederos-Eriksson and Stenberg, 2015; Fleche et al., 2020). As I show here, however, the male breadwinner norm also affects the quality of jobs in which women are employed (above and beyond the quantity of employment), and particularly for less educated women, which might have important welfare implications. Secondly, analysing job informality allows me to identify meaningful impacts of gender norms on both men's and women's behaviours. While it seems that men do not alter their labour supply, those with lower potential earnings than their wives, do change their labor market behavior: they self-select into better-paid formal jobs. Not considering this effect would lead to underestimate the impact of gender norms on labour market inequalities. Yet, so far, no studies have examined the effect of the male breadwinner norm on men's behaviour.

Theoretical and empirical research on the gender wage gap has tended to focus on discrimination and preferences formation (see for example Blau and Kahn (2017) for a general review, and Azmat and Petrongolo (2014) for more specific evidence coming from lab and field experiments). This paper contributes to a growing literature on the effects of gender norms on labour market outcomes (for a comprehensive review of this literature see Bertrand (2011)). Gender identity roles and beliefs have been argued to explain different stylized facts in the labour market, which cannot be explained within standard economic models, such as persistence of occupational gender segregation (Breen and García-Peñalosa, 2002; Humlum et al., 2017), women's under-representation in mathematics and in most of the scientific disciplines (Nollenberger et al., 2016; Lippmann and Senik, 2018) and the intergenerational transmission of gender identities among family and society as an important explanation for female labour market outcomes (Fortin, 2005; Fernández et al., 2004; Morrill and Morrill, 2013; Farré and Vella, 2013 and Olivetti et al., 2018) and housework division (Giménez-Nadal et al., 2019). This paper is closely related to Bursztyn et al. (2017), who find that single women shy away from actions that could improve their careers to avoid looking ambitious, assertive or pushy in the marriage market, highlighting the importance of social norms, particularly what is differentially expected from a wife in explaining differences in labour market trajectories for men and women.

More specifically, this paper adds to a small group of studies that empirically test the effect of the male breadwinner norm on wives' labour market outcomes. Using data for the US, Bertrand et al. (2015) find that in couples in which the wife's potential earnings are likely to exceed her husband's, she is less likely to participate in the labour force and if she does work, the gap between realized and potential income is greater, suggesting that women remain in low-pay jobs so as to avoid gender role reversals in earnings. Using Swedish data, Hederos-Eriksson and Stenberg (2015) analyse whether the distribution of the relative earnings within couples is affected by the male breadwinner norm, while Ichino et al. (2019) find suggestive evidence of the relevance of both traditional and non-traditional norms in different groups of the Swedish population, by observing changes in the time allocation of spouses following a change in the market penalty of adopting gendered norms. Comparing Western and Eastern Germany, Wieber and Holst (2015) find that gender identity has an impact on the labour supply of full time working women, but only in Western Germany where the role of the wife as home-maker was encouraged during the time of the separation into the GDR and FRG. Galván and García-Peñalosa (2020) examine the interaction between different identity norms in the US, showing that while motherhood generates very strong responses in terms of the intensive and the extensive margins of labour supply, the effect of the male breadwinner norm is highly contextualized. Also focusing in the US, Fleche et al. (2020) find that women report significantly lower life satisfaction from working relative longer hours than their husbands, providing evidence of women's aversion to a situation where they work more.

While most of the literature has analysed the effect of the male breadwinner norm in the context of high-income countries, this is one of the first papers to focus on a non-Western economy, together with the study by Codazzi et al. (2018) for Brazil. I contribute to the literature by showing that in fact part of the responses to the male breadwinner norm on labour supply take place through adjustments in the informality margin. By restricting employment to formal jobs, and comparing the results to those obtained when considering labour force participation and hours of work, in both formal and informal jobs, my results indicate that part of the wife's responses to the norm would be through moving or remaining in informal jobs and working fewer hours in this kind of jobs, which are often more flexible to reduce hours of work. Moreover, by focusing on informality, this paper is the first to show that men also react to the norm: those with lower potential earnings than their wives self select into better-quality formal jobs. Lastly, I show that the male breadwinner norm has also meaningful effects on the other face of the labour market: the housework division. I find that when the wife earns more than her partner, she responds to this violation of the social norm by increasing her amount of housework.

While standard economic models of decision-making within the household predict that an individual decreases her number of housework hours as her contribution to the household income increases, my

results support the hypothesis of *doing gender* (West and Zimmerman, 1987), which predicts that couples compensate deviations from the normative income standard with a more traditional division of housework. This result provides evidence in favour of the importance of traditional norms to analyse social phenomena (Burda et al., 2013), and is also in line with previous evidence found by Bittman et al. (2003) and Booth and Van Ours (2009) for Australia and Lippmann et al. (2020) for West Germany.

The remainder of the paper is organized as follows. Section 2 discusses the predictions of the male breadwinner norm in the context of the gender identity model. Section 3 presents the data and sample of analysis. Section 4 describes the empirical approach. Section 5 discusses the results on the effect of the male breadwinner norm on female labour market outcomes, while Section 6 discuss the results for male outcomes. Section 7 presents the analysis of the effect of the norm on the division of housework. Finally, Section 8 concludes.

2 Behavioral effects of gender norms

2.1 The gender identity model

Gender norms refer to the patterns of behavior appropriate for and expected of each gender within a social community (Bittman et al., 2003). Such norms are learned from a very young age through socialization and have effects at many levels, structuring identities, interactions, and institutions. Most of the recent economic literature on gender norms is grounded on the theoretical developments of Akerlof and Kranton (2000) who bring the concept of identity from social psychology into economic analysis, and introduce it into the model of individual choices based on utility maximization. In their model, identity is defined as a sense of belonging to a social category (i.e. man or woman), together with a view on how people in that category should behave. They state that the individual's economic actions can in part be explained by a desire to conform with one's sense of self, proposing a utility function that incorporates identity as a motivation for behavior.

Formally, the model can be expressed by the utility function U_j, which depends on j's identity I_j, as well as on the vectors of j's actions, a_j, and others' action, a_{-j}:

$$U_j = U_j(a_j, a_{-j}, I_j) \tag{1}$$

Since a_j and a_{-j} determine j's consumption of goods and services, these arguments are sufficient to capture the standard economics of own actions and externalities in the utility function. An individual j's identity, I_j depends on the assigned social categories (c_j), the extent to which j's own given characteristics (ϵ_j) match the ideal of j's assigned category, the corresponding prescriptions on how the individuals

belonging to each category should behave (P_j), and the extent to which j's own and others' actions correspond to this prescribed behavior:

$$I_j = I_j(a_j, a_{-j}; c_j, \epsilon_j, P) \tag{2}$$

Then, the impact of an action a_j on utility U_j depends in part on its effect on identity I_j, which explains why in this setting people have identity-related payoffs from their own actions. Being the gender one of the most salient social categories, this model suggests pressures for individuals to behave according with gender norms and social prescriptions. In this context, some behaviors are explained as a desire, conscious or not, to follow gender identity norms, which can even lead to decisions that appear detrimental.

2.2 Implications of the male breadwinner norm for labor market outcomes

Previous work suggested that the response to the male breadwinner norm can take place reducing female's labour supply, which can be done both by leaving the labour force (extensive margin) or by working fewer hours in the market (intensive margin). In the context of a less developed country, this study explores informal employment as a channel through which gender norms can affect female labor market outcomes, in addition to those already discussed for high-income contexts.

The existence of the duality of informal and formal work is a common characteristic of labour markets in developing economies, where the government institutions have limited enforcement capacity compared to those of rich countries. Working in an informal job has important welfare implications as it often leaves workers without any protection of labour laws, social benefits such as pension, health insurance or paid sick leave. However, as pointed by Maloney (2004), social protections are not free and, in the absence of nominal wage rigidities, workers pay for them either explicitly or in terms of lower wages. Therefore, if an alternative exists at lower cost, or which better suits the needs of the worker, there is an incentive to not participate in the formal institution. For example, Bergolo and Cruces (2014) studied a reform in Uruguay that extended healthcare coverage to the children of registered private-sector workers and find that these kinds of policies increase the incentive for primary workers to register.

Moreover, while informal jobs have lower labour protection and labour costs, they may offer other benefits to workers such as greater flexibility, which might introduce different incentives for men and women to sort into formal and informal jobs (Ben Yahmed, 2018). For example, interview data for Brazil reported in Maloney (2004) suggest that about 30% of both male and female informal employees are voluntarily working informally. Out of the 30% of women who preferred informal jobs, about 13% cited competing household chores as the reason for this preference. This suggests that there might be different

selection rules into informal vs. formal jobs for men and women related with traditional gender roles within the household.

In this context, this paper analyses the effect on informal employment as an additional outcome through which gender norms can have an effect. As informal jobs are less well-paid and less regulated than registered jobs (for example with greater flexibility to reduce working hours), a complementary mechanism for women to comply to the norm while remaining in the labor market could be to remain in or to move into informal jobs.

Although informality and the extent of the informal economy in Uruguay are lower than the LA averages (ECLAC 2014), they are still high for most of the period covered in this study, in particular when compared to European countries. In Table 1, I show descriptive statistics for some occupations that are typically held by women of low educational level, such as cleaners, babysitters, or personal care workers in households or institutions. These data show that non-registered workers have lower earnings and hourly earnings, and that they work fewer hours compared to registered workers in the same occupations. For example, for cleaners and home assistants, the level of formalization along the period 2001-2016 (period for which the variable indicating registration in the social security is available) is of 54%. The non-registered workers earn on average 53% less than the formal workers and have hourly earnings that are 26.5% lower.

Moreover, in this paper I argue that if we claim that traditional gender norms prevail in the couple, we should expect that not only wives, but also husbands react to them, as the husband loses utility when his wife earns more than he does. Following the behavioural prescriptions for one's gender affirms men's self-image or identity as a "man", while violating them generates discomfort, which in Akerlof and Kranton (2000)'s model is expressed as looses in identity. Then, an increase in the probability that the woman becomes the main earner (i.e. the man becomes the secondary earner) would lead the husband to respond by trying to improve his relative earnings. That is, we would expect a positive effect of the probability of the husband earning less on his labor market outcomes.

Lastly, gender identity theories predict that beyond spouses' income equality threshold, that is, when couples deviate from the male breadwinner norm, they would respond by "doing gender" (West and Zimmerman, 1987). That is, women start to allocate more time to housework so as to compensate this deviation by reinforcing gender traditional roles in the division of housework (Bittman et al., 2003). This compensation would be opposite to behaviour predicted by theories based on comparative advantage (e.g., Becker (1965)).[5]

[5]Theories based on comparative advantage predict that whoever works more outside the home will work less inside the home, whether it be the husband or the wife. Also the literature on household economics (e.g. Lundberg and Pollak 1996) state that if preferences over leisure are normal we should expect that women do relatively less housework when their contribution to household increases, as it can be considered a measure of their bargaining power within the household.

The differential patterns observed in labour market behaviour among individuals of different educational attainment suggest the importance that the education has for the construction of gender roles at home and the labour market. Therefore we would expect that the responses to gender norms differ by educational attainment. On one hand, because the financial and career costs of leaving the labour market are higher for most educated women. On the other hand, in the framework of the identity model, we can argue that individuals can get a sense of identity also from their job and career. As stated by Akerlof and Kranton (2000), social categories need not be mutually exclusive, and an individual may be mapped into several social categories (e.g., individual j is both a "woman" and a "professional"). Therefore, if more educated women find themselves in conflict between the identity derived from their career and that associated to conforming with gender norms, we can expect them to be less responsive to gender traditional norms, as affecting their labour outcomes represents a cost for them in terms of their identity as "professionals".

This is reflected on the prevalence of traditional gender norms, which as shown by data coming from the World Value Survey, is stronger among less educated women compared to the more educated. Notably, concerning the prescription that *"If a woman earns more money than her husband, it's almost certain to cause problems",* among those women who have some college the percentage of agreement is 36%, while among those whose maximum educational level is primary school, it is 43%.[6] Similarly, regarding the statement *"When a mother works for pay the children suffer"* (WVS 2011), among those women with the lowest level of education the percentage of agreement is 43% while among those with college education it is only 6.5%, reflecting their different perceptions about the role of women at home and the possibility of developing a career.

3 Data and context

The main analysis in this study is based on a representative Household Survey for Uruguay (*Encuesta Continua de Hogares*, hereafter ECH), conducted annually by the National Statistics Institute (*Instituto Nacional de Estadística*, INE). This survey collects information about households and individuals such as family structure, work and earnings. The period considered here is 1986-2016. During this period there were some changes in the sample populations, therefore in order to ensure consistency along the period, only observations corresponding to localities with a population above 5000 inhabitants are included. Section 7 is based on data coming from the Survey on the Use of Time and Non-paid work (EUT). This

[6]There were five possible answers to that question: Strongly agree, Agree, Disagree, Strongly disagree or Don't know. I excluded those who answer "Don't know" (5.8%). For 2011 although the statement was exactly the same, the categories of the possible answers change to: Don't know, Agree, Neither or Disagree. Those who answer that agree with the statement represent 29% among women, while among men this number is 21%. Although the answers for the the 2011 survey were more difficult to interpret, there may be some evidence of change across years in attitudes toward gender identity and in particular with the possibility that women become breadwinners in a household.

survey was conducted in 2007 and 2013 as a complementary module of the Household Survey. Therefore it is possible to merge these two data-sets at the individual and household levels by a unique identification number, and to combine information of use of time with socio-demographic and labour force information. More details about these data are provided in Section 7.

3.1 Main variables and sample description

The variables for the outcomes on labour supply are labour force participation and logarithm of hours of work. Labour force participation is defined as a dummy variable that indicates whether the individual is participating in the labour market or not, that is, employed or actively looking for a job. Hours of work refers to the hours usually worked per week.[7] The years of education is a constructed variable, which considers the number of years needed to reach the last level of education declared by the individual (independently of the number of years that the individual has actually taken to reach that level; the maximum for this variable is 22 years of education). The variable on labour income includes total earnings in the main occupation (comprising both dependent and self-employed), in the month preceding the interview. That is, it includes salaries, bonuses, holiday pay, tips and in-kind pay for each individual (net, after taxes), including also those who are non-registered in the social security. To ensure comparability, all earnings variables are converted into prices of December 2006 by using the national consumer price index elaborated by the National Statistics Institute.

The main sample in this study is composed of married or cohabiting couples, where both members are between 18 and 65 years old and are either the household head or the spouse (other couples in the house are not considered) and the husband has positive earnings.[8] A sample containing 347,516 couples is obtained (i.e. 347,516 women and 347,516 men). Summary statistics for this sample are presented in Table 2. Men are on average three years older than their female partners and about half a year less educated. However, when considering employed women, they are almost one and a half years more educated than employed men. On average 70% of the women in this sample participate in the labour market (are employed or looking for a job). Considering household characteristics, about half of the couples live in Montevideo (the capital city) and have nearly four members on average. Around one of its members is a son or daughter aged 0 to 12 (0.79 children aged 0-12 per household in average). Concerning civil status, 68% of these couples are married, however, this average hides large differences over time. For example, in 2016, 55% of the couples are married and the rest 45% are cohabiting.

Only in 13.9% of the couples in this sample the wife earns more than her husband, and when we

[7] Observations with less than six hours per week are not considered and, the number of hours is censored in 120 hours per week. Before year 1991 instead of hours of work usually worked, the individuals were asked the hours worked in the previous week.

[8] In what follows husband and wife are used indistinctly for married and unmarried couples. Only heterosexual couples are considered, I exclude those corresponding to cohabitants of the same sex.

restrict the sample to couples where both the husband and wife have positive earnings, we have that in 24.4% of the couples the wife earns more. Table A.2 in the Appendix provides summary statistics dividing the sample between those couples in which the wife earns more and the rest. We can see that wives that belong to couples where the wife is the main earner work six hours more per week on average and they are a bit more educated than those wives in couples where the husband earns more or equal: on average they have 1.1 years more of education compared with employed women in the rest of the couples. Men are also slightly more educated in couples where the wife earns more (on average 0.78 more years of education than men in the rest of the sample).

3.2 Relative income within couples

To construct a measure of relative income within couples, only those where both members are employed are considered. The share of female labour income (s_i) is defined as the total wife's income divided by the sum of labour incomes for both couple members:

$$s_i = \frac{y_{if}^o}{y_{if}^o + y_{im}^o} \tag{3}$$

where y_{if}^o and y_{im}^o are respectively female and male observed labour incomes for couple i. The mean value of this variable is 0.385, which implies that for those couples where both are employed, on average women provide 38.5% of the couple's income.

Figure 1 presents the distribution of s_i. Each dot represents the proportion of couples in a 0.05 relative income bin. The vertical line indicates the relative income share equal to 0.5. A *lowess* line (Locally Weighted Scatterplot Smoothing) was superimposed to help better visualize patterns in the data.

A first evidence in favour of the male breadwinner norm is that the distribution of the female share of labour income is such that most of the couples are situated to the left of 0.5. In Bertrand et al. (2015), a sharp discontinuity to the right of 0.5 in the distribution of female relative earnings for US couples is seen as evidence of the couple manipulating their relative earnings so as to comply with the male breadwinner norm, that is, avoiding that women earn more than their partners. A preliminary visual inspection of this graph seems to provide evidence in favour of a sharp drop to the right of 0.5 for the Uruguayan case. To perform a formal test of whether this discontinuity is significant, I conduct the McCrary (2008)'s test (the detailed analysis is presented in the Online Appendix). My results imply a statistically significant discontinuous decrease in the distribution of the wife's share of household labour income at the cut-off.

However, one important fact to notice is that in 2.88% of these couples the share is exactly 0.5. This bunching at the point of equal incomes, although not always addressed, seems to be a common feature in the distribution of relative income within couples in studies for other countries. For example, Lippmann

et al. (2020) report a spike at 0.5 where 2.75% of the couples are clustered for East Germany and 1.37% for the West, and using administrative data, Hederos-Eriksson and Stenberg (2015) find one with 0.28% for Sweden. For the US Bertrand et al. (2015) also find a positive fraction of couples with relative income exactly at 0.5, of around 0.26% of the couples using data of Survey of Income and Program Participation (administrative data) and much higher (not reported) when using US Census (which is the main source of information in their study). However in these last data, there are top-coded (upper-bound) incomes and imputed values, that explain part of the spike at 0.5. Therefore, they do a transformation (drop couples with imputed incomes and those where both have top-coded incomes and multiply by 1.5 the earnings of those individuals in which only one member has top-code) and after the changes, they report around 3% of the couples with incomes exactly at 0.5 (similar to the percentage that I find in Uruguay). In a final step, they "de-round" the data, saving 0.26% of the couples at 0.5 (the percentage they reported for the administrative data).

In the case of Uruguay, this concentration, although small, is large enough to create a marked spike at this point of the distribution of female share of income. In order to better visualize this pattern, Figure 2 presents the same distribution, but this time using 100 bins (instead of 20 bins as in Bertrand et al. (2015) and Figure 1).[9] With this finer detail, it is possible to clearly see the jump at the bin containing the 0.5. Also the first bin after 0.5 exhibits a much lower proportion of couples than the bins around it.

Using linked employer-employee data from Finland, Zinovyeva and Tverdostup (forthcoming) show that the discontinuity at the right of spousal's equal earnings is caused by the existence of a point mass of couples exactly at 0.5. This has already been found by Hederos-Eriksson and Stenberg (2015) on Sweden data and later by Binder and Lam (2018) for the US. I analysed this for the case of Uruguay and find also that the discontinuity to the right of 0.5 seems to be caused by an excess mass of couples with exactly equal earnings. In fact, the estimated discontinuities (McCrary test) when excluding 50%, 75% and 95% of the observations with female share of labour income at 0.5, although still significant, show a considerable reduction in its magnitude. These results together with the graphical inspection of the distribution of incomes when excluding these observations, suggest that the previously observed discontinuity could be driven by the spike at female share of income equal to 0.5 (the detailed analysis is presented in the Online Appendix).

Zinovyeva and Tverdostup (forthcoming) show that the discontinuity emerges as a result of equalization and convergence of earnings in co-working couples, and it is associated with an increase in the relative earnings of women, while Hederos-Eriksson and Stenberg (2015) find that this spike is mostly caused by self-employed individuals which have a higher flexibility to manipulate earnings. I do not have information on firms on my data, however, I find that among employees (wage earners) with female share

[9] Figure C.1 of the Appendix shows the distribution of the females shares of labor income by women's level of education

equal to 0.5, 37% work at the same industry (4-digits of ISIC), while when considering the whole sample this percentage is 9.19%. So, there is certain evidence of higher bunching among couples where both work at the same industry. Moreover, I find that 35% of the cases correspond to couples where both are self-employed. A higher proportion of self-employed among couples with relative earnings at 0.5 can be related to a higher flexibility to manipulate earnings (Saez, 2010), for example to avoid violating the gender norm of male breadwinner. Hederos-Eriksson and Stenberg (2015) for the Swedish case find that wives in couples at 0.5 have markedly less education relative to their husbands, rejecting the idea that these wives are held back. When analysing the relative level of education of the couples with female share equal to 0.5 for Uruguay, I find that in 49.5% of the couples the woman has a higher level of education and in 23.5% they have the same level. Then, contrary to the Swedish case, I cannot state that the women in these couples do not have the potential to advance to better paid jobs or that they are less productive than their husbands. Therefore, I cannot reject that they are held back or distorting their earnings with respect to their potential.

In any case, it should be stressed that the existence or not of a discontinuity in the 0.5 of the distribution of the couple's relative earnings does not imply by itself that the norm does not exist (whose prevalence is shown by WVS data on the high percentage of people that agree with it) or that it does not affect women's outcomes. In fact, Zinovyeva and Tverdostup (forthcoming) conclude that the absence of the discontinuity among the majority of couples where spouses do not work together may indicate that the norm only gradually gains importance with the increase in the relative earnings of women, and there is no sharp discontinuity in the utility function immediately to the right of the point with equal earnings of spouses. This suggests that the graphical analysis might not be the best way to address this question. In the next section I describe the empirical strategy used to identify the effects of this norm.

4 Empirical approach

In order to analyse the distortions in labour market outcomes that might take place through male breadwinner norm, this study follows the approach of Bertrand et al. (2015). A set of regressions is defined as follows:

$$z_i = \beta_0 + \beta_1 PrWem_i + \beta_2 X_i + \varepsilon_i \tag{4}$$

where z_i represents each of the labour market outcomes: labour force participation, hours of work and registered employment. The parameter of interest is β_1, and in all cases we follow a similar interpretation.

For example, when the outcome is labour force participation, β_1 measures the predicted changes in the likelihood that the wife participates in the labour force when the probability that the wife earns more ($PrWem_i$) changes by one percentage point, holding the other variables fixed.

Given that only realized earnings are observed, a major challenge is how to empirically construct the probability that female's earnings would exceed her husband's ($PrWem_i$). This definition entails choosing a counterfactual distribution for potential earnings. In Bertrand et al. (2015) the probability that the wife earns more $PrWem_i$, is defined as the likelihood that the woman would earn more than her partner if her income were a random draw from the population of working women in the wife's demographic group. Following this approach, I construct a potential income distribution drawn from the earnings distribution of those women in the demographic group who have positive earnings, that is, from the sample of employed women between 18 and 65 years old. For $p \in \{5, ..., 95\}$, y_i^p is defined as the pth percentile of earnings among working women in the wife's demographic group that year. The distribution is based on every 5th percentile from the 5th to 95th, so 19 potential labour incomes are obtained for each group each year.

The probability that the wife earns more than her husband is then defined as:

$$PrWem_i = \frac{1}{19} \sum_p 1_{\{y_{if}^p > y_{im}^o\}} \tag{5}$$

where y_{im}^o is the husband's observed earnings. Given the way in which $PrWem_i$ is constructed its value depends on the husband's income, the wife's affiliation to a demographic group and the distribution of earnings of employed women in the group. The demographic groups are constructed based on age and education levels. Six groups of age are taken: 18-25, 26-33, 34-41, 42-49, 50-57 and 58-65, and five groups of education level: less than 7 years (primary school or less), between 7 and 9 years (some basic highschool), between 10 and 12 years (some pre-university highschool - *"bachillerato"*), between 13 and 16 years (some college or technical education), and more than 16 years (college or more). Therefore, 30 groups for each year are obtained for each sex. Then each woman and man in each year is assigned to a demographic group based on these individual characteristics.[10]

This approach, proposed by Bertrand et al. (2015) assumes that the potential earning that a woman can have in the labour market is given by the distribution of observed earnings of working women in her demographic group. However, by the way it is constructed, this measure of wife's potential earnings

[10] Bertrand et al. (2015) take: race (3 groups), age group (five-year intervals), education level (5 categories) and state of residence. I include region in the regression as a control but not for constructing the groups so as to avoid duplicating the number of groups in each year. Concerning race, this variable is not available for all the period in my data, therefore it is not included. However, the proportion of people from different races is much lower in Uruguay compared with US (or with other Latin American countries). For example, for 2014, around 94% of the population identify "white" as their main race, 4.6% declare being "black" and 1.5% native or indigenous.

might be distorted by the gender norm as well. This would be specially so in those demographic groups where married women are the majority. In those cases, we could believe that if there is a causal effect of the norm on the labour supply then this would affect the construction of the independent variable itself. To deal with this, I conducted a robustness check using an alternative measure of the probability that the wife earns more, based only on the earnings distribution of women without partner for constructing the potential earnings. The results of these regressions are presented in the Appendix, and we can say that both ways of estimating the potential earnings for constructing the probability that the wife earns more lead to the same conclusions.

The other term in the regression, X_i, is a vector of control variables that includes the natural logarithm of the husband's income, the logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th and a set of non-income controls: year fixed effects, dummy variables for the wife's and the husband's age groups (six categories described above), dummies for the wife's and husband's education level (five levels described above) and a dummy for location, which takes value of one for those who live in the capital city and zero otherwise.

The regressions are estimated using a linear probability model with clustered standard errors by the wife's demographic group.[11] Additionally to the baseline regression alternative specifications are estimated, adding additional controls following the approach of Bertrand et al. (2015). As the impact of the wife's potential income on her labour supply might interact with the husband's income for other reason apart from the concern about violating the male breadwinner norm, a control for the median of the wife's predicted income (w_i^{50}) interacted with the husband's income is included. On the other hand, there is also the concern that women who marry men with lower education and earnings might have characteristics that keep them out of the labour force in favour of home production or child care activities. To deal with this, a dummy variable for the presence of children at home and an interaction between the wife's and husband's demographic groups are included.

5 Results on female labour outcomes

5.1 Labour supply and relative earnings within couples

This subsection discusses the results of the effect of the male breadwinner norm on wife's labour supply: labour force participation and hours of work. The coefficient of interest, β_1, measures the predicted changes in the probability that the wife participates in the labour force when the probability that the

[11] A disadvantage of the linear probability model is that the estimated probability of the wife's labor force participation can take values that are not in the interval [0,1], therefore if the interest is in prediction one should use a nonlinear binary model (such as logit or probit). However, given the fact that the aim here is not prediction, and I am interested in the marginal effects, I follow Bertrand et al. (2015) using the linear probability model which provides a good estimate of the marginal effects near the average of the covariates.

wife earns more ($PrWem_i$) changes by one percentage-point, holding the other variables fixed. Across all years, I obtain a mean of $PrWem_i$ of 0.25. However, if we compare it by dividing the period in two parts, we can observe that this value is on average 0.21 before 2001 and around 0.28 after 2001. Also, there are relevant differences by educational level. For example, if we compare those women with less than seven years of education, across all the period we get a value of 0.22, while it is about 0.34 for those with more than sixteen years of education.

The estimated coefficients for β_1 in Equation 4 for female labour force participation are reported in Table 3. Results are presented for the entire sample (*Panel a*) and also separately for two groups according to the wife's educational level: with highschool or less (*Panel b*) and with some college (*Panel c*). Column (1) presents the estimate of $\hat{\beta}_1$ for the baseline equation for all the sample, which is -0.065. These results are in line with those found in previous work by Bertrand et al. (2015).[12] That is, if we assume that there is a social norm that says that the wife shouldn't earn more than the husband, these results would indicate that a 10 percentage points increase in the probability that a wife earns more than her husband, reduces the likelihood that she participates in the labour force by around 0.65 percentage points. In columns (2) to (4) the sensitivity to the inclusion of additional controls is examined. When splitting the sample by educational levels, the baseline specification yields a significant estimated coefficient equal to -0.071 for those with highschool or less, and -0.048 for those with some college. In both cases it stays relatively unchanged when additional controls are added, and it is always significant and higher for the less educated. However, in a test of the equality of the estimated coefficients of $PrWem_i$ in the regressions for low and high educated women, I obtained a p-value of 0.0822 (and 0.1356 in the specification including all additional controls). This means that in fact we cannot reject the equality of the coefficients at the 95% level of confidence for the results on female labour force participation. That is, the differences in the estimated coefficients for low and high educated women are not statistically different.

As previously discussed, possible distortions in female earnings can take place not only by not participating in the labour market, but also by reducing the amount of hours worked to a level that does not threaten the husband's role as primary breadwinner. In fact, this seems to be a less costly way to avoid violating male breadwinner norm, as leaving the labour force is more costly in terms of foregone household income. In order to test this channel of adjustment to the norm, a regression is estimated with the natural logarithm of weekly hours of work as dependent variable and restricting the sample to couples where both the wife and the husband are working. Results are presented in Table 4. The estimate of $\hat{\beta}_1$ in the baseline regression yields a significant coefficient equal to -0.05. Columns (2) to (4) consider the same robustness checks as before, with the coefficient being always negative and significant. In the

[12] This is around half the size of the effect found for the US by Bertrand et al. (2015), who report a coefficient of -0.14.

specification with all the additional controls $\hat{\beta}_1$= -0.063. In terms of hours, taking the mean of the value of the $PrWem_i$ in the sample, a 10 percent point increase in the probability that a wife would earn more than her husband is associated with a reduction of six hours of work per week.[13]

When considering the regression separately by educational level, the coefficients are negative and significant in all the specifications and always higher for those with lower educational level. The estimate in the specification with all the additional controls is -0.087 for those with highschool or less, and -0.040 for women with college. In terms of hours, a 10 percent point increase in the probability that a wife would earn more than her husband, would imply a reduction of 7.9 and 4.7 hours per week respectively. In this case the test of the equality of the coefficients estimated for low and high educated wives yields a p-value=0.0474, which means that the differences are statistically significant at the standard levels.

To sum up, I find negative and significant coefficients in all specifications for all the sample and separately for both educational levels. The effect is always larger for those with lower educational attainment. That is, more educated wives are less likely to be out of the labour force or to work fewer hours due to the male breadwinner norm. These results are consistent with the hypothesis that the male's role as primary breadwinner has a stronger prevalence among the less educated, as well as with the idea that more educated women may find their job and careers as part of their identity. Then, while more educated women may find themselves in a conflict between the identity derived from their career and that associated to conforming to gender identity norms, for the less educated their jobs might be considered a way to get earnings and leaving the labour market or reducing working time does not represent for them a "career" cost.

Comparing the magnitude of the effects, the estimated coefficients for labour force participation are around half the coefficient found for the US (Bertrand et al., 2015), while my coefficients for the regression of working hours are about twice as large.[14] In the context of a relatively poorer country, one possible interpretation of these results is the dominance of the income effect. That is, while leaving the labour force seems a highly costly way of ensuring the prevalence of the male breadwinner model, reducing the number of hours of work or taking jobs with shorter or less demanding hours seems to be a more likely channel to which this gender norm can affect female labour supply. An alternative explanation for the difference in the magnitudes of the effects might be that some of the adjustments come from women moving to informal jobs. For this to hold we should observe that if we define labour force participation as being employed in the formal labour market, we obtain larger coefficients than those found for labour force participation in general, as part of those women are not actually leaving in the labour market but remaining in informal jobs. In the same line, we should find lower coefficients for hours of work when

[13]The average hours worked per week is 38 hours, and the mean of the value of $PrWem_i = 0.25$

[14]The coefficient reported for the regression of hours of work by Bertrand et al. (2015) [Online Appendix] is -0.032.

considering only formal jobs, as part of the adjustment would be through moving to informal jobs and working fewer hours in this kind of jobs, which are often more flexible to reduce hours. This is explored in the next subsection.

5.2 Informal jobs and relative earnings within couples

In the context of a middle income country like Uruguay, with weaker labour market institutions and limited enforcement capacity, this study explores informality as a complementary channel through which gender norms can affect labour market outcomes. As informal jobs are less well-paid and less regulated than registered jobs, an additional mechanism to avoid violating the male breadwinner norm while remaining in the labour market could be to stay in or to move into informal jobs. These non-registered jobs would allow wives to remain in the labour market while working fewer hours and with lower wages, reinforcing their secondary earner role at home.

Table 5 presents the results of estimating the previous set regressions for labour supply effects, but this time restricting it to the formal labour market. In columns (1) to (4) the dependent variable is a dummy that takes value one if the individual is employed in a formal job, zero otherwise. In columns (5) to (8) the dependent variable is the logarithm of weekly hours of work in a formal job, that is, considering only the sample of women employed in formal jobs. Given that the variable indicating registration in the social security is only available since 2001, in this subsection the analysis covers the period 2001-2016.

For employment in a formal job, the estimate of $\hat{\beta}_1$ in the baseline regression yields a significant coefficient equal to -0.129. Columns (2) to (4) consider the same robustness checks as before, with the coefficient being always negative and significant. In the specification with all the additional controls $\hat{\beta}_1$= -0.146, which implies that a 10 percentage point increase in the probability that a wife would earn more than her husband reduces the likelihood that she is employed in the formal labour market by around 1.5 percentage points. This estimated effect doubles the one obtained when using participation in the labour market as outcome.[15] Concerning the estimations for hours of work in formal jobs, I obtain negative and significant coefficients. In the specification with all the additional controls $\hat{\beta}_1$= -0.035. Compared with the estimates when considering hours of work in both, formal and informal jobs, these are almost half the magnitude. These results suggest that part of the adjustment in labour force participation and hours of work is in fact explained by adjustments in the formality margin.[16]

Panels (b) and (c) divide the sample by educational level, and we can observe that the effect for the less educated doubles the one obtained for those with at least some college in the case of employment.

[15] To be comparable Table A.6 in the Appendix estimates the set of regressions on labor force participation and Ln hours of work restricting the period to years 2001-2016. In the specification with all the additional controls $\hat{\beta}_1$=-0.062

[16] My estimates when restricting labor force participation and hours of work to the formal sector are very similar to those obtained by Bertrand et al. (2015) for the US for all their sample.

When considering hours of work, we obtain negative and significant coefficients only for the less educated but not significant for those with some college. That is, as before, we find that the less educated women are more responsive to the norm.

Lastly, I directly test the effect of the probability that the wife earns more that her husband on a dummy that takes value one if she is employed in a registered job vs being in the informal sector. The sample is restricted to couples where both members have positive earnings, that is, where the wife is also employed. The results are presented in Table 6. In line with the predictions of the male breadwinner norm, the estimate of $\hat{\beta}_1$ in the baseline regression yields a negative and significant coefficient, equal to -0.097. The estimates remain negative and significant with similar magnitudes across the specifications (in the specification with all the additional controls $\hat{\beta}_1$= -0.129).

When I split the sample across educational levels, the coefficients remain negative and significant for both subgroups, however they are much higher for those with lower educational level. The estimate in the specification with all the additional controls is -0.209 for those with highschool or less, and -0.051 for women with college. These results would imply that it is mostly the less educated women who have a greater probability of being in non-formal jobs as a way to avoid violating the male breadwinner norm: an increase of 10 percentage points in the probability that the wife earns more than her husband decreases in 2 percentage point her probability of being employed in a formal job. This is expected in the sense that non registered jobs are more frequent among less qualified occupations, and it may be associated also with the greater flexibility to adjust hours of work in informal jobs compared with the formal ones, therefore it is complementary to the result that I find for the hours of work.

6 Results on male labour outcomes

This subsection presents the effects of the male breadwinner norm on the husband's labour market outcomes. If traditional gender roles prevail in the couple, we would expect a positive effect of the probability that their wives earn more (which is equivalent to the probability that they earn less) on their labour market outcomes. They would try to increase their relative earnings, which can be done either by working more hours or by moving to a better paid job. As better paid jobs are likely to be those registered in the social security, we would also expect a positive effect of the probability that they earn less than their wives on formality.

A set of equivalent regressions is estimated for men, and this time the variable of interest is the probability that the husband earns less than his wife ($PrHusbEarnsLess$). The labour force participation channel is not tested in the case of men given than all the husbands in our sample are employed or looking for a job. Results for the estimated coefficients of the probability that the husband earns less

on the hours of work are presented in Table 7, where non significant estimates are obtained for β_1. One possible interpretation to the fact that men do not change their hours of work as a response to the male breadwinner norm, neither decreasing or increasing, is that their wives already react decreasing their hours so that they continue to be the main breadwinners at home. An alternative interpretation is that there is little margin to increase their earnings by increasing the hours of work because they already work a high number of hours. In fact, in these data, the average number of hours worked for husbands in the sample is 48 weekly hours (Table 2).

Table 8 presents the results for being employed in a formal job. In line with the predictions of the norm, positive and significant coefficients are obtained, except for the more educated where I find insignificant estimates. As before, the result that for the most educated group the formality is not affected can be explained by the fact that those with at least a college degree are more likely to be already employed in registered jobs, so there is no much margin to increase their formality. These findings are in line with the predictions of the male breadwinner norm, but contrary to what happen with women this norm leads men to improve their labour market outcomes. The more likely it is that the husband earns less than his wife, the more likely he is to self select into better quality jobs.

7 Relative income and housework

Together with the social prescription of the husband as main breadwinner, traditional gender roles also imply the social norm that women should be the main providers of care and housework tasks. In this section I analyse the effect of violating the social norm of male breadwinner on the division of housework within couples. In particular, I want to answer if Uruguayan couples verify the hypothesis of *doing gender* (West and Zimmerman, 1987), which states that in those households in which the male breadwinner norm is violated, that is, the female share of income exceeds 0.5, the couples compensate this deviation from the normative income standard with a more traditional division of housework.

The following analysis is based on time-use data coming from the Survey on Time-use and Non-paid work (EUT - INE). This survey was conducted in 2007 and 2013 as a complementary module of the Household Survey, therefore it is possible to merge these two data-sets at the individual and household levels by a unique identification number, and to combine information of use of time with socio-demographic and labour force data. Housework includes those activities that satisfy the third-party rule (Reid, 1934), that is, activities that can be substituted by market goods and paid market work. The categories included for constructing this variable are: cleaning the house and pets care, laundry, maintenance of the house and repairs and shopping. In order to express it as weekly hours of housework, the daily hours are multiplied per seven. Wives spend on average 32.8 hours a week on housework,

compared with 9.7 for husbands. However if only employed women are considered, we obtain an average of 28.7 hours a week.

Following the approach of Bertrand et al. (2015), the following regression is estimated to analyse how relative income within the couple affects the division of housework:

$$totalHouseWork_i = \beta_0 + \beta_1 \times female_i \times wifeEarnsMore_i + \beta_2 \times female_i + \beta_3 wifeEarnsMore_i + \beta_4 lnWifeEarnings_i + \beta_5 \times female_i \times lnWifeEarnings_i + \beta_6 \times lnHusbEarnings_i + \beta_7 \times female_i \times lnHusbEarnings_i + \beta_8 \times lnTotIncome_i + \beta_9 \times female_i \times lnTotIncome_i + \beta_{10} \times X_i + \beta_{11} \times female_i \times X_i + \varepsilon_i$$

where $lnWifeEarnings_i$ and $lnHusbEarnings_i$ are wife's and husband's weekly earnings at the main job at prices of December 2013, and $lnTotIncome_i$ is the sum of couple's earnings.[17] Based on these earnings, $wifeEarnsMore_i$ is defined as a dummy variable equal to one if the share of wife's earnings is higher than 0.5. X_i includes a dummy for Montevideo (region variable), year fixed effects, dummy variables for whether only the husband is working and only the wife is working, a set of dummies for wife and husband's education level (five levels - detailed in the previous section), and wife's and husband's age and quadratic age.

The coefficient of interest is β_1. A positive estimate of this coefficient would indicate that, *ceteris paribus*, in couples where the woman earns more than her partner, she also spends more time on non-paid work. Estimated results are presented in Table 9. In the baseline specification I obtain a positive and significant estimate for β_1 equal to 5.99. This result would imply that the gender gap in non-market work is greater when the wife earns more than the husband: in couples where the woman earns more than her partner, she spends around 6 hours per week more on non-paid work as compared to couples where she earns less. In column (2) controls for the presence of children of different ages are introduced (number of children aged 0-3 and 4-12 years), as well as their interactions with female. In Column (3) a cubic in wife's and husband's income is included. An advantage of the Uruguayan time-use survey is that the information is collected for all the individuals (older than 13 years old) in the household. Therefore, both members of the couple are included in my estimations. However, as time-use information is not necessary reported by the person to whom it refers, a major concern is that the respondent overstates or understates the housework time allocated by other members. In order to control for this possible source of bias, an additional specification is performed, adding a dummy variable that takes the value of one if the informant is the same to whom it is referred or zero otherwise, as well as its interaction with female. Its results are reported in Column (4). The estimate of β_1 remains positive, with $\hat{\beta}_1$ =2.105 in the specification with all the additional controls but it turns non-significative. Table A.7 in the Appendix

[17] In this section $lnWifeEarnings_i$ is set equal to zero if the wife's earnings are zero, and the same for husband's earnings. Controls for whether only one of them is employed are included in the regression.

reports the results when using a measure of non-paid work, that in addition to household chores includes taking care of children and elderly.

According to Bittman et al. (2003) an alternative way to visualize this non-linear relationship between relative income and the division of housework within the couple, is to plot the predicted hours of housework across the range of the wife's share of income, with other variables taken at their means or a modal category. Using data for Australia and the US they find a strong U shape relation between housework provided by the wife and the share of husband's income for Australia, but not for the US, and they argue that these differences are due to a more strong prevalence of the male breadwinner model in Australia.

Following them, I estimate a regression where the dependent variable is the weekly hours of non paid work, and the regressors include the wife share of couple's income and its square, a dummy for female, a dummy for living in the capital city, days of the week and year fixed effects, dummies for whether only the wife or only the husband is employed, wife's and husband's age and age square, dummies for husband's and wife's education levels and race, number of children 0-3 and 4-12 years old, wife's and husband's weekly hours of work at the labour market and the sum of couple's labour income. An interaction between all these variables and female is also included. Figure 3 shows the predicted hours of unpaid work per week for women and men across the range of the wife's share of labour income when values are set at their means and assuming that the couple has one child under four years of age and one child between four and twelve.[18]

It is possible to observe that even when women and men provide equal income, there is an ascription by sex that leads women to do much more housework than men. Women's unpaid hours of work are minimized when she contributes approximately 60% of the couple's income. Holding other things equal, moving from the man providing all the income to the woman providing an equal share, decreases women's housework by around 7 hours per week (decreasing from 61 to 54 hours approximately). But when men earn less than their wives (women provide more income than their husbands), couples compensate by increasing the hours of housework performed by the wife by around 2.5 hours more (from 54 hours per week to nearly 57). On the other hand, the hours of housework performed by men increase with the female share of couple's income, from around 21 hours when the man provides all the income, to around 27 when the woman provides all the income. In the context of a poorer country, an additional interpretation for the absence of reduction in the amount of housework performed by the men when women are main-breadwinners is that purchasing market substitutes for home made goods (e.g. ready-frozen food or fast-food) is more expensive.

The results in this section support the hypothesis of *doing gender* and are in line with previous work

[18] As stated in Bittman et al. (2003) the values assumed for variables other than the proportion of earnings contributed by the wife affect the level but not the shape of the relation depicted.

by Bertrand et al. (2015) for the US, Bittman et al. (2003) for Australia and Lippmann et al. (2020) for West Germany. This compensation in housework hours for deviance in the gender norms is inconsistent with the behaviour predicted by the literature on household economics (e.g. Lundberg and Pollak, 1996). In this line, Burda et al. (2013) after analysing Time-diary data from 27 countries, conclude that social norms' explanation can account for some of the patterns and correlates they observe, suggesting the potential importance of going beyond standard neoclassical models to analyse social phenomena.

8 Conclusions

While much research has focused on the gender wage gaps in the labour market, less is known about the differences in earnings within couples. Using data on Uruguayan couples from a representative Household Survey for the period 1986-2016, this study finds that the higher the probability that the wife earns more than her husband, the less likely she is to participate in the labour market and, conditional on employment, the fewer hours she works. This apparently counterintuitive behaviour can be explained by slow moving gender identity norms. In this paper I show that part of the responses to gender norms on labour supply take place through adjustments in the informality margin. That is, some women do not leave the labour force but remain employed in informal jobs and working fewer hours in this kind of jobs, which are often low-pay and more flexible to reduce hours of work. Moreover, my results show that not only women, but also men react to the male breadwinner norm, but contrary to what happens for women, it leads men to improve their labour market outcomes by self-selecting into better-paid formal jobs.

By providing evidence that traditional gender norms are holding back women's labour market performance for Uruguayan couples, this study contributes to the ongoing debate about the factors that limit further convergence in labour market outcomes between men and women, and the most adequate policies to reduce the gender gaps. The finding that gender norms can affect not only the labour supply, but also the quality of the jobs in which women are employed, through adjustments in the formality margin, has important welfare implications. This is specially so when considering that the attachment to traditional gender norms as well as the magnitude of the effects are higher for women of low educational attainment, suggesting that they are more likely to respond to this gender norm compared to the more educated. This reinforces a situation in which they are already characterized by having weak labour trajectories and less favourable conditions to participate in the labour market, and highlights the relevance that education has to broaden women's choices and vanish some of the negative consequences of gender stereotypes.

Public policies aimed to address some of these gender inequalities should promote better conditions to participate in the labour market, with better quality jobs that guarantee access to social security and

labour rights, especially for women of low educational attainment. However, not all public policies to incentivize women's participation in the labour market have the potential to change social perceptions. Gender norms are cultural constructions, transmitted across generations through socialization. That is, the male breadwinner norm and the division of tasks within the household are not irrevocably grounded in nature and they can be changed by institutions (see for example Lippmann et al. (2020)). Then, favouring policies that promote more egalitarian gender beliefs about male and female roles at home and the labour market, and its transmission among family and society can be more effective in the long run for eroding gender inequalities in the labour market.

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Tables

Table 1: Earnings and hourly earnings in low qualified female occupations by registration

	Registered average	Earnings Mean	Earnings Sd	Hourly earnings Mean	Hourly earnings Sd	Weekly hours Mean	Weekly hours Sd
Cleaners and home assistants							
All		5015	3468	45.7	29.4	29.6	15.2
Registered	0.54	6594	3420	51.2	31.9	33.5	14.2
Not registered		3067	2361	37.7	23.0	23.9	14.9
Cleaners in offices, hotels and other							
All		7426	3928	49.0	25.7	37.4	12.2
Registered	0.88	7933	3756	49.7	24.8	38.9	11.1
Not registered		3259	2610	41.9	32.4	22.2	12.3
Babysitters							
All		4003	3437	32.4	24.5	29.7	13.8
Registered	0.31	7008	3951	52.3	25.2	32.0	12.3
Not registered		2503	1777	22.4	16.8	28.5	14.3
Auxiliary in children's daycare institutions							
All		8097	4180	60.6	33.0	32.9	10.7
Registered	0.95	8279	4177	61.3	33.1	33.1	10.6
Not registered		4615	2291	47.5	25.7	29.3	12.2
Personal care worker in institutions							
All		9073	4667	50.2	30.3	44.4	14.9
Registered	0.88	9621	4578	52.9	30.1	45.1	14.2
Not registered		4691	2604	29.4	22.7	38.9	18.4
Home care workers							
All		5468	3775	34.2	21.8	39.5	19.3
Registered	0.41	7704	3994	44.2	22.7	44.8	18.2
Not registered		3788	2529	26.9	17.8	35.6	19.1

Notes: Data corresponds to Uruguayan Household Surveys 2001-2016. Registered is a dummy variable that takes value one if the individual is employed in a job registered in the social security and zero otherwise.

Table 2: Summary statistics

	Women				Men			
	Mean	SD	Min	Max	Mean	SD	Min	Max
1. Individual characteristics (max N=347,516)								
Age (years)	40.5	10.7	18	65	43.3	10.8	18	65
Schooling (years)	10.1	4.0	0	22	9.5	3.8	0	22
Schooling of employed (years)	11.1	4.0	0	22	9.5	3.8	0	22
Labour force participation	0.70	0.46	0	1	1.00	0.02	0	1
Weekly hours worked (for employed)	38.1	15.1	6	120	48.2	14.5	6	120
2. Household characteristics (max N=347,516)								
Living in the Capital	0.47	0.50	0	1				
Married couple	0.68	0.46	0	1				
N children 0-5 years old	0.36	0.64	0	6				
N children 0-12 years old	0.79	1.00	0	11				
N household members	3.82	1.46	2	24				

Notes: The sample is composed of couples where both are between 18 and 65 years old, and are either the household head or the spouse and the husband has positive earnings

Table 3: Female labour force participation and potential relative income

	(1)	(2)	(3)	(4)
	Dep variable: female labour force participation			
	(a) All women in the sample			
PrWem	-0.065***	-0.068***	-0.064***	-0.065***
	[0.009]	[0.009]	[0.009]	[0.009]
Observations	347,516	347,516	347,516	347,516
R-squared	0.119	0.119	0.124	0.124
	(b) Highschool or less			
PrWem	-0.071***	-0.076***	-0.070***	-0.071***
	[0.012]	[0.012]	[0.012]	[0.012]
Observations	276,188	276,188	276,188	276,188
R-squared	0.074	0.075	0.082	0.082
	(c) Some college			
PrWem	-0.048***	-0.047***	-0.048***	-0.046***
	[0.013]	[0.013]	[0.013]	[0.013]
Observations	71,328	71,328	71,328	71,328
R-squared	0.093	0.093	0.094	0.094
Additional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both are between 18 and 65 years old, household head or spouse, and husband has positive earnings. The dependent variable is a dummy which takes the value of one if the woman participates in the labor market (employed or actively looking for a job), zero otherwise. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors are clustered at women's demographic groups and reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Female hours of work and potential relative income

	(1)	(2)	(3)	(4)
	Dependent variable: ln Hours of work			
	(a) All women in the sample			
PrWem	-0.050***	-0.066***	-0.064***	-0.063***
	[0.012]	[0.012]	[0.012]	[0.012]
Observations	189,749	189,749	189,749	189,749
R-squared	0.018	0.019	0.023	0.023
	(b) Highschool or less			
PrWem	-0.073***	-0.090***	-0.087***	-0.087***
	[0.018]	[0.018]	[0.018]	[0.018]
Observations	132,050	132,050	132,050	132,050
R-squared	0.018	0.020	0.023	0.023
	(c) Some college			
PrWem	-0.037**	-0.039**	-0.040***	-0.040***
	[0.015]	[0.015]	[0.015]	[0.015]
Observations	57,699	57,699	57,699	57,699
R-squared	0.022	0.023	0.030	0.030
Additional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The dependent variable is the natural logarithm of weekly hours of work. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups , dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Labour supply in the formal labour market and potential relative income

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Formal Employment				*ln Hours of work*			
	(a) All women in the sample							
PrWem	-0.129***	-0.152***	-0.147***	-0.146***	-0.034***	-0.038***	-0.037***	-0.035***
	[0.011]	[0.010]	[0.010]	[0.010]	[0.011]	[0.011]	[0.011]	[0.011]
Observations	220,656	220,656	220,656	220,656	103,679	103,679	103,679	103,679
R-squared	0.223	0.225	0.230	0.230	0.020	0.020	0.025	0.025
	(b) Highschool or less							
PrWem	-0.188***	-0.197***	-0.189***	-0.189***	-0.049***	-0.061***	-0.059***	-0.059***
	[0.012]	[0.012]	[0.012]	[0.012]	[0.016]	[0.016]	[0.016]	[0.016]
Observations	168,258	168,258	168,258	168,258	62,413	62,413	62,413	62,413
R-squared	0.121	0.121	0.129	0.129	0.012	0.013	0.015	0.015
	(c) Some college							
PrWem	-0.091***	-0.091***	-0.092***	-0.090***	-0.017	-0.019	-0.019	-0.018
	[0.016]	[0.016]	[0.016]	[0.016]	[0.016]	[0.016]	[0.015]	[0.015]
Observations	52,398	52,398	52,398	52,398	41,266	41,266	41,266	41,266
R-squared	0.077	0.077	0.078	0.078	0.022	0.022	0.031	0.031
Additional controls								
*ln HusbIncome * ln wi50*	-	yes	yes	yes	-	yes	yes	yes
any child	-	-	yes	yes	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes	-	-	-	yes

Notes: The period is restricted to 2001-2016. In columns (1) to (4) the dependent variable is a dummy that takes value one if the wife is employed in a formal job, zero otherwise. In columns (5) to (8) the dependent variable is the natural logarithm of weekly hours of work in a formal job. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Female formal job and potential relative income

	(1)	(2)	(3)	(4)
	Dependent variable: registered job			
	(a) All women in the sample			
PrWem	-0.097***	-0.129***	-0.128***	-0.129***
	[0.013]	[0.012]	[0.012]	[0.012]
Observations	137,768	137,768	137,768	137,768
R-squared	0.177	0.182	0.183	0.183
	(b) Highschool or less			
PrWem	-0.196***	-0.212***	-0.209***	-0.209***
	[0.017]	[0.017]	[0.017]	[0.017]
Observations	93,524	93,524	93,524	93,524
R-squared	0.121	0.123	0.125	0.125
	(c) Some college			
PrWem	-0.050***	-0.050***	-0.050***	-0.051***
	[0.010]	[0.010]	[0.010]	[0.010]
Observations	44,244	44,244	44,244	44,244
R-squared	0.020	0.020	0.020	0.020
Additional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The period is restricted to 2001-2016. The dependent variable is a dummy which takes value of one if the individual is employed in a registered job, that is, that makes contributions to social security. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Male hours of work and potential relative income

	(1)	(2)	(3)	(4)
	Dependent variable: ln Hours of work			
	(a) All men in the sample			
PrHusbEarnsLess	-0.012*	-0.011	-0.011	-0.011
	[0.007]	[0.007]	[0.007]	[0.007]
Observations	194,855	194,855	194,855	194,855
R-squared	0.023	0.024	0.024	0.024
	(b) Highschool or less			
PrHusbEarnsLess	-0.013	-0.013	-0.013	-0.013
	[0.008]	[0.008]	[0.008]	[0.008]
Observations	156,223	156,223	156,223	156,223
R-squared	0.024	0.025	0.025	0.025
	(c) Some college			
PrHusbEarnsLess	-0.006	-0.006	-0.007	-0.007
	[0.013]	[0.014]	[0.014]	[0.014]
Observations	38,632	38,632	38,632	38,632
R-squared	0.030	0.030	0.031	0.031
Additional controls				
ln WifeIncome ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The dependent variable is the natural logarithm of usual hours of work. *PrHusbEarnsMore* is the likelihood that the husband's income would exceed the woman's if his income were a random draw from the distribution of positive earnings in his demographic group. Baseline specification includes the natural logarithm of the wife's income, logarithms of earnings in the husband's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Male formal job and potential earnings

	(1)	(2)	(3)	(4)
	Dependent variable: registered job			
	(a) All men in the sample			
PrHusbEarnsLess	0.039***	0.042***	0.043***	0.043***
	[0.009]	[0.009]	[0.009]	[0.009]
Observations	137,816	137,816	137,816	137,816
R-squared	0.106	0.108	0.108	0.108
	(b) Highschool or less			
PrHusbEarnsLess	0.059***	0.059***	0.060***	0.060***
	[0.010]	[0.010]	[0.010]	[0.010]
Observations	108,716	108,716	108,716	108,716
R-squared	0.081	0.081	0.082	0.082
	(c) Some college			
PrHusbEarnsLess	-0.007	-0.010	-0.010	-0.010
	[0.011]	[0.011]	[0.011]	[0.011]
Observations	29,100	29,100	29,100	29,100
R-squared	0.026	0.026	0.027	0.027
Additional controls				
ln WifeIncome ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The dependent variable is a dummy which takes value of one if the individual is employed in a registered job, that is, that makes contributions to social security. *PrHusbEarnsMore* is the likelihood that the husband's income would exceed the woman's if his income were a random draw from the distribution of positive earnings in his demographic group. Baseline specification includes the natural logarithm of the wife's income, logarithms of earnings in the husband's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife´s and husband´s education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

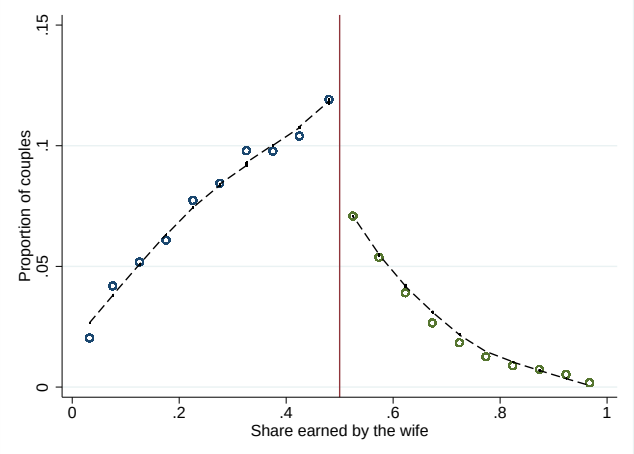
Table 9: Non market work and relative income

	(1)	(2)	(3)	(4)
	Dependent variable: Housework			
female x wifeEarnsMore	6.095***	5.972***	1.870	2.105
	(1.425)	(1.422)	(1.591)	(1.500)
wifeEarnsMore	2.676***	2.695***	1.218	1.271
	(0.871)	(0.872)	(0.944)	(0.894)
Aditional controls:				
Children	-	yes	yes	yes
Cubic in lnWifeIncome and lnHusbIncome	-	-	yes	yes
who_answers	-	-	-	yes
Observations	6,140	6,140	6,140	6,140
R-squared	0.358	0.364	0.370	0.425

Notes: Data source is EUT 2007 & 2013 and ECH 2007 & 2013. Sample of couples where both are between 18 and 65 years old, household head or spouse, and at least one is employed. The dependent variable is Total weekly hours of housework. *WifeEarnsMore* is a binary variable that takes the value of one when the wife's share of household income exceeds 0.5. Baseline specification (1) described above. (2) includes controls for children: number of children between 0-3 and 4-12 years old, and its interactions with female; (3) includes cubic in logarithms of wife's and husband's weekly earnings, and also these variables interacted with female; (4) includes a dummy for whether the survey was answered by itself. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

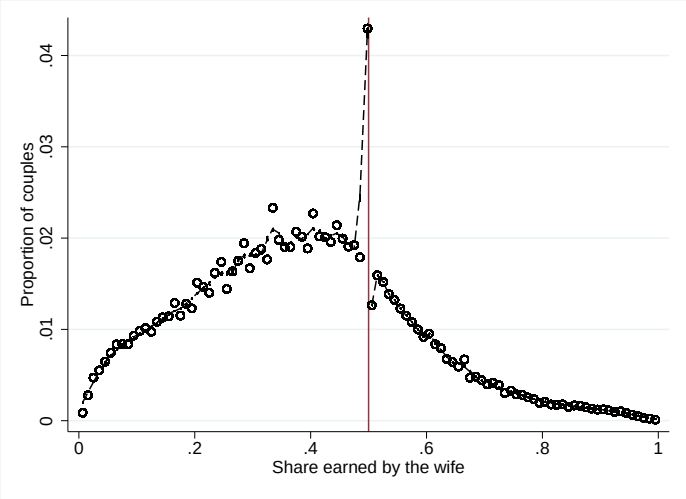
Figures

Figure 1: Distribution of female shares of labour income. 1986-2016



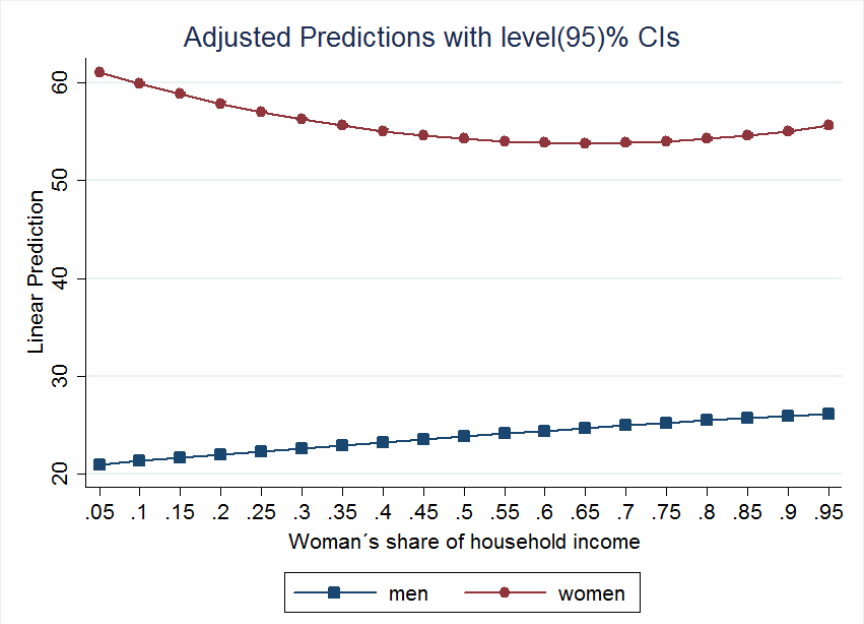
Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2016. The sample includes 18 to 65 year old couples where both members have positive earnings. Each dot represents the proportion of couples for each mean value of women's income share for a 0.05 relative income bin (20 bins). The vertical line indicates the relative income share= 0.5

Figure 2: Distribution of female shares of labor income. 1986-2016. 100 bins



Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2016. The sample includes 18 to 65 year old couples where both members have positive earnings. Each dot represents the proportion of couples for each mean value of women's income share for a 0.01 relative income bin (100 bins). The vertical line indicates the relative income share= 0.5

Figure 3: Predicted weekly hours of housework by woman's share of couple's income.



Notes: Data corresponds to Uruguayan Time Use Surveys and Household Surveys of 2007 and 2013. Predicted values of hours of non-paid work are computed from the regression, setting total couple's income, age, and hours of paid work to their observed means and assuming they have one child ages 0–3 and one child ages 4–12.

Gender identity and quality of employment

Appendix

A Additional tables

Table A.1: Activity condition by marital status

	Women			Men		
	In couple	Single	Separated, divorced and widowed	In couple	Single	Separated, divorced and widowed
Before 2001						
Employed	47.6	58.2	58.0	88.8	70.9	76.7
Unemployed	5.4	13.1	5.4	2.9	13.0	6.5
Inactivity -housework	31.1	4.6	5.0	0.1	0.4	0.4
Inactivity - others	16.0	24.1	31.6	8.2	15.8	16.4
Since 2001						
Employed	63.9	59.8	72.9	91.4	68.7	85.3
Unemployed	5.6	11.3	5.6	2.3	10.7	4.1
Inactivity -housework	22.6	4.8	7.0	0.6	1.4	1.7
Inactivity - others	7.9	24.1	14.4	5.8	19.2	8.9

Notes: Own calculations based on Uruguayan Household Surveys 2001-2014. The sample includes women and men between 18 and 65 years old.

Table A.2: Summary statistics for couples in which wife earn more and couples in which she is the secondary earner

	Panel (a): Couples were husband earns more or equal							
	Women				Men			
1. Individual characteristics	Mean	SD	Min	Max	Mean	SD	Min	Max
(max N=299,148)								
Age (years)	40.4	10.9	18	65	43.4	10.8	18	65
Schooling (years)	9.75	3.82	0	22	9.40	3.82	0	22
Schooling of employed (years)	10.85	3.95	0	22	9.40	3.82	0	22
Labour force participation	0.65	0.48	0	1	1.00	0.01	0	1
Weekly hours worked (for employed)	36.5	15.2	6	120	48.9	14.2	6	120
2. Household characteristics								
(max N=299,148)								
Living in the Capital	0.46	0.50	0	1				
Married couple	0.69	0.46	0	1				
N children 0-5 years old	0.38	0.65	0	6				
N children 0-12 years old	0.81	1.02	0	11				
N household members	3.87	1.48	2	24				
	Panel (b): Couples were wife earns more							
	Women				Men			
1. Individual characteristics	Mean	SD	Min	Max	Mean	SD	Min	Max
(max N=48,368)								
Age (years)	40.8	9.9	18	65	43.1	10.5	18	65
Schooling (years)	11.96	4.14	0	22	10.17	3.78	0	22
Labor force participation	1.00	0.02	0	1	1.00	0.02	0	1
Weekly hours worked (for employed)	42.6	13.7	7	120	44.5	15.5	6	120
2. Household characteristics								
(max N=48,368)								
Living in the Capital	0.53	0.50	0	1				
Married couple	0.66	0.47	0	1				
N children 0-5 years old	0.30	0.56	0	5				
N children 0-12 years old	0.65	0.86	0	7				
N household members	3.58	1.33	2	18				

Notes: Sample of couples where both are between 18 and 65 years old and the husband has positive earnings. In Panel (b) all women have positive earnings, while Panel (a) includes also unemployed/ inactive.

Table A.3: Female labor force participation and potential relative income. Alternative specification

	(1)	(2)	(3)	(4)
	Dependent variable: female labour force participation			
	(a) All women in the sample			
PrWem_sw	-0.059***	-0.062***	-0.058***	-0.058***
	[0.009]	[0.009]	[0.009]	[0.009]
Observations	347,516	347,516	347,516	347,516
R-squared	0.118	0.119	0.124	0.124
	(b) Highschool or less			
PrWem_sw	-0.062***	-0.068***	-0.062***	-0.062***
	[0.011]	[0.012]	[0.011]	[0.011]
Observations	276,188	276,188	276,188	276,188
R-squared	0.074	0.075	0.082	0.082
	(c) Some college			
PrWem_sw	-0.049***	-0.048***	-0.048***	-0.047***
	[0.013]	[0.013]	[0.012]	[0.013]
Observations	71,328	71,328	71,328	71,328
R-squared	0.092	0.092	0.093	0.094
Aditional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both are between 18 and 65 years old, household head or spouse, and husband has positive earnings. The dependent variable is a dummy which takes the value of one if the woman participates in the labor market (employed or actively looking for a job), zero otherwise. *PrWem_sw* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings os women who do not have a partner in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A.4: Female hours of work and potential relative income. Alternative specification

	(1)	(2)	(3)	(4)
	Dependent variable: ln Hours of work			
	(a) All women in the sample			
PrWem_sw	-0.053***	-0.066***	-0.063***	-0.062***
	[0.012]	[0.012]	[0.012]	[0.012]
Observations	189,749	189,749	189,749	189,749
R-squared	0.017	0.018	0.022	0.022
	(b) Highschool or less			
PrWem_sw	-0.070***	-0.085***	-0.082***	-0.082***
	[0.019]	[0.018]	[0.018]	[0.018]
Observations	132,050	132,050	132,050	132,050
R-squared	0.018	0.019	0.023	0.023
	(c) Some college			
PrWem_sw	-0.042***	-0.044***	-0.045***	-0.044***
	[0.015]	[0.015]	[0.015]	[0.015]
Observations	57,699	57,699	57,699	57,699
R-squared	0.022	0.022	0.029	0.029
Additional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The dependent variable is the natural logarithm of weekly hours of work. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups , dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A.5: Female formal job and potential relative income

	(1)	(2)	(3)	(4)
	Dependent variable: registered job			
	(a) All women in the sample			
PrWem_sw	-0.101***	-0.129***	-0.127***	-0.128***
	[0.012]	[0.011]	[0.011]	[0.011]
Observations	137,768	137,768	137,768	137,768
R-squared	0.177	0.182	0.183	0.183
	(b) Highschool or less			
PrWem_sw	-0.186***	-0.201***	-0.199***	-0.198***
	[0.015]	[0.015]	[0.015]	[0.015]
Observations	93,524	93,524	93,524	93,524
R-squared	0.121	0.122	0.124	0.124
	(c) Some college			
PrWem_sw	-0.048***	-0.049***	-0.049***	-0.049***
	[0.010]	[0.011]	[0.011]	[0.011]
Observations	44,244	44,244	44,244	44,244
R-squared	0.019	0.019	0.019	0.019
Additional controls				
*ln HusbIncome * ln wi50*	-	yes	yes	yes
any child	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes

Notes: Sample of couples where both have positive earnings. The period is restricted to 2001-2016. The dependent variable is a dummy which takes value of one if the individual is employed in a registered job, that is, that makes contributions to social security. *PrWem_sw* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings os women who do not have a partner in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in every 5th percentile from the 5th to 95th, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A.6: Labour supply and potential relative income

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Labor force participation				*ln Hours of work*			
	(a) All women in the sample							
PrWem	-0.063***	-0.067***	-0.062***	-0.062***	-0.051***	-0.068***	-0.065***	-0.064***
	[0.009]	[0.009]	[0.009]	[0.009]	[0.013]	[0.013]	[0.013]	[0.013]
Observations	220,656	220,656	220,656	220,656	132,228	132,228	132,228	132,228
R-squared	0.113	0.114	0.119	0.119	0.018	0.019	0.024	0.024
	(b) Highschool or less							
PrWem	-0.073***	-0.079***	-0.072***	-0.072***	-0.078***	-0.098***	-0.094***	-0.094***
	[0.012]	[0.012]	[0.012]	[0.012]	[0.020]	[0.020]	[0.020]	[0.020]
Observations	168,258	168,258	168,258	168,258	88,712	88,712	88,712	88,712
R-squared	0.070	0.070	0.078	0.078	0.019	0.021	0.024	0.024
	(c) Some college							
PrWem	-0.040***	-0.039***	-0.040***	-0.038***	-0.037**	-0.039**	-0.040**	-0.039**
	[0.014]	[0.014]	[0.014]	[0.014]	[0.016]	[0.016]	[0.016]	[0.016]
Observations	52,398	52,398	52,398	52,398	43,516	43,516	43,516	43,516
R-squared	0.085	0.085	0.086	0.087	0.022	0.022	0.030	0.030
Additional controls								
*ln HusbIncome * ln wi50*	-	yes	yes	yes	-	yes	yes	yes
any child	-	-	yes	yes	-	-	yes	yes
*wife's*husb's dem groups*	-	-	-	yes	-	-	-	yes

Notes: Period is restricted to 2001-2016. In columns (1) to (4) the dependent variable is a dummy which takes the value of one if the woman participates in the labor market (employed or actively looking for a job), zero otherwise. In columns (5) to (8) the dependent variable is the natural logarithm of weekly hours of work. *PrWem* is the likelihood that the wife's income would exceed the man's if her income were a random draw from the distribution of positive earnings in her demographic group. Baseline specification includes the natural logarithm of the husband's income, logarithms of earnings in the wife's demographic group in percentiles 5, 10, 15 and 19, and a vector of control variables: a set of dummy variables for the survey year (year fixed effects), dummy variables for the wife's and the husband's age groups, dummies for the wife's and husband's education level and a dummy for region. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A.7: Non market work and relative income

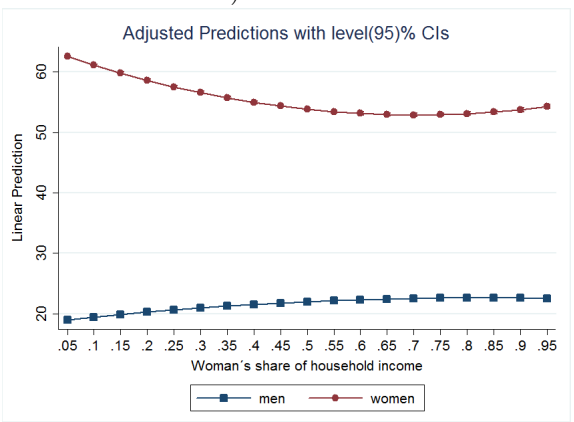
	(1)	(2)	(3)	(4)
	Dependent variable: Total non market work			
female x wifeEarnsMore	8.094***	7.743***	2.997	3.295*
	(1.935)	(1.860)	(2.052)	(1.942)
wifeEarnsMore	3.132***	3.368***	1.853	1.913
	(1.202)	(1.171)	(1.244)	(1.186)
Aditional controls:				
Children	-	yes	yes	yes
Cubic in lnWifeIncome and lnHusbIncome	-	-	yes	yes
who_answers	-	-	-	yes
Observations	6,140	6,140	6,140	6,140
R-squared	0.329	0.382	0.387	0.437

Notes: Data source is EUT 2007 & 2013 and ECH 2007 & 2013. Sample of couples where both are between 18 and 65 years old, household head or spouse, and at least one is employed. The dependent variable is Total weekly hours of non paid work, including house chores and taking care of children and elderly dependent adults. *WifeEarnsMore* is a binary variable that takes the value of one when the wife's share of household income exceeds 0.5. Baseline specification (1) described above. (2) includes controls for children: number of children between 0-3 and 4-12 years old, and its interactions with female; (3) includes cubic in logarithms of wife's and husband's weekly earnings, and also these variables interacted with female; (4) includes a dummy for whether the survey was answered by itself. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

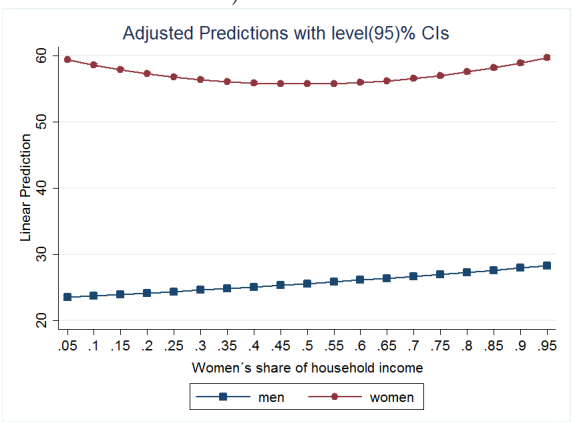
B Additional figures

Figure B.1: Predicted weekly hours of housework by woman's share of couple's income

a) Year 2007



b) Year 2013



Notes: Data corresponds to Uruguayan Time Use Surveys and Household Survey of 2007 and 2013. Predicted values of hours of non-paid work are computed from the regression, setting total couple's income, age, and hours of paid work to their observed means and assuming they have one child ages 0–3 and one child ages 4–12.

C Analysis on the discontinuity in the distribution of relative income within couples

C.1 Distribution of relative income within couples

To construct the graph of the relative income within couple, the shares of incomes were divided into twenty intervals of 0.05 size each (often referred as "bins"). The first bin goes from shares larger than 0 to shares equal or less than 0.05 and so on. The share 0.5 is included in the 10th group. Then, I calculate the mean value of the shares for each group and the proportion of households in each group as the number of observations in each bin divided by total number of couples belonging to the sample with positive female share. Finally, the values of the proportions were plotted against the mean value of female income shares for each bin.

A lowess line (Locally Weighted Scatterplot Smoothing) was superimpose to help better visualize patterns in the data. Locally Weighted Scatterplot Smoothing is a non-parametric strategy for fitting a smooth curve to data points, commonly used in regression analysis to create a smooth line through a timeplot or scatter plot to help visualizing relationship between variables and foresee trends. By default, lowess provides locally weighted scatterplot smoothing. At each point in the range of the data set a low-degree polynomial is fitted to a subset of the data, with explanatory variable values near the point whose response is being estimated. The polynomial is fitted using weighted least squares, giving more weight to points near the point whose response is being estimated and less weight to points further away. The value of the regression function for the point is then obtained by evaluating the local polynomial using the explanatory variable values for that data point. The lowess fit is complete after regression function values have been computed for each of the n data points. Lowess is a desirable smoother because of its locality it tends to follow the data.

A visual inspection of this graph seems to provide evidence in favour of a sharp drop to the right of 0.5. To perform a formal test of whether this discontinuity is significant, I conduct the McCrary test. McCrary (2008) developed an estimator for the discontinuity at a given cutoff point in the density function, by assessing the change in log densities at that point. The test coefficient is the difference between the log densities at the left and right of the cutoff: $\theta = ln\, f^{+} - ln\, f^{-}$. This test was developed as a test of manipulation related with the continuity of the running variable density function and commonly used in Regression Discontinuity designs, however, the method is also useful in applications where a discontinuous density function is itself the object of interest.[19]

[19] In regressions discontinuity designs if there is a discontinuity in the density of the assignment variable at the threshold for treatment, then this may suggest that some agents were able to manipulate their treatment status. The test is implemented as a Wald test of the null hypothesis that the discontinuity is zero. The idea behind the test is to smooth the histogram using local linear regression separately on either side of the cutoff.

Table C.1 presents the estimated discontinuity (McCrary test) at different values at the right of 0.5. These results imply a statistically significant discontinuous decrease in the distribution of the wife's share of household labour income at the cut-off.

Table C.1: McCrary test for the discontinuity in female shares of labor income

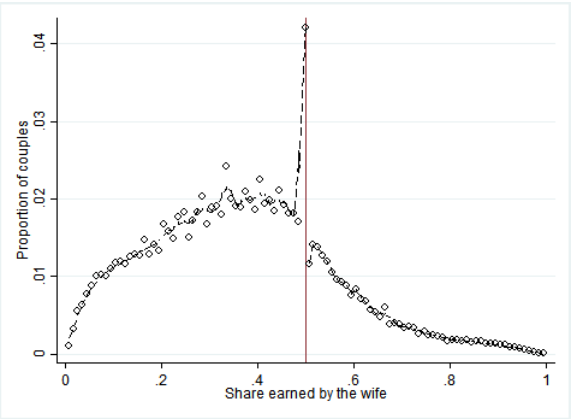
cutoff value	**theta**	**sd**	**p-value**
0.50001	0.646	0.0133	p<.01
0.501	0.588	0.0130	p<.01
0.502	0.545	0.0128	p<.01
0.505	-0.469	0.0124	p<.01

Notes: Sample of couples where both are between 18 and 65 years old and have positive earnings. N=178,493

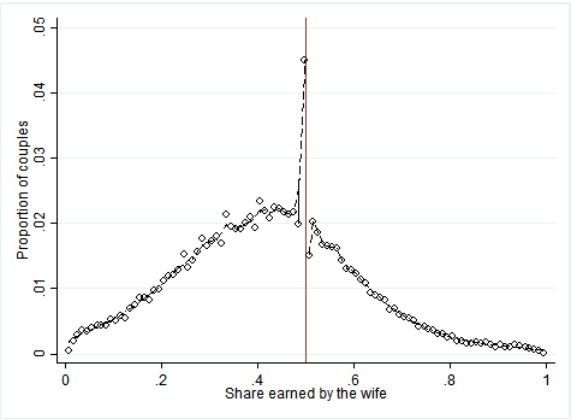
One important fact to notice is that there are 5139 couples in which the woman's share is exactly 0.5. This represents 0.0288 of the couples where both have positive earnings. In spite of the fact that a percentage of less than three percent does not seems to be too high, the concentration of couples with share exactly at 0.5 is large enough to create a marked spike at this point of the distribution of female share of income. Figure 2 presents the same distribution of female shares of income for the couples where both members have positive income, but this time instead of using 20 bins (as in Bertrand et al. (2015) and Figure 1), 100 bins are used. Figure C.1 shows the distribution of the females shares of labor income by women's level of education.

Figure C.1: Distribution of female shares of labor income. 1986-2016 by woman´s educational level

a) Highschool or less



b) Some college



Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2016. The sample includes 18 to 65 year old couples where both members have positive earnings. N with some college: 51,947. N with highschool or less: 126,546. Each dot represents the proportion of couples for each mean value of women's income share for a 0.01 relative income bin (100 bins). The vertical line indicates the relative income share=0.5

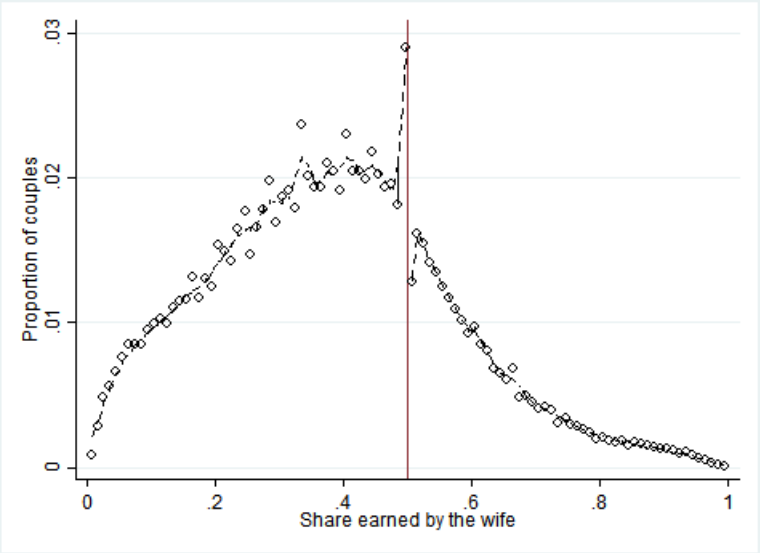
With this finer detail, it is possible to see clearly the jump at the bin containing the 0.5. Also the first bin after 0.5 exhibits a much lower proportion of couples than the bins around it. This fact seems to be a common feature in the distribution of relative income within couples in the studies previously presented for the other countries. Using register data for Sweden, Hederos-Eriksson and Stenberg (2015) find a spike at 0.5 where 0.28 percent of the couples are clustered. For the US Bertrand et al. (2015) also reported a positive fraction of couples with relative income exactly at 0.5 of around 0.26 percent of the couples using data of Survey of Income and Program participation (possible to link with administrative data) and much higher (not reported) when using US Census Bureau (which is the main source of information in their study). However in this last data, there are top-coded (upper-bound) incomes and imputed values, that explain part of the spike at 0.5. Therefore, they do some transformations, dropping couples with imputed incomes, those where both have top-coded incomes and multiplying by 1.5 those in which only one member has top-code. After these changes, they reported around 3 percent of the couples with incomes exactly at 0.5 (similar to the percentage found for Uruguay). In a final step, they "de-round" the data, saving 0.26 percent of the couples at 0.5 (the percentage they reported for the administrative data).[20]

C.2 Can we explain the spike?

In a first step 50% of the couples with relative female labour income equal to 0.5 in our data are excluded and then 75% and 95%. The resulting distributions are presented in Figures C.2 and C.3.

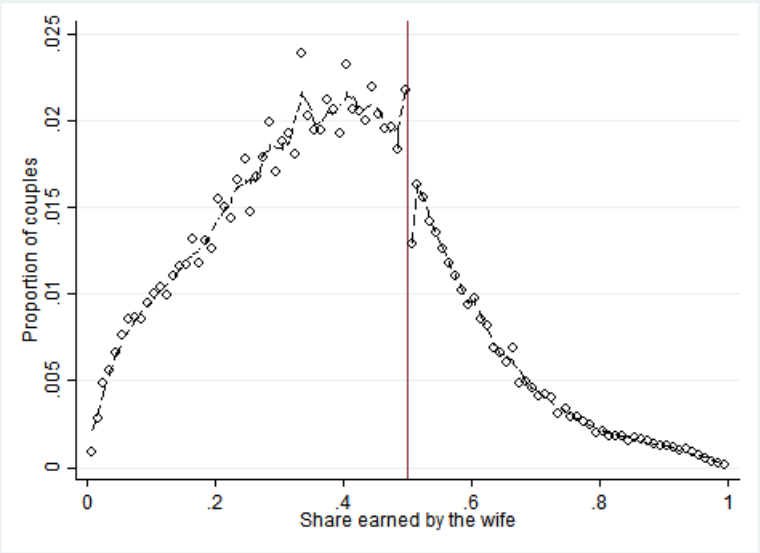
[20] In the case of Uruguay there is not systematic rounding in the data as they argue for US (but there may be a natural rounding when respondents declare their earnings).

Figure C.2: Distribution of female shares of labor income. 1986-2016. 100 bins excluding 50% of couples with share at 0.5



Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2016. The sample includes 18 to 65 year old couples where both members have positive earnings, excluding 50% of the couples with sharewife=0.5. Number of observations: 175,923. Each dot represents the proportion of couples for each mean value of women's income share for a 0.01 relative income bin (100 bins). The vertical line indicates the relative income share=0.5

Figure C.3: Distribution of female shares of labor income. 1986-2016. 100 bins excluding 75% of couples with share at 0.5



Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2016. The sample includes 18 to 65 year old couples where both members have positive earnings, excluding 75% of the couples with sharewife=0.5. Number of observations: 174,639. Each dot represents the proportion of couples for each mean value of women's income share for a 0.01 relative income bin (100 bins). The vertical line indicates the relative income share= 0.5

The estimated discontinuities (McCrary test) when excluding 50%, 75% and 95% of the observations with female share of labor income at 0.5 are presented in Table C.2. Even though the estimated discontinuity is still significant when deleting 50, 75 or 95 percent of the observations with female share equal 0.5, its magnitude is reduced in a considerable way. These results together with the graphical inspection of the distribution of incomes when excluding these observations, suggest that the previously observed discontinuity can be driven by the spike at female share of income equal to 0.5.

Table C.2: McCrary test for the discontinuity in female shares of labor income excluding observations at 0.5

	cutoff value	**theta**	**sd**	**p-value**
Deleting 50% of the observations at 0.5	0.50001	-0.355	0.0117	p¡.01
	0.501	-0.322	0.0116	p<.01
Deleting 75% of the observations at 0.5	0.50001	-0.256	0.0143	p¡.01
	0.501	-0.207	0.0145	p<.01
Deleting 95% of the observations at 0.5	0.50001	-0.111	0.0161	p¡.01
	0.501	-0.050	0.0162	p<.01

Notes: Sample of couples where both are between 18 and 65 years old and have positive earnings. N when excluding 50% of the observations at 0.5: 175,923. N when excluding 75% of the observations at 0.5: 174,639. N when excluding 95% of the observations at 0.5: 173,611.

Then I turn to analyse the characteristics of the sample of couples with female share equal to 0.5, by analyzing first the proportion of self-employed in this sample. Finding a higher proportion of self-employed among couples with shares at 0.5 does not give by itself an answer on the question if they bunch at 0.5 because of the male breadwinner norm or for some other reason. On the one hand, it is possible to state that if both spouses are self-employed they may work on the same enterprise and therefore it is expected that they set their earnings equal (on the idea of "equal pay for equal work" or to minimize areas of conflict (Hederos-Eriksson and Stenberg, 2015)).

On the other hand, a higher proportion of self-employed among couples with relative earnings at 0.5 can be related to a higher possibility of manipulating their earnings. Saez (2010) studying behavioral responses of earnings to taxes and transfers, observes bunching of individuals at convex kink points of the budget set. In particular, analyzing a means-tested government transfer program, the Earned Income Tax Credit (EITC), finds clear evidence of bunching around the first kink point of the EITC concentrated solely among self-employed (and not for pure wage earners). Using a bunching approach for taxpayers he argues that there are large adjustment cost to changing labor supply for wage earners, while self-employed have more flexibility to adjust their labour supply (or can misreport their income). A higher bunching for self-employed could be interpreted in this context as a large flexibility to manipulate earnings so as

to avoid violating the gender norm of male breadwinner.[21]

When analysing the sample of couples with relative income at 0.5, 54% correspond to couples where neither the female or male are self-employed, 11% to couples where only one of them is self employed and 35% to couples where both are self-employed. Comparing this with the total sample of couples where both members have positive incomes, 65% correspond to couples where neither the female or male are self-employed, 28% to couples where only one of them are self employed, and 7% to couples where both are self-employed. So, compared with all the distribution, we can observe that there is a large proportion of self-employed between couples with female share at 0.5.

If we analyse the couples "near" 0.5, considering those with female share between 0.45 to 0.5 and 0.5 to 0.55, we can observe that the proportion of couples where neither of them are self-employed is 73%, the percentage of couples where only one member is self-employed is 22%, and 5% of the couples where both are self-employed. Another potential reason why the spouses can have equal earnings is working in the same industry. Next I turn to analyse if there is a larger proportion of couples where both members are employed in the same industry between those couples with female share equal to 0.5. For doing this, the ISIC (International Standard Industrial Classification) code at 4 digits is used. Before 2005 the survey only contains this code at 2 digits, therefore the following analysis is conducted only for the period 2005-2014. For the couples of dependent workers (wage earners) with female share equal to 0.5, 37% work at the same industry (16% in the entire sample of couples with relative share 0.5), while when considering the entire sample, this percentage is 9.19%. So there is evidence of higher bunching among couples where both work at the same industry.

Even if the reported discontinuity in wives' earnings shares is larger for self employed couples or for couples working at the same industry, the relevant question is if this bunching can be related to the male breadwinner norm. Hederos and Stenberg (2015) pointed that it would be evidence in favour of the norm prescribing women should not earn more than their husband if women in these couples have the potential to advance to better paid jobs or if they are more productive than their husbands. In the Swedish case they find that wives in couples at 0.5 have markedly less education relative to their husbands, rejecting the idea that these wives are held back. When analysing the relative level of education of the couples with female share equal to 0.5 for Uruguay, it is possible to observe that in 27% of the couples the level of education of the man is higher than that of his wife. In 49.5% of the couples the woman has a higher level of education and in 23.5% they have the same level. Therefore, contrary to the Swedish case we cannot state that the women in these couples have a lower relative level of education.

[21] Kleven et al. (2015) use a bunching approach to analyse the distribution of the wife´s share of income within household, representing the breadwinner notch as an implicit tax on female earnings above the 50% reference point, and then estimate the implicit tax notch based on observed bunching and an elasticity parameter.

C.3 Counterfactual distributions

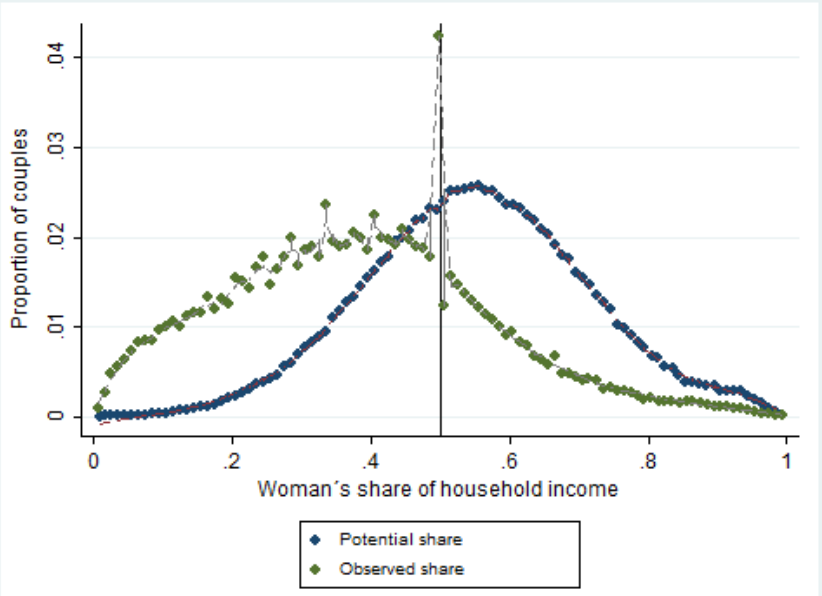
Apart from a strong discontinuity to the right of 0.5, evidence of a male breadwinner norm affecting the distribution of relative earnings within couples would imply that the observed distribution presents more observations to the left of 0.5 compared with the potential distribution. As the potential distribution is not observed, a major empirical concern is how to define potential earnings. In this section a simple exercise is conducted, by defining potential female earnings as those that would take place if women returns to their observed characteristics were equal to those obtained by men in a basic human capital equation.

A basic human capital regression for earnings is estimated separately for employed men and women aged between 18 and 65 years old, including as independent variables the age and age square, years of education and its square, region and year fixed effects.[22] Then potential labour income for women, $\hat{y}_{if}{}^{P}$ is constructed using male coefficients and female characteristics.[23] Therefore, for each couple i we have observed male and female earnings and an estimated potential female earnings: y^o_{im}, y^o_{if} and $\hat{y_{if}}^{P}$. Then a potential share of female labour income, $\hat{s_i} = \hat{y^P_{if}}/(y^P_{if} + y^o_{im})$ is constructed for those couples in which both members are between 18 and 65 years old and have positive labour income (i.e. the share is positive and less than one). The distributions for this potential share of female labour income and the observed share are plotted in Figure C.4. Given that the level of education of women is higher than that of men, the potential distribution of female share of earnings shows a strong shift to the right. Therefore we cannot reject that women distort their labour outcomes.

[22] Education is the years of education calculated based on the maximum educational level achieved, *region* is a dummy variable that takes the value of one for those who live in the capital city, and *year dummy* is a set of dummy variables for each year from 1987 to 2014, 1986 is the omitted category.

[23] The fact that education is an election variable does not mean that we cannot answer the question of what would be the labour income shares distribution if women were remunerated as men. Endogeneity means that we cannot give a causal interpretation to the estimated returns.

Figure C.4: Distribution of observed and potential female shares of labor income using male returns to female characteristics. 1986-2014.



Notes: Data corresponds to Uruguayan Household Survey from 1986 to 2014. The sample for the observed shares includes 18 to 65 year old couples where both members have positive earnings. Each dot represents the proportion of couples for each mean value of women´s income share for a 0.01 relative income bin (100 bins). The vertical line indicates the relative income share= 0.5