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Verónica Amarante - Cecilia Rossel

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# Gender differences in housework and earnings: intrahousehold evidence from Latin America

Verónica Amarante\* - Cecilia Rossel \*\*

## Resumen

Este documento analiza la distribución del trabajo remunerado y no remunerado al interior de los hogares en cinco países de América Latina. El estudio de las decisiones que se toman al interior del hogar es especialmente relevante en una región que presenta niveles de desigualdad de género superiores a los del mundo desarrollado, y donde una proporción significativa de las mujeres se encuentra excluida del mercado laboral. Se busca explorar como las teorías que han sido aplicadas al mundo desarrollado se adaptan a contextos más desiguales. En base a encuestas de uso de tiempo de Chile, Colombia, México, Perú y Uruguay, se presenta evidencia econométrica sobre la relación entre los ingresos y el tiempo dedicado al trabajo doméstico, considerando las hipótesis de dependencia, neutralización del desvío de la norma o señalización de género ('gender deviance neutralization/gender display') y autonomía. Nuestros resultados indican que, en América Latina, las decisiones sobre trabajo doméstico femenino se asocian más fuertemente con los ingresos absolutos de las mujeres, favoreciendo la hipótesis de autonomía. Los resultados econométricos compatibles con las hipótesis de dependencia o de neutralización del desvío de la norma, tienden a desaparecer cuando se incluyen los ingresos absolutos de las mujeres. Esta evidencia sobre la importancia de los recursos económicos de las mujeres para las decisiones al interior del hogar es relevante para el diseño de políticas, subrayando los vínculos cruciales entre el desempeño de los mercados laborales y la equidad de género al interior de los hogares en la región.

Palabras clave: trabajo doméstico no remunerado; uso del tiempo; división del trabajo; América Latina

Código JEL: C81, D13, C83

(\*) Verónica Amarante, IECON, Universidad de la República, Uruguay, correo electrónico: [veronica.amarante@fcea.edu.uy](mailto:veronica.amarante@fcea.edu.uy)

(\*\*) Cecilia Rossel, Departamento de Ciencias Sociales, Universidad Católica del Uruguay, correo electrónico: [cecilia.rossel@ucu.edu.uy](mailto:cecilia.rossel@ucu.edu.uy)

## Abstract

This paper analyzes the intrahousehold allocation of housework and paid work in five Latin American countries. The study of intrahousehold decisions in a region where gender inequality is higher than in the developed world and where a high proportion of women are excluded from paid work is important to disentangle how existing theories for the developed world apply to more unequal contexts. We carry out OLS regressions using harmonized time-use surveys for Chile, Colombia, Mexico, Peru, and Uruguay to consider the relationship between earnings and housework, in the framework of the dependency, gender deviance neutralization, and autonomy hypothesis. We find that in Latin America, female housework decisions are better associated with women's absolute earnings. The econometric evidence compatible with the dependence hypothesis, or even with compensatory gender display for some countries, tends to disappear when absolute earnings are considered to understand women's time devoted to household work. The significance that women's monetary resources have in shaping intra-household decisions in Latin America offers new evidence to incorporate into policy design, highlighting the crucial links between labor market performance and intrahousehold gender equity in the region.

Keywords: unpaid family work; Time use; Housework/division of labor, Latin America

JEL Classification: C81, D13, C83

## **1. Introduction**

In the last decade, the distribution of paid and unpaid work has gained attention among researchers in Latin America. New literature based on an increasing number of time-use surveys consistently reveals not only the existence of deep gender gaps in the distribution of paid and unpaid work in the region but also that these gaps are significantly higher than those found in the developed world (Amarante & Rossel, 2018).

Although this literature provides evidence on aggregate patterns of unpaid work allocation in the region, it does not deal with the role played by income and the interdependence of men's and women's choices regarding the allocation of unpaid work within the household. In this paper, we argue that unpacking intra-household patterns behind time-use decisions is essential to gain an understanding of gender-specific effects in the region. The housework literature is dominated by comparisons of European and OECD countries (Grunow, 2019); in contrast to the myriad of studies that analyze intrahousehold behavior for the developed world (Alvarez & Miles, 2003; Bittman, England, Folbre, Sayer, & Matheson, 2003; Connelly & Kimmel, 2010, among many others), no research has been carried out to capture these patterns in Latin America, with the recent exception of Domínguez-Amorós et al (2021).

Based on the idea that differences in time devoted to housework are related to gender disparities in power and resources within families, we explore the relationship between earnings and the allocation of housework within couples in Latin America. Our goal is to analyze the role that earnings play in how spouses decide the time they will devote to housework. It is important to note that our research does not claim to find causality in this relationship, given that individual income is endogenous and depends on a time-use outcome as hours in market work. Even with this limitation, our evidence about statistically significant associations between earnings and time devoted to housework contributes to unpacking the intra-household structure of gender inequality in the region.

We offer new comparative evidence from harmonized time-use surveys from five Latin American countries (Chile, Colombia, Mexico, Peru, and Uruguay), which represent the regional heterogeneity in terms of gender inequality. We find that -in our set of selected countries- female housework decisions are better associated with their own earnings. Our results reinforce the significance of women's monetary resources as well as the relevant links between labor market performance and intra-household gender equity.

## **2. Intra-household gaps in the allocation of unpaid work**

The widely documented asymmetrical division of housework between spouses has been theoretically explained under two main economic arguments. The more traditional one refers to Becker's model of household specialization (Becker, 1981), based on altruistic family members and a single-family utility function. Under the unitary model, the allocation of expenditure is not affected by the source of household income: wife and husband pool their resources regardless of their origins. The other argument relies on bargaining theories, which bring resources and power as the key to understand housework allocation. The idea is that, given that household work is perceived as unpleasant, the person with more resources will negotiate his way out of it, whereas the one with fewer resources will concentrate on housework, mainly because there is more to lose if the union dissolves -threat points, as discussed in McElroy & Horney (1981) -.

Both theories— specialization model and bargaining models- predict that the person with relatively high market wages will devote fewer hours to housework, although for different reasons. In the first case, this result is due to pure economic rationality and comparative advantage, while in the bargaining models, it is because the spouse's bargaining position is stronger. In both cases, the earnings of a person compared to that of his/her partner become a key issue. Whether the process is consensual or contested, both economic theories imply that the more money someone makes relative to her partner by working outside the home, the less work she will do at home. As discussed by Grunow (2019), the literature on housework time

published from 2000 onwards tends to emphasize the role of economic dependency and the non-economic factors involved, even if pure economic rationality still plays a role.

The understanding of differences in paid and unpaid work between men and women has also been deeply addressed in the sociological arena: three competing hypotheses refer to the relative resources or dependency theory, the gender display or gender deviance theory (Brines, 1994) and the autonomy theory.

The 'dependence' hypothesis can be linked to the idea of an exchange process and so the economic bargaining theory. It proposes a simple inverse relationship between a partner's share of the couple's total income and the time devoted to domestic labor. The partner with lower earnings compensates the other by doing more housework. This approach is gender-neutral, as partners' time spent on housework varies inversely with shares, regardless of gender (Gupta, 2007). In general terms, economic dependency has been confirmed in case studies or comparative studies, implying that increases in women's earnings relative to those of men are related to a decline in women's housework hours. Some of the examples of this literature include Brines (1994), Hersch & Stratton (1994), Greenstein (2000), Evertsson & Neramo (2004), Hook (2017) among many others. However, other scholars find small effects of the wage of the partner on individual hours of housework or childcare (Kalenkoski et al., 2006; H. Bloemen et al., 2008; Connelly & Kimmel, 2007). For a review of the literature on housework see Grunow (2019).

A different approach is given by those who argue that individuals with relative earnings that are unusually high or low for their gender, compensate by exaggerating their gender normative housework performance (Sullivan, 2013). Under this argument, the compulsion to reinforce gender identities will lead people to break the logic of economic exchange (Brines, 1994; Greenstein, 2000; Bittman et al., 2003). Therefore, men with unusually low relative earnings will spend less time on housework than other men, tending to refuse to perform routine housework (the 'gender display' hypothesis). When not only men but both partners engage in more gender traditional behaviors to offset female breadwinning, this hypothesis

turns into the 'gender deviance neutralization'. Under this behavior, nonnormative divisions of paid work are compensated by reinforced normative behaviors in unpaid work. In both cases, the idea is that under certain conditions pure bargaining explanations are not fully adequate, and the sociological concept related to 'doing gender' is useful to understand behaviors, as housework is a way of constructing gender (West & Zimmerman, 1987). Among the empirical evidence for this hypothesis, Bittman et al. (2003) find that women decrease the time they devote to housework up to the point where their income contributes equally to the household income compared to their partners. Men typically do less housework than their wives because they earn more, while women use their money to either reduce their housework or increase their husbands' up to a certain point. Brines (1994) finds that while women's housework hours are consistent with the specialization/bargaining models, the same does not hold for dependent husbands: the more they depend on their wives' income, the less housework they do. Greenstein (2000) reaches this same result, confirming the hypothesis that men compensate for their gender-atypical position by doing less housework. In line with these findings, other scholars show that the effects of both partners' incomes are not equal. Once women are the primary providers, they seem to compensate with a more traditional division of household work (Sevilla-Sanz, Gimenez-Nadal, & Fernandez, 2010). This literature tends to indicate that the upward curve in women's housework corresponds to when women earn approximately 70 or 75% of couple earnings (Hook, 2017).

The third approach corresponds to studies that have questioned the importance given in the literature to relative earnings as the main factor behind housework allocation. This scholarly work argues that absolute earnings -not relative earnings- are key to understand intra-household decisions on the allocation of unpaid housework (Gupta & Ash, 2008; Killewald & Gough, 2010). Under this 'autonomy hypothesis', women's absolute earnings determine the amount of time they devote to housework ('her time, her money'). In other words, if every additional dollar earned by women matters more to their housework time than an extra dollar

earned by men, it would be a mistake to only look into relative earnings (Gupta, 2006, 2007). The most likely reason for the importance of absolute earnings is that rather than bargaining out of housework with their partners, women can decrease their housework time by purchasing market substitutes with their own income. Evidence for the 'autonomy hypothesis' is presented by Gupta (2006, 2007) using data for the US and Australia. He finds that the effect of women's income is two to three times larger than that of their partners; moreover, in the full models with all controls, the partner's income has no statistically significant effect. The author suggests that the association between relative earnings and housework identified by the 'gender deviance neutralization' hypothesis in previous empirical research would be a consequence of the relationship between women's relative and absolute earnings. This relationship could be driven by the fact that women's absolute earnings decrease for higher levels of relative earnings. Further support for the importance of absolute earnings is provided by Killewald & Gough (2010), who also argue that limits in wives' ability to outsource household labor will lead to small additional reductions in housework time for wives at the high end of the earnings distribution, implying that the relationship between wives' earnings and their time in housework is non-linear.

Evidence from time use surveys has been mainly descriptive in available studies of housework for Latin America. Among the exceptions, in their comparative study, Amarante and Rossel (2018) find that unpaid work is much more responsive to personal and household characteristics in the case of women and that holding informal jobs is associated with more time dedicated to unpaid work for women, but the pattern for men is weaker. Also, Campaña et. Al. (2020) analyze the use of time among self-employed mothers and find results consistent with working mothers choosing self-employment as a way to improve work-life balance. Finally, in a recent study for Argentina, Brasil, Chile, and Uruguay, Domínguez Amorós et al (2021) evaluate the factors explaining the gender gap in the distribution of unpaid domestic and care and find

that relative resources of men and women have a limited effect on understanding the gender gap in the distribution of time-use in unpaid work.

An important shortcoming of most of the empirical literature reviewed is that the endogeneity problem is rarely addressed. The possibility of reverse causality, meaning that time spent in housework affects men's and women's earnings, is hard to solve in empirical terms.<sup>1</sup> Traditional methods to deal with joint endogeneity (instrumental variables, two-stage least squares, or panel data) have been scarcely used. Among the exceptions, Connelly and Kimmel (2007) instrument spouse's wages through standard first stage procedures to reduce endogeneity problems. Bloemen and Stancantelli (2014) also attempt to control for endogeneity -in their analysis of the effect of partners' wages on partners' allocation of time- through the estimation of a ten simultaneous equations model using job characteristics to identify wages. Carlson and Lynch (2017) estimate a structural equations model and two-stage least stage regressions to deal with possible reciprocal causality between personal earnings and housework.

As a closing remark for this literature review, it is relevant to note that more recently, comparative research has widened its scope, combining the micro (individual) factors with macro factors to understand decisions related to housework within couples. National contexts, including the level of gender equality and the strength of work-family policies, have shown to be relevant to understand country differences (Altintas & Sullivan, 2017; Campaña et al., 2017; Geist & Cohen, 2011; Hook, 2010; Prince Cooke & Baxter, 2010). At the individual level, gender ideologies have also proved to be important factors, not always available in traditional data sources (see for example Carlson & Lynch (2013) and Cunningham (2005)).

### **3. Data and method**

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<sup>1</sup> A separate body of research, not summarized here, has suggested reverse causality: time spent in housework has a negative effect on both men's and women's earnings.

We use data from time-use surveys for Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007). In all cases, time-use information is obtained through survey questions, instead of diary information. It is important to notice that time-use diaries, which are the usual way of gathering time-use information in Europe, are not extended in Latin America. The main reason is that, although time- diaries have the important advantage of capturing simultaneous unpaid work activities, questionnaires are a cheaper way of gathering overall time-use information (Kitterød & Lyngstad, 2005). Even if survey questions may have limitations to capture time use (Lentz et al., 2019), they provide rather consistent findings for main housework activities when compared to diary information (Schulz & Grunow, 2012). We consider that our data provides very valuable -and unique- information to understand time- use patterns in Latin America. In Colombia, Mexico, and Uruguay, time-use data was collected using a special module in the traditional household survey, whereas in Chile and Peru, a special time-use survey was carried out. The main characteristics of each survey and the differences among them are presented in Table 1 in the Supplementary Material.<sup>2</sup> In all cases except Uruguay, information about each member of the couple was obtained from the corresponding person.

Our measure for housework includes both standard household chores such as cooking, shopping, cleaning, washing, etc. but also child-caring time, although we are aware that these time allocations may entail different values for people. <sup>3</sup> The activities covered by the questions on household work in each survey's questionnaire are presented in Table 1 in the Supplementary Material.

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<sup>2</sup> The supplementary material is available upon request to the authors.

<sup>3</sup> We are aware that it could be problematic to subsume child care time under housework time, since they are by nature very different activities and therefore might have different explanatory variables and mechanisms (Connelly & Kimmel, 2007; Sullivan, 2013). In this first analysis of intrahousehold patterns in the allocation of unpaid work in Latin America, we opted not to analyze them separately, although further research is clearly needed on the subject.

Our analysis is restricted to families with two parents and at least one child, in which the spouses are between 25 and 64 years old. We refer to ‘husband’ and ‘wife’ for the sake of simplicity, although couples may not be married. The selection of cohabiting partners in central ages - including male or female sole breadwinner households- is the usual practice in time allocation studies. The consideration of these couples restricts the original survey samples to around 30-60% of the total population, depending on the country (see Table 2 in the Supplementary Material). To address the specific feature of Latin American countries where frequently only men receive market earnings, we work both with two samples: all couples and only dual earners couples (the latter equals around 15-25% of the total population in the sample).

As mentioned, when all couples selected for our study are considered, between 38% and 53% of households women do not receive earnings (see Table 1). In all five countries, between 9% and 14% of selected households can be classified as composed of equal earners (defined as those households where female’s share accounts for 45 to 55% of total earnings). As expected, male breadwinner households are a significant part of our sample of couples (between 25% and 40% of households included in our study), while female breadwinner households represent between 6% and 10% of households, depending on the country. Finally, households only dependent on female earnings represent a minor proportion of our sample of couples (between 3% and 4%).

Table 1. Types of households. All couples

	Chile	Colombia	Mexico	Peru	Uruguay
Only male earnings (zero female earnings)	37,8%	47,7%	52,8%	48,7%	37,4%
Dual earners, male breadwinner	39,5%	28,1%	24,9%	32,1%	37,1%
Dual earners, equal share of earnings	13,7%	11,5%	11,0%	8,8%	11,1%
Dual earners, female breadwinner	6,2%	8,0%	7,1%	6,0%	10,5%
Only female earnings (zero male earnings)	2,7%	4,6%	4,2%	4,3%	4,0%

earnings)

Source: time-use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

Our dependent variable is the number of housework hours per week ( $Y_i$ ) for each partner in a couple and we ran separate regressions for men and women. We ran OLS regressions, although we are aware that given the fact that  $Y_i$  has an upper and a lower limit, and that a considerable proportion of individuals report devoting zero hours to unpaid household, censored regressions (Tobit) could also be estimated (see, among others, Kalenkoski, Ribar, & Stratton, 2005; Kalenkoski et al., 2006; Connelly & Kimmel, 2007). If zeros in time-use data arise from a mismatch between the reference period of the data and the period of interest, then a Tobit model may not be adequate. For methodological discussions on this issue concerning time-diary data, see Stewart (2009) and Foster & Kalenkoski (2013).

Drawing on the discussions in the literature reviewed in the previous section, we consider different ways in which earnings can relate to housework. First, we consider the dependence and gender deviance neutralization hypotheses through the inclusion of the share of female income (measured as wives' earnings as a proportion of couples' total earnings,  $X$ ) and its square (equation 1). The inclusion of the quadratic form of the share of female earnings aims to explore the existence of gender deviance neutralization (see Hook, 2017). The model includes a set of control variables ( $Z$ ) at the individual and household levels. In the second specification, absolute female earnings (or male earnings) are added ( $W$  or  $M$ ), to test if there are changes in the significance or relative earnings (equation 2).

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_1^2 + \beta_Z Z_1 + \varepsilon_1 \quad (1)$$

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_1^2 + \beta_W W_1 + \beta_Z Z_1 + \varepsilon_1 \quad (2)$$

We also estimate specifications reflecting the autonomy model, where housework is related to absolute male and female earnings (equation 3).

$$Y_1 = \beta_0 + \beta_W W_1 + \beta_M M_1 + \beta_Z Z_1 + \varepsilon_1 \quad (3)$$

It is important to reclarify the scope of this research. Given that our analysis is based on cross-sectional data and that we lack suitable instrumental variables, we are not able to control for joint endogeneity, implying a reciprocal relationship between earnings and housework. We are, therefore, not testing for any causal directionality but just providing evidence on significant associations, which might support or be consistent with the different hypothesis considered, but do not prove them.

The control variables include personal characteristics of both members of the couple: own and partner's age, binary variables for own and partner's educational level, own and partner's non-labor income (in Colombia, Mexico, and Uruguay), or household non-labor income (Chile). A binary variable that controls for the presence of other adults in the households (besides the couple) is also included. Other relevant independent variables considered are labor market adscription, the number of children younger than 3 years old, between 3 and 5 years old, between 6 and 12 years old, and between 13 and 18 years old (in this last case, separating between male and female), and a binary variable that indicates if the household pays for domestic labor.

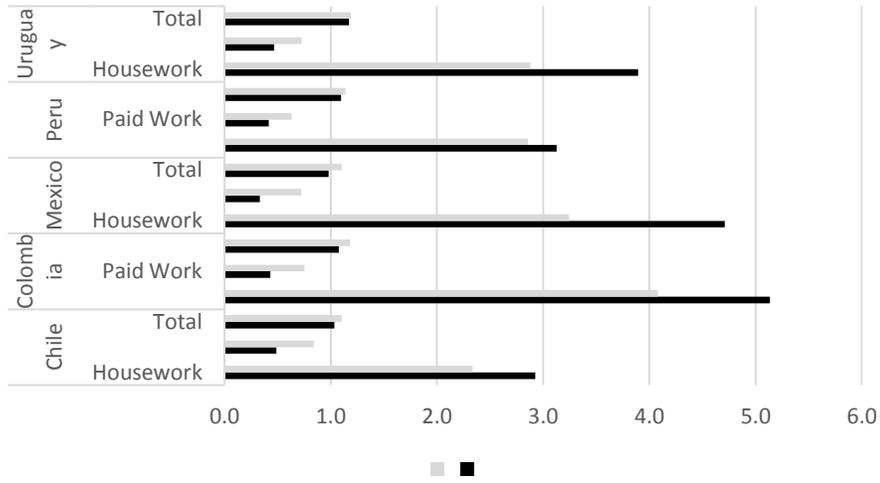
#### **4. Descriptive statistics**

The five countries we explore (Chile, Colombia, Mexico, Peru, and Uruguay) represent the heterogeneity of the region in terms of gender norms, gender inequality, and family policy developments. Colombia is the most unequal country in terms of gender. The gender social norms index (GSNI) shows a very traditional culture with important biases against women

(UNDP, 2020). Labor market inequality is high and there are no developments in the field of family policies. In Mexico and Peru, the male breadwinner model is still predominant (UNDP, 2020) and, although female participation in the labor market is relatively high, it is mostly informal and families still play a significant role in the provision of welfare (Martínez Franzoni 2008). Uruguay and Chile stand as the least sexist countries, although with some differences. In Uruguay, women's participation in the labor market is among the highest in the region and the male breadwinner stereotype is relatively weak compared to other countries (Pribble, 2006). Uruguay also presents a higher proportion of people with no gender bias of the five countries (UNDP, 2020). In Chile, female labor participation is still relatively low and its value in the gender social norms index is slightly higher than in Uruguay. Both countries have developed childcare and leave policies have been established.

The division of housework and paid within households presents significant gender gaps in all countries. Women devote between 3 and 5 times more hours to housework than men (see Figure 1 and Table 3 in the Supplementary Material). In dual earners households, even if the burden is on the female partner, housework allocation tends to be more egalitarian. There are important differences in total hours of work when all couples are considered women work 4 times more than men in Colombia and Mexico, and around 3 times more in Peru, Uruguay, and Chile. But the total hours of work are relatively similar between spouses when both members of the couple work (ratios equal or near to 1).

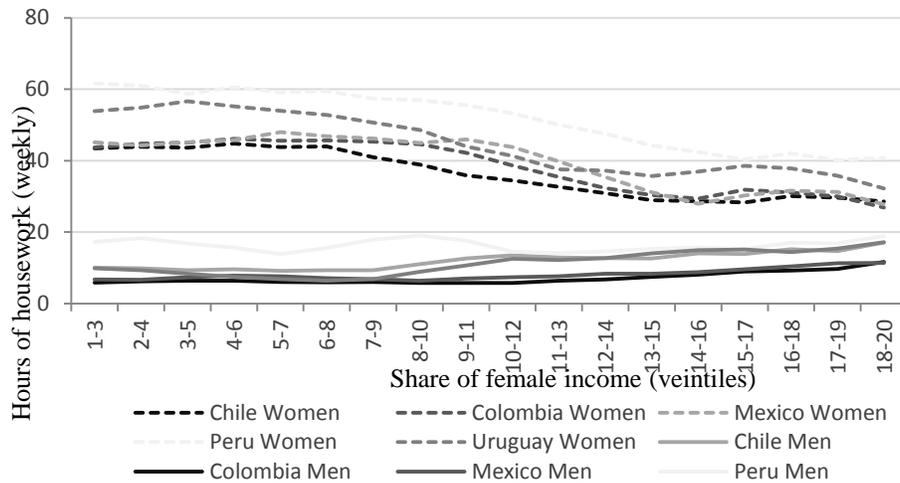
Figure 1. Differences in housework, paid work, and total hours of work



Source: time-use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

The relative value of female paid time compared to her husbands can be interpreted as a proxy for the relative bargaining power of women within the household. Under the bargaining model, higher wife's relative wage may reduce her housework time, although under the gender deviance neutralization hypothesis this relationship may be non-linear. A graphical analysis of the relationship between female and male housework hours by women's share of household earnings (in veintiles) indicates small variations along the distribution for males, with a slightly increasing trend as female share increases. In the case of women, the pattern is clear and similar across the five countries: they tend to devote less time to housework as their share of earnings increases (Figure 2). The figure for dual earners -available upon request- is very similar, although in the case of women the curve's slope is smaller.

Figure 2. Hours devoted to housework by men and women across women's share in total household earnings (all couples)

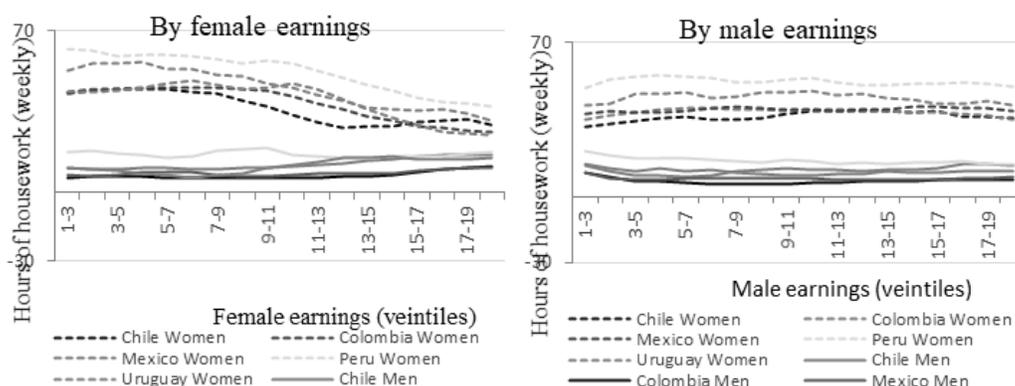


Source: time-use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

Also, some interesting trends can be found when analyzing the relationship between time (hours) devoted to housework and men and women's absolute earnings. Time devoted to housework does not vary by female absolute labor income (in veintiles) in the case of men (it remains low and stable), but it does vary for women (figure 3). In their case, housework hours

decrease as their income increases. Also, the housework time of men and women does not seem to be related to male labor income. Results for dual earners present similar patterns, providing a first indication about the importance of female own income for intrahousehold decisions.

Figure 3. Hours devoted to housework by men and women by absolute earnings (all couples)



Source: time-use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

## 5. Main results

We analyze how resources, and specifically male and female earnings, relate to a couple's allocation of time to housework. We estimated the equations detailed before, with weekly hours of housework as a dependent variable, and considering all couples. In this section, we report results referring to the income variable (details about the complete estimations can be found in the supplementary online material, as indicated in the text).

We first considered the relative and the gender deviance explanations. We report our results in table 2, in three separated blocks of coefficients. The first block of results shows the coefficients of female labor income share and its square: in all countries, higher female shares of

labor income were related to lower hours dedicated to housework, with very significant decreases in weekly hours in all cases, consistent with predictions from the dependency hypothesis. The quadratic term was always positive, but only significant for Colombia and to a lesser extent for Peru, so in general terms, the gender deviance neutralization hypothesis was not a generalized pattern in the region. Increasing female share in labor income was only associated with more male housework in Chile and Uruguay, with an impact smaller than those estimated for females. In Colombia and Mexico, male dedication to housework was not significantly related to a higher share of female earnings, whereas, in Peru, it presented a negative association.

The second and third blocks in table 4 correspond to the inclusion of absolute female earnings (equation 2 in the methodological section). In the first case, absolute income is included in logs, whereas in the other one, it is included in absolute splines, corresponding to the 0-50<sup>th</sup> percentile of female earnings, the 50<sup>th</sup>-90<sup>th</sup> percentile, and 90<sup>th</sup> and more. In the specification with logs of female earnings, female shares continued to be significant, but with smaller coefficients in almost all cases, and the quadratic term was not significant, except for Colombia. In the specification with splines of absolute female earnings, relative earnings were not any more significant, whereas the second splines showed a significant negative association with housework in the case of women. When absolute male labor income was included (instead of female, see Table 4 in Supplementary Material), female shares kept being significant, giving a first clue about the role of women's earnings in relation to their partners' when taking housework decisions. When these equations are estimated for the sample of dual earners, results are similar although some changes are detected (see Tables 5 and 6 in Supplementary Material). The apparent evidence of gender deviance neutralization detected for some countries disappeared when female absolute earnings were included. Moreover, female shares lost significance in all

countries except in Colombia. In this case, the first spline of female absolute earnings was highly significant in Colombia, Mexico, Peru, and Uruguay. This is consistent with the fact that the sample does not include the relevant proportion of women with no earnings that are concentrated in the first spline of absolute female earnings when all couples are included. Overall, our results give no support to the gender deviance neutralization for these countries. The apparent existence of gender deviance neutralization behavior in Colombia and Peru, found in the first block of table 2, disappeared once absolute female income was included. Moreover, the dependence hypothesis also tended to weaken when female earnings were included in the form of splines, although this point deserves further consideration.

Table 2. Coefficients of female share and its quadratic term and female absolute earnings. All couples. Dependent variable: weekly hours of housework

	Chile		Colombia		Mexico		Peru		Uruguay	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Female share	-33.79*** (8.190)	11.57** (5.251)	-17.07*** (1.323)	-0.0635 (0.893)	-13.59*** (3.395)	2.860 (2.202)	-25.84*** (4.994)	-9.522** (3.765)	-22.93*** (8.188)	13.77*** (5.196)
Female share^2	16.79* (9.076)	-5.076 (6.035)	8.130*** (1.335)	5.218*** (1.040)	6.345* (3.790)	-2.852 (2.225)	13.51** (5.722)	12.45*** (4.454)	9.111 (8.292)	-6.353 (5.721)
R2	0.247	0.118	0.219	0.124	0.160	0.074	0.355	0.063	0.207	0.134
Female share	-22.39** (9.554)	12.27* (6.375)	-18.00*** (1.617)	-0.575 (1.121)	-11.59*** (3.880)	2.260 (2.384)	-22.57*** (8.621)	2.772 (6.172)	-16.87* (9.635)	15.21** (6.716)
Female share^2	9.920 (9.461)	-5.499 (6.496)	8.707*** (1.459)	5.533*** (1.151)	5.120 (3.938)	-2.484 (2.311)	11.27 (7.719)	3.954 (5.806)	5.175 (8.912)	-7.288 (6.468)
Female earnings (log)	-1.213* (0.643)	-0.0750 (0.303)	0.0470 (0.0483)	0.0257 (0.0264)	-0.183 (0.188)	0.0550 (0.0864)	-0.203 (0.366)	-0.756*** (0.266)	-0.556 (0.471)	-0.132 (0.294)
R2	0.250	0.118	0.219	0.124	0.160	0.074	0.355	0.069	0.208	0.134
Female share	-11.30 (9.638)	9.378 (6.796)	-4.979*** (1.746)	-1.563 (1.266)	-5.184 (4.271)	2.324 (2.390)	-8.604 (8.818)	2.573 (6.492)	-3.945 (10.39)	12.50* (7.472)
Female share^2	5.929 (9.208)	-3.932 (6.601)	2.106 (1.518)	6.270*** (1.210)	1.458 (3.804)	-2.502 (2.347)	4.279 (7.801)	3.485 (5.985)	0.692 (9.022)	-6.042 (6.661)
Women earnings, 0 <sup>th</sup> -50 <sup>th</sup>	-0.434 (0.672)	-0.233 (0.313)	1.339*** (0.0815)	-0.0640 (0.0420)	2.813*** (0.741)	0.0908 (0.295)	5.419*** (0.932)	-1.042 (0.698)	0.198 (0.480)	-0.253 (0.289)
Women earnings, 50 <sup>th</sup> -90 <sup>th</sup>	-6.232*** (1.771)	1.485 (1.116)	-3.909*** (0.209)	0.334** (0.133)	-2.597*** (0.597)	0.0293 (0.251)	-5.746*** (0.964)	-0.558 (0.721)	-5.981*** (1.893)	1.152 (1.102)
Women earnings, 90 <sup>th</sup> +	-2.795 (4.301)	-2.715 (2.310)	-1.224** (0.496)	-1.011** (0.435)	-1.886* (1.103)	-0.0507 (0.819)	0.497 (2.396)	1.169 (1.912)	-11.17*** (2.968)	-0.646 (2.787)
R-squared	0.256	0.120	0.228	0.125	0.165	0.074	0.372	0.070	0.222	0.135
Observations	2302	2302	84653	84653	13150	13150	1998	1998	1305	1305

Source: Author's elaboration based on time use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

Given the previous results that underline the role of absolute earnings, we turn to estimate equation 3, focused on the role of own absolute earnings. Increases in female absolute earnings were related to decreases in hours devoted to housework in the case of women in all countries, whereas for men no clear pattern was detected (Table 3, first block). When absolute earnings were included in splines instead of logs, the second spline showed the most significant and negative effect on women's housework in all countries, and it also presented a positive association with men's housework in Chile, Colombia, and Uruguay. The first spline was only significant and positive for women in Colombia, Mexico, and Peru (Table 3, second block). The sizeable negative relationship became smaller for the third spline. These declining returns of additional earnings may reflect that more complex tasks are difficult or expensive to outsource appealing to the market, as suggested by Killewald & Gough (2010). In some countries, absolute male earnings were negatively associated with male housework, although the coefficients were significantly lower than in the case of women. The three splines of male earnings were associated with lower hours of housework of men in Colombia, whereas the first and second showed the same relationship in Peru and only the third one in Chile. In all cases, the coefficients of absolute male earnings indicated lower elasticity of response than in the case of female earnings. When the sample consisted only of dual earners, both the first and second splines of absolute female earnings were associated with lower hours devoted to housework in the case of women (see Table 7 in Supplementary Material).

The two most commonly used criteria to select among different econometric models—the Akaike information criterion and the Bayesian information criterion, AIC and BIC respectively—indicate that when all couples were considered, the best fit for women always includes splines of female absolute earnings (see Table 8 in Supplementary Material). When the sample was

restricted to dual earners, the pattern was not so clear, although the BIC criterion selected the autonomy model for women in all countries except Colombia (see Table 9 in Supplementary Material). Our results indicate that women's own earnings are the ones more directly associated with their time on housework and that their partners' earnings do not even seem to be relevant. Our results are consistent with previous arguments for developed countries about the superiority of modeling intrahousehold decisions including women's and men's earnings separately (see for example Gupta & Ash (2008)).

As mentioned, our estimations also included a set of personal and household control variables as detailed in section 2. The presence of children younger than three years of age had a positive and significant effect on housework for both women and men in all countries, except in the case of men in Peru. The impact was always higher on women, as the coefficients were around three times those of men and decreased with the age of children. The effect disappeared for teenagers in most countries, except in Colombia for men and women and in Mexico for men. In these countries, the presence of children aged 13 to 18 was associated with lower housework, and the impact was higher in the case that teenagers are women, suggesting the intergenerational transmission of traditional gender roles within the household (Table A.1 in the appendix). The presence of extra adults in the household was only significant in Colombia, associated with more time devoted to unpaid household work (results available in Table 10 in Supplementary Material, which presents complete results for the specification with absolute earnings).

Table 3. Coefficients of female and male absolute earnings. All couples. Dependent variable: weekly hours of housework

	Chile		Colombia		Mexico		Peru		Uruguay	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Female earnings (log)	-2.161*** (0.574)	0.444* (0.252)	-0.365*** (0.0376)	0.105*** (0.0197)	-0.592*** (0.162)	0.0854 (0.0793)	-1.317*** (0.181)	-0.391*** (0.139)	-1.253*** (0.389)	0.424* (0.218)
Male earnings (log)	0.462 (0.640)	-0.289 (0.385)	0.0357 (0.0440)	-0.229*** (0.0343)	0.335* (0.179)	0.126* (0.0711)	0.348 (0.304)	-0.795*** (0.217)	0.422 (0.453)	-0.215 (0.293)
R2	0.245	0.115	0.215	0.121	0.158	0.074	0.349	0.070	0.204	0.125
Womens earnings, 0th-50th	-0.645 (0.638)	-0.0431 (0.285)	1.358*** (0.0817)	-0.124*** (0.0416)	2.947*** (0.705)	0.0643 (0.298)	5.472*** (0.927)	-1.256* (0.695)	0.0918 (0.450)	-0.0200 (0.256)
Women´s earnings, 50th-90th	-7.673*** (1.490)	2.731*** (0.925)	-4.364*** (0.174)	0.641*** (0.0999)	-3.068*** (0.444)	0.0932 (0.252)	-6.552*** (0.779)	0.173 (0.565)	-6.666*** (1.480)	2.679*** (0.845)
Women´s earnings, 90th +	-4.036 (4.477)	-1.046 (2.255)	-1.046** (0.495)	-0.269 (0.433)	-2.046* (1.131)	0.0140 (0.815)	0.276 (2.437)	2.332 (1.975)	-10.88*** (3.197)	-0.159 (2.869)
Men´s earnings, 0th-50th	0.239 (0.798)	0.297 (0.344)	0.0822* (0.0465)	-0.189*** (0.0364)	0.284 (0.184)	0.182** (0.0815)	0.353 (0.343)	-0.560** (0.254)	0.418 (0.492)	-0.181 (0.321)
Men´s earnings, 50th-90th	2.414 (1.831)	-1.209 (1.358)	0.406 (0.406)	-0.849*** (0.235)	3.019*** (1.089)	-0.318 (0.556)	0.215 (1.683)	-2.412** (1.094)	1.046 (2.039)	0.172 (1.141)
Men´s earnings, 90th +	1.483 (4.694)	-6.395*** (1.628)	-2.215*** (0.629)	-0.750** (0.316)	-5.054*** (1.835)	-0.718 (0.697)	-0.423 (2.443)	-0.919 (1.383)	-3.402 (4.422)	-0.872 (1.895)
R2	0.257	0.125	0.228	0.123	0.167	0.075	0.372	0.073	0.223	0.130
Observations	2302	2302	84653	84653	13150	13150	1998	1998	1305	1305

Source: based on time use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)

Finally, our data allows us to analyze the extent to which household work is outsourced. Due to differences in the questions included in the survey, this variable captures different services across countries.<sup>4</sup> The variable reflecting domestic workers was associated with lower hours of housework for women in all countries except in Mexico, where it was not significant. The variable was also not significant for men in Chile, Mexico, and Peru (see Table 10 in Supplementary Material). For women, the impact was considerable in magnitude, especially in Colombia, Peru, and Uruguay. This result was consistent with previous evidence that the outsourcing of domestic work reduces women's time on housework (Van Der Lippe et al., 2004; Baxter & Hewitt, 2012).

## **6. Concluding remarks**

The context in which the three main theories about income and housework (dependency, gender deviance neutralization, and autonomy) have been tested refers mainly to developed countries, where women's incorporation into the labor market is relatively high and gender inequality is lower than in other contexts. Therefore, our knowledge on whether these theories can 'travel' adequately to contexts with different structural features is still limited.

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<sup>4</sup> For Colombia and Mexico, homes with domestic service are those where a domestic worker lives with the family, so it captures only a part of outsourcing. In the case of Peru and Uruguay, it includes both the cases where domestic worker lives in the household and also the situation when household chores are done with the help of an external worker. In Chile, it distinguishes households where housework was done by domestic workers during the last week.

Latin American countries are a particularly interesting case. Differences between men and women in time devoted to housework within the household are significant in magnitude and higher than those found in developed contexts. This is partially explained by the high proportion of women that either do not participate in the paid labor force and do not have a personal income or work in the informal market. However, existing studies do not deepen into factors associated with intra-household decisions.

Our study contributes to starting to fill this gap. The evidence compatible with dependency or even gender deviance neutralization tends to disappear when absolute earnings are included in the models. The best specification to understand intrahousehold decisions about housework is the one that includes female absolute earnings, consistent with the autonomy hypothesis. In all countries, increases in female absolute earnings are related to decreases in hours devoted by women to housework, and their partners' earnings do not seem to be relevant. For men, no clear pattern of association with their own or partners' earnings is detected.

Although we are not able to disentangle causality patterns, our results about the significance of women's monetary resources are relevant information for policy design, and it highlights the crucial links between labor market performance and intrahousehold gender equity. Changing the unequal distribution of unpaid time within couples seems not to be compatible with the high rates of dependency in terms of earnings that women show in Latin America. The idea that economic empowerment should be considered an entry point to other dimensions of empowerment leads to the importance of policies that promote female access to employment, namely active labor market policies but also childcare and other family policies.

In terms of further research, more advances are needed to understand the concrete bargaining mechanisms that operate within the household. At the individual level, the role that women's and men's earnings have on the possibility of purchasing market substitutes for housework should be further explored, and testing for causal directionality in the link between earnings and housework in developing countries remains a pending issue. At the macro level, systematic consideration of the role of national contexts, including gender ideologies, norms, and culture could help us understand differences between countries.

## References

- Altintas, E., & Sullivan, O. (2017). Trends in Fathers' Contribution to Housework and Childcare under Different Welfare Policy Regimes. *Social Politics: International Studies in Gender, State & Society*, 24(1), 81-108. <https://doi.org/10.1093/sp/jxw007>
- Alvarez, B., & Miles, D. (2003). Gender Effect on Housework Allocation: Evidence from Spanish Two-Earner Couples. *Journal of Population Economics*, 16(2), 227-242.
- Amarante, V., & Rossel, C. (2018). Unfolding Patterns of Unpaid Household Work in Latin America. *Feminist Economics*, 24(1), 1-34. <https://doi.org/10.1080/13545701.2017.1344776>
- Baxter, J., & Hewitt, B. (2012). Negotiating Domestic Labor: Women's Earnings and Housework Time in Australia. *Feminist Economics*, 1-25. <https://doi.org/10.1080/13545701.2012.744138>
- Becker, G. S. (1981). *A treatise on the family*. Harvard University Press.
- Bittman, M., England, P., Folbre, N., Sayer, L. C., & Matheson, G. (2003). When Does Gender Trump Money? Bargaining and Time in Household Work. *American Journal of Sociology*, 109(1), 186-214.
- Bloemen, H. G., & Stancanelli, E. G. F. (2014). Market hours, household work, child care, and wage rates of partners: An empirical analysis. *Review of Economics of the Household*, 12(1), 51-81. <https://doi.org/10.1007/s11150-013-9219-4>

- Bloemen, H., Pasqua, S., & Stancanelli, E. (2008). *An Empirical Analysis of the Time Allocation of Italian Couples: Are Italian Men Irresponsible?* IZA DP No. 3823.
- Brines, J. (1994). Economic Dependency, Gender, and the Division of Labor at Home. *American Journal of Sociology*, 100, 652-688.
- Budlender, D. (2007). *A Critical Review of Selected Time Use Surveys*. Gender and Development Programme Paper Number 2UNRISD.
- Budlender, D. (2008). *The Statistical Evidence on Care and Non-Care Work across Six Countries*. Gender and Development Programme Paper Number 4, UNRISD.
- Campañá, J. C., Gimenez-Nadal, J. I., & Molina, J. A. (2017). Increasing the Human Capital of Children in Latin American Countries: The Role of Parents' Time in Childcare. *The Journal of Development Studies*, 53(6), 805-825.  
<https://doi.org/10.1080/00220388.2016.1208179>
- Campañá, J. C., Giménez-Nadal, J. I., & Molina, J. A. (2020). Self-employed and Employed Mothers in Latin American Families: Are There Differences in Paid Work, Unpaid Work, and Child Care? *Journal of Family and Economic Issues*, 41(1), 52-69. <https://doi.org/10.1007/s10834-020-09660-5>
- Carlson, D. L., & Lynch, J. L. (2013). Housework: Cause and consequence of gender ideology? *Social Science Research*, 42(6), 1505-1518.  
<https://doi.org/10.1016/j.ssresearch.2013.07.003>
- Carlson, D. L., & Lynch, J. L. (2017). Purchases, Penalties, and Power: The Relationship Between Earnings and Housework: The Relationship Between Earnings and Housework. *Journal of Marriage and Family*, 79(1), 199-224.  
<https://doi.org/10.1111/jomf.12337>
- Connelly, R., & Kimmel, J. (2007). *Spousal influences on parents' non-market time choices*. IZA Discussion Papers, No. 2894.
- Connelly, R., & Kimmel, J. (2010). *The Time Use of Mothers in the United States at the Beginning of the 21st Century*. W.E. Upjohn Institute.  
<https://doi.org/10.17848/9780880993975>
- Cunningham, M. (2005). Gender in Cohabitation and Marriage: The Influence of Gender Ideology on Housework Allocation Over the Life Course. *Journal of Family Issues*, 26(8), 1037-1061. <https://doi.org/10.1177/0192513X04273592>
- Domínguez-Amorós, M., Muñiz, L., & Rubilar, G. (2021). Social Times, Reproduction and Social Inequality at Work: Contrasts and Comparative Perspectives Between Countries. En P. López-Roldán & S. Fachelli (Eds.), *Towards a Comparative Analysis of Social Inequalities between Europe and Latin America* (pp. 331-

- 359). Springer International Publishing. [https://doi.org/10.1007/978-3-030-48442-2\\_11](https://doi.org/10.1007/978-3-030-48442-2_11)
- Evertsson, M., & Neramo, M. (2004). Dependence within families and the division of labor: Comparing Sweden and the United States. *Journal of Marriage and Family*, 66(5), 1272-1286. <https://doi.org/10.1111/j.0022-2445.2004.00092.x>
- Foster, G., & Kalenkoski, C. M. (2013). Tobit or OLS? An empirical evaluation under different diary window lengths. *Applied Economics*, 45(20), 2994-3010. <https://doi.org/10.1080/00036846.2012.690852>
- Geist, C., & Cohen, P. N. (2011). Headed Toward Equality? Housework Change in Comparative Perspective. *Journal of Marriage and Family*, 73(4), 832-844. <https://doi.org/10.1111/j.1741-3737.2011.00850.x>
- Greenstein, T. N. (2000). Economic Dependence, Gender, and the Division of Labor in the Home: A Replication and Extension. *Journal of Marriage and Family*, 62(2), 322-335. <https://doi.org/10.1111/j.1741-3737.2000.00322.x>
- Grunow, D. (2019). Comparative Analyses of Housework and Its Relation to Paid Work: Institutional Contexts and Individual Agency. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie*, 71(S1), 247-284. <https://doi.org/10.1007/s11577-019-00601-1>
- Gupta, S. (2006). Her money, her time: Women's earnings and their housework hours. *Social Science Research*, 35(4), 975-999. <https://doi.org/10.1016/j.ssresearch.2005.07.003>
- Gupta, S. (2007). Autonomy, Dependence, or Display? The Relationship Between Married Women's Earnings and Housework. *Journal of Marriage and Family*, 69(2), 399-417. <https://doi.org/10.1111/j.1741-3737.2007.00373.x>
- Gupta, S., & Ash, M. (2008). Whose money, whose time? A nonparametric approach to modeling time spent on housework in the United States. *Feminist Economics*, 14(1), 93-120. <https://doi.org/10.1080/13545700701716664>
- Hersch, J., & Stratton, L. (1994). Housework, Wages, and the Division of Housework Time for Employed Spouses. *The American Economic Review*, 84(2), 120-125.
- Hook, J. L. (2010). Gender Inequality in the Welfare State: Sex Segregation in Housework, 1965–2003. *American Journal of Sociology*, 115(5), 1480-1523. <https://doi.org/10.1086/651384>
- Hook, J. L. (2017). Women's Housework: New Tests of Time and Money: Women's Housework: New Tests of Time and Money. *Journal of Marriage and Family*, 79(1), 179-198. <https://doi.org/10.1111/jomf.12351>

- Kalenkoski, C., Ribar, D., & Stratton, L. (2005). Parental child care in single-parent, cohabiting and married-couple families: Time-diary evidence from the United Kingdom. *The American Economic Review*, 95(2), 194-198.
- Kalenkoski, C., Ribar, D., & Stratton, L. (2006). *The influence of wages on parents' allocations of time to child care and market work in the United Kingdom*. IZA Discussion Papers, No. 2436.
- Killewald, A., & Gough, M. (2010). Money isn't everything: Wives' earnings and housework time. *Social Science Research*, 39(6), 987-1003.  
<https://doi.org/10.1016/j.ssresearch.2010.08.005>
- Kitterød, R. H., & Lyngstad, T. H. (2005). Diary versus questionnaire information on time spent on housework – The case of Norway. *electronic International Journal of Time Use Research*, 2(1), 13-32.  
<https://doi.org/10.13085/eIJTUR.2.1.13-32>
- Lentz, E., Bezner Kerr, R., Patel, R., Dakishoni, L., & Lupafya, E. (2019). The Invisible Hand that Rocks the Cradle: On the Limits of Time Use Surveys. *Development and Change*, 50(2), 301-328. <https://doi.org/10.1111/dech.12426>
- Martínez Franzoni, J. (2008). *Domesticar la incertidumbre en América Latina. Mercado laboral, política social y familia*. Editorial Universidad de Costa Rica.
- McElroy, M., & Horney, M. J. (1981). "Nash-Bargained Household Decisions: Toward a Generalization of the Theory of Demand." *International Economic Review*, 22(2), 333-349.
- Pribble, J. (2006). Women and Welfare: The Politics of Coping with New Social Risks in Chile and Uruguay. *Latin American Research Review*, 41(2), 84-111.
- Prince Cooke, L., & Baxter, J. (2010). "Families" in International Context: Comparing Institutional Effects Across Western Societies. *Journal of Marriage and Family*, 72(3), 516-536. <https://doi.org/10.1111/j.1741-3737.2010.00716.x>
- Schulz, F., & Grunow, D. (2012). Comparing Diary and Survey Estimates on Time Use†. *European Sociological Review*, 28(5), 622-632.  
<https://doi.org/10.1093/esr/jcr030>
- Sevilla-Sanz, A., Gimenez-Nadal, J. I., & Fernandez, C. (2010). Gender Roles and the Division of Unpaid Work in Spanish Households. *Feminist Economics*, 16(4), 137-184. <https://doi.org/10.1080/13545701.2010.531197>
- Stewart, J. (2009). *Tobit or Not Tobit?* IZA Discussion Paper No. 4588. Bureau of Labor Statistics; IZA Institute of Labor Economics.

- Sullivan, O. (2011). An End to Gender Display Through the Performance of Housework? A Review and Reassessment of the Quantitative Literature Using Insights From the Qualitative Literature. *Journal of Family Theory & Review*, 3(1), 1-13. <https://doi.org/10.1111/j.1756-2589.2010.00074.x>
- Sullivan, O. (2013). What Do We Learn About Gender by Analyzing Housework Separately From Child Care? Some Considerations From Time-Use Evidence: Gender, Housework, Child Care. *Journal of Family Theory & Review*, 5(2), 72-84. <https://doi.org/10.1111/jftr.12007>
- UNDP. (2020). *2020 Human development perspectives. Tackling social norms: A game changer for gender inequalities*. UNDP.
- Van Der Lippe, T., Tjstens, K., & De Ruijter, E. (2004). Outsourcing of Domestic Tasks and Time-saving Effects. *Journal of Family Issues*, 25(2).
- West, C., & Zimmerman, D. (1987). Doing Gender. *Gender and Society*, 1(2).

## Appendix

Table A.1. Coefficients of the number of children in the household. Dependent variable:  
weekly hours of housework

		Children <3	Children 3-5	Children 6-12	Children 13-18 (female)	Children 13-18 (male)
Chile	Women	18.27***	6.295***	5.211***	0.317	2.225*
	Men	5.528***	3.946***	1.628***	-0.620	0.0891
Colombia	Women	9.926***	5.554***	1.833***	-	-
	Men	3.420***	1.582***	0.260***	1.228***	0.692***
Mexico	Women	4.112***	3.250***	1.263***	-	-
	Men	1.408***	0.550*	-0.0146	0.889***	0.426***
Peru	Women	10.62***	6.407***	3.074***	-0.161	0.694
	Men	0.531	1.840***	1.097***	1.077***	-0.449*
Uruguay	Women	8.614***	6.115***	3.664***	-0.692	0.178
	Men	3.314***	1.322	0.607	-0.427	0.257
					-0.0186	-0.472
					-0.549	0.343

Source: Based on time-use surveys from Chile (2015), Colombia (2010), Mexico (2010), Peru (2010), and Uruguay (2007)