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## Revealing Gender Gap Changes in Home Production and Labor Income in Uruguay

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### Abstract

A vast international literature has provided evidence on the key role of women in household activities as well as a long-term trend of time reallocation toward a more egalitarian gender division of work. Our objective is to study the changes in gender gaps in home production and the labor market in Uruguay between 2006 and 2013. Our main conclusions are: i) the gender gaps for time spent in the labor market and home production decreased; ii) women increased their time allocated to the labor market and slightly reduced the time spent on home production, whereas the opposite is observable for men; iii) both women and men increased the time allocated to childcare, which resulted in a stable gender gap; iv) both women and men decreased the time spent on other household activities, narrowing the gender gap; and v) this less unequal division of time is also apparent when the gender gaps are measured in monetary terms, although the movement in home production prices did not contribute to reducing the gender gaps.

### Keywords

Home production, labor market, gender gap, Uruguay

## Introduction

A vast literature has provided evidence of the important role of women in household activities. In developed countries during the last decades, however, many studies have uncovered important changes in the female allocation of time – changes characterized by a reduction in time spent on home production and an increase in time spent in the labor market (Fang and McDaniel 2017; Alonso et al. 2019). Alonso et al. (2019) concluded that, in developed countries, there is a gender gap decline in time spent on home production, resulting from a reduction in female time spent on home production and an increase in male time spent. As a result, there has been a trend toward a less unequal division of time. In Latin America, female labor market participation increased but remains at a lower level than in developed countries (CEPAL 2016; CEPAL/OIT 2019; Colacce et al. 2020; Marchionni et al. 2018). To our knowledge, no studies have analyzed the changes in the time assigned to home production.

To contribute to filling this gap, we analyze the changes in gender gaps in the labor market and home production in Uruguay. Our approach is based on the National Transfer Accounts (NTA) and National Time Transfer Accounts (NTTA) systems that were developed to measure intergenerational monetary transfers within the economy. The starting point of the NTA perspective is that transfers are needed to make it possible for members of the population, for example children, to consume even if they do not generate their own resources. Labor income is a genuine resource that is generated in each calendar year by a population group that uses part of it to consume or save and transfers the rest to other groups (mainly by paying taxes to fund public transfers and directly via private transfers to provide their family with support). International evidence shows that the generation of labor income comes mainly from the male population of working age, which highlights the important role of men in production when we restrict its definition to the traditional concept of the National Account System (Donehower 2019). The NTTA system introduces home production, which has to be added to the labor income to assess the total effort of the population in the generation of resources. Therefore, the total transfers include time transfers. Studies on several countries have shown that home production is mainly generated by females of working age (Donehower 2019; Urdinola and Tovar 2019; Zagheni et al. 2015).

In this work, we analyze the gender gaps in labor income and home production in 2006 and 2013. In that period, the country experienced an expansive business cycle: GDP grew at an average annual rate of 6.6%, income inequality declined, the moderate poverty rate fell from 32.5% in 2006 to 11.5% in 2013, and extreme poverty practically disappeared. The improved macroeconomic performance was also reflected in an inflation rate that was stable and low in historical terms for Uruguay (6.4% in 2006 and 8.5% in 2013). Meanwhile, the exchange rate decreased from 24 to 20 pesos, affecting the relationship between domestic and foreign prices. In the labor market, the unemployment rate declined from 10.8% to 6.5%, whereas real wages increased at an average annual rate of 4.9%. In addition, informality (measured as the proportion of employed persons who do not contribute to the social security system) declined from 34% in 2006 to 25% in 2013.

In the context of these macroeconomic changes, we may expect the gender gaps in home production and the labor market to move, which makes this an interesting study case. Besides, as we mentioned, evidence about the evolution of the female allocation of time to home production is scarce in Latin America. Finally, the Uruguayan case may help to reflect on the future evolution of other Latin American countries because, in spite of its common cultural aspects, it registered some

gender-related changes earlier. Indeed, Uruguay was one of the first countries in the region to complete this first demographic transition. Nowadays, it has a low fertility rate and an ageing population structure and is currently experiencing the second demographic transition (Pellegrino 2013). In recent decades, there has been a postponement in the average age of starting a family and an increase in the divorce rate and cohabitation without marriage (Cabella 2007). The participation of Uruguayan women has steadily increased in the labor market and is above average for developing countries. The social protection system has traditionally been characterized by the universal coverage of public services (education, health and pensions) initiated early in the Latin American comparison, with a well-established maternity leave program.

To study the changes in gender labor income and home production gaps, we use data provided by the NTA and the NTTA systems. These systems give information on pre-tax labor income and home production (valued by the specialist replacement cost method) by age and gender. One of the advantages of these data is that they aim to be consistent with the National Account System. In addition, the common aspects of the NTA and NTTA methods allow the use of the data together. In other words, we have consistent estimations of labor income and home production by age, though the microdata used in the estimations come from different sources of information.

We find that the gender gaps in labor income and home production narrowed. These shifts were driven by the reduction of gender differences in time spent in the labor market and on household activities. On one hand, women increased the time that they allocated to the labor market and slightly reduced the time that they spent on home production. The shifts in time allocation were the opposite for men. We also observe changes within home production: both women and men increased the time that they allocated to childcare, which resulted in a stable gender gap, but they also both reduced the time that they devoted to other household activities, which is the source of the reduction of the gender gap.

The rest of this article is organized as follows. We first present a literature review, including the international evidence of the NTTA work and four theoretical approaches that help to discuss our findings: the economic perspective of the link between wages and time allocation, the quantity–quality trade-off hypothesis, the effect of appliance changes on home production, and the role of cultural and social norms. After that, we briefly describe the data and methods. Then, we present two sections of results: one on the labor income gender gap and the other on the home production gender gap. Each of these sections is organized into three subsections: changes in the monetary gap, changes in the time gap, and changes in the hourly price gap. After the presentation of the results, we discuss our findings in light of the arguments introduced in the literature review section. Finally, we conclude.

## **Literature review**

The NTA system framework allows us to measure the economic flows of production and the consumption of market goods and services disaggregated by age in way that is consistent with the National Account System. The age dimension gives us useful information about the transfers of resources among different age groups (Lee and Mason 2011). Furthermore, when we add the NTTA system, we also take into account the resources produced by households, which are not included in the National Account System but also have an economic value. The NTTA approach includes the gender dimension to analyze the time transfers stemming from home production.

Evidence based on NTA and NTTA studies confirms the prevalent traditional gender division of labor: men specialize in market production and women in household production (Donehower 2019; Jiménez-Fontana 2017; Rivero 2018; Tovar and Urdinola 2019; Zagheni et al. 2015). Indeed, men assume a higher workload in the labor market and women in the home. Men at productive ages generate most of the labor income, which is used to support their own consumption and their dependents' consumption. In contrast, in the household sphere, most of the production is performed by women, who support their own consumption of unpaid work and cover other household members' needs. Particularly, women's home production increases sharply at their reproductive age to support childcare activities.

Furthermore, disaggregating home production, there is another gender specialization: women dedicate more time to basic chores and childcare (which are low remunerated activities), while men are more involved in other domestic jobs, such as management and maintenance (associated with higher remunerated work) (Amporfu 2018; Urdinola and Tovar 2019).

Despite these common patterns, the magnitude of the home production gender gaps differs between countries. The NTTA estimates for rich countries reveal a higher gender gap in Italy, Spain and Austria, where adult women spend six or more hours per day performing unpaid household work. This result is comparable to the Uruguayan estimates. On the other side, in the Nordic countries, the patterns show a more equal allocation of time by gender and a reduced gender gap in home production (Zagheni et al. 2015).

We are interested in interpreting the changes in gender gaps in the time assigned to the labor market and home production in Uruguay. Thus, we selected four pieces of literature that will help us in the discussion of our main results.

First, the labor supply model provides the most traditional framework. The basic labor supply model is based on the time allocation choices of an individual who has only two options: the labor market and leisure. Under this model, a rise in wages leads to an increase in the time allocated to the labor market if the substitution effect (substitution of leisure by labor stemming from the rise in the opportunity cost of leisure) offsets the income effect (an increase in leisure stemming from the increase in income). The new home economics (Becker 1965; Gronau 1977) enriched this proposal by introducing home production, which includes the possibility of incorporating another use of time and considering the substitution between market and home goods. In this context, the response of the labor supply to wages increases in the basic model because of the possibility of substitution of household activities. Usually, trade-offs between the labor market and home production are neglected in studies of men but not women.

Ample evidence underpins the positive relationship between wages and time spent in the labor market, although there is a broad range of estimated elasticities; in any case, there is a relative consensus that the elasticities are weak for married men but strong for married women (Blundell and MaCurdy 1999). To a lesser extent, the empirical literature has also focused on the home production side. In particular, for women, the literature has tended to support the hypothesis of a negative relationship between wages and time allocated to household activities and the existence of a positive elasticity of substitution between home and market goods (Aguiar and Hurst 2007; Gelber and Mitchell 2012).

An important aspect of our discussion is the reallocation of time in the business cycle. Aguiar, Hurst and Karabarbounis (2013) studied a recessionary period in the US and provided evidence of the existence of high elasticity of substitution between the market and the home sector; they estimated that nonmarket work absorbed around 35% (including childcare) of the forgone market hours. In addition, Burda and Hamermesh (2010) found that a temporary increase in unemployment results in an increase in household production, although their results do not support this type of response to high long-term unemployment. On the other hand, Krueger and Mueller (2012) provided evidence that, at the time of reemployment, the time spent on home production declines.

Second, another important model to frame our discussion is the quantity-quality trade-off hypothesis. An increase in wages may produce a reallocation of time from household activities to the labor market together with an increase in time spent on childcare. This argument is based on the well-known quantity-quality trade-off hypothesis introduced by Becker (1960). The increase in wages has an income effect that makes the demand for both quality and quantity of children to grow, but the rise in quality leads to a higher shadow price of child quantity, reducing the demand for children. In sum, increases in wages may explain the decline in fertility together with a higher investment in children. This hypothesis has been supported by many authors but debated by others. For example, Blake (1968) questioned the assumption of freedom of choice (quantity and quality) and Ferber and Birnbaum (1977) criticized the assumption of rational behavior in the allocation of time and the unitary-based model in the decision-making. From the empirical perspective, there is also a strong debate about the direction of the causality, as reviewed by Clarke (2018) and Schultz (2008).

Third, based on standard microeconomic theory, we expect that a change in the price of capital goods used in home production affects the allocation of time between home production and the labor market. However, the sign of the effect is uncertain because it depends on the elasticity of substitution between capital and labor in home production. In an extreme case, in which capital and labor are perfect substitutes, a fall in the price of capital leads to people buying more capital and substituting it with labor; as a result, we will observe a reduction in the time allocated to home production. At the other extreme, if capital and labor are complementary, the increase in capital stemming from the fall in its price induces additional time allocation to home production. Something similar is applied to technical innovations such as appliances: time spent on home production may rise, fall or stay at the same level.

The effect of the development and dissemination of appliances on time spent on home production in the long run is controversial. On the one hand, some studies have supported the hypothesis that labor-saving technologies in household production free up time allocated to home production, as pointed out in a study on the US by Greenwood et al. (2005). Cubas (2016) analyzed the Latin American case and concluded that female labor participation was able to increase when policies that prevented the prices of household appliances from falling were abandoned. In a cross-country study, Bridgman et al. (2018) used this argument to explain that time devoted to household work is strongly negatively related to the level of development: as countries become richer, investments in labor-saving appliances increase. Interestingly, they also found that the higher the level of development, the less time women spend on household work and the greater their market work, but the opposite occurs in the male case (the more time men spend on household work, the less time they spend on market work).

On the other hand, using US data, Jones et al. (2015) found that the effect of technological changes on female home production is very small, which means that the reduction in the time allocation gender gap was mainly due to the decline in the wage gender gap. In turn, Ramey (2009) found that the total housework time barely changed during the period of rising household capital but gender specialization declined: a reduction in female time was accompanied by an increase in male time.

Finally, cultural and social norms also contribute to explaining the changes in the gender division of labor. Economic studies have used the concept of culture differently, but most works have included values, beliefs and attitudes (Alesina and Giuliano 2015). These factors have been used to explain the gender division of household production and labor market participation and the way in which gender divisions of labor vary across countries or over time. Van der Lippe et al. (2011) used a “masculinity-femininity” score that captures the extent to which gender roles are present in society. Using panel data for 17 countries, they found that gender specialization among married couples is deeper in masculine cultures.

In turn, social norms refer to behaviors considered normal for a reference group, which may lead to an individual suffering a cost when deviating from some norm. In an analysis of OECD countries, De Laat and Sevilla-Sanz (2011) found evidence about the effect of social norms on the gender division of time and highlighted their importance: greater involvement of men in home production helps to produce a social norm that further motivates their commitment.

## Data and method

The NTA system provides estimates of the values of goods and services produced and consumed in a year at each age and the economic flows among ages (generations) that sustain consumption throughout the life cycle. The estimates are built using surveys and administrative data and are consistent with the macro values provided by the National Account System and official population data (UNPD 2013). The available estimates from the Uruguayan NTA system for 2006 and 2013 provide labor income by age, both in per capita units and in aggregate values (<http://www.ntaccounts.org/web/nta/show>). Labor income includes earnings, taxes and contributions paid by employees and employers and the labor share of mixed income.

In the present work, we estimate labor income by age for men and women separately, following the guidelines compiled by the UNDP (2013). We calculate the aggregate and per capita labor income by gender and age as:

$$VA_{a,g} = \frac{VPC_{a,g}^{UHS} * P_{a,g}^{UHS}}{\sum_g VPC_{a,g}^{UHS} * P_{a,g}^{UHS}} * VA_a$$

$$VPC_{a,g} = \frac{VA_{a,g}}{P_{a,g}}$$

where  $a$  is age,  $g$  is gender,  $P_{a,g}$  is the official population projection (Instituto Nacional de Estadística 2017) and  $VA_a$  ( $VPC_a$ ) is the aggregate (per capita) value of labor income by age reported by the NTA system.  $VPC_{a,g}^{UHS}$  and  $P_{a,g}^{UHS}$  denote the average values of labor income and population by age and gender calculated using the Uruguayan Household Survey (Instituto

Nacional de Estadística 2006, 2013a). We can then obtain estimates by gender that are consistent with the labor income estimates provided by the NTA system. Following a similar procedure, we also estimate the time spent in the labor market in hours and its price (labor income per hour).

The NTTA system provides information about home production and consumption by age and gender in time and monetary units based on time use surveys (Donehower 2014). Home production is defined as non-remunerated activities that meet the “third-party” criterion (Reid 1934), including the following activities: cleaning, laundry, cooking, childcare, eldercare and other care, household purchases, home maintenance, gardening, pet care, home management and transporting of household members. A time use survey is used to measure the time devoted to these activities. To value it, the NTTA system uses the replacement cost method. As with the NTA, the price of each activity includes taxes and contributions paid by employers and employees.

Two time use surveys were carried out in Uruguay in September 2007 and May to July 2013 (Instituto Nacional de Estadística 2007, 2013b). We use them to obtain NTTA estimates, using the wages of 2006 and 2013 based on the same household surveys as used in the NTA estimates (Instituto Nacional de Estadística, 2006, 2013a). We use these estimates as data of the 2006 and 2013 NTTA system.

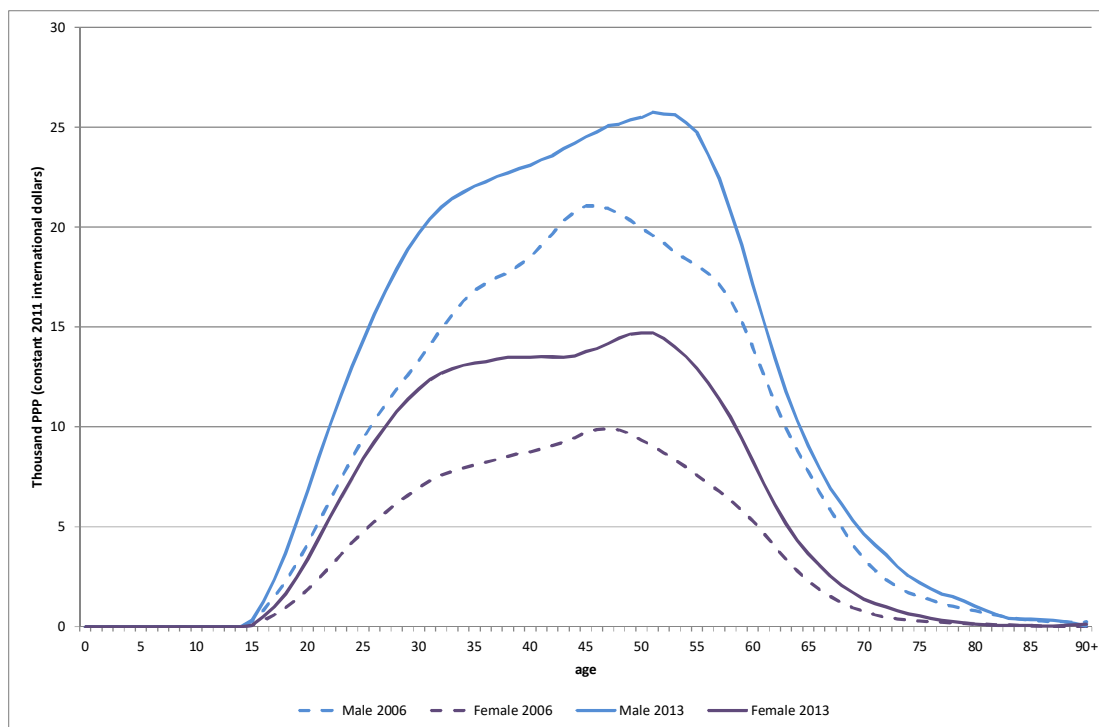
As the data are expressed in Uruguayan pesos, we analyze the monetary changes in constant 2011 international dollars PPP to avoid the effect of inflation on the measures. Changes in monetary units are the result of changes in time and/or prices. Although we do not aim to measure the effect of each of these two factors, we discuss their importance in explaining the monetary gender gap changes.

## **Labor income gender gap**

### *Labor income gender gap by age*

We can see the per capita labor income by age and gender for 2006 and 2013 in Figure 1 (next page). Since people who do not work have zero labor income, the curves are bell shaped, reflecting that the income generation is concentrated among middle-aged women and men. In addition, male incomes evolve over female incomes throughout all the ages. These results for Uruguay are in line with estimates for other countries following the NTA method (Donehower et al. 2019). The comparison of the profiles between years shows a rise in real wages in the period. Further, between 2006 and 2013, the peaks of per capita labor income shifted to the right for both genders: the highest values were for the ages 44-50 in 2006 and the 50-54 age group in 2013. The slightly older age of the maximum point is a follow-up of a shift that was already observed when comparing the average NTA estimations of 1994 and 2006 (Bucheli et al. 2010). Among the possible explanations, we can mention the postponement of the retirement age that was documented by Álvarez et al. (2010).

**Figure 1.** Average annual labor income by age and gender (PPP constant 2011 international dollars), Uruguay, 2006 and 2013



Source: Authors' estimations based on *Instituto Nacional de Estadística* (2006, 2013a and 2017).

In both years, labor income was higher for men than for women at all ages. However, the gender gap decreased between 2006 and 2013 at all ages, as can be seen in Figure 2 (next page). Among the population over the age of 13, the difference between male and female labor income changed from 56% of male labor income in 2006 to 47% in 2013. On average for the 24-55 age group – which covers most of people's working life – it declined from 52% to 42%.

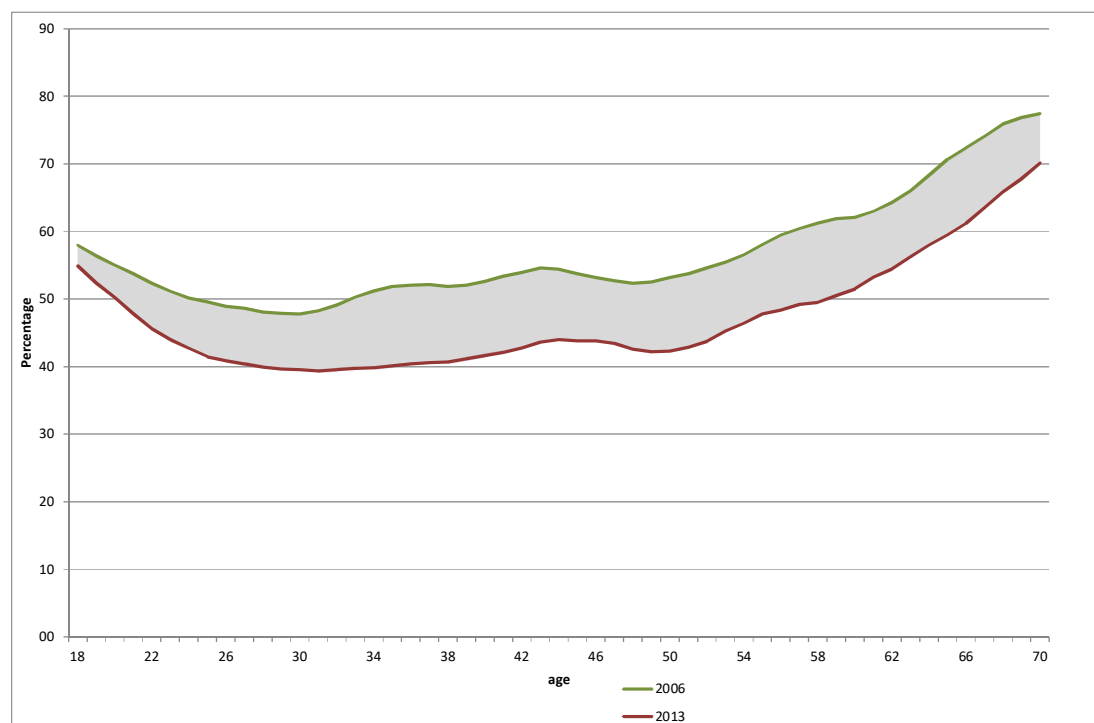
The reduction of the labor income gender gap is the result of two forces: a relative increase in time spent in the labor market by females and a decrease in the gender gap in hourly earnings. We analyze and discuss the role of these factors in the next subsections.

#### *Time spent in the labor market*

The weekly average worked hours were higher for men than for women in both 2006 and 2013, as illustrated in Figure 3 (p.10). Again, these results are consistent with evidence obtained for other countries using the NTA method (Donehower et al. 2019). The most important feature reflected in the age profiles is that a reduction in the gender gap as a result of an increase in women's involvement in the labor market and stable behavior of men. Considering the population over 13 years of age, the per capita female time spent in the labor market increased from 16.4 to 18.5 hours per week whereas the male time in the labor market averaged 31.3 hours. The gender gap declined by 2.4 hours per week on average; if we restrict ourselves to the 20-59 age group, when the participation rates are at their highest values, the fall is 3.6 hours per week.



**Figure 2.** Gender labor income gap by age, Uruguay, 2006 and 2013



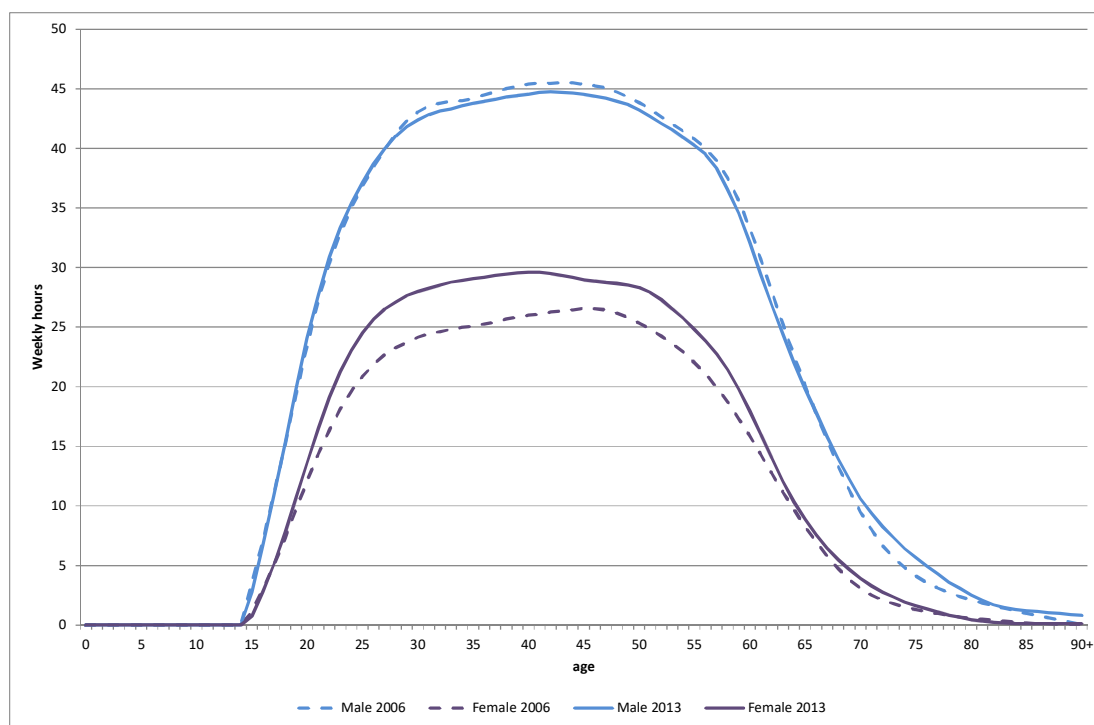
*Source:* Authors' estimations based on *Instituto Nacional de Estadística* (2006, 2013a and 2017).

*Note:* The gender gap by age is equal to the difference between male and female labor income measured as a percentage of male labor income at each age.

The increase in women's time spent in the labor market may be due to an increase in their participation (extensive margin) and/or an increase in the hours worked by employed women (intensive margin). To understand better the role played by these factors, we report the labor outcomes in Table 1 (p.11).

The overall picture for 2006 and 2013 indicates that men were more likely to be employed than women as a result of the combination of being more likely to participate in the labor market and being less affected by unemployment. Moreover, employed men worked more hours on average than employed women. Thus, both the extensive and the intensive margin contributed to the existence of a gender gap. However, as we mentioned, the gender gap of time spent in the labor market declined. This decrease is mostly explained by an increase in the female participation rate from 52% in 2006 to 54% in 2013 (from 71% to 75% for the 20-59 age group), whereas the male participation rate did not change. This change was stronger when considering the employment rate because of the unemployment fall, which both women and men attained. On the other hand, the intensive margin did not play a role in reducing the gender gap: both women and men who were working reduced their working hours, and the gender gap for this statistic did not change much over the period (although it declined slightly for the 20-59 age group). The analysis of the weekly working hours and the labor market participation rate in the years between 2006 and 2013 suggests that these changes resulted from a converging trend during the period.

**Figure 3.** Average time spent in the labor market by age and gender (weekly hours), Uruguay, 2006 and 2013



Source: Authors' estimates based on *Instituto Nacional de Estadística* (2006, 2013a and 2017).

### Hourly labor income

Men benefit from higher hourly wages than women when controlling for productive attributes, as documented in several studies on gender discrimination in the Uruguayan labor market (Amarante and Espino 2004; Bucheli and Sanromán 2005; Espino 2013; Espino, Salvador and Azar 2014). According to these works, the measures of discrimination have been stable over the last two decades, increase with years of schooling and indicate evidence of a glass ceiling phenomenon for the most educated women. Women also face occupational segregation. According to Espino et al. (2014), the level of segregation has been stable and higher for less educated women than for more highly educated ones.

These findings are based on wages net of taxes and contributions and in some cases only on private wages. In Table 2 (p.11), we report the gender gap using the NTA system variable, that is, considering the gross hourly labor income of wage earners and the self-employed. The gender gap was on average 2011 PPP US\$1.2 in 2006, equivalent to 16% of male labor income. As the income of women increases by more than that of men, the gap declined to 2011 PPP US\$1.0 (11% of male labor income) in 2013. We also present the gender gap of income after subtracting contributions and taxes. The conclusion is the same: the gender gap decreased. Thus, the hourly gap contributed to the decline of the overall gender labor income gap registered in 2006 and 2013. However, the above-mentioned evidence suggests that this fall in the hourly earnings gender gap is not part of a broader trend.

**Table 1.** Labor market indicators by age groups and gender, Uruguay, 2006 and 2013

Variables	2006			2013			Change in gender gap
	Male	Female	Gender gap	Male	Female	Gender gap	
Per capita weekly hours							
Population over 13	31.5	16.4	15.1	31.2	18.5	12.7	-2.4
20-59 age-group	41.0	23.1	17.9	40.5	26.3	14.2	-3.6
Employment rate (%)							
Population over 13	68.1	44.4	23.7	70.3	49.9	20.4	-3.3
20-59 age-group	86.6	61.8	24.8	89.0	69.5	19.6	-5.2
Participation rate (%)							
Population over 13	74.0	51.7	22.3	73.9	54.3	19.6	-2.7
20-59 age-group	92.8	71.4	21.5	92.8	75.1	17.8	-3.7
Unemployment rate (%)							
Population over 13	9.7	15.3	-5.6	5.7	9.3	-3.6	2.0
20-59 age-group	7.1	13.9	-6.8	4.4	7.9	-3.5	3.3
Per capita weekly hours (employed)							
Population over 13	43.2	34.3	8.9	40.9	32.5	8.4	-0.4
20-59 age-group	47.0	37.1	9.9	45.1	36.9	8.3	-1.7

Source: Authors' estimations based on *Instituto Nacional de Estadística* (2006, 2013a and 2017).

Note: The variables are estimated following the general NTA procedures to be consistent with the population projections by age and gender and the labor income estimates.

**Table 2.** Hourly labor income by gender, Uruguay, 2006 and 2013

Variables	2006			2013		
	Male	Female	Gender gap as a percentage of males	Male	Female	Gender gap as a percentage of males
<b>NTA labor income</b>						
All workers	7.3	6.1	16.2	9.7	8.7	10.8
25-59 age-group	7.4	6.2	15.9	10.0	8.8	11.3
<b>Labor income less contributions</b>						
All workers	6.2	5.2	16.1	7.8	6.8	11.9
25-59 age-group	6.3	5.3	15.7	8.0	7.0	12.3
<b>Labor income less contributions and taxes on labor</b>						
All workers	6.1	5.1	16.4	7.3	6.5	10.6
25-59 age-group	6.2	5.2	15.9	7.5	6.6	11.1

Source: Authors' estimations *Instituto Nacional de Estadística* (2006, 2013a and 2017).

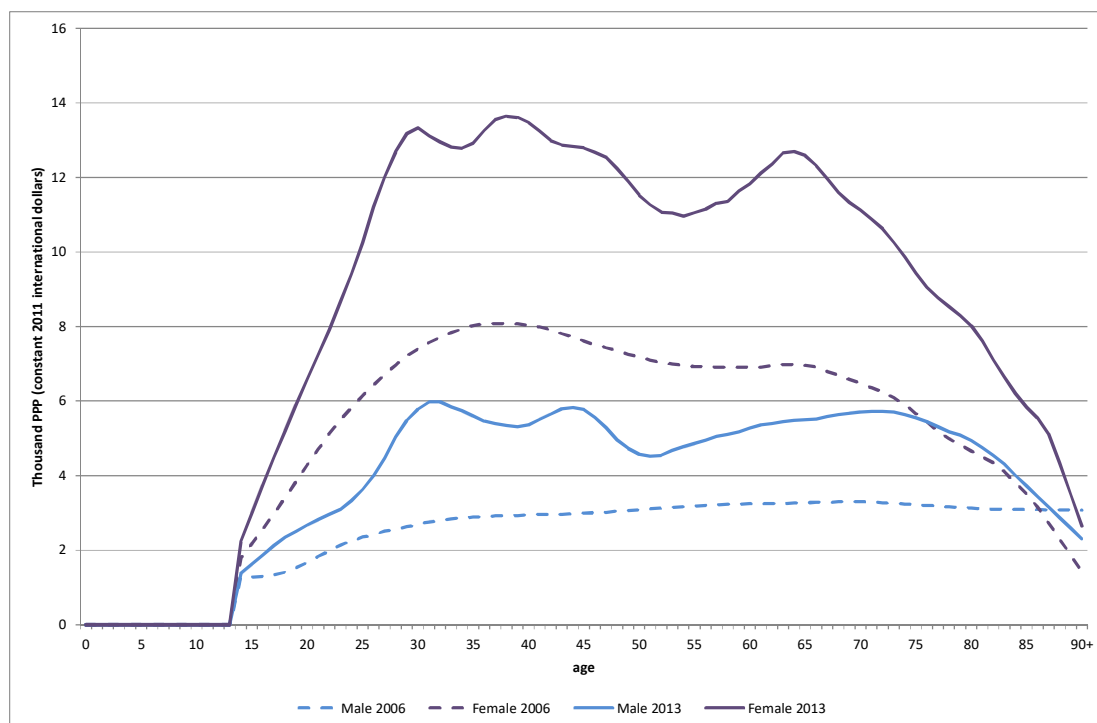
Notes: The gender gap is equal to the difference between male and female labor income measured as a percentage of male labor income.

## Home production gender gap

### *Home production gender gap by age*

In Figure 6, we show the average per capita home production by age and gender in 2006 and 2013. The age profiles are similar in both years and are common to other countries: the home production of both women and men increases at young ages, reaches a plateau at reproductive ages and then decreases. Moreover, female home production is higher at all ages than male production, a tendency that is observed worldwide (Jiménez-Fontana 2014, 2016; Renteria et al. 2016; Sambt et al. 2016; Zagheni and Zannella 2013; Zagheni et al. 2015).

**Figure 6.** Average annual home production by age and gender (PPP constant 2011 international dollars), Uruguay, 2006 and 2013



Source: Authors' estimations based on *Instituto Nacional de Estadística* (2006, 2007, 2013a, 2013b and 2017).

In Figure 6, we can see that both male and female home production increased across all ages. The increase in the average male home production surpassed that of females: as shown in Table 3 (next page), the average gender gap decreased from 133% of male home production in 2006 to 127% in 2013. We also present the gender gap by age group. We can see that the reduction in the gender gap is linked to changes in the 30-49 age group. This is the stage of life at which most individuals start a family and spend more time taking care of children.

**Table 3.** Average gender gap in home production as a percentage of male home production by age group, Uruguay, 2006 and 2013

	2006	2013	Difference 2006-2013
Population over age 13	133.5	127.2	-6.3
14-19	105.8	107.6	1.8
20-29	164.3	164.7	0.4
30-39	176.2	133.7	-42.4
40-49	156.1	134.2	-21.9
50-59	120.7	133.5	12.8
60 +	77.0	87.7	10.6

*Source:* Authors' estimations based on *Instituto Nacional de Estadística* (2006, 2007, 2013a, 2013b and 2017).

*Note:* The gender gap is equal to the difference between male and female home production measured as a percentage of male home production. The values were multiplied by (-1) to improve their visual presentation.

The decrease in the gender gap is the result of two effects: i) a change in time spent by males and females on home production and ii) a change in the implicit price of home production activities. We explore the role of these variables in the next subsections.

#### *Time spent on home production*

In Figure 7 (next page), we present the average weekly hours spent on home production by age and gender. The overall picture looks very different from that in Figure 6: we interpret it as showing that most of the above-mentioned increase in home production came mainly from changes in prices rather than quantities.

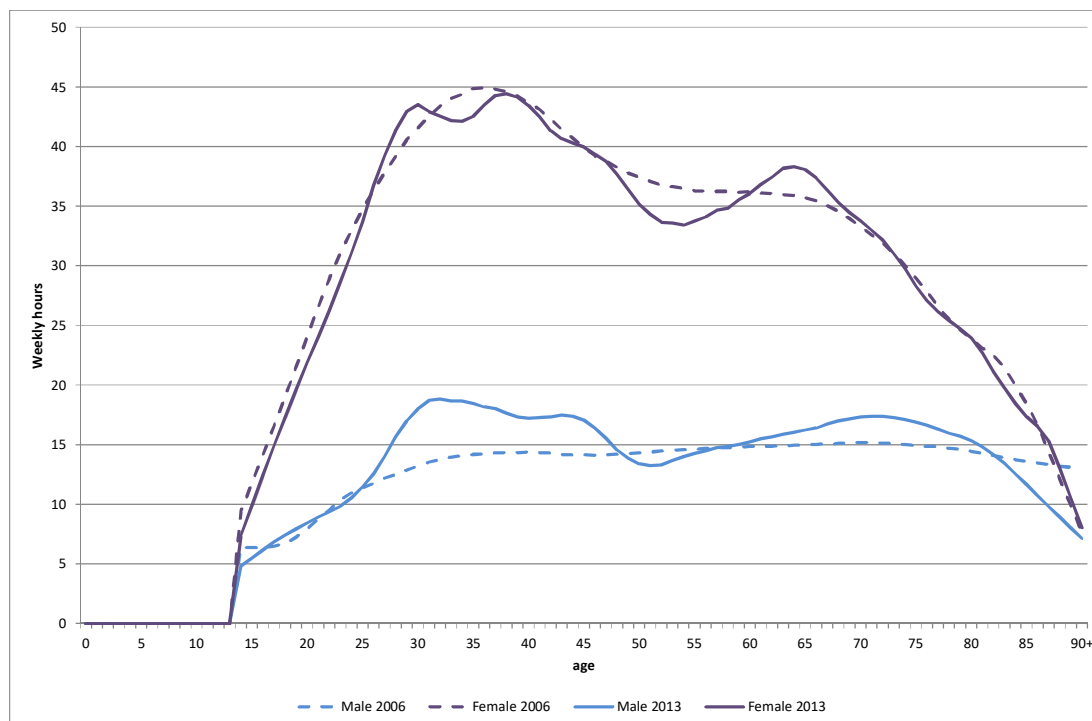
The patterns by age were similar in 2006 and 2013. In the case of men, however, we see an increase in time spent on home production across a range of ages.

In Table 4 (next page), we show the gender differences for the population over the age of 13. The average gap dropped from 21 hours per week in 2006 to 18.8 in 2013. This was the result of an increase in men's time spent on household activities accompanied by a slight decline in women's time. In the rest of the rows of Table 6 (p.16), we report the estimations of time and gender gaps by age group. Between 2006 and 2013, the gender difference decreased for all groups and especially for the age group 30-49. Male time spent on home production increased from 14 hours per week to 18 for the 30-39 age group and to 16 for the 40-49 age group, whereas female time remained at 40/43 hours.

To analyze the sources of this reduction, we report the gender gap by task in Table 5 (p.15). The reduction of the gender gap came from changes in time spent on basic chores (cooking, laundry and cleaning). Both men and women devoted less time to basic chores in 2013 than in 2006, but the change was more pronounced for women than for men: 3 hours for the former and 0.7 hours for the latter. Contrary to this result, both men and women increased their time spent on childcare by 1.1 hours per week, so the gender gap in this task remained the same. We can also see a sharp increase in the time assigned to care given to people other than children, but a modification to the questionnaire makes this result hard to interpret: in 2006 a broad question inquired about "other

care,” but in 2013 the survey introduced specific questions about time devoted to taking care of disabled persons and the elderly.

**Figure 7.** Average time spent on home production by gender (weekly hours), Uruguay, 2006 and 2013



Source: Authors’ estimates based on *Instituto Nacional de Estadística* (2007, 2013b and 2017).

**Table 4.** Time spent on home production by age group and gender (average hours per week), Uruguay, 2006 and 2013

	2006			2013			Change in gender gap
	Male	Female	Gender gap	Male	Female	Gender gap	
Pop. over age 13	12.7	33.7	21.0	14.1	32.9	18.8	-2.2
14-19	6.6	15.4	8.8	6.4	13.6	7.1	-1.6
20-29	10.8	33.3	22.5	11.7	32.4	20.7	-1.7
30-39	14.0	43.9	29.9	18.2	43.2	24.9	-5.0
40-49	14.2	40.5	26.3	16.4	40.1	23.6	-2.7
50-59	14.6	36.6	22.0	14.0	34.3	20.2	-1.8
60 +	14.8	29.5	14.7	15.7	29.7	14.0	-0.7

Source: Authors’ estimates based on *Instituto Nacional de Estadística* (2007, 2013b and 2107).

**Table 5.** Time spent on home production, childcare and other activities by gender (hours per week), Uruguay, 2006 and 2013

Household activity	2006			2013			Change in gender gap
	Male	Female	Gender gap	Male	Female	Gender gap	
Total	12.7	33.7	21.0	14.1	32.9	18.8	-2.2
Childcare	2.4	6.2	3.8	3.5	7.3	3.8	0.0
Other care	0.4	1.0	0.6	1.5	2.3	0.8	0.2
Laundry	0.7	3.7	3.0	0.4	2.9	2.4	-0.6
Cooking	3.2	10.5	7.3	3.0	9.2	6.2	-1.0
Cleaning	1.6	7.9	6.3	1.4	6.9	5.5	-0.7
Maintenance	2.0	1.5	-0.6	1.9	1.4	-0.5	0.0
Management	2.5	3.0	0.5	2.3	2.9	0.5	0.0

*Source:* Authors' estimations based on *Instituto Nacional de Estadística* (2007, 2013b and 2017).

*Note:* Management includes purchases of goods and services for the household and household management; maintenance includes home repairs, gardening and pet care; other activities include care for non-children household members and home production directed to other households.

These movements in time allocation have some common patterns with the evidence found for Europe and the US. As in Uruguay, in developed countries, the gender difference in time spent on home production declined as a result of a reduction in female time and an increase in male time (Alonso et al. 2019). However, the shifts within household activities in Uruguay are different from the patterns found by Fang and McDaniel (2017) in a study on developed countries. Indeed, as in Uruguay, women and men increased their time allocated to childcare and women reduced their time spent on basic chores. However, unlike the Uruguayan case, men increased, albeit slightly, their time spent on basic chores.

#### *Implicit price of home production*

To analyze the effect of prices on the change in the gender gap, we estimate the implicit price of home production as the ratio of home production in monetary units to home production in time units. In Table 6, we report the estimated implicit price by task in 2006 normalized by the price of childcare and their change between 2006 and 2013.<sup>1</sup>

In 2006, men devoted more time than women to the most expensive activities. Indeed, women assigned more time than men to childcare and basic chores (tasks related to low-wage activities) whereas men assigned more time than women to management and maintenance (high-wage activities). The pattern is similar in 2013, and it has also been found in other countries (Amporfu et al. 2018). Because of this division of time within home production, the average price of these tasks is higher for men than for women. Thus, the division of housework activities makes the gender gap larger when measured in terms of monetary rather than time units.

<sup>1</sup> The valuation method is based on tasks and prices at a more disaggregated level than the reported estimates.

Between 2006 and 2013, the prices of childcare and basic chores increased at a higher rate than maintenance and management prices. This is consistent with the decline in wage inequality that characterized the period under analysis. Consequently, although the home production gender gap decreased, the evolution of prices did not contribute to this change. On the contrary, prices had the effect of broadening the gender gap, which was more than offset by changes in the number of hours.

**Table 6.** Distribution of time spent on home production and implicit prices of tasks (base = childcare 2006), Uruguay, 2006 and 2013

Household activity	Implicit price 2006 (childcare = 100)	Implicit price, change 2006-2013 (%)	Distribution of time spent in home production (%)			
			2006		2013	
			Male	Female	Male	Female
Total	192.4	65.9	100.0	100.0	100.0	100.0
Childcare	100.0	69.6	18.9	18.3	24.8	22.2
Other care	171.3	14.4	3.2	3.1	10.3	6.9
Laundry	126.0	69.6	5.4	11.0	3.2	8.7
Cooking	129.3	88.7	25.4	31.2	21.2	28.1
Cleaning	125.5	96.5	12.7	23.4	9.8	21.0
Maintenance	179.8	40.8	15.9	4.3	13.4	4.2
Management	206.5	38.0	19.7	9.0	16.4	8.7

*Source:* Authors' estimations based on *Instituto Nacional de Estadística* (2006 and 2013).

*Notes:* a. Maintenance includes home repairs, gardening and pet care; other activities include care of other non-children household members and home production directed to other households. b. In the distribution of time, the totals may not correspond to the sum of all figures shown due to rounding.

## Discussion

The above analysis shows that the gender gap in home production and the labor market declined between 2006 and 2013. When decomposing this change between quantities and prices, we found that prices contributed to the reduction in the labor income gender gap but had the opposite effect on the home production gender gap. Quantities instead, that is, changes in time allocation, contributed to narrowing the gender differences in both domains. In the labor market, quantity changes were driven by an increase in female participation and a decline in male working hours. In contrast, male time spent on household activities rose whereas female time slightly decreased. These changes in home production are comprised of two different movements. On the one hand, both women and men increased their time allocated to childcare in such a way that the gender gap in this activity remained stable. On the other hand, both reduced their time spent on other household activities; as the reduction was larger for women than for men, the gender gap in these activities decreased.

Our findings may be explained in the frame of the traditional explanations about the link between wages and time allocation. Indeed, the simultaneous increase in real wages and female labor participation are consistent with the strong elasticities between wages and labor market time for married women found by Blundell and MaCurdy (1999). Moreover, the reduction of female time in



household activities can be associated with a positive elasticity of substitution between home and market goods, as found in the evidence provided by Aguiar and Hurst (2007) and Gelber and Mitchell (2012). Remember that these movements occurred during an expansion period in which the GDP grew at an average annual rate of 6.6% and the unemployment rate declined from 10.8% to 6.5% whereas real wages increased at an average annual rate of 4.9%. Thus, our findings are also consistent with evidence about change in time allocation in the business cycle (Aguiar, Hurst and Karabarbounis 2013; Burda and Hamermesh 2010; Krueger and Mueller 2012).

Further, our results about the increase in parental time spent on childcare are consistent with the quantity-quality trade-off hypothesis, which links wage increases with fertility decline and the rise of investment in children. Indeed, if childcare is a component of investment in children, the three trends are present in the Uruguayan case: the above-mentioned strong wage growth, a long-term fertility decline (from 2.9 children per woman in 1975 to 1.9 children per woman in 2011 according to the population census) and the childcare time rise. To refine the estimate of investment in children, we calculated the average consumption of childcare by age in time units (hours per week) following the guidelines of the NTTA system estimates. We divided the total hours of childcare consumed by children (defined as younger than 13) by the total population of children. We found that, on average, our proxy of investment in children per child increased from 17 hours per week in 2006 to 24 in 2013.

The evolution of the prices of appliances may also support some of our findings, particularly the decline of both female and male time allocated to household activities other than childcare. The evidence provided by different works supports the hypothesis that the decline of household appliance prices induces the adoption of labor-saving technologies in home production (Cuba 2016; Greenwood et al. 2005). In Figure 6 (next page), we show the evolution of appliance prices, wages and the exchange rate. We see that the evolution of appliance prices is similar to that of the exchange rate, which is related to the tradable nature of those goods, which are mostly imported. Between 2006 and 2013, wages increased more than the exchange rate. Thus, beyond the potential long-term trend effect of the decline in appliance prices, in the period under study, the exchange rate policy contributed to the decline in the prices of appliances. As housing goods are another possibility for household investment, we also show the evolution of its price relative to wages: note that this ratio is much more stable. Thus, our findings are consistent with the increased adoption of labor-saving technologies in household production.

This conclusion is supported by the indicators shown in Table 7 (next page). To analyze the change in household investments in capital goods, we calculated the percentage of households that own selected appliances (fridge, washing machine, microwave, clothes dryer and dishwasher) in 2006 and 2013. In Table 7, we can see that, on average, households' investment increased; this also happened across the income distribution except for the clothes dryer and dishwasher in the top decile.

Finally, another explanation for the decline in time allocation gender gaps relies on changes in social norms. We are aware that these changes may be gradual and slow. However, we can expect that our findings are also related to an increase in the acceptance of more egalitarian gender roles. To obtain some insights into this type of changes, we analyze the attitudes toward the gender division of labor collected in a survey carried out among teens and young adults (12 to 29 years of age) in 2008 and 2013. The survey reports whether individuals agree (on a five-point scale) with

several statements. The first two statements reported in Table 8 fit attitudes that, in the spirit of Hakim (2003), may be interpreted as responding to female home-centered preferences, that is, women for whom family life and children are the main priority. The statements are: “The main task of women is to rear children” and “Household activities should be carried out mostly by women.” Between 2008 and 2013, we see a shift toward disagreement with these statements. The third statement shown in Table 8 (next page) pertains to an egalitarian distribution of labor: “women should share household activities with men in order to develop their projects.” We see a change toward agreement with this attitude. Therefore, this attitude change may also help us to explain the gender gap reduction observed in our estimates.

**Figure 6.** Monthly price index of household appliance prices, exchange rate and price of housing relative to the wage index, Uruguay, January 2000-December 2013



Source: Instituto Nacional de Estadística, Uruguay.

**Table 7.** Percentage of households that own selected appliances, Uruguay, 2006 and 2013

	Fridge		Washing machine		Microwave		Clothes dryer		Dishwasher	
	2006	2013	2006	2013	2006	2013	2006	2013	2006	2013
Total	93.8	97.6	38.0	77.4	38.0	61.1	6.0	6.6	3.6	3.6
Bottom 10%	79.2	91.4	25.3	53.0	6.5	25.1	0.8	1.1	0.1	0.3
5 <sup>th</sup> decile	95.4	98.2	60.6	78.1	33.0	60.4	3.9	4.5	1.2	1.2
Top 10%	99.0	99.5	79.4	87.0	76.4	87.2	18.8	17.0	16.3	15.3

Source: Authors' estimations based on *Instituto Nacional de Estadística* (2006 and 2013).

**Table 8.** Attitudes toward gender specialization in home production, Uruguay, 2008 and 2013 (in percentages)

Responses to statements	The main task of women is to rear children		Household activities should be carried out mostly by women		Women should share household activities with men to develop their own projects	
	2008	2013	2008	2013	2008	2013
Strongly disagree	10.9	25.6	13.6	31.7	0.5	0.6
Disagree	33.6	26.9	39.9	31.3	1.6	1.6
Indifferent	23.1	15.6	21.6	18.0	52.4	5.2
Agree	14.0	14.7	16.2	11.9	5.1	29.8
Strongly agree	18.4	17.2	8.7	7.1	40.3	62.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Source:* ENAJ (2008) and ENAJ (2013), Instituto Nacional de Estadísticas, Uruguay.

## Conclusions

Expanding on the importance of the results presented and on the possible explanations – some of which are impossible to test but interesting to consider from a theoretical point of view – behind the results. Explicit references to particular policy implications could also benefit the conclusions.

In this work, we offer new evidence about gender gap trends in home production and labor income in Uruguay. Though there are several studies about the labor market, evidence for Latin American countries about home production is scarce. Thus, with this work, we aim to contribute to the time use research from a generational and gender perspective.

We find that the gender gaps of time spent in the labor market and on home production declined in Uruguay, following a similar trend to developed countries. One of the main drivers of the time allocation change in Uruguay is that women increased their time spent in the labor market and slightly reduced their time spent on home production whereas the opposite was observed for men. These changes in time reallocation are consistent with the expansive business cycle in which they took place and with the increasing adoption of labor-saving technologies in household production, driven by the long-term decline of appliance prices and reinforced by the appreciation of the domestic currency in the period of study. We also found that both women and men increased the time that they allocated to childcare, which is consistent with the quantity-quality trade-off hypothesis (a decline in the number of children and a rise in investment in children). Besides these economic-related explanations, we also have evidence that Uruguay witnessed changes in social norms toward a more egalitarian gender division of labor, which usually accompanies behavioral changes.

The gender gaps in time allocation, however, remain larger than in non-Mediterranean developed countries. One of the sources of gender differences in home production comes from childcare activities. Evidence for developed countries indicates that motherhood has a negative effect on women's employment and, more broadly, the arrival of a child reinforces the traditional gender division at home and intensifies traditional gender roles (Angelov, Johansson and Lindhal 2016).

Thus, the design of childcare policies that promote the redistribution of time invested in children is crucial. Maternity leave programs are widely used as policy instruments to reconcile work and family life, though the lack of paternity leave makes the policy not gender-neutral.

In Uruguay, a recent modification of the leave for newborn care introduced the possibility of fathers and mothers sharing this responsibility. However, the new program did not encourage men to use it (Batthyány et al. 2018). A National Care System was recently created but public support for childcare has not been assigned yet. Thus, we may speculate that public policies have not had the force actually to change men's childcare behavior. In addition, as our evidence indicates, there are gender differences in the time allocated to basic chores of home production.

In sum, a very good economic environment helped to reduce the gender gaps in home production and labor income. The lack of well-designed public policies, however, focused on closing the gender gaps in the labor market and production put a limit on the achievement of gender equity. At present, the debate about policies that promote a more egalitarian division of labor is weak in the country and other topics are found to be more relevant. However, they would enable the economic autonomy of women and possibly have a positive impact on poverty reduction since the gender division of labor is more pronounced among low-educated than high-educated couples (Bucheli et al. 2019).

## References

- Aguiar, Mark, and Erik Hurst (2007). "Measuring trends in leisure: The allocation of time over five decades." *The Quarterly Journal of Economics* 122(3): 969-1006.
- Aguiar, Mark, Erik Hurst, and Loukas Karabarbounis (2013). "Time Use During Recessions." *American Economic Review* 103(5): 1664-96. DOI: 10.1257/aer.103.5.1664
- Alesina, Alberto, and Paola Giuliano (2015). "Culture and institutions." *Journal of Economic Literature* 53(4): 898-944. DOI: 10.1257/jel.53.4.898
- Alonso, Cristian, Mariya Brussevich, Era Dabla-Norris, Yuko Kinoshita, and Kalpana Kochhar (2019). Reducing and Redistributing Unpaid Work: Stronger Policies to Support Gender Equality. IMF Working Paper 19/225.
- Álvarez, Ignacio, Natalia Da Silva, Alvaro Forteza, and Ianina Rossi (2010). "¿ Qué incentivos al retiro genera la seguridad social?: el caso uruguayo". *Cuadernos de Economía* 47(136): 217-248.
- Amarante, Verónica and Alma Espino (2004). "La segregación ocupacional de género y las diferencias en las remuneraciones de los asalariados privados. Uruguay, 1990-2000". *Desarrollo Económico* 44(173): 109-129.
- Amporfu, Eugenia, Daniel Sakyi, Prince Boakye Frimpong, Eric Arthur, Jacob Novignon (2018). The Distribution of Paid and Unpaid Work among Men and Women in Ghana: The National Time Transfer Accounts Approach. CWW Working Paper WP3.
- Angelov, Nikolay, Per Johansson, and Erica Lindahl. "Parenthood and the gender gap in pay." *Journal of Labor Economics* 34.3 (2016): 545-579.
- Bátthyany, Karina, Natalia Genta, and Valentina Perrotta (2018). Uso de Licencias Parentales y Roles de Género en el Cuidado. Montevideo, SNIC.
- Becker, Gary S. (1960). "An Economic Analysis of Fertility". In *Demographic and Economic Change in Developed Countries*, edited by Universities-National Bureau, 209 – 240. Columbia University Press.
- Becker, Gary S. (1965). "A Theory of the Allocation of Time." *Economic Journal* 75(299): 493–517.
- Bridgman, Benjamin, Georg Duernecker, and Berthold Herrendorf (2018). "Structural transformation, marketization, and household production around the world". *Journal of Development Economics* 133: 102–126. DOI: 10.1016/j.jdeveco.2017.12.009.
- Blake, Judith (1968). "Are babies consumer durables? A critique of the economic theory of reproductive motivation." *Population Studies* 22(1): 5-25. DOI: 10.1080/00324728.1968.10405523
- Blundell, Richard, and Thomas MaCurdy (1999). "Labor supply: A review of alternative approaches." In *Handbook of labor economics*, 1559-1695. Elsevier. DOI: 10.1016/S1573-4463(99)03008-4
- Bucheli, Marisa and Graciela Sanromán (2005). "Salarios femeninos en Uruguay: ¿existe un techo de cristal?" *Revista de Economía* 12(2): 63-88.

Bucheli, Marisa, Cecilia González, and Cecilia Olivieri (2010). “Transferencias del sector público a la infancia y vejez en Uruguay”. *Notas de Población* 90: 163-184.

Bucheli, Marisa, Cecilia González and Cecilia Lara (2019). Gender Differences in Home Production and Consumption in Uruguay. In Urdinola, and Tovar Editors: Time Use and Transfers in the Americas. Producing, Consuming, and Sharing Time Across Generations and Genders, Springer, Chapter 6, pgs: 97-118.

Burda, Michael C., and Daniel S. Hamermesh (2010). “Unemployment, Market Work and Household Production.” *Economics Letters* 107 (2): 131–33. DOI: 10.1016/j.econlet.2010.01.004

Cabella, Wanda (2007). “El cambio familiar en Uruguay: una breve reseña de las tendencias recientes”. Fondo de Población de Naciones Unidas. Montevideo: Trilce.

CEPAL (2016). “The wage gap persists between men and women”. CEPAL Gender Equality Observatory. Notes for equality. 199–260. Center for Distributive, Labor and Social Studies.

CEPAL and OIT (2019). “Evolución y perspectivas de la participación laboral femenina en América Latina”. Coyuntura Laboral en América Latina y el Caribe, N 21, Santiago.

Clarke, Damian (2018). “Children and their parents: a review of fertility and causality”. *Journal of Economic Surveys* 32 (2): 518-540. DOI: 10.1111/joes.12202.

Cubas, Germán (2016). “Distortions, infrastructure, and female labor supply in developing countries”. *European Economic Review* 87: 194-2015. DOI: 10.1016/j.eurocorev.2016.05.006.

De Laat, Joost, and Almudena Sevilla-Sanz (2011). “The Fertility and Women’s Labor Force Participation puzzle in OECD Countries: The Role of Men’s Home Production”. *Feminist Economics* 17(2): 87–119. DOI: 10.1080/13545701.2011.573484.

Donehower, Gretchen. 2014. “Incorporating gender and time use into NTA: National time transfer accounts methodology”. <http://www.ntaccounts.org/web/nta/show/Gender,%20Time%20use>.

Donehower, Gretchen (2019). Methodology of the National Time Transfer Accounts. In Urdinola, and Tovar Editors: Time Use and Transfers in the Americas. Producing, Consuming, and Sharing Time Across Generations and Genders, Springer, Chapter 2, pgs: 5-40.

Donehower, Gretchen, Jorge A. Tovar, and B. Piedad Urdinola (2019). Time Use Differences and Similarities between Developed and Emerging Economies in the Americas. In Urdinola, and Tovar Editors: Time Use and Transfers in the Americas. Producing, Consuming, and Sharing Time Across Generations and Genders, Springer, Chapter 3, pgs: 41-55.

Espino, Alma (2013). “Brechas salariales en Uruguay: género, segregación y desajustes por calificación”. *Revista Problemas del Desarrollo* 174 (44): 89-117. DOI: 10.1016/S0301-7036(13)71889-3

Espino, Alma, Soledad Salvador, and Paola Azar (2014). “Desigualdades persistentes: mercado de trabajo, calificación y género”. El futuro en foco: Cuadernos sobre Desarrollo Humano. Montevideo: PNUD.

Fang, Lei, and Cara McDaniel (2017). “Home hours in the United States and Europe”, B. E. *Journal of Macroeconomics* 17(1), 1-27.

- Ferber, Marianne A., and Bonnie G. Birnbaum (1977). "The "new home economics": Retrospects and prospects." *Journal of Consumer Research* 4(1): 19-28. DOI: 10.1086/208675
- Gelber, Alexander M., and Joshua W. Mitchell (2012). "Taxes and time allocation: Evidence from single women and men." *The Review of Economic Studies* 79(3): 863-897.
- Greenwood, Jeremy, Ananth Seshadri, and Mehmet Yorukoglu (2005). "Engines of Liberation". *The Review of Economic Studies* 72 (1): 109-133. DOI: 10.1111/0034-6527.00326
- Gronau, Reuben (1977). "Leisure, Home production, and work. The theory of the allocation of time revisited". *Journal of Political Economy* 85(6): 1099-1123. DOI: 10.1086/260629.
- Hakim, Catherine (2003). "A new approach to explaining fertility patterns: Preference theory." *Population and development review* 29(3): 349-374. DOI: 10.1111/j.1728-4457.2003.00349.x
- Instituto Nacional de Estadística (2006). Encuesta Continua de Hogares: microdata 2009. Retrieved in June 2017: <http://ine.gub.uy/web/guest/encuesta-continua-de-hogares1>
- Instituto Nacional de Estadística (2007). Encuesta de uso del tiempo: microdata 2007. Retrieved in June 2017: <http://www.ine.gub.uy/uso-del-tiempo>
- Instituto Nacional de Estadística (2013a). Encuesta Continua de Hogares: microdata 2013. Retrieved in June 2017: <http://ine.gub.uy/web/guest/encuesta-continua-de-hogares1>
- Instituto Nacional de Estadística (2013b). Encuesta de uso del tiempo: microdata 2013. Retrieved in June 2017: <http://www.ine.gub.uy/encuesta-de-uso-del-tiempo-eut->
- Jiménez-Fontana, Pamela (2014). "Analysis of non-remunerated production in Costa Rica". *The Journal of the Economics of Ageing* 5: 45-53. DOI: 10.1016/j.jeoa.2014.09.004.
- Jiménez-Fontana, Pamela (2016). "Retos para materializar el dividendo de género perfiles de uso de tiempo en Costa Rica". *Población y Salud en Mesoamérica* 13(2): 1-23. DOI: 10.15517/psm.v13i2.21748.
- Jiménez-Fontana, Pamela (2017). Challenges to increase female labor force participation: Gender inequality in Costa Rica. CWW Working Paper WP1.
- Jones, Larry, Rodolfo Manuelli and Ellen R. McGrattan (2015). "Why are married women working so much?". *Journal of Demographic Economics* 81: 75–114. DOI: 10.1017/dem.2014.7
- Krueger, Alan, and Andreas Mueller (2012). "Time Use, Emotional Well-Being, and Unemployment: Evidence from Longitudinal Data". *American Economic Journal: Paper and Proceeding* 102 (3): 594-599. DOI: 10.1257/aer.102.3.594.
- Lee, Ronald and Andrew Mason (2011). "Introduction age into national accounts". In R. Lee, & A. Mason (Eds.), *Population aging and the generational economy: A global perspective* (pp. 55–78). Northampton: Edward Elgar Publishing Limited.
- Marchionni, Mariana, Leonardo Gasparini, and María Edo (2018). *Brechas de género en América Latina. Un estado de situación*. CAF.

Pellegrino, Adela (2013). “Uruguay: cien años de transición demográfica”. *Migración y desarrollo* 11 (20): 186–207.

Reid, Margaret (1934). *Economics of household production*. New York: John Wiley.

Ramey, Valerie A. (2009). “Time Spent in Home Production in the Twentieth-Century United States: New Estimates from Old Data”. *The Journal of Economic History* 69 (1): 1-47. DOI: 10.1017/S0022050709000333

Rentería, Elisenda, Rosario Scandurra, Guadalupe Souto, and Concepció Patxot. 2016. “Intergenerational money and time transfers by gender in Spain: Who are the actual dependents?”. *Demographic Research* 34(24): 689-704. DOI: 10.4054/DemRes.2016.34.24.

Rivero, Estela (2018). Intergenerational time transfers and their contribution to Mexico’s economy in 2014. CWW Working Paper WP2.

Sambt, Jože, Gretchen Donehower and Miroslav Verbič (2016). “Incorporating household production into the National Transfer Accounts for Slovenia”. *Post-Communist Economies* 28 (2): 249-267. DOI: 10.1080/14631377.2016.1164962.

Schultz, T. Paul (2008). “Population policies, fertility, women's human capital, and child quality.” In *Handbook of development economics* 4: 3249-3303.

Tovar, Jorge A. and B. Piedad Urdinola (2019). Home and Market Production Time Use Differentials in Colombia. In Urdinola, and Tovar Editors: *Time Use and Transfers in the Americas. Producing, Consuming, and Sharing Time Across Generations and Genders*, Springer, Chapter 4, pgs: 57-76.

United Nations Population Division (2013). *National Transfer Accounts Manual: Measuring and Analysing the Generational Economy*. New York: United Nations.

Van der Lippe, Tanja, Judith de Ruijter, Esther de Ruijter and Werner Raub (2011). “Persistent Inequalities in Time Use between Men and Women: A Detailed Look at the Influence of Economic Circumstances, Policies, and Culture”. *European Sociological Review* 27 (2): 164-179. DOI: 10.1093/esr/jcp0.

Zagheni, Emilio, and Mariana Zannella (2013). “The life cycle dimension of time transfers in Europe”. *Demographic Research* 29(35): 937-948. DOI: 10.4054/DemRes.2013.29.35.

Zagheni, Emilio, Mariana Zannella, Gabriel Movsesyan, and Brittney Wagner (2015). *A comparative analysis of European time transfers between generations and gender*. Springer. DOI 10.1007/978-94-017-9591-3.