

## **Time Transfer Accounts by types of households and income groups in Brazil**

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### **Introduction**

The development of the National Time Transfer Accounts has uncovered different patterns of time transfers by age across the globe. However, intra-age variation may also impact non-market work. In this paper, we look at two dimensions - in addition to age - that may shape the pattern of time transfers by gender in Brazil. The first one is the types of household arrangements, which affect household size, composition, and economies of scale. The second one is the socio-economic context of the households. In an unequal country, we expect that many factors influence the production and consumption of non-market activities by income levels (e.g., labor force participation rates, and the prevalence of home appliances and housekeepers). Our specific goals are to examine (1) the degree of market and non-market specialization by income levels, and (2) the pattern of time transfers by income levels and types of household arrangements in Brazil.

### **Methods**

We draw data from the PNAD (2013), a nationally representative survey in Brazil, to estimate time production, consumption, and net transfers. Because of the underestimation of hours allocated to care in the PNAD, we apply an indirect standardization method to input the missing information. To do this, we use as an adjustment factor the ratio between the number of daily hours dedicated to childcare and other household activities calculated from the National Time Use Surveys from Colombia (2012-2013) and Paraguay (2016). After adjusting Brazilian data, we apply the methodology suggested by Donehower (2014, 2018) to generate the NTTA.

We investigate net time transfers by age according to four types of household arrangements. The first type comprises households in which women have neither a spouse nor a child. Therefore, transfers are associated with neither motherhood nor marriage. The second household type refers to couples without children and includes women living in the company of a spouse, regardless of the kind of union, and who do not have children. In this type of arrangement, marriage is the main reason for time transfers. The third type of arrangement comprises single-parent households, in which women live with children, but do not live with a spouse, so that time transfers are related only to maternity. Finally, the fourth type of household arrangement combines the presence of a spouse and children, who together demand transfers from women. We select only women who are the household head or the spouse of a household head to avoid confusion between the role of daughters and mothers.

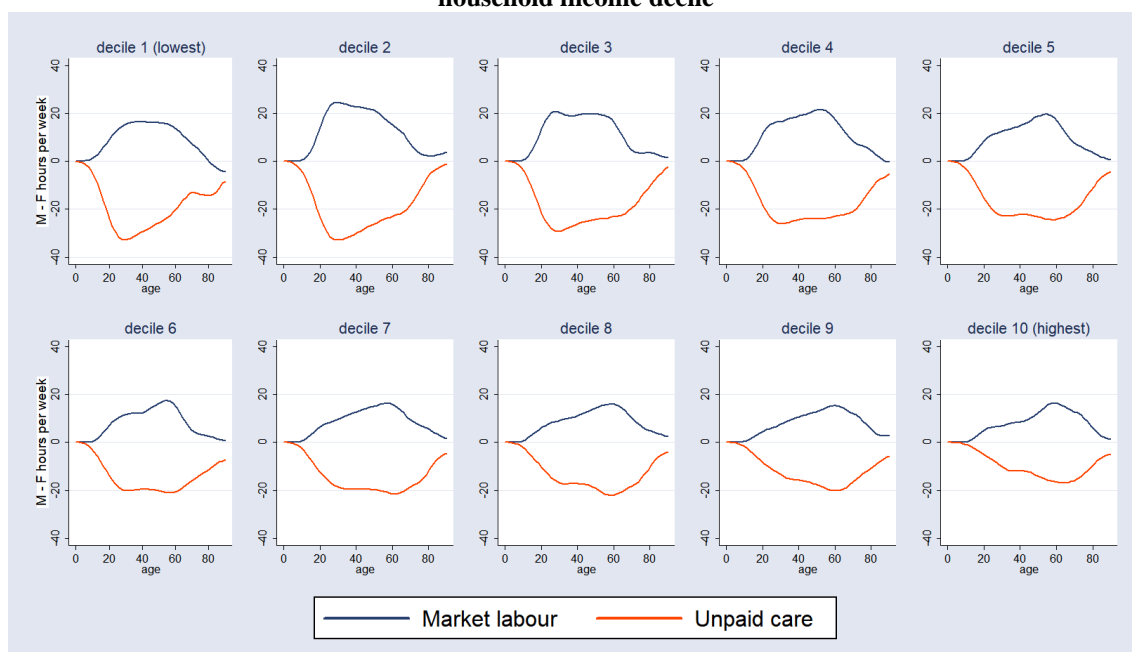
We also compare the degree of market and non-market specialization by social groups, measured by household income deciles. Specialization is calculated as the difference

between hours per week dedicated by men and women in market activities (market work) and non-market activities (unpaid care work). Data for hours allocated for market activities by age, gender, and income levels, were also drawn from the PNAD.

## Preliminary Results

Figure 1 shows the degree of market and non-market work specialization by income levels. The degree of work specialization within Brazil decreases with income. As income increases, women dedicate more hours to market activities and fewer hours to unpaid activities. This pattern explains the reduction in differences in hours per week allocated by men and women in the market and non-market activities (“squeezing the two curves”).

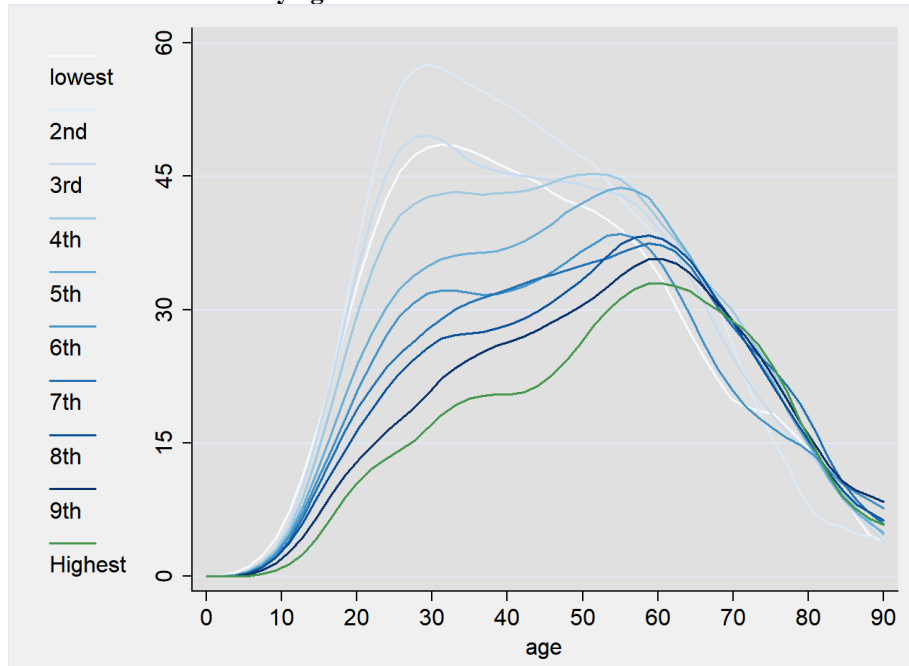
**Figure 1: Average difference in working hours (market and unpaid care) per week, by age and household income decile**



Source: PNAD, 2013

For each income decile, we estimate the difference between gender differences in market and unpaid work (i.e., the difference between the blue and red lines in Figure 1) by age, and provide a more synthetic indicator of work specialization (Figure 2). For example, at the second income decile, the largest difference is equal to 58 hours and occurs at around the age of 30. On the other hand, in the 10th decile, the gender difference at the same age is only 16 hours. Moreover, as income levels increase, the point at which specialization is the highest moves to older ages.

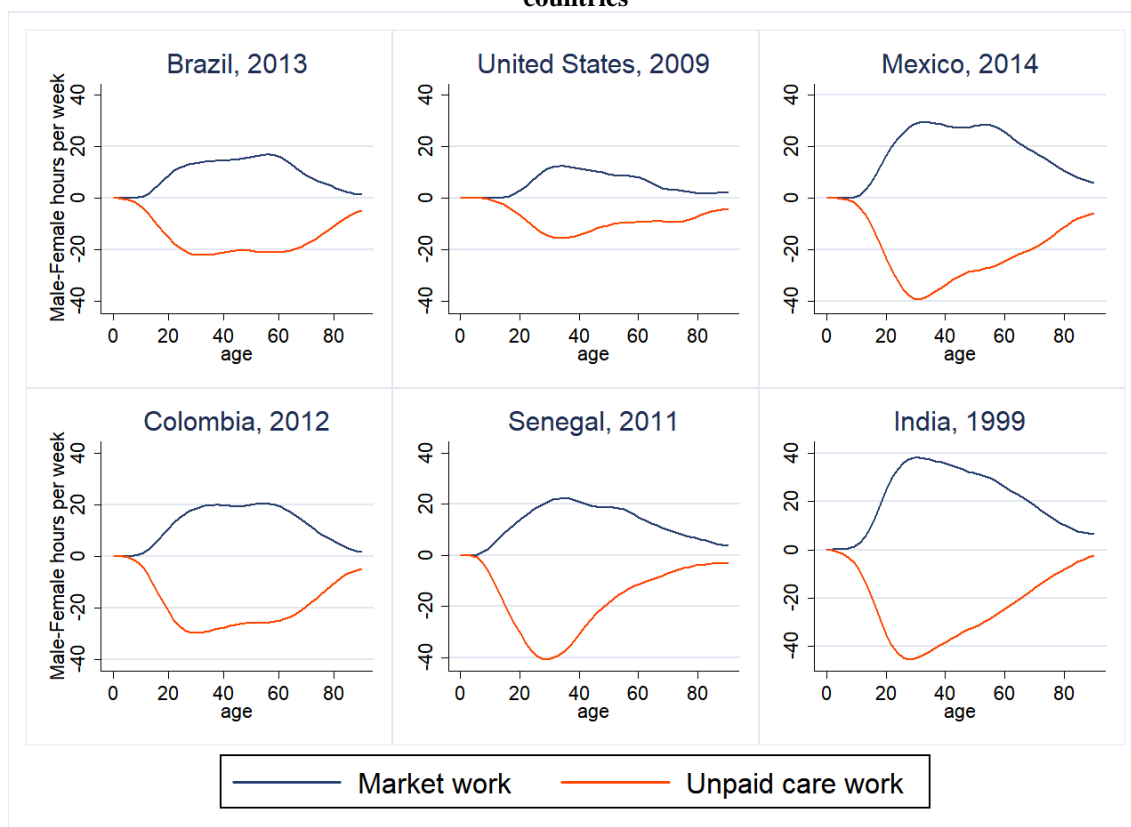
**Figure 2 – Difference between gender differences in market and unpaid care work, hours per week, by age and household income decile**



Source: PNAD, 2013

The patterns observed within Brazil by income deciles resemble, to a certain degree, the specialization estimated for countries of different income levels (Figure 3). Brazil shows a comparable degree of specialization than Colombia, lower specialization than Senegal and India, but a higher level than the United States. Mexico shows significant differences compared to Brazil, a result that deserves future detailed analysis.

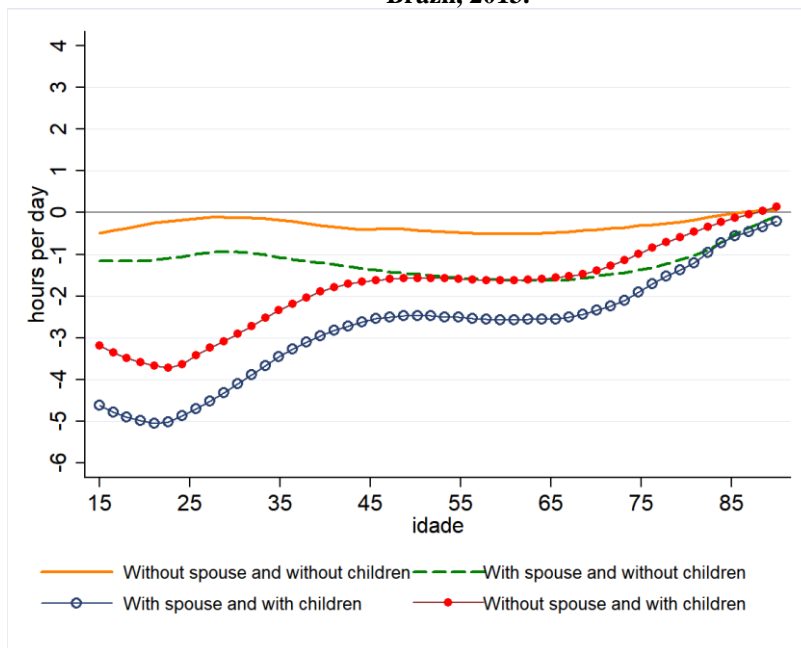
**Figure 3 - Average difference in working hours (market and unpaid care) per week, by age, selected countries**



Source: PNAD, 2013; Counting Women's Work (2020), "Counting Women's Work Public Release Dataset Version 2.0," [www.countingwomenswork.org](http://www.countingwomenswork.org), accessed on 14<sup>th</sup> March 2020.

Figure 4 shows very different age patterns and levels of net time transfers from women, ages 15 to 85, across the four types of household arrangements. When there are no children in the household, net transfers vary significantly less by age. Also, net transfers from women are the lowest among those who do not live with a spouse and do not have children. At maximum, they transfer half an hour per day. Adding a spouse increases the level of net transfers by about twofold but changes little the age pattern. However, the most significant change occurs for households with children. Adding children increases net transfers from women at most ages. For example, in single-parent households, at around the age of 25, net transfers from women are, on average, almost four hours a day. Not surprisingly, the difference to households with no children reduces as women (and children) become older. The typical net-transfer-women are those who live together with a spouse and children. Non-market activities add up, and at the age of 25, the net transfers reach an average of 5 hours a day.

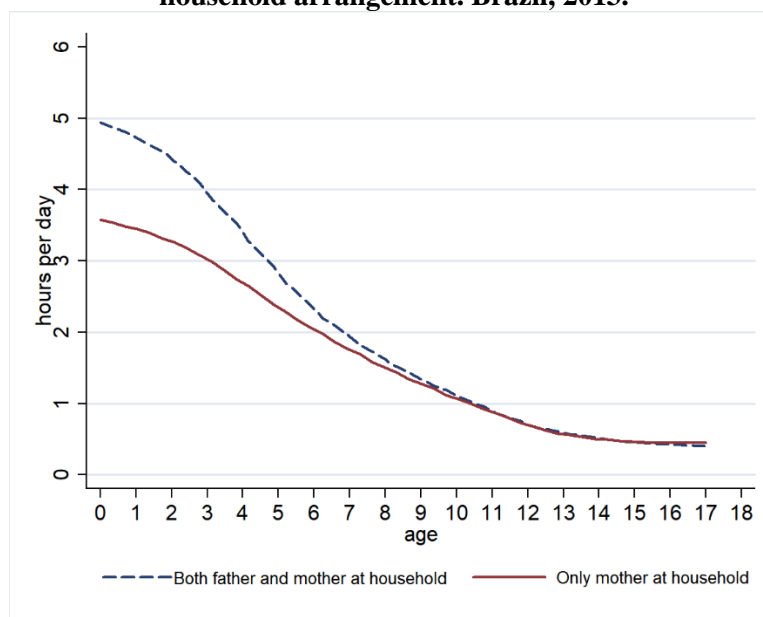
**Figure 4 - Net time transfers by age and types of household arrangements (hours per day), Women, Brazil, 2013.**



Source: PNAD, 2013

The presence of a spouse increases the amount of unpaid care work done by women, but it could also increase net time transfers to children (a type of human capital investment) since fathers can take care of them. Figure 5 compares the consumption of non-market activities for children, ages 0 to 18, in two types of households: two-parent and single-parent (only with mothers) households. In the first year of life, babies' consumption increases by 35% with the presence of the father, but the gains decrease with the child's age until they practically cease after six years of age.

**Figure 5 – Consumption of unpaid care work (hours per day) by age and type of household arrangement. Brazil, 2013.**



Source: PNAD, 2013

In the final version of the paper, we will discuss earlier studies that are related to our analysis and improve our estimates by examining net time transfers both by socioeconomic level and by household arrangement.

### **References**

DONEHOWER, G. Incorporating Gender and Time Use into NTA: Estimating NTA and National Time Transfer Accounts by Sex, 2014

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