

Counting Women's Work in India



The market and the household in India

India is a lower middle-income economy—GDP per capita in constant 2010 US\$ of \$1 806 in 2015—that is changing rapidly but in different ways for different members of society. One of those changes is its steady economic growth which has outpaced global growth over most of its history since independence in 1947. As a result, real Indian GDP per capita has grown by a factor of about six from 1960 to 2015, compared to a factor of three globally (World Bank 2016). This increase in the overall standard of living took place alongside a steady decline in fertility, with the total fertility rate falling from 5.9 children per woman in 1960-1965 to 2.5 children per women in 2010-2015 (United Nations 2016).

Many countries that experience economic growth and falling fertility over a long period of time also see increasing female labour force participation, as declines in the time burden of childrearing allow women more time for market work. This has not been the case in India, however. In the recent period, adult female labour force participation has fallen from a high of 37% in 2005 to 27% in 2014 (World Bank 2016). Other indicators of female employment see declines since the 1980s (Chaudhary and Verick 2014). This may be because Indian families prefer to have women stay out of the labour force and take care of their families instead, and they now have the income to support that preference. Alternatively, factors other than mutual choice and preference which represent barriers to women's participation in market work may be involved and may be strengthening over time. For example, even while the number of children to care for has gone down, expectations of the amount of care to devote to children may have increased. Alternatively, there may be aspects to the Indian economy that make having two or three children to care for just as much of a barrier to market work as having five or six.

The question of why lower fertility has come at the same time as lower female labour force participation centres on divisions of labour between the market and the household. Traditional economic monitoring tools are very poor at examining these issues, however, as they focus on market work only. Leaving household production, that is the unpaid labour of care and housework, out of economic measurement obscures Indian women's contributions and hampers efforts to understand how the household and the market interact. It devalues this vital work that creates the human capital of the future and sustains workers in the economy today.

This "blind spot" also makes it difficult to formulate policies that can deal effectively with the challenges India faces. These challenges include both supporting human rights by ending gender discrimination and also allowing all members of society to use their human capital in the most efficient way to increase economic growth and raise living standards. This brief describes the results from the Indian team of the Counting Women's Work (CWW) project, a research effort within the National Transfer Accounts

In Brief

-  The average Indian adult (aged 20+) spends 39.0 hours per week in market work, and 39.3 hours per week in unpaid care and housework, traditionally referred to as "women's work". For women, these figures are 22.1 hours and 40.0 hours, and for men 55.0 hours and 3.5 hours.
-  Unpaid care and housework represent 35% of all work time in India, and women are responsible for 91% of it. Women also do 29% of all market work.
-  Valuing time spent in unpaid care and housework at a market wage for these activities, this sector's production is equal to 43% of GDP, compared with 49% of GDP for market labour.
-  Women spend more time in total work than men at all ages up to the age of 52, creating a gender gap in access to time for education, and leisure and self-care.
-  Younger girls spend slightly less time in education compared with boys, with the gap widening at older ages. At age 18, girls and boys spend 11 hours and 16 hours per week respectively on school and study.
-  The value of unpaid care a child receives in the first year of life is estimated more than three times the value of market goods and services consumed.

project designed to integrate measurement of market and household economic activity by age and gender in a new way.

Our estimates require information on time use, which India has at the national level only for 1998-1999. While this means that we capture only a moment in time that has now passed, we hope that our results will demonstrate the power of this type of analysis to reveal the whole economy, and will add to the motivation for India to commit to a concrete plan to conduct another national time use survey in the near future.

Age and gender in the economy

With over 50 countries around the world involved in the project, the National Transfer Accounts (NTA) methodology disaggregates national-level economic flows by age, revealing the generational economy: how we produce, consume, share, and save resources by age. The tools developed by NTA have helped us understand how population age structure impacts economic growth, welfare, and the sustainability of government and family transfer systems (Lee and Mason 2011). This is vitally important given that lower fertility and subsequent population ageing is a virtual certainty in almost every country in the world, albeit with great variation across countries.

Another global long term trend related to the phenomenon of decreasing fertility is that of women's changing economic roles. When fertility is very high, women spend many years bearing and caring for young children, which ties them to the household and presents barriers to their participation in market work. They specialise in the unpaid work of raising children, maintaining households, and caring for others, while men specialise in market work (Watkins, Menken, and Bongaarts 1987). Traditional "women's work" however, is not included in our major economic monitoring systems, and thus remains invisible and stubbornly outside of the realm of economic analysis and policy development (Waring 1999).

The aim of Counting Women's Work is to reveal the gendered economy in the same way that NTA has revealed the generational economy. This involves two efforts: (1) separating NTA economic age profiles by gender, and (2) creating National Time Transfer Accounts (NTTA). NTA uses household income and expenditure surveys and administrative data to estimate flows of income, consumption, taxes paid, and public benefits received by age, adding gender as another characteristic, and adjusting the age/gender schedules so that they are consistent with national accounts aggregates. NTTA uses time use data to measure the production, consumption, and transfers of unpaid time in the same framework as NTA estimates. Time production is estimated from time use respondents' activities. Consumption of that time is imputed based on the type of activity. For example, consumption of cleaning time and other general housework is imputed equally to all household members, but care of household children or elders is imputed to the children or elders in the household by age using numerical methods (Donehower 2014). Taken together, NTA and NTTA reveal how men and women, and girls and boys, produce, consume, and share their time in addition to their money. Understanding the nature of gender differences in the economy and how and why they may change is part of ensuring gender equality and is also vital for nations to thrive in a changing world.

For the purposes of this brief, we refer to household production as "NTTA work" and market production as "NTA work". NTTA work includes the time spent or value produced in unpaid care for children, elders, or other family or community members, and housework, including cooking, cleaning, household management and maintenance and related activities. NTA work is the time spent in market labour or the value of that labour income, which includes wage and salary income earned from an employer as well as a

Counting Women's Work

Counting Women's Work (CWW) is a project within the National Transfer Accounts (NTA) research network, and is coordinated by the University of California, Berkeley; the Development Policy Research Unit at the University of Cape Town; and the East-West Center, Honolulu. The research is funded by the William and Flora Hewlett Foundation and the International Development Research Centre (IDRC).

CWW has developed methodology to measure age and gender in the gendered market and household economies. The project currently supports research in nine low- and middle-income countries around the world—Colombia, Costa Rica, Mexico, Ghana, Kenya, Senegal, South Africa, India, and Vietnam—who join a growing number of countries globally with comparable estimates.

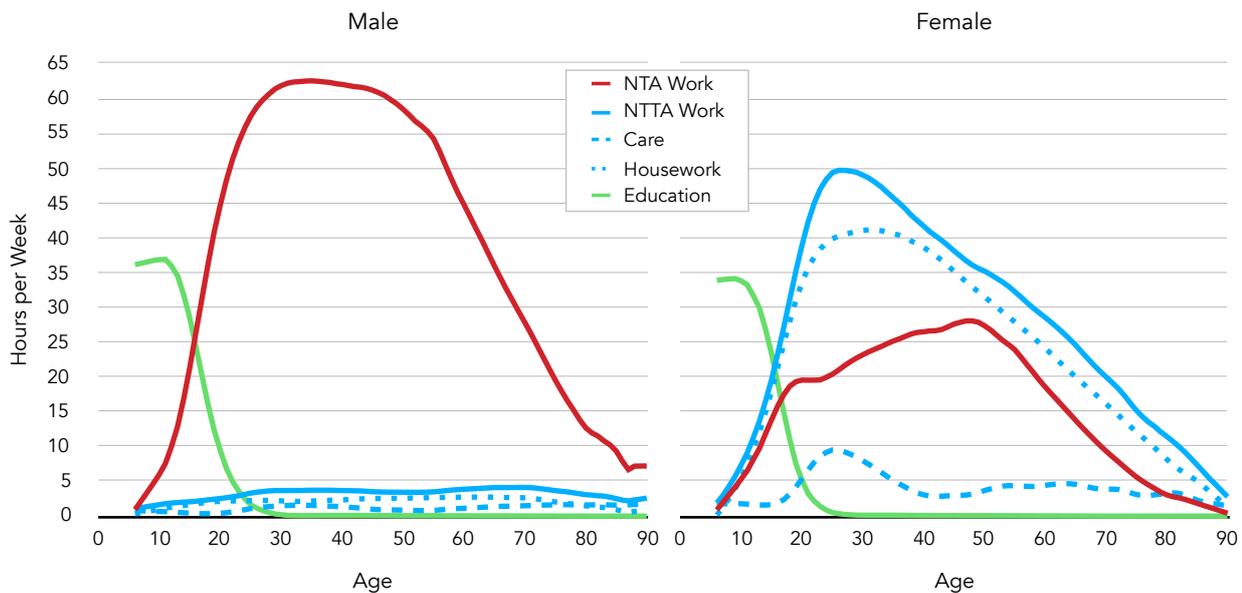
portion of the earnings of household-owned farms and enterprises attributed to labour.

Time use and gender specialisation

Patterns of gender specialisation in time use are estimated using the 1998-1999 time use survey in India, conducted by the National Sample Survey Organisation (NSSO). Sampled members aged 6 years and above in over 18 000 households were asked to fill out a complete time diary. Time use is impacted by a variety of factors including employment status, household structure and socioeconomic status. Because these factors are related to life course events like childbearing and ageing, average patterns of time use vary systematically by age and gender. Adding the specific age dimension to what are often simple statistics for adult men versus women makes our approach more useful for deriving key policy inputs for monitoring of gender sensitive public programmes, gender budgeting, and advancement of women in India.

Time spent in education is a good example. Children and young people are typically enrolled in school and, as a result, spend large amounts of time in education. In India, boys and girls between the ages of 10 and 16 years spend an average of 30.7 hours per week in education (Figure 1), but the number for boys is 32.8 hours while for girls it is 28.4 hours, a disadvantage for girls of 4.4 hours per week. At the same we know that children in this age group perform significant amounts of work, but it is heavily gender specialised: boys help with household farms and businesses while girls are more likely to do housework and care work for siblings. This specialisation comes with total work time disadvantage for girls: for ages 10 to 16, boys do an average of 4.2 more hours of market work compared to girls doing 12.3 more hours of care and housework. The greater total work burden on girls translate to less time available for them to go to school.

FIGURE 1: TIME USE, BY AGE AND GENDER (1999)



As children grow older, young people begin exiting the education system and enter the labour market in larger numbers; as a result, time spent in education declines, while time spent in paid work begins to increase. By age 16, mean time spent in education in India at that time was below time spent in paid work for both men and women.

Time spent in productive activities increases rapidly for young people. Figure 1 distinguishes between time spent in NTA work and in NTTA work. For boys, NTTA work (in blue) is very low but NTA work rises rapidly after age 16. By age 19, men are already working what is considered to be full time, over 40 hours per week in NTA work and related activities, and that rises to a peak of 62.5 hours per week at age 35. By contrast, men’s time in NTTA work never rises above 5 hours per week. NTA work decreases at older ages, but only falls below 40 hours per week at ages older than 62. Even men in their early 80s are doing NTA work for 10 hours per week on average.

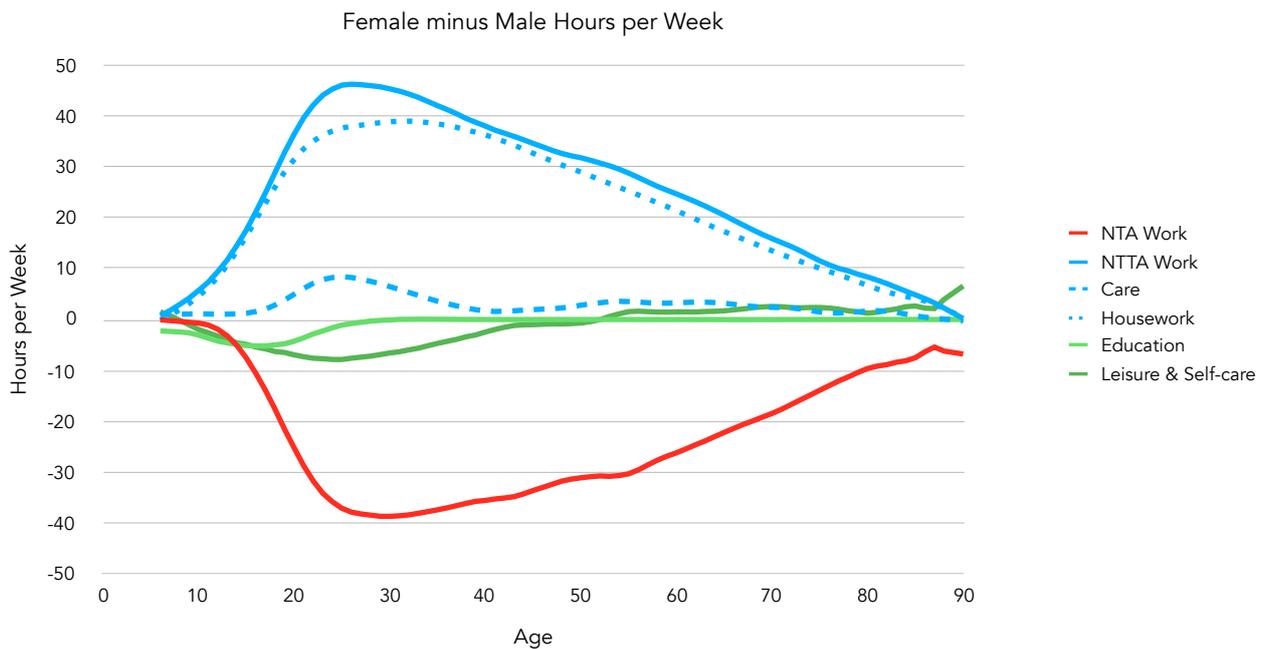
This represents a great deal of specialisation in NTA work over NTTA work. While these estimates are from a cross-section of different age groups at one point in time, if we imagine that they do represent a person's life accurately, we could see that only 7.8 percent of a representative man's time over his life would be spent in NTTA work, compared to 92.2 percent in NTA work.

For women, time spent in productive activities at young ages rises even more rapidly than for men. By 16 years, girls are already spending 23.3 hours per week in NTTA work and this reaches 49.7 hours per week at age 27 with a growing share of direct care as well. Between the ages of 21 and 42 years, women are spending over 40 hours per week in NTTA work, the equivalent of a full time job. At the same time, they are also putting significant amounts of time into NTA work. At age 27, the age of peak time spent in NTTA work, women are also doing 21.6 hours of NTA work. Notice, however, that the age shape of NTA work is quite different for men versus women. Men's peak age of NTA work is 35 years old while women's is 48 years old.

Women's greater NTA work time may be made possible by the decline in NTTA work with age. Time in both NTA and NTTA work falls gradually for women in their 50s and older, but only gets below 40 total hours per week for women age 65 and older. As we did for men, if we imagine that these curves are for an individual, rather than for a cross-section of the population, such a woman would spend 63.7 percent of her life's work time on NTTA work and 36.3 percent on NTA work. Of her total NTTA work, she would only spend 14.6 percent of that time on direct care activities, as opposed to general housework and household management and maintenance.

Figure 2 looks at the same information but in a different way that reveals the extent of gender specialisation in time use in India; positive numbers represent tasks that women spend relatively more time in, while negative numbers reveal tasks that men specialise in.

FIGURE 2: GENDER SPECIALISATION IN TIME USE, BY AGE (1999)



Women are clearly specialising in NTTA work, and in both care and housework. Men on the other hand specialise in NTA work, and leisure and self-care and at younger ages boys and men consistently enjoy more time for education than girls and young women. At all ages, men on average spend more time in leisure and self-care activities than women, with the difference particularly large during the mid-20s. The largest gender gap in time for leisure and self-care occurs at age 25, when men have 7.9 more hours per week than women, more than an hour per day. The gap reverses at age 53 and women older than this have anywhere from 1 to 3 more hours per week of leisure and self-care time than men.

Combining market and household production

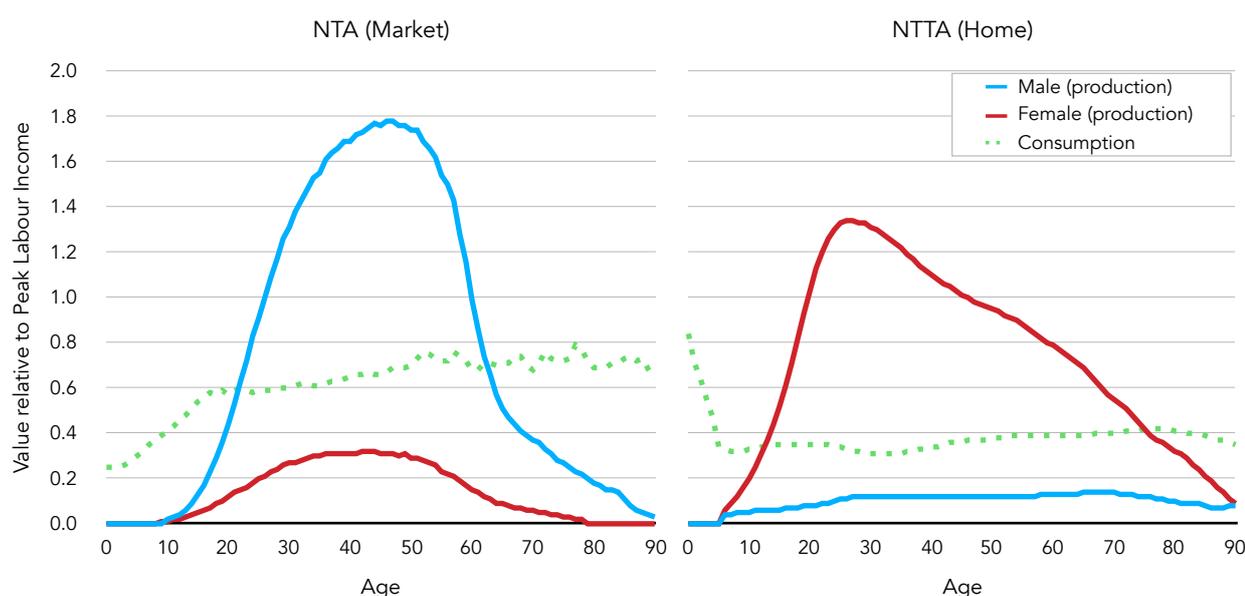
Now that we know how much time is spent by men and women in market work and household production, the next question to ask is what is the value of total production. By its nature, work in the home is unpaid and the output produced is not priced, and so, in order to be able to value it, a suitable wage needs to be chosen to value the time. It would be preferable to value the output at a suitable price instead, but this is more difficult to do consistently across the countries in the NTA and CWW projects, so we use wage imputation instead. This makes our estimates comparable across countries, but in the end also likely underestimates the total value of production.

In choosing a suitable wage, there are a number of options available. We use a specialist replacement wage to value the time inputs in household production. This wage is pre-tax since we are valuing the full price of the production were someone to purchase the service. One alternative is to use the wages of a generalist across tasks rather than specialist workers for each task. We do this for some countries if there is very little available wage data, although that is not the case for India.

In valuing NTTA production, wages are not differentiated by gender since differences in market wages may already be the outcome of labour market disadvantage experienced by women. For India, the wages used to value activities in 1999 come from the ILO and vary across activities. For example, 9 Rupees per hour for laundry, 14 Rupees per hour for care activities, to 32 Rupees per hour for management activities. The NTTA overall wage is the weighted average of the wage for different activities, and comes out to about 12-14 Rupees per hour. Using this specialist replacement wage, unpaid work in India is valued at 43.5 percent of GDP in 1999, most of which is contributed by women. This compares with 48.5 percent of GDP for all labour income in the same year. This is a striking statistic: even when valued at very low replacement wages, almost as much value is being produced in home production as in market labour.

The right-hand panel of Figure 3 shows the value of NTTA production and consumption using the chosen wage. The same scale is used in both panels to aid comparison. Although production is disaggregated by gender, we do not do the same for consumption as we are unable to accurately gauge the complex nature of intra-household distribution. The patterns observed are broadly similar to the time patterns in Figure 1. NTTA production rises rapidly for women and peaks in the mid 20s at around 133 percent of peak labour income. (Note that the vast differences in average labour income between men and women mean that the overall average labour income is significantly below men's labour income).

FIGURE 3: PRODUCTION AND CONSUMPTION IN THE MARKET AND THE HOME, BY AGE AND GENDER (1999)



The value of per capita NTTA production for men is vastly lower than for women right from the youngest age groups. It rises slightly in mid-life but is not anywhere close to the level of women's NTTA production until the very

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oldest age groups. Compared with women, the value of per capita NTTA production for men remains within a much narrower range: between the ages of 16 and 80, it ranges between 7 and 14 percent of peak labour income. When we impute the value of care and housework produced to the age groups that likely consume that care and housework, it is expected to see young children have the highest per capita NTTA consumption levels. Infants' consumption is equivalent to 84 percent of peak labour income, falling to 55 percent at age 3 and 34 percent at age 5. NTTA consumption remains between 35 and 40 percent of peak labour income for all older age groups.

The contrast with NTA production and consumption (the left-hand panel of Figure 3) is clear, especially the high degree of specialisation between men and women. NTTA production peaks at lower levels than NTA production, but is spread somewhat more evenly across the life course and persists into old age to a greater extent than NTA production. For example, at age 80, NTA production by men and women is estimated at 18 and 0 percent of peak labour income respectively, while NTTA production is 10 and 32 percent.

One of the most striking findings shown in Figure 3 is in the consumption during the first five years of life: children's consumption of care and housework is much larger in value than their consumption of market goods and services, effectively raising the 'cost' of children.

One of the key concepts of the National Transfer Accounts is that of the lifecycle deficit (LCD), which is the difference between consumption and labour income. While the conventional lifecycle deficit involves market production and consumption, the concept can be extended to cover production and consumption in the home. The impact of "counting women's work" on the lifecycle deficit is illustrated in Figure 4.

FIGURE 4: THE LIFECYCLE DEFICIT IN THE MARKET AND THE HOME, BY AGE AND GENDER (1999)



The conventional (NTA) lifecycle deficit typically shows a deficit (positive values) for children and the elderly, and a surplus (negative values) for prime working age adults. Calculated separately by gender, the lifecycle deficit retains this general pattern, but the key difference is in the extent of the surplus: for men, the surplus peaks at 111 percent of peak labour income at age 46, while women never produce a surplus (i.e. their consumption is always larger than their labour income). The opposite is true for the NTTA lifecycle deficit: women generate substantial surpluses, peaking at age 28 where they are generating net transfers of time equivalent to 101 percent of peak labour income, while men do not generate NTTA surplus at any age.

Combining the NTA and NTTA lifecycle deficits, as shown in the green line in Figure 4, reveals a much more equal pattern for men and women, with women's care and housework adding significantly to the lifecycle surplus. The combined lifecycle surplus peaks at 67 percent of peak labour income for women at age 29, compared with 87 percent for men at age 44. The impact of including NTTA work in our understanding of the economic lifecycle is clear: while men contribute 100 percent of the aggregate NTA lifecycle surplus, they contribute a much more balanced 56 percent of the surplus once NTTA work is included.

A second important result is the increased cost associated with children, once we account for unpaid care and housework. For infants under the age of one, the NTA lifecycle deficit (and consumption) rises from just 25 percent of peak labour income to 110 percent of peak labour income once NTTA work is included in the estimates. For children under the age of 10, the NTA lifecycle deficit ranges between 25 percent and 39 percent of peak labour income; this rises to between 67 percent and 110 percent of peak labour income once NTTA work is included. Elders have smaller NTTA lifecycle deficits, and so including NTTA estimates with NTA estimates of the lifecycle deficit has less impact. Both men and women are in NTTA deficit at oldest ages, however, which generates a need for surplus NTTA time transfers from younger generations. Since men have no NTTA surplus, and thus make no NTTA net transfers, this elder care burden is part of women's care responsibilities along with the care for children.

Since the lifecycle deficit underpins our estimates of the first demographic dividend—the potential boost to living standards and economic growth resulting from falling fertility—these results have important implications for our understanding of the full economic impact of demographic change.

Conclusion and policy recommendations

Our current measures of the economy remain flawed in that they overlook the significant production and consumption of unpaid services within the household. Building on other efforts to quantify the household economy, as well as the NTA framework, the NTTA methodology allows us to quantify various aspects of gender inequality and household production, including differences between men and women in market work and wages, the potential barriers posed by household responsibilities to women's participation within the labour force, the excess total work time that most women spend relative to men, and the 'hidden' costs of children.

The results of this research are also important in terms of countries' ability to achieve the Sustainable Development Goals. Specifically, Target 5.4 of the Sustainable Development Goals requires that countries "[r]ecognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate".¹ CWW provides the measurement and monitoring tools to understand these issues and follow them over time.

In addition, the Counting Women's Work research for India highlights a number of key lessons with bearing on social and economic policy.

Reliance on standard economic measures underestimates the full economic contribution of women in particular. The estimates presented here confirm that unpaid care and household work represents a significant proportion of total output within Indian society—equivalent to roughly 43 percent of GDP in 2010—with almost all of this work being undertaken by women. This contribution, often overlooked and rarely acknowledged, is vital to the Indian economy: it is critical for the reproduction of human capital, in caring for a new generation of potential workers, and underpins the ability of men to specialise in market work.

Women are particularly burdened with responsibilities of care and housework during peak childbearing years, often forcing them out of the labour force and potentially limiting their future earnings potential and well-being. Women in their twenties spend the most time in NTTA work, driven by a surge in care work associated with bearing and raising children. This age group spends about 15 percent more time in NTTA work than their slightly younger or slightly older counterparts. Many women therefore experience significantly increased time pressure, which may also limit their ability to find employment (Floro and Komatsu 2011). This is also the age group with the greatest gender difference in access to time for leisure and self-care compared to men, which could mean they are experiencing time poverty and decreased ability to maintain their health and well-being over the long term.

Care and housework responsibilities may be impacting on the education of girls and young women, with negative impacts on gender equality in later life. Girls and young women are spending more time in NTTA work than boys and young men and it is therefore not surprising that they spend less time in education and learning. At

¹ See <https://sustainabledevelopment.un.org>.
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ages 17 and 18, equivalent to the final two years of secondary education, they spend 22 to 25 hours per week more in NTTA work. Young men work as well at these ages, working 14 to 18 more hours per week in NTA work compared to young women, but the greater total work burden for young women at this age results in them having 5 hours fewer per week in education and learning. This may compromise young women's academic performance and limit their ability to access higher education, their access to more challenging courses within higher education or their performance in higher education; each of these impacts may have long-term consequences for the economic well-being of women, their children and their families more broadly.

Results from the Counting Women's Work research, therefore, suggest a number of potential policy interventions, including:

- Acknowledge the important contributions that millions of women make every day to well-being and total production in India.
- Encourage a national conversation on norms around gender roles, within the household but also within the labour market, and a reconsideration of the designation of certain activities as "women's work". This conversation could include discussing India's extreme gender specialisation compared to many other countries in the region and the world, and a full discussion of what may be lost or gained by segregating men's and women's economic activities to such an extent.
- Consider policies to support market-provided childcare for adult women, but also potentially for younger women whose care responsibilities for siblings or their own children may be crowding out their time for secondary schooling.
- Within the labour market, promote policy interventions that encourage men to take more active roles in the home, particularly in India with respect to housework which takes up so much of women's time and is relatively low-productivity work.

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