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## Article

# The gender gap in time allocation

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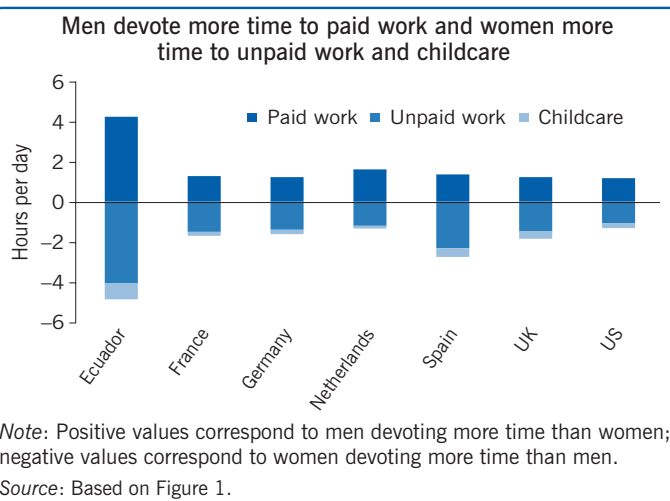
# The gender gap in time allocation

## Gender inequalities in daily time allocation may have detrimental effects on earnings and well-being

Keywords: paid work, unpaid work, gender gap

### ELEVATOR PITCH

Many countries experience gender differences, of various magnitudes, in the time devoted to paid work (e.g. market work time) and unpaid work (e.g. housework and childcare). Since household responsibilities influence the participation of women, especially mothers, in the labor market, the unequal sharing of unpaid work, with women bearing the brunt of housework and childcare, is one of the main drivers of gender inequality in the labor market. Understanding the factors behind these gender inequalities is crucial for constructing policies aimed at promoting gender equality and combating gender-based discrimination.



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### KEY FINDINGS

#### Pros

- ⊕ The gender gap in time allocation in both paid and unpaid work has decreased over time in most countries.
- ⊕ An increase in female education has contributed to a narrowing gender gap in paid and unpaid work.
- ⊕ Public policies aimed at increasing female participation in the labor market contribute to closing the gender gap in time allocation.
- ⊕ Increased paternity leave duration and coverage for men may boost participation of men in unpaid work and childcare time.
- ⊕ The use of market substitutes for unpaid work and childcare may decrease the gender gap in time allocation.

#### Cons

- ⊖ Gender differences in unpaid work and childcare time persist.
- ⊖ Public policies aimed at tackling gender inequality in time allocation mainly focus on labor market aspects, leaving aside unpaid work inequalities.
- ⊖ Gender differentials in unpaid work and childcare caused by social norms are difficult to eradicate.
- ⊖ Household joint taxation may boost specialization within couples, perpetuating the gender gap in paid and unpaid work.
- ⊖ The gender gap in unpaid work limits women's wages, thereby making it more difficult to increase female participation in the labor market.

### AUTHOR'S MAIN MESSAGE

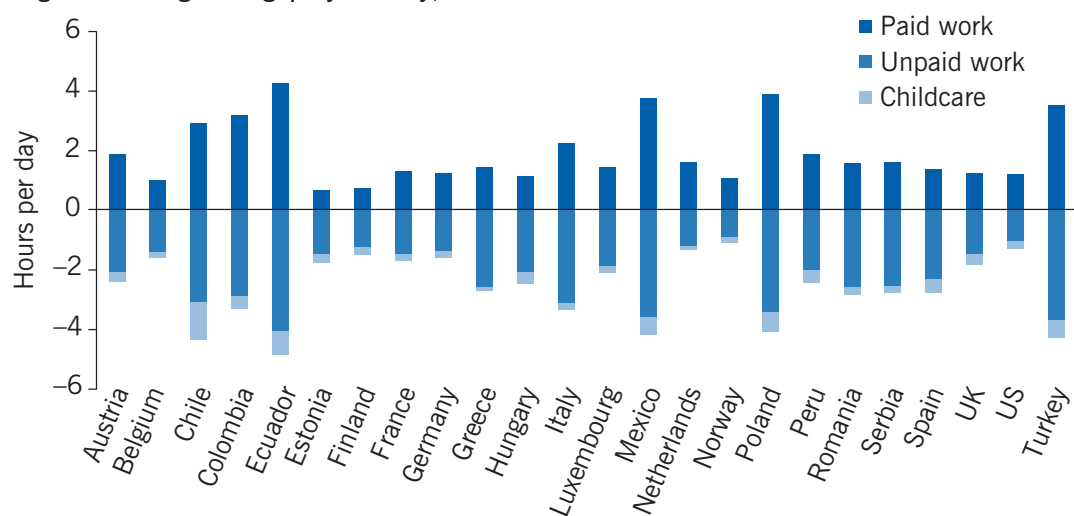
Gender gaps in time allocation produce gender inequalities in work experience and earnings. Efforts to reduce the gender wage gap and equalize the roles of men and women in society may be helpful in reducing the gender gap in time allocation. Policymakers should also consider the role that tax schemes, paternity leave policies, and the presence of women in politics may have in reducing gender gaps in time allocation. The consequences of gender gaps can be significant in terms of pensions, foregone economic productivity, and growth, notwithstanding the issue of equality of opportunity between men and women.

## MOTIVATION

The gender gap in time devoted to paid work, unpaid work, and childcare, activities that individuals perform worldwide on a daily basis, is crucial for determining work experience and therefore earnings. The time devoted to everyday activities depends on factors such as personal characteristics, peers, norms, and country characteristics, leading to differences in how men and women allocate their available time.

Figure 1 shows the gender gap in the average number of daily hours devoted to paid work, unpaid work, and childcare across 24 countries. One common feature is that while men devote more time to paid work (positive gender gap) than women, the opposite holds for unpaid work and childcare—although such gender differences are often close to compensating. The differences in paid work time range from more than 3.5 hours per day (men devote more time than women) in Ecuador, Mexico, Poland, and Turkey, to less than one hour per day in Belgium, Estonia, and Finland. The differences in unpaid work (childcare) range from more than 3.5 hours per day (women devote more time than men) in Ecuador, Mexico, Poland, and Turkey, to less than 1.5 hours per day in Belgium, Finland, Norway, and the US. In the case of childcare time, the largest differences (women devote more time than men) are found in Chile, Ecuador, Poland, and Turkey, while the smallest are found in Belgium, the Netherlands, and Norway.

Figure 1. The gender gap by country, 2008–2018



Note: The sample of European countries has been restricted to countries with available data for the 2010 wave of the Harmonised European Time Use Surveys (HETUS) and includes men and women between 20 and 74 years old. For the US, data are obtained from the American Time Use Survey (ATUS) for the years 2008–2014. The activities included in each time use category follow the same classification used by the authors in previous research; information available upon request. Positive values correspond to men devoting more time than women. Negative values correspond to women devoting more time than men.

Source: Authors' own compilation based on Eurostat HETUS data. Online at: <https://ec.europa.eu/eurostat/web/time-use-surveys/data/database>; and the American Time Use Survey (ATUS) for the years 2008–2014. Online at: <https://www.bls.gov/tus/>

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To properly analyze public policies aimed at tackling gender inequality, an examination of gender gaps in the labor market alone (i.e. work hours and earnings) is not enough, given the importance of how individuals use their time in any analysis of the quality of life [1]. Furthermore, unpaid work responsibilities negatively affect the labor market outcomes

of workers, including lowering wages [2]. If women devote more time to unpaid work, they may have comparatively lower wages, creating a vicious circle as lower wages reduce participation in the labor market and thus decrease earnings and future pensions. Such a cycle would also boost the specialization of women in unpaid work tasks. The gender gap in time allocation carries over to gender inequality in earnings, pensions, and poverty rates. Thus, assessing inequality in the gender distribution of paid and unpaid work, and identifying the channels of these inequalities, is key to monitoring progress and helps to identify priority areas for policy intervention.

## DISCUSSION OF PROS AND CONS

### Intra-household time allocation: Theory

Several theories have been proposed to explain male and female time allocation decisions. The unitary framework assumes that households are represented by a single utility function, and the main household earner, most often the husband, has an hourly wage that is higher than the hourly wage of the second earner, most often the wife, which leads to specialization within the household. In particular, the husband specializes in paid work, and the wife specializes in unpaid work—although specialization may change, depending on preferences. However, prior research has shown that this model does not fit well to reality, and several alternative theories have been proposed. Alternatives include the cooperative and non-cooperative bargaining models, collective models, and social exchange models, all of which abandon the assumption of a single household utility function. These theories instead assume that spouses have their own utility functions that may lead to conflicting interests and bargaining over the distribution of time and resources within the couple [3].

Collective models have been used to explain the distribution of paid and unpaid work among men and women. According to these models, household members (spouses) have their own (egoistic or altruistic) preferences, and the model includes an optimization program with more than one utility function, along with constraint equations. Assuming only that spouses cooperate to reach Pareto-efficient outcomes (e.g. an action that harms no one and helps at least one person), intrahousehold behaviors can be recovered from household observed behaviors, including consumption, household labor supply, caring preferences, and household production (i.e. unpaid work).

Bargaining models, based on game theory, have also been used to explain the time allocation decisions of individuals and households. Cooperative and non-cooperative models differ in how personal interests and household interests interact. In cooperative bargaining models, the outcomes of the negotiation over the distribution of time and resources are considered beneficial to all members of the household, where cooperation within the members of the household is needed. In non-cooperative bargaining models, personal gains only motivate individual decisions within the household, and no cooperation is expected between the members of the couple. In comparison to non-cooperative models, cooperative models have been considered a more natural means of analyzing household outcomes.

These alternative theories to the unitary model of the household have shown that socio-demographic and external factors affect the time individuals devote to paid work, unpaid

work, and childcare. Both collective and bargaining models have shown that the partner with the highest earnings spends relatively more time on paid work, which leads to the fact that gender gaps in earnings may be an important source of gender inequality in time allocation. However, there is some evidence showing that higher-educated women, with high earnings, may contribute somewhat more to unpaid work than do women with lower levels of education. This is known in sociology as “doing gender”: women who make a career in the labor market (which in a stereotyped world is “a man’s world”) compensate by working harder at home (which in a stereotyped world is “the woman’s world”) to prove their femininity. Alternatively, the household responsibilities hypothesis argues that as women must be in charge of household responsibilities—due to societal stereotypes—their possibilities in the labor market are limited in terms of participation, time, and flexibility of work schedules.

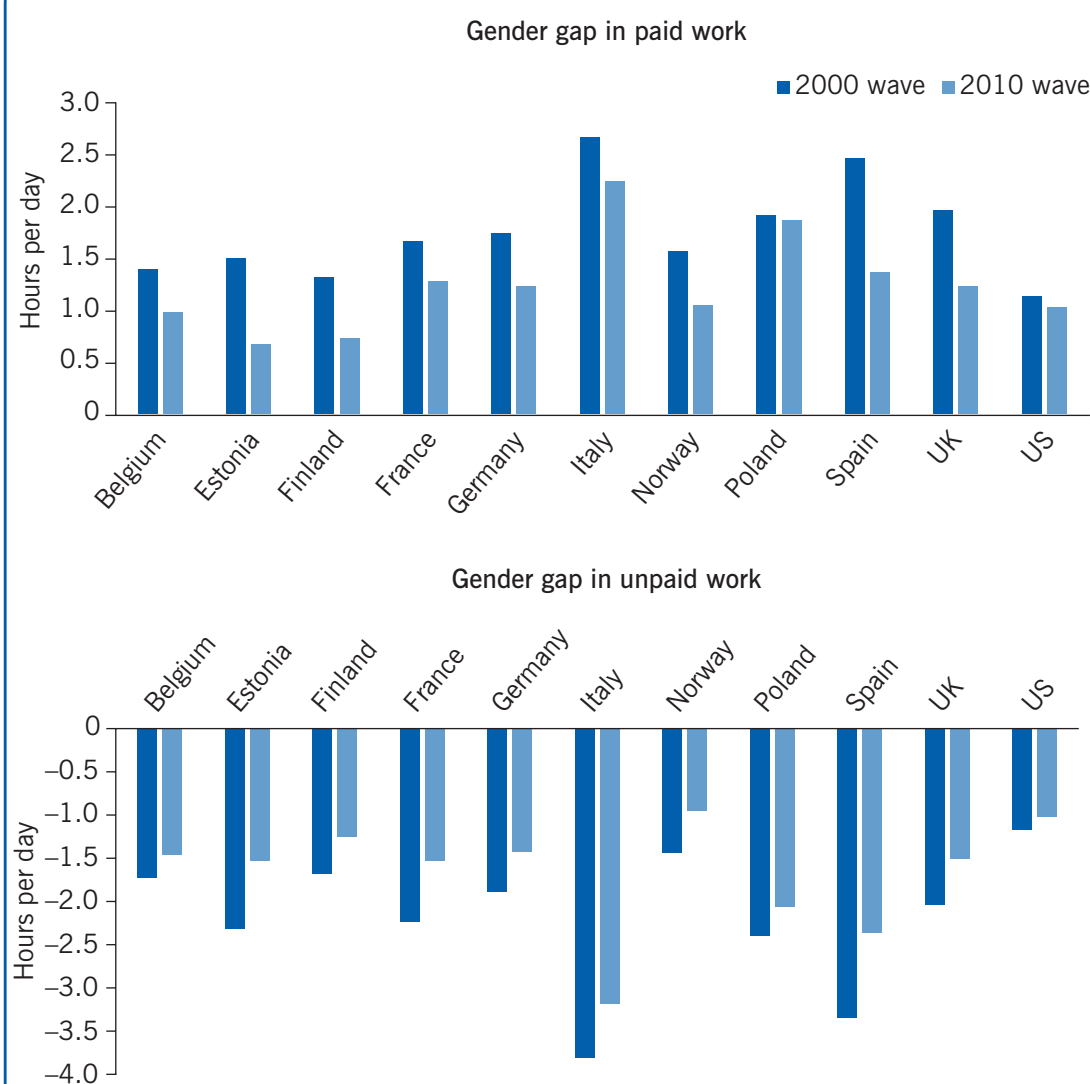
### The gender gap in time allocation: Evidence

Studies have analyzed the gender gap in time allocation decisions, in different countries, decades, and cohorts, showing that men devote more time to paid work activities and women devote more time to unpaid work and childcare [4]. However, there are cross-country differences in the extent of this gender gap, with some countries, such as the Nordic grouping, showing a more egalitarian gender distribution of the uses of time, while others, such as Mediterranean or Latin-American countries, present a less egalitarian gender distribution of the uses of time.

Gender convergence in the uses of time has also been reported, as women have increased the time devoted to paid work in relation to men, and men have relatively increased the time devoted to unpaid work and childcare [5], [6]. However, despite this convergence, the gaps have not been eliminated, and different countries have experienced it at different rates.

Figure 2 shows the evolution of the gender gap in time-allocation, for paid work and unpaid work. The countries included in these calculations are all those participating in both waves of the Harmonised European Time Use Survey (HETUS). Regarding paid work hours, the gender gap has fallen in most European countries over the past decade, with the only exception being Poland, where the gap has slightly increased. Regarding unpaid work hours, the gap also dropped substantially in all European countries. Furthermore, hours worked by men have declined more than those worked by women, and previous evidence has shown that the increased relative time men spend in unpaid work is primarily—although not completely—due to a decrease in the time women spend on unpaid work. However, it is difficult to determine whether these patterns are transitory or permanent, as these figures do not refer to the same year in all countries (data are from waves of the respective surveys, which may have some variation between countries). In this sense, for some countries, information was collected during the Great Recession, which may have temporarily increased unpaid work hours among men. Thus, it cannot be concluded that the observed shifts are long-lasting, nor that they reflect changes in women’s and men’s attitudes to unpaid work, although previous evidence has shown gender convergence in paid and unpaid work predating the 2000s.

Figure 2. The evolution of the gender gap in time allocation in selected countries



*Note:* The sample of European countries has been restricted to countries with available data for the 2000 and 2010 waves of the Harmonised European Time Use Surveys (HETUS), and includes men and women between 20 and 74 years old. Paid work and unpaid work are measured in hours per day. The activities included in each time use category follow the same classification used by the authors in previous research; information available upon request. Positive values correspond to men devoting more time than women. Negative values correspond to women devoting more time than men.

*Source:* Authors' own compilation based on Eurostat HETUS data. Online at: <https://ec.europa.eu/eurostat/web/time-use-surveys/data/database>.

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## Factors related to the gender gap in time allocation

Several personal, household, and country factors have been shown to affect the time allocation decisions of individuals. Education is a key factor since it mirrors the so-called “shadow price” or “opportunity cost” of time, which measures the implicit cost of an hour of non-work (e.g. doing unpaid work, childcare, or leisure) in terms of the hourly wage of the individual doing that hour of unpaid work. However, women have been outperforming men in terms of educational outcomes in recent decades, and thus the opportunity costs of doing unpaid work and childcare rather than paid work have risen

for women, in comparison to men. Balancing work and family life has become a priority for women, not only from the point of view of equality of opportunity in the labor market, but also due to the high opportunity costs.

Regarding the relationship between paid work, unpaid work, and wages, there is a consensus in the literature that higher wages are associated with more time spent in paid work, and less time devoted to unpaid work. Moreover, individual earnings are seen as a measure of “bargaining power” and the ratio of men’s to women’s earnings within a couple is often used as a measure of that power. In couples in which the woman has more bargaining power, the man is often found to do more unpaid work than in other couples.

In the case of education, previous evidence has found that highly educated parents devote comparatively more time to paid work, and less time to unpaid work, in comparison to low-educated parents. However, for childcare, the evidence is contrary, as highly educated parents devote comparatively more time to childcare than do low-educated parents [7]. Explanations based on income effects, returns to human capital investments, or ad hoc tastes, are used to explain the positive gradient between parents’ education and childcare time. Clearly, the relationship between education, earnings, and individual time allocation is complex and multifaceted.

Commuting has been shown to be an important component of work. In particular, there is evidence of gender differences in commuting behavior, as women tend to work closer to home, possibly to attend to their household responsibilities, in line with gender stereotypes and social norms. If women commute shorter distances, this can affect their local job market; they may forego (better) job opportunities located farther from home, or may not take up jobs beyond a certain commuting distance, and they may remain unemployed longer than similar men, which can translate into additional labor market inequality by gender. In all countries, male workers devote comparatively more time to commuting than do female workers, and thus commuting time likely adds to the gender gap in paid work.

Household structure, such as the presence of a working partner, is related to time allocation decisions [8]. In this sense, marital status is a significant determinant of female labor force participation. Moreover, marriage is an important factor, as prior evidence has shown that gender differences in time use are greater for married than for cohabiting couples, with such differences being related to differences in gender norms of cohabiting and married couples. Also, differences in the risk of getting divorced/separated, where the risk of becoming single is lower for married women, in comparison to cohabiting women, may lead the former to devote less time to market work. On the other hand, the presence of children may impose restrictions on paid and unpaid work for both men and women. The presence of children under the age of three in the household has been shown to have a negative impact on the probability of women working for pay. In this sense, the unequal share of household responsibilities may impose an extra burden on working mothers with little children and may lead to women having comparatively more difficulties in accessing certain jobs, developing their careers, or gaining promotion to decision-making positions. Furthermore, women may take jobs with inferior working conditions (i.e. lower pay or with fewer contracted working hours) in order to be able to balance their work and household responsibilities. Thus, women are confronted with the decision between becoming mothers and that of advancing professionally; some countries



succeed better than others (e.g. Poland, Sweden, and Hungary versus Italy, Luxembourg, and the Netherlands) in promulgating policies aimed at facilitating women's access to the labor market and to top managerial positions.

Studies conclude that macroeconomic conditions affect the time allocation decisions of individuals. In particular, it has been found that the 2008 recession in the US reduced paid work hours and slightly increased the time devoted to unpaid work, presumably because, at times of recession, individuals substitute private expenditure with household production (e.g. they may eat out less). Labor market conditions, such as the employment rate, which often varies dramatically by gender, are also related to gender gaps in time allocation. The employment rates of women are, in general, lower in comparison to those of men, and are more variable. While male employment rates are quite high, the employment rates of females are lower and vary considerably from country to country. Moreover, unemployed women (unemployed, perhaps, as a consequence of economic crisis) tend to do more unpaid work relative to their employed counterparts, but this is not the case for men. Some studies have investigated the link between the business cycle and the time allocations of individuals; there is consensus in the literature that macroeconomic conditions can influence how much time individuals spend, not only working for pay, but also on home production.

The tax scheme in a given country may also shape the gender gap in time allocation [9]. In this sense, the tax treatment of the household may also penalize women, as second earners (normally women) are taxed in comparison to first earners, that is to say differently and with very high rates. Such a situation further discourages female labor force participation and increases the gender gap in paid work, unpaid work, and childcare.

Gender norms have also been posited as the root of the observed gender gaps in time allocation [10]. Social norms refer to what men and women “should” and “should not” do in the society where they live. They are important with respect to the amount of time devoted to paid and unpaid work, and in the related gender gaps. Research has shown that, in those countries where gender roles reflect a more “traditional” distribution of labor, in the sense that women are in charge of children and the home, and men are in charge of earning money, the gender distribution of paid work, unpaid work, and childcare is more unequal, as women specialize in unpaid work and childcare and men specialize in paid work. The relationship between gender roles and gender gaps in time allocation exists worldwide, in both developed and developing countries [11]. Thus, gender roles are an important factor, although they can be considered as part of the country's culture and thus are difficult to change. It is true that different cohorts may have different gender roles, and thus there may be cross-cohort differences in the gender differences in time allocations.

One issue associated with gender roles is that of the kind of unpaid work performed by men and women. Unpaid work performed by men tends to be concentrated in male-stereotyped activities, such as home repairs or car maintenance, that normally do not need to be performed every day. Tasks in unpaid work have thus a different time frequency, and male unpaid work tasks do not require the same time as women's tasks. To redress gender inequalities in unpaid work, increasing the involvement of men in unpaid work tasks that are done on a daily basis may be important. Thus, to reduce existing gender gaps in the allocation of time, it is necessary not only to increase paid employment for women, but also to increase the proportion of men involved in daily unpaid work.



Institutional factors may also be related to gender gaps in paid work, unpaid work, and childcare. For example, European countries differ in their welfare regimes, reflected in the share of the public budget allocated to providing childcare. In many developed countries, children aged three to five years have nearly 100% rates of enrolment in early childhood education or childcare, although rates are not as high for children aged up to two years. A comparison for a set of European countries of the percentage of children under the age of three in formal education shows large cross-country differences [12]. If parents are not provided with education for their children under three, they will need to spend more time in childcare, which will affect the time they devote to both paid work and (especially) unpaid work. If they opt for private education, perhaps they will have to spend more time in paid work to cover the associated financial costs. Thus, work-family policies related to childcare, and/or parental leave policies, affect the gendered division of labor, and cross-country differences in these factors will also affect gender gaps in time allocation. In many developed countries, parental leave policies are female-oriented, and only a minority of males opt out of the labor market to raise their children.

## LIMITATIONS AND GAPS

The analysis presented in the figures above refers to individuals between the ages of 20 and 74, who are both working and non-working. Considering only workers could reveal even larger gender differences in time allocation. Furthermore, the data used for each country are restricted to one year only, and thus the figures do not reflect general trends. The information reported is based on time use surveys developed for each country for single years, which prevents examination of the effects of macroeconomic conditions on the gender gap in time allocation. Further, this analysis does not consider that individuals may be doing several activities at the same time (i.e. multitasking), which raises questions about the real gender gap in both unpaid work and childcare time. The consideration of simultaneous or “secondary” activities has been found to change the comparison of the time devoted to unpaid work and childcare, with increased gender gaps in both unpaid work and childcare time, and thus is important in gender comparisons, given that there may be gender differences in the ability to carry out, and the need for, multitasking [13].

## SUMMARY AND POLICY ADVICE

Differences in the paid and unpaid workload of men and women were still sizable in the 2010s, with the consequences being detrimental for both women and nations. The under-representation of women in the labor market may undermine countries’ economic growth. Thus, more and better policies aimed at redressing these imbalances are needed. In this context, reducing the gender gaps in pay, earnings, and pensions (and so stimulating female employment and combating female poverty) deserve priority. However, the gender gap in pay and earnings has barely changed since the late 1990s. Designing tax policies that focus on individuals rather than households may boost the participation of women in the labor market, helping to close the gender gap in paid work. However, for some individuals and/or countries, labor supply may be irresponsive to tax policy. If women participate more in the labor market, with increased income, households may buy market substitutes for home production, which may help to close the gap in unpaid work time.

Furthermore, the gender gaps in paid and unpaid work are related to the gender-stereotyped views of women’s role at home and men’s role in the labor market. School

programs that teach boys and girls a less-gendered view of the roles of men and women in society may be helpful in reducing the gender gap in time allocation, although this may only be a solution in the long term, given that gender roles are entrenched in societies and thereby resistant to change.

Extending the duration and generosity of parental leave policies for men may be helpful in reducing the gender gap in time allocation, as men may be more willing to share family responsibilities, which would lead to a reduction in the gender gaps in both unpaid work and childcare time. Such policies should be carefully designed, as very long paid maternal leave policies may lead to greater gender gaps in paid work time and disrupted career ladders for women.

Finally, the ongoing changes in education, the structure of the economy, and growth in the share of wives who out-earn their husbands represent important forces that may help to reduce the gender gaps in time allocation. In this sense, women are more educated and the workplace favors education more, with high-income countries moving away from what have been high-paying physical jobs held by men. Over the last 20 years or so women have had a lower unemployment rate than men during recessions, making women's relatively stable employment more valuable to the household.

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## Competing interests

The IZA World of Labor project is committed to the IZA Code of Conduct. The authors declare to have observed the principles outlined in the code.

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## REFERENCES

### Further reading

- Aguiar, M., E. Hurst, and L. Karabarbounis. "Time use during the Great Recession." *American Economic Review* 103:5 (2013): 1664–1696.
- Doepke, M., and F. Zilibotti. "Parenting with style: Altruism and paternalism in intergenerational preference transmission." *Econometrica* 85:5 (2017): 1331–1371.

### Key references

- [1] Stiglitz, J. E., A. Sen, and J. P. Fitoussi. *Mismeasuring Our Lives: Why GDP Doesn't Add Up*. New York: The New Press, 2010.
- [2] Hersch, J., and L. S. Stratton. "Housework and wages." *Journal of Human Resources* 37:1 (2002): 217–229.
- [3] Lundberg, S., and R. A. Pollak. "Family decision making." In: *The New Palgrave Dictionary of Economics*. London: Palgrave Macmillan, 2008.
- [4] Fisher, K., and J. Robinson. "Daily life in 23 countries." *Social Indicators Research* 101 (2011): 295–304.
- [5] Aguiar, M., and E. Hurst. "Measuring trends in leisure: The allocation of time over five decades." *The Quarterly Journal of Economics* 122:3 (2007): 969–1006.
- [6] Gimenez-Nadal, J. I., and A. Sevilla. "Trends in time allocation: A cross-country analysis." *European Economic Review* 56:6 (2012): 1338–1359.
- [7] Guryan, J., E. Hurst, and M. Kearney. "Parental education and parental time with children." *Journal of Economic Perspectives* 22:3 (2008): 23–46.
- [8] Kalenkoski, C. M., D. C. Ribar, and L. S. Stratton. "Parental childcare in single-parent, cohabiting, and married-couple families. Time-diary evidence from the United Kingdom." *American Economic Review* 95:2 (2005): 194–198.
- [9] Apps, P., and R. Rees. "Gender, time use, and public policy over the life cycle." *Oxford Review of Economic Policy* 21:3 (2005): 439–461.
- [10] Burda, M., D. S. Hamermesh, and P. Weil. "Total work and gender: Facts and possible explanations." *Journal of Population Economics* 26:1 (2013): 239–261.
- [11] Campaña, J. C., J. I. Gimenez-Nadal, and J. A. Molina. "Gender norms and the gendered distribution of total work in Latin American families." *Feminist Economics* 24:1 (2018): 35–62.
- [12] Fernández-Crehuet, J. M., J. I. Giménez-Nadal, and L. E. Reyes-Recio. "The National Work-Life Balance Index©: The European case." *Social Indicators Research* 128:1 (2016): 341–359.
- [13] Kalenkoski, C. M., and G. Foster. *The Economics of Multitasking*. New York: Springer, 2016.

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