

The Evolution of Maternity and Paternity Leave Policies over Five Decades

A Global Analysis

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Abstract

This research analyzes the evolution of maternity and paternity leave across the world, covering 190 countries over 52 years. The data show striking differences both within and between countries in how leave distribution for parents upon the birth of a child has evolved. The study finds that, across all regions, there have been notable increases in the number of leave days a mother can take. The absolute increase in the number of leave days for mothers has been greatest in Europe and Central Asia, followed by Organisation for Economic Co-operation and Development high-income economies. However, apart from the

high-income economies, the number of leave days allocated to fathers has increased by only a fraction of the amount for mothers. An analysis of the correlations between relative leave allocation and women's labor market outcomes suggests that where the disparity in the allocation of leave days is greater, women's participation in the labor market may be lower. However, the study finds no evidence of any association between the gender gap in leave allocation and other labor market outcomes, including the gender wage gap and women's representation at the managerial level.

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The Evolution of Maternity and Paternity Leave Policies over Five Decades – A Global Analysis

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1. Introduction

Over time, an increasing number of countries have been mandating maternity leave provisions that meet or exceed the standard of 14 weeks set by the International Labor Organization (ILO).² In tandem, more countries have introduced legislation to grant a certain amount of paid leave to fathers following the birth of a child. Policy movements in this area recognize the growing body of evidence that granting parents a period of leave following the birth of a child can be beneficial for both children and their parents. However, the consensus on the impact of maternity and paternity leave on women's labor market outcomes remains equivocal and while the empirical evidence on the link has been growing in depth, it has not necessarily been growing in breadth. Indeed, much of the research has been based on data from a select set of mostly high-income economies. Through this research, we present a global overview of how family leave policies have evolved using a novel data set covering 190 countries over 52 years and consider the relationship between maternity and paternity leave and women's labor market outcomes.

The literature on family leave policies and their effects considers different types of leave—maternity, paternity and parental; paid, partially-paid and unpaid—and a range of outcomes, including wages and employment for both parents, child development, and fertility rates. The pioneering study of Winegarden and Bracy (1995) shows that periods of paid maternity leave may be associated with several positive outcomes. Using data from 17 OECD countries, results from the authors' structural estimation show that extending the duration of maternity leave is associated with lower infant mortality rates, higher rates of female labor force participation and increased fertility. Results from a reduced-form estimation, however, show that when the direct and indirect effects are combined, the positive association with fertility rates disappears, but the positive correlation between female labor participation and lower infant mortality remains significant. Ruhm (1998) considers the impact of parental leave on the gap between female and male labor market outcomes, using data from nine countries in the European Union (EU) from 1969 to 1993. The author finds that paid parental leave is associated with higher levels of female employment, but that excessively long durations of leave are associated with a decline in women's wages. Leave for a period of three months is associated with increased employment without a corresponding wage penalty. On the other hand, Klerman and Leibowitz (1999) consider the United States' Family and Medical Leave Act of 1993 and show that maternity-leave legislation is unlikely to have a major effect on female job continuity, because new mothers already presented high levels of job continuity before its introduction.

² ILO Maternity Protection Convention, 2000 (No. 183), Article 4.

More recently, Baker and Milligan (2008) find that the introduction of the right to leave in Canadian provinces delays mothers' return to work shortly after birth but increases the likelihood that they will return to their pre-birth employer. Similarly, Lalive and Zweimüller (2009) use the period before and after this time as a natural experiment to analyze the effects of these changes in entitlement on fertility and mothers' labor market outcomes in Germany. Based on variation across births on either side of policy introduction, the authors show that extended leave delays return to work of mothers, even after the benefits are exhausted, resulting in significant reductions in female employment and earnings during the first three years after birth, but only minor effects beyond three years. Hanratty and Trzcinski (2009) examine the impact of the expansion of Canadian paid family leave and find no significant change in return-to-work levels by the 16th month after birth. Recent cross-country evidence from Europe (Del Boca, Pasqua and Pronzato 2009) explores the relationship between conditions in the labor market, a range of social policies (including parental leave) and women's employment outcomes. The authors find that social policies have a large and significant impact on the probability of a woman being in employment, but that the relationship is much stronger for less-educated women for whom the relative costs of participation in the labor market are higher. They also find that while a legal entitlement to maternity leave has positive implications for women's labor market outcomes, as it helps women to keep a formal connection to their employers, longer leave durations harm women's career opportunities in the long term. Akgunduz and Plantenga (2013) present evidence of an inverse U-shaped relationship between maternity leave and women's labor market outcomes. Using data from 16 European countries between 1970 to 2010, Akgunduz and Plantenga (ibid) find that parental leave is associated with increases in women's labor market participation, particularly when participation is measured in terms of hours worked; however, longer durations of parental leave are associated with declines in wages for high-skilled women and with increased occupational segregation. Overall, Blau and Kahn (2013) show that "family-friendly" policies, including parental leave, account for 29 percent of the decrease in US women's labor force participation relative to other OECD countries. The authors justify their results, arguing that parental leave may encourage women to stay out of the labor force longer than they otherwise would.

Using a differences-in-differences analysis, Schönberg and Ludsteck (2014) compare the labor market outcomes of mothers who gave birth shortly before and shortly after one of five major expansions in maternity leave coverage in Germany. The authors find that while expansions in maternity leave reduced mothers' employment rates in the short run, the impacts were small in the long run. Dahl et al. (2016) obtain similar results, showing that the series of policy reforms implemented in Norway do not affect parental earnings and labor force participation in the short or long run. The conclusion that the effects of

family leave are limited is also reached by Olivetti and Petrongolo (2017). In a comprehensive review of family leave policies in high-income economies, the authors note that there is no clear consensus from the extensive literature they have reviewed of the impact of parental leave on women's labor market outcomes. The evidence does suggest that any positive impacts on wages and employment are limited to less-skilled workers, with potentially negative effects for high-skilled workers. More recent research from the United States (Bailey, et al. 2019) also shows that the impacts of paid family leave on working mothers are not always positive. In an analysis of California's 2004 Paid Family Leave Act, the authors find little evidence that the policy had a positive impact on wages or employment and find that, specifically for new mothers, making use of the policy was associated with a 7 percent reduction in employment and an 8 percent reduction in wages. A study of successive expansions of maternity leave benefits in Norway (Corekcioglu, Francesconi and Kunze 2020) finds that the reforms had no positive association with women being in top positions by the end of their careers and, in fact, may have reduced the probability of women being in the upper echelons of pay within their firms.

Much of the focus of the literature has been on the impact of leave granted to mothers. Recently, studies have begun to emerge on the impacts of leave granted to fathers as more countries enact legislation granting such leave following the birth of a child. The results—which have focused on the effects on labor market outcomes for both parents, as well as outcomes for children—are mixed. Thor Arnarson and Mitra (2010) find that the Icelandic Act on Paternity and Parental Leave allows mothers to work longer hours, enter high-paying occupations that demand time and fewer interruptions and find full-time jobs. On the other hand, research by Rege and Solli (2013) finds that, in Norway, four weeks of paid paternity leave during a child's first year reduces fathers' future earnings. An analysis of Swedish data by Ekberg, Eriksson and Friebel (2013) finds strong short-term impacts on the incentives for fathers to take leave, but no long-term impacts on wages or employment. Focusing on Norwegian data, Cools, Fiva and Kirkebøen (2015) find that reserving a part of parental leave for use by fathers increases the likelihood that fathers will take time off and may be associated with better school performance for children. However, the authors do not find any evidence that it reduces the gap in working hours and earnings between men and women. Tamm (2019) demonstrates that fathers' leave-taking significantly reduces their working hours, but these labor market effects seem to be rather short-lived. Analyzing a reform in Quebec, Patnaik (2019) shows that fathers' employment is not significantly impacted by the introduction of "daddy months." Interestingly, Johnsen et al. (2020) observe that fathers' own leave-taking does not affect their labor market trajectory when controlling for their relative eligibility status within the firm. However, fathers have higher earnings

if a larger share of their coworkers is eligible for paternity leave. This suggests that paternity leave may negatively affect fathers' earnings by causing them to lose out on high-wage positions to competing coworkers who do not take leave.

It is worth noting that much of the evidence on family leave policies is based on data from high-income economies. However, a small number of papers use data from developing economies; given their importance in a global study of the evolution of leave policies, we highlight them here. A study of maternity leave policies in 121 low- and middle-income economies by Fallon, Mazar and Swiss (2017) finds no evidence of a positive impact on female labor supply; however, the authors find a positive association with a range of development outcomes, including reduced infant and child mortality. Using firm-level data from 66 mostly developing economies, Amin and Islam (2019) find a positive association between maternity leave provisions and female labor supply at the firm level. They highlight that the results are much stronger in countries where maternity benefits are entirely funded by the government. Similar conclusions are reached by the authors in an update to their previous analysis that extends the country coverage to 111 countries and looks at maternity leave policies in greater depth (Amin and Islam, 2022). Again, looking specifically at the relationship between paid maternity leave and female employment in the private sector, the authors find a large and significant positive correlation between the length of maternity leave and the share of female workers in a firm. The authors confirm their previous finding that context matters, as the positive relationship is much stronger when the maternity benefits are paid for by the government, and where the share of the female population at childbearing age is larger.

The only paper identified in this research that considered the impacts of paternity leave policies in developing economies is by Amin, Islam and Sakhonchik (2016). Using data from 53 developing economies, the authors find a strong positive association between the provision of paternity leave and female employment at the firm level.

We contribute to this body of literature in a number of ways. Firstly, our data set in this analysis covers 190 countries over 52 years, and captures leave granted to both parents; this allows us to provide what is, to the best of our knowledge, a novel overview of the global trends in family leave policies over five decades. Secondly, the global nature of our data allows us to consider the relationship between leave policies on women's labor market outcomes across regions. Finally, while earlier studies have tended to focus on either leave granted to mothers or to fathers, we assess both types of leave by focusing on the gap between the leave allocated to mothers and fathers.

The paper proceeds as follows: section 2 outlines a conceptual framework in which we consider the correlates of family leave policies, section 3 presents the data and shows how the allocation of family leave has evolved over the past five decades. Section 4 presents our empirical model and estimation results. Finally, section 5 provides some concluding remarks.

2. Conceptual framework

As discussed by Cools, Fiva and Kirkebøen (2015), one of the factors motivating the expansion of paternity leave policies was a desire to reduce gender gaps in employment and wages. While the arguments of Cools, Fiva and Kirkebøen (*ibid*) are specific to countries in Northern Europe, the rationale for granting leave to fathers can be applied in a broader geographical context. Motivations behind policies granting leave to fathers included the belief that such leave allocation in the early part of a child's life would alter traditional gendered patterns of household work and increase men's participation in childcare, with potentially long-term effects. This theory was grounded in the work of Becker (1985), suggesting that small changes in initial conditions can lead to substantial changes to how household members allocate their time in the long run. It is complemented by the model of Heckman and Cunha (2007), who note the multiplicative effects of parental investment at the early stages of a child's life—a critical phase during which children form attachments to their primary caregivers (Bowlby, 1969).

As discussed by Ekberg et al. (2013), there is evidence that family leave policies confer benefits in terms of increases in children's well-being, but they can come at a cost in terms of the increase in gender inequalities. Motivations for the introduction and expansion of policies promoting fathers' leave include the desire to undo some of the negative consequences on women's labor market outcomes of previous family leave policies, which had encouraged mothers, but not fathers, to take time out of the labor market. In their research, Ekberg et al. (*ibid*) focus on Sweden—a country with very generous leave policies, but with substantial gender gaps at the higher end of the earnings distribution. The Swedish Government Bill of 1993 introducing 30-day quotas for both parents in parental leave legislation explicitly noted that increasing the uptake of parental leave by fathers would change employers' attitudes vis-à-vis hiring workers. This should in turn affect any career concerns either parent may have when considering whether to take such leave, or which parent should take it. Further, the Government Bill noted, if fathers took more parental leave, it should enable a more equal distribution between parents of interruptions in work due to the need to care for children. Such changes should help advance women's career development. Overall, the parental leave reform in Sweden aimed to improve women's labor force participation rates, as well as their career progression and earnings.

Ekberg et al. (ibid) outline mechanisms through which parental leave reform in Sweden may improve women's labor market outcomes in the long run. The first mechanism comes from the demand side. Adopting policies to encourage fathers to take time out after the birth of a child, and thus reducing the gap in leave between both parents, could change employers' beliefs that women are significantly more likely to drop out of the labor market (either permanently, or for an extended period) after the birth of a child. When women are more likely than men to drop out of the labor market, an otherwise unbiased employer may prefer to hire a man due to the investment costs of training workers (Lazear and Rosen 1990). This may be a particularly important consideration in the hiring of high-skilled workers. Beyond the immediate period following the birth of a child, the mother is more likely to experience work interruptions because of a need to take care of sick children, or due to other household responsibilities. This further increases the relative costs of employing a woman and makes women less attractive as employees due to statistical discrimination (Phelps, 1972).

The second mechanism outlined by Ekberg et al. (ibid) relates to behavior within the household. It is proposed that if men spend more leave days taking care of a child, the allocation of time within a household will be altered so that the comparative advantage that women have in childcare and household responsibilities will be reduced. If more balanced leave days are available to parents and there is a less gender-specific accumulation of human capital, this would also alter employers' views in such a way that should benefit women.

Motivated by the argument that encouraging men to take more time relative to women may reduce the comparative advantage that mothers have in childcare-specific human capital, we investigate how the gap in the allocation of leave to both parents, that is, the difference between the number of days allocated to mothers versus fathers, relates to women's labor market outcomes. We look at this primarily in terms of aggregate participation in the labor force, but also consider the gender wage gap, women's propensity to be employed in managerial positions and in the formal sector, labor force participation rates for women of different education levels, and attitudes to women's work.

3. Data and descriptive findings

3.1 Leave data

The leave data we use in our analysis have been collected and compiled by the World Bank's *Women, Business and the Law* (WBL) project. The WBL index measures the legal inequalities that a woman faces as she navigates her career, from the time she enters the workforce through to her retirement. Eight

indicators underly the aggregate WBL index, each of which covers a different area of the law that may affect a woman's working life. The *Mobility* indicator examines laws that constrain a woman's freedom of movement. The *Workplace* indicator evaluates laws that may constrain a woman's ability to work. The *Pay* indicator assesses legislation that may affect a woman's pay. The *Marriage* indicator assesses legal constraints related to marriage and divorce. The *Parenthood* indicator assesses the legislation that may impact a woman's ability to partake in the workforce after having a child. The *Entrepreneurship* indicator examines how legislation may impact a woman's ability to start and run a business. The *Assets* indicator considers how the law may constrain a woman's ability to own and manage assets. Finally, the *Pension* indicator examines how the law may affect the size of a woman's pension upon her retirement. The data cover 190 countries from 1970 until 2021 (at the time of writing) and are updated annually.³

The data examined in this paper were collected as part of the development of the *Parenthood* indicator. There are five binary data points underlying the indicator: (1) Is paid leave of at least 14 weeks available to mothers? (2) Does the government administer 100% of maternity leave benefits? (3) Is there paid leave available to fathers? (4) Is there paid parental leave? (5) Is dismissal of pregnant workers prohibited? The main data presented here and used in the analysis are the detailed data underlying questions (1), (3) and (4) above. These data give the precise length (in days) of leave available to mothers, to fathers, or to both parents as granted under each country's maternity leave, paternity leave or parental leave policies.

Under the WBL methodology, maternity leave refers to leave available to the mother for the birth of a child, consisting of days before, during, and immediately after childbirth. Similarly, paternity leave refers to leave available only to the father to be taken immediately for the birth of a child. While maternity and paternity leave refer to leave explicitly granted to mothers and fathers respectively, parental leave is designed for childcare that follows or replaces maternity or paternity leave and can be shared or specifically allocated to mothers or fathers. Some countries reserve a specific portion of parental leave for either parent. For example, according to WBL data for 2021, in Germany, there are 300 parental leave days available for parents to share, in addition to which there are 60 days reserved for the specific use of each parent.⁴

Standardized assumptions are used by WBL to ensure data comparability. For example, the WBL methodology assumes women are lawful citizens living in the main business city of the country in question. They are healthy adults without any criminal records and are assumed to be employed as

³ The full data set can be accessed at <https://wbl.worldbank.org/en/wbl-data>.

⁴ Parental Benefits and Leave Act; Sections 4, 15, and 16.

cashiers in a grocery store with 60 employees. When collecting the five data points under the *Parenthood* indicator, the research applies additional assumptions, such as that mothers and fathers have worked long enough to accrue maternity, paternity, and parental benefits.⁵ In each data collection cycle, specific time frames are set, and only legislation entered into force in each time frame is measured. Only codified laws (including codified customary laws) are considered in data collection. WBL data were collected from primary legal sources and confirmed by local experts through the administration of standardized questionnaires. Historical data on laws and regulations before 2009 and going back to 1970 were collected through desk research of the primary legal sources and consulted with secondary sources where the primary ones could not be located.⁶

We follow the WBL methodology in our analysis, and the total number of leave days available to a mother is calculated as the combination of maternity leave, parental leave days reserved for the mother and any additional days that are not specifically reserved for the use of either parent.⁷ Fathers' leave is the sum of paternity leave days plus any days of parental leave specifically allocated to the father. In our analysis, only paid leave is counted, and all leave days are calculated in calendar days. Continuing with the example of Germany, according to data for 2021, women in Germany are entitled to 98 days of maternity leave,⁸ while there is no provision in place granting paternity leave specifically (fathers' leave is only covered under parental leave policy). Thus, according to our method of counting leave days, total leave days for mothers is 458—of 98 maternity leave days, 60 parental leave days reserved for mothers, and 300 unallocated parental leave days. Total leave days for fathers is 60 days, comprised solely of parental leave days reserved for fathers.

⁵ The complete list of assumptions for the indicators can be accessed at <https://wbl.worldbank.org/en/methodology>.

⁶ The full dataset of legal bases can be accessed at <https://wbl.worldbank.org/content/dam/sites/wbl/documents/2021/02/WBL1971-2022%20Dataset.xlsx>.

⁷ This is based on the assumption that mothers are more likely than fathers to take the parental leave that is not assigned to either parent. In our analysis, we test the robustness of the results to this assumption.

⁸ Maternity Protections Act; sections 3 and 6.

3.2 The evolution of leave allocation across countries and time

Figure 1. The evolution of average leave days granted to mothers and fathers, global

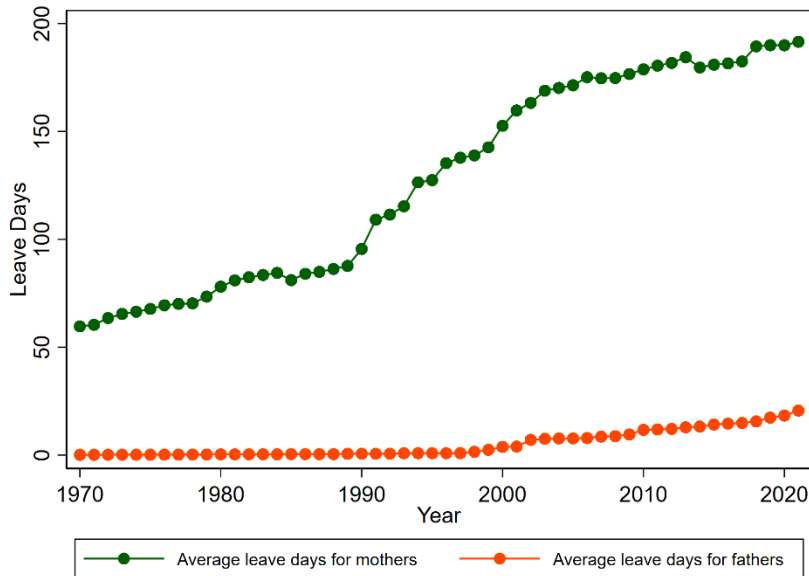


Figure 1 shows that in 1970—the first year covered by the WBL panel data, the average number of leave days allocated to mothers was 59.7 (the median was 63 days). In comparison, the average number of days allocated to fathers in the same year was 0.1 (median of zero). This extremely low average for fathers reflects the fact that, in many countries, fathers were not entitled to any type of paid leave upon the birth of a child. In fact, only 13 out of the 190 countries covered granted leave to fathers for the birth of a child in 1970. Overall, there has been significant progress made over the past five decades. According to data for 2021, the global average number of leave days for mothers had increased to 191.5 days (median of 98 days), and while the same figure for fathers had increased significantly over this time period, to 20.6 days (median of two days), it remains a fraction of that which is allocated to mothers—a fact that is evident from figure 1. In 2021, 114 countries granted leave to fathers; however, more than one-third of those countries allocated only three days or fewer to them.

Figure 2. The evolution of average leave days granted to mothers and fathers, by region

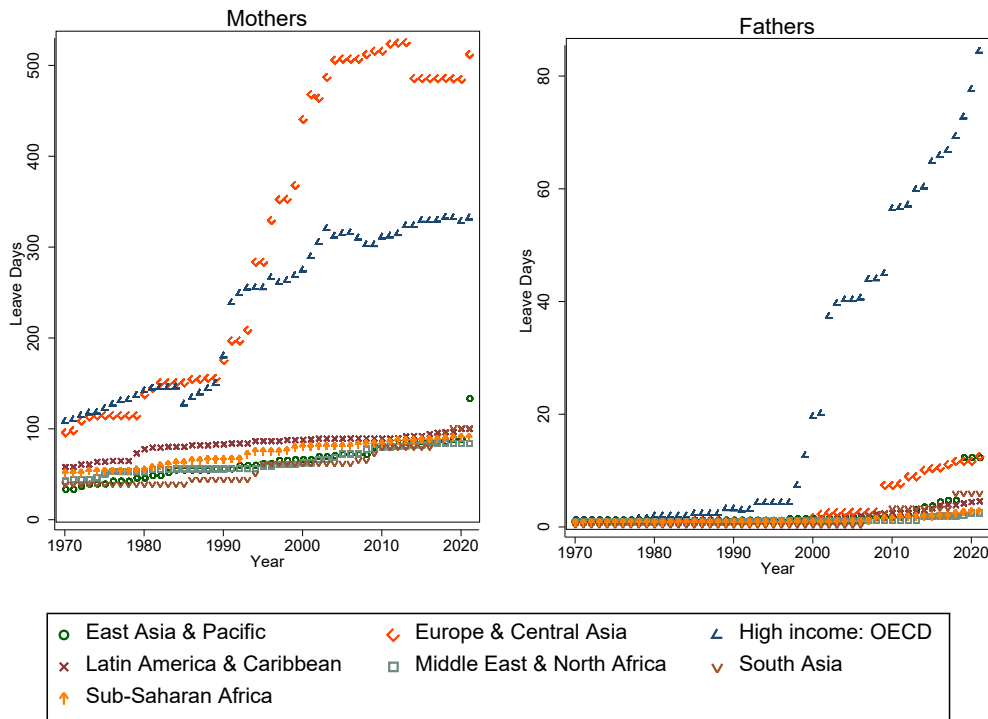


Figure 2 plots the average allocation of leave days to each parent by region for the period from 1970 to 2021. It shows that, in 1970, the allocation of leave days to mothers was, on average, the highest in OECD high-income economies (mean of 102.5 days and median of 84 days), followed by countries in the Europe and Central Asia (ECA) region (mean of 88.8 days and median of 105 days). More than fifty years later, the average allocation of leave to mothers, which includes those parental leave days that are not specifically reserved for either parent, is quite notably the highest in Europe and Central Asia at 506 days (median of 379 days). The average in OECD high-income economies follows at 332.8 days (median of 311). Average values are, to a degree, skewed by some countries with extremely generous leave policies; for example, the total number of leave days for mothers in Belarus is 1,221 days and in the Slovak Republic it is 1,137 days. It is for this reason that the median values are presented in parentheses.

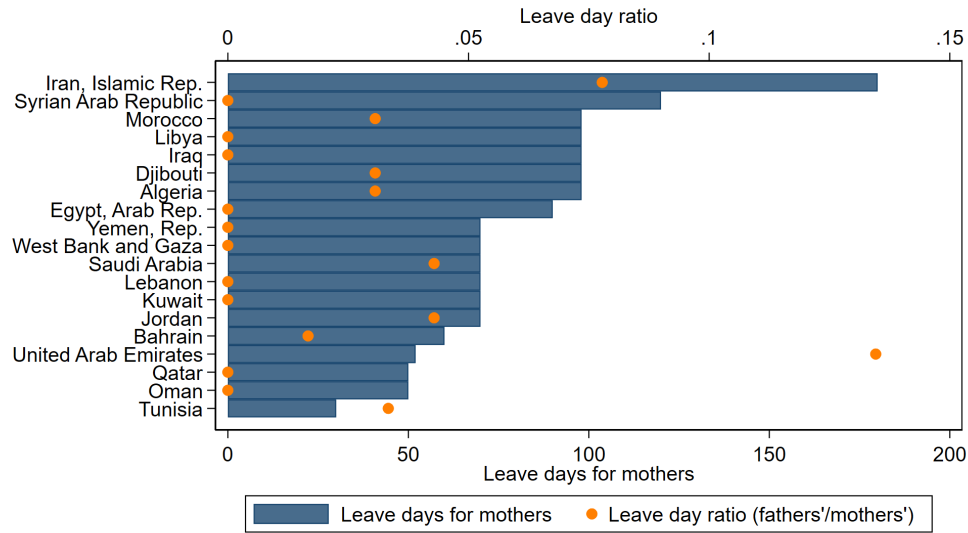
In other parts of the world, the allocation of leave days to mothers in 1970 was well below the averages of OECD high-income economies and countries in the ECA region. Furthermore, the gap between the rest of the world and these two regions has increased notably over time. One region where the gap has been reduced is the East Asia Pacific (EAP) region. In 1970, this was the region with the lowest average number of leave days allocated to mothers (with an average of 25.5 days and a median of zero days). By 2021, the average length of leave to mothers in this region had increased to 126.4 days (median of 90 days). As the

left panel of Figure 2 illustrates, as of 2021, the average number of leave days for mothers is the third highest in this region.

Turning to the right panel of Figure 2, several facts are immediately clear. Firstly, noting that the scale on the right panel is much lower than that on the left, we can see that the total number of leave days available to fathers is only a fraction of that which is available to mothers in all regions. Secondly, it is also clear that, with the exception of OECD high-income economies, progress in allocating more leave to fathers upon the birth of a child has been very slow over time. Indeed, globally, the average number of leave days for fathers increased by fewer than 20 days over the 52-year period (the median has increased by two days). In 1970—the first year of data—only 13 of the 190 countries covered in the dataset had policies in place granting leave to fathers after the birth of a child. The third fact highlighted by the right panel of Figure 2 is that, over the past five decades, OECD high-income economies have made significant progress in increasing leave allocation to fathers. While in 1970, the average number of leave days for fathers in OECD high-income economies was less than half a day (with a median of zero); by 2021, this had increased to an average of 83.7 days (median equal to 45.5 days). In contrast, the progress was significantly slower in other regions. As of 2021, the Europe and Central Asia and East Asia Pacific regions have the second and third highest allocation of leave to fathers but, at an average of only 11 days (and a median of 2.5 and zero days, respectively), these regions are still far behind the OECD average.

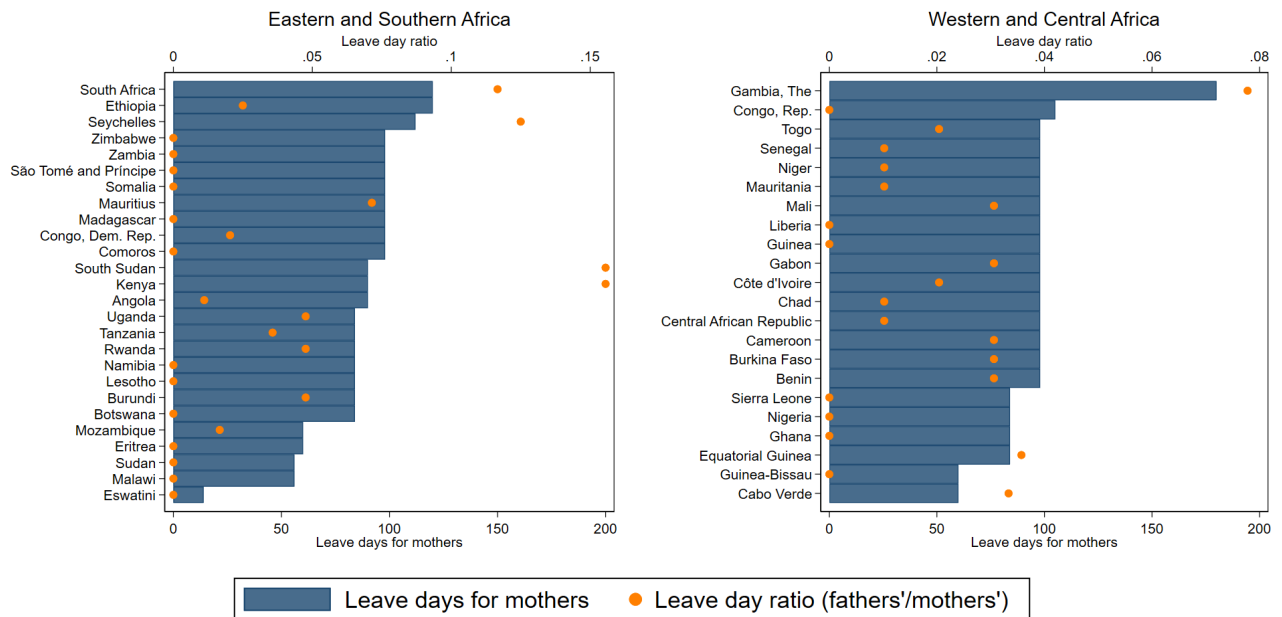
Progress in granting additional leave days to fathers has been particularly slow in countries in the Middle East and North Africa and in Sub-Saharan Africa, where the average number of leave days granted to fathers in 2021 were two days and 2.7 days, respectively (median of zero days and one day, respectively). Of the 19 countries in the Middle East and North Africa region, parental leave is, according to 2021 data, most generous in Iran at 14 days, followed by the United Arab Emirates at seven days. Ten countries in the region do not have legislation in place granting any leave to fathers upon the birth of a child. The stark difference in leave allocation to mothers and fathers in the Middle East and North Africa region is highlighted in Figure 3 below. This graph shows, sorted by largest to smallest, the leave allocation to mothers in 2021. It also illustrates fathers' leave day allocation, as a fraction of what mothers receive.

Figure 3: Mother and father leave days in the Middle East and North Africa region, data for 2021



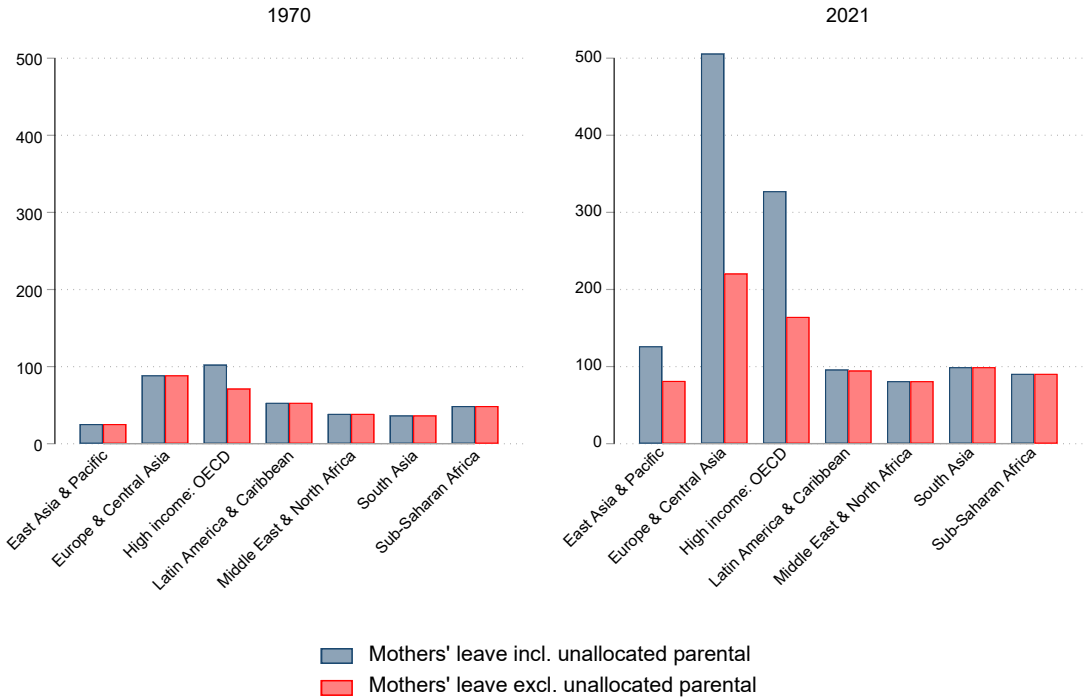
Of the 48 countries in Sub-Saharan Africa, the highest number of leave days allocated to fathers is also 14 days, and this is made available in five countries (The Gambia, Kenya, Seychelles, South Africa, and South Sudan). Twenty countries in the region have no legislation in place that grants leave to fathers. Figure 4 below highlights the leave allocation according to data for 2021.

Figure 4: Mother and father leave days in the Sub-Saharan Africa region, data for 2021



As noted previously, the patterns highlighted above are based on the assumption that the total number of leave days to mothers is the sum of maternity leave, parental leave days allocated to the mother, and any additional days of parental leave that are not specifically allocated to either parent. In contrast, we assume fathers do not take any of the unallocated leave. If we exclude the unallocated parental leave days from the calculation of mothers' leave days, the 2021 average in Europe and Central Asia is 220.8 days (median equal to 130.5 days); whereas in high-income OECD economies it is 164.5 days (median equal to 140 days) and in East Asia Pacific countries it is 81.5 days (median equal to 90 days). In all other regions, unallocated parental leave days are rare and, therefore, do not notably impact the number of leave days available to mothers. This is illustrated in Figure 5.

Figure 5: A comparison of alternative methods of calculating leave days for mothers



4. Correlating leave policy with women’s labor market outcomes

4.1 Empirical approach

Having documented the heterogeneity in global patterns of leave and how they have evolved over five decades, we next consider the ways in which leave policy may correlate with women’s economic

outcomes. The main explanatory variable we wish to correlate with women’s economic empowerment is the gap between the leave days allocated to mothers and to fathers. As noted in section 2, motivated by the work of Eckberg et al. 2013, we wish to investigate whether there is any correlation between the leave allocation to both parents and women’s labor market outcomes. Because there are some extreme values in this relationship, we express this variable in logarithmic form.⁹ Additionally, because the relationship between the leave day gap and women’s outcomes may vary based on the number of days that a mother receives—for example, a gap of five days may have very different implications if mothers are allocated ten days, or if they are allocated 100—we also control for the number of days allocated to mothers. As leave policies may not be correlated with any changes in labor market statistics in the year in which the policies are implemented or changed, we lag the policy variables by three years.

There are several control variables that are included in our estimations. Firstly, because countries that have a more equal allocation of leave between parents may have a more gender-inclusive legal framework in general, we control for the overall level of legal equality within a country using the *Women, Business and the Law* index score, recalculated without including the datapoints capturing family leave. Secondly, we account for the overall level of economic development in a country by including the log of gross domestic product (GDP) and its square term. This variable is measured with a three-year lag to lessen endogeneity concerns. Next, because we expect family leave policies to be most effective when there are more women in a country of child-bearing age, we include the percentage of women in a country between the ages of 15 and 44. Finally, we also control for the fertility rate within a country – while countries with relatively lower fertility rates have been at the forefront of the development of leave policies, more women in countries with higher fertility rates may be impacted by leave policies. We also include country and year fixed effects to control for unobservable differences between countries as well as over time. By including country fixed effects, we are measuring the correlation between leave policies and women’s economic outcomes based on variation over time within each country, as opposed to cross-country comparisons. The model is summarized by equation (1) below.

$$y_{i,t} = \alpha + \beta \ln(\text{Leavegap}_{i,t-3}) + \gamma \text{Mother_leave}_{i,t-3} + \delta \text{WBL_index}_{i,t} + \rho \ln \text{GDPPC}_{i,t-3} + \theta \ln \ln \text{GDPPC}_{i,t-3}^2 + \vartheta \text{PercChildbearingAge}_{i,t} + \mu \text{FertilityRate}_{i,t} + \varphi_i + \tau_t + \varepsilon_{i,t} \quad (1)$$

⁹ For those few country-year observations where there is no gap between leave days for mothers and fathers, the value of the dependent variable will be zero. As such, we transform the dependent variable using the hyperbolic inverse sine. This transformation can be interpreted as a normal logarithmic transformation, but it takes account of zero values (Witte, Burger and Ianchovichina 2020).

We use several metrics of women’s economic empowerment as the dependent variable in our models. Our main outcome variable is women’s labor force participation rate. We also look at this outcome disaggregated by education level as Olivetti and Petrongolo, 2017 suggest that maternity leave is more beneficial for women earning lower incomes and, as such, we use education level as a proxy for a woman’s earning potential. On the other hand, the model of Eckberg et al. 2015 suggests that women with higher skill levels may disproportionately suffer when the gap in leave allocation between both parents is large. As such, the differential relationship between leave policies and women’s skills is an empirical question we investigate in the data. We also test the relationship between family leave policies and the proportion of women in a country that are employed in wage and salaried jobs (a proxy for employment in the formal sector). We consider the relationship between a country’s family leave policies and the proportion of women in managerial positions, a proxy for the seniority of employment. Additionally, we ask whether there is an association between leave policies and the gender wage gap. Finally, we examine the correlation between leave policies and attitudes towards women’s work. Our outcome variables are summarized in Table 1 below.

Table 1: Dependent variables and data sources

Variable	Source
Labor force participation rate, female (% of female population ages 15-64)	World Bank Gender Data Portal
Labor force participation rate for females with basic education (% of female working-age population with basic education)	World Bank Gender Data Portal
Labor force participation rate for females with intermediate education (% of female working-age population with intermediate education)	World Bank Gender Data Portal
Labor force participation rate for females with advanced education (% of female working-age population with advanced education)	World Bank Gender Data Portal
Gender wage gap (unadjusted)	ILO & OECD
Wage and salaried workers (or employees), female (% of female employment)	World Bank Gender Data Portal
Female share of employment in senior and middle management (%)	World Bank Gender Data Portal
Attitudes with respect to whether men should have more right to a job than women when jobs are scarce	World and European Values Surveys

4.2 Estimation results

Considering the correlation between leave policies and women’s labor force participation, table 2a shows that a higher gap between the leave allocated to mothers versus fathers is negatively correlated with women’s participation in the labor market. The absolute number of leave days allocated to mothers is also negatively associated with women’s participation in the labor market. If we consider the association between leave policies and labor supply disaggregated by education, the results are not intuitive. A larger leave gap is associated with a greater labor force participation rate for women with the lowest levels of

education and, although the result is barely statistically significant, also for those with the highest level of education. An important caveat here is that the sample size drops dramatically for these outcome variables due to a lack of data for many countries, and thus the sample in columns (2) to (4) of Table 2a differs from that in column (1).

Table 2a: Correlation between leave policies and women's labor market outcomes

	Female labor force participation (FLFP) rate	FLFP rate amongst those with a basic education	FLFP rate amongst those with an intermediate education	FLFP rate amongst those with an advanced education
	(1)	(2)	(3)	(4)
Log of gap between mothers and fathers leave at t-3	-0.2777***	0.5667**	0.0800	0.3824*
	(0.0655)	(0.2475)	(0.2305)	(0.2207)
Log of mothers' leave days at t-3	-0.0044***	-0.0088***	-0.0041**	0.0018
	(0.0005)	(0.0017)	(0.0016)	(0.0015)
Residual WBL Index	5.4996***	5.9941*	2.9006	-1.8506
	(0.8673)	(3.3099)	(3.0908)	(2.9421)
Log of GDP per capita at t-3	-39.0294***	-19.1687**	-13.4725*	-5.1249
	(1.3888)	(7.9374)	(7.4076)	(6.9691)
Log of GDP per capita at t-3 squared	2.5121***	1.1986***	0.8515**	0.6630
	(0.0898)	(0.4598)	(0.4291)	(0.4034)
% Female at childbearing age	0.0985***	0.2450	-0.3741***	-0.1644
	(0.0358)	(0.1506)	(0.1405)	(0.1320)
Fertility rate, total (births per woman)	-0.0174	-0.1142	-3.3900***	-1.8744*
	(0.2187)	(1.1575)	(1.0811)	(1.0163)
Number of observations	4,897	1,709	1,713	1,706
R2	0.968	0.908	0.886	0.830
Adjusted R2	0.966	0.896	0.871	0.808
Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.				

Table 2b presents the correlations between leave policies and additional metrics of women's economic empowerment, as well as attitudes towards women's work. Column (1) of Table 2b shows that the gap in leave days between parents is not significantly associated with the gender wage gap; however, the results do show some relatively weak evidence that the correlation between the absolute number of leave days and the gender wage gap is negative, suggesting a lower wage gap when leave days are higher.

Considering the correlation with female wage and salaried workers (a proxy variable for female employment in the formal sector), column (2) of Table 2b shows no association between the gap in leave days and women's propensity to be employed in the formal sector. Additionally, there is no evidence of an association between the gap in leave between parents and women's seniority in employment. Finally, we find a weak correlation between the leave gap and social norms; however, here again the relationship is not in the expected direction. The results show that a larger leave gap is associated with fewer people within a country expressing negative attitudes toward women's work.

Table 2b: Correlation between leave policies and women's labor market outcomes, continued

	Gender wage gap (unadjusted)	Female wage and salaried workers (% of female employment)	Female share of employment in senior and middle management (%)	Attitudes: men have more rights to a job
	(1)	(2)	(3)	(4)
Log of gap between mothers and fathers leave at t-3	0.1675	0.0059	-0.0282	-0.0042*
	(0.4688)	(0.0800)	(0.5412)	(0.0022)
Log of mothers' leave days at t-3	-0.0089*	-0.0011*	0.0001	-0.0000
	(0.0050)	(0.0006)	(0.0021)	(0.0000)
Residual WBL Index	-3.8379	1.0381	0.3806	-0.1080***
	(8.6115)	(1.0614)	(3.7805)	(0.0248)
Log of GDP per capita at t-3	-80.2993**	20.0108***	8.5624	0.3732***
	(32.3260)	(1.7093)	(9.2041)	(0.0437)
Log of GDP per capita at t-3 squared	4.3864**	-1.0162***	-0.8033	-0.0206***
	(1.8084)	(0.1106)	(0.5451)	(0.0028)
% Female at childbearing age	-0.3492	0.2432***	0.4584***	0.0036***
	(0.3149)	(0.0436)	(0.1677)	(0.0010)
Fertility rate, total (births per woman)	1.7944	1.6059***	0.7581	-0.0113*
	(2.2876)	(0.2686)	(1.4524)	(0.0068)
Number of observations	1,077	4,762	1,005	1,831
R2	0.635	0.986	0.822	0.957
Adjusted R2	0.569	0.986	0.794	0.953
Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.				

Overall, the results on the correlation between the leave gap between parents and women's labor market outcomes are inconclusive and show no strong evidence that reducing the gap between the amount of

leave allocated to both parents will dramatically improve women's employment prospects. However, the results do suggest that reducing the gap between mothers' and fathers' leave is, on aggregate, correlated with greater participation in the labor market by women. We next turn to investigate whether these results hold under a number of robustness checks.

4.3 Robustness checks

As noted above, our model controls the level of gender equality, economic development, women at childbearing age and fertility rate. We first test the robustness of our model by adding additional control variables. Comparative studies find women's representation in politics is positively associated with the adoption of family leave policies (Kittilson, 2008). Therefore, we add an extra control of the proportion of seats held by women in national parliaments as a proxy for women's political representation. We also include another control of women's secondary school enrollment as a proxy for women's education level. The results of leave policies and female labor force participation rate after adding additional controls are demonstrated in column (1) of Table 3 below. The results for other outcome variables are displayed in table A1 of the appendix.

Although the number of observations drops dramatically again, similar to our baseline model's results shown in column (1) of Table 2a, a larger leave gap between parents is significantly associated with a lower level of female labor force participation rate. Longer leave for mothers is negatively correlated with women's participation rate in the labor market.

We mentioned earlier that in our analysis of the data, we assume all parental leave days that are not specifically reserved for the use of either parent are allocated to the mother. This assumption allocates the highest possible number of days to mothers and may not be reflective of the amount of leave mothers take. As such, we next test the robustness of our results to two more conservative counts of leave days available to mothers. In the first, we do not add these unallocated leave days to the total for either parent. In the second, we multiply the number of allocated leave days by the rate at which parental leave is reimbursed and add this number of leave days to the mother's total. As we do not have the percentage reimbursement for all years in our panel, we use the percentage for the most recent year—2021. For example, if parental leave is remunerated at a rate of 70 percent of their salary,¹⁰ and the unallocated

¹⁰ Assuming parents earn the minimum wage if cash benefits are not calculated as a set percentage of their salary.

parental leave days are 50 days, the total number of leave days available to the mother would be the sum of maternity leave, parental leave days reserved for the mother, plus 35 days (50 days multiplied by 70%). Also in Table 3, we show the correlation between family leave and the female labor force participation rate under these different assumptions in columns (2) and (3). As with the first robustness test, the other results are recorded in tables A2 and A3 of the appendix.

The correlations displayed below once again confirm those from column (1) of Table 2a—where the leave gap between mothers and fathers is larger, a smaller percentage of the female working age population participates in the labor force.

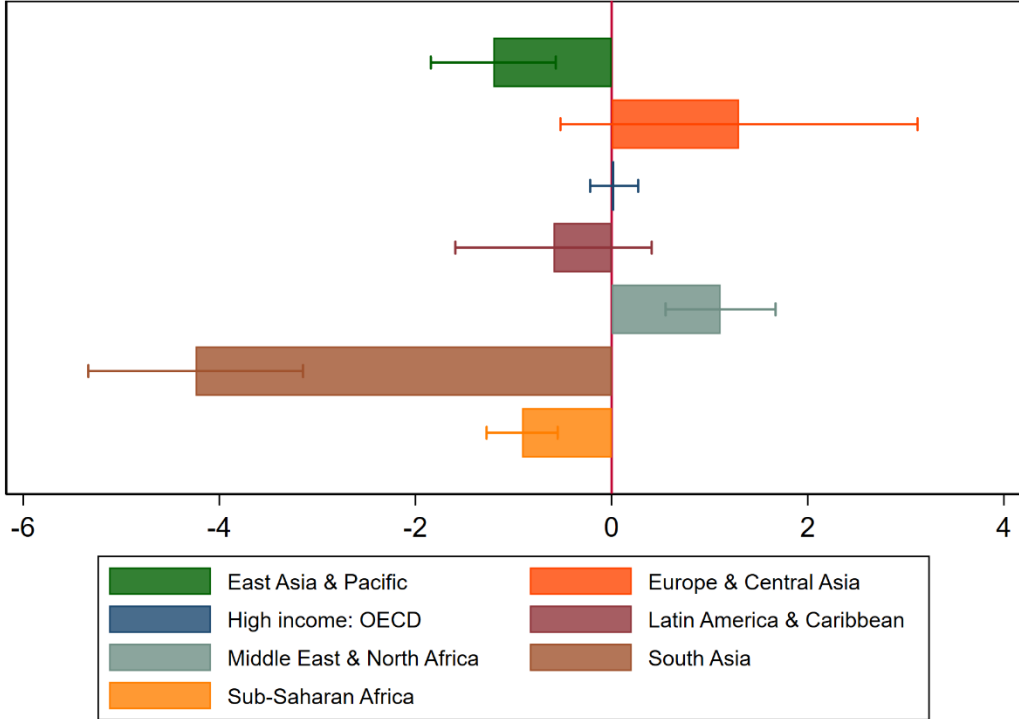
Table 3: Robustness checks on additional controls and alternative assumptions on mothers' leave and female labor force participation rate

	Adding additional control variables	Excluding unallocated leave days	Multiplying unallocated leave days by % remuneration
	(1)	(2)	(3)
<i>Y = Female labor force participation rate</i>			
Log of gap between mothers and fathers leave at t-3	-0.1654*	-0.2164***	-0.2446***
	(0.0979)	(0.0583)	(0.0643)
Log of mothers' leave days at t-3	-0.0017**	-0.0016	-0.0038***
	(0.0008)	(0.0015)	(0.0007)
Residual WBL Index	2.4236**	5.1749***	5.3596***
	(1.1497)	(0.8761)	(0.8733)
Log of GDP per capita at t-3	-42.3806***	-39.1594***	-39.4245***
	(2.4079)	(1.4145)	(1.3998)
Log of GDP per capita at t-3 squared	2.5451***	2.5148***	2.5338***
	(0.1505)	(0.0914)	(0.0905)
% Female at childbearing age	-0.1218**	0.0811**	0.0864**
	(0.0499)	(0.0363)	(0.0360)
Fertility rate, total (births per woman)	-0.6323*	-0.3094	-0.2148
	(0.3249)	(0.2190)	(0.2183)
Proportion of seats held by women in national parliaments (%)	0.0247**		
	(0.0123)		
School enrollment, secondary, female (% gross)	-0.0195***		
	(0.0075)		
Number of observations	2,492	4,897	4,897
R2	0.979	0.967	0.967
Adjusted R2	0.977	0.966	0.966
Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.			

4.4 Results by region

The results discussed thus far are based on a pooled sample of all countries. However, it is very plausible that the correlations differ across regions, given the heterogeneous leave policies documented in Section 3. As such, we consider the relationship between family leave policies and female labor supply, conducting the analysis on a region-by-region basis. The results, summarized in Figure 6 below (and presented in full in table A4 of the appendix), show that the negative association between the leave gap between parents and the female labor force participation rate is driven by countries in the East Asia Pacific, South Asia and Sub-Saharan Africa regions. In the Middle East and North Africa region, however, a larger gap of leave for parents is associated with more females in the workforce. The heterogeneous results across regions highlight the importance of the context in which leave policies are applied, and require more detailed analysis, ideally at the micro level, to understand its causes.

Figure 6: Leave gap and female labor force participation, results by region



5. Concluding remarks

In this paper, we introduce an expansion of the *Women, Business and the Law* data set that presents the evolution of the number of leave days available to fathers and to mothers upon the birth of a child across 190 countries and 52 years. Highlighting selected stylized facts from the data, we show that—across all

regions—the amount of leave granted to mothers upon the birth of a child has increased significantly over the past five decades. The increase has been greatest in the Europe and Central Asia region, where the average number of leave days is the highest today. In contrast, progress in granting additional leave days to fathers has been much slower and, in general, fathers are only offered a small portion of the leave available to mothers. The leave gap between mothers and fathers increases over time globally, and the only place where the data show significant progress in granting leave to fathers and in narrowing the leave gap has been in OECD high-income economies.

Correlating leave policies with women’s economic outcomes, we see that a smaller gap between mothers’ and fathers’ leave is associated with a higher female labor force participation rate and, at the same time, offering longer leave for mothers is correlated with fewer women in the workforce. The results indicate that it is not enough to just increase the length of mothers’ leave to encourage women’s participation in the workforce, but it may be important to shrink the leave gap between parents. However, the leave gap between parents is not significantly correlated with the other outcomes we tested.

The overall negative association between the leave gap and the female labor force participation rate appears to be driven by the East Asia Pacific, South Asia and Sub-Saharan Africa regions. On the other hand, a larger leave gap between mothers and fathers is associated with a higher female labor supply in the Middle East and North Africa region. In other regions, the correlation is not statistically significant.

In general, the correlations we present here are a mere snapshot of the aggregate associations between leave policies and women’s labor market outcomes. While our application of country fixed effects in all models ensures that we are examining changes within countries over time and their correlation with labor market outcomes, much more detailed analyses would be necessary to draw any causal links and to understand the mechanisms through which the allocation of leave days to both parents may affect female labor supply, as well as other metrics of women’s economic empowerment. Another important caveat to note here is that, in our correlations, we are looking only at those outcomes that relate to women’s participation in the labor market. It is important to state that family leave policies may also be associated with different outcomes for fathers, for children, as well as for development more broadly. All these issues represent fruitful areas for future research.

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Appendix

Table A1: Robustness test — adding additional control variables

	FLFP rate amongst those with a basic education	FLFP rate amongst those with an intermediate education	FLFP rate amongst those with an advanced education	Gender wage gap (unadjusted)	Female wage and salaried workers (% of female employment)	Female share of employment in senior and middle mgmt. (%)	Attitudes: men have more rights to a job
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of gap between mothers and fathers leave at t-3	0.4337	-0.3516	0.0379	-0.1254	-0.2174*	0.2240	-0.0033
	(0.2782)	(0.2366)	(0.2162)	(0.9417)	(0.1175)	(0.6488)	(0.0021)
Log of mothers' leave days at t-3	-0.0068***	-0.0011	0.0028**	-0.0070	0.0059***	0.0004	-0.0000
	(0.0017)	(0.0015)	(0.0013)	(0.0065)	(0.0010)	(0.0022)	(0.0000)
Residual WBL Index	5.3543	-2.0341	-6.4596**	-27.3343*	-0.9818	2.5639	-0.0067
	(3.4590)	(2.9413)	(2.6347)	(15.9080)	(1.3793)	(3.8736)	(0.0316)
Log of GDP per capita at t-3	-37.3843***	-27.9857***	-1.6857	-123.9742**	33.1577***	-9.1677	0.3293***
	(9.9613)	(8.4680)	(7.4743)	(56.1848)	(2.8886)	(13.5088)	(0.0648)
Log of GDP per capita at t-3 squared	2.2779***	1.5980***	0.4731	6.5644**	-1.9088***	0.0256	-0.0164***
	(0.5693)	(0.4839)	(0.4267)	(3.1104)	(0.1805)	(0.7638)	(0.0039)
% Female at childbearing age	0.2432*	-0.2963**	-0.2548**	-0.4412	-0.0676	0.3242*	0.0008
	(0.1470)	(0.1250)	(0.1100)	(0.5341)	(0.0598)	(0.1708)	(0.0013)
Fertility rate, total (births per woman)	0.6156	-3.9080***	-3.4696***	5.9922	2.7152***	1.0948	0.0026
	(1.2233)	(1.0407)	(0.9162)	(4.9318)	(0.3898)	(1.5923)	(0.0087)
Proportion of seats held by women in national parliaments (%)	0.0778**	0.0910***	-0.0206	0.0726	0.0398***	-0.0545	-0.0002
	(0.0339)	(0.0289)	(0.0254)	(0.1585)	(0.0148)	(0.0362)	(0.0003)
School enrollment, secondary, female (% gross)	0.0203	0.0015	-0.0199	0.0084	0.0506***	0.0450**	-0.0004**
	(0.0188)	(0.0160)	(0.0141)	(0.0645)	(0.0090)	(0.0195)	(0.0002)
Number of observations	1,329	1,332	1,325	723	2,492	864	1,207
R2	0.919	0.912	0.905	0.554	0.991	0.826	0.967
Adjusted R2	0.908	0.899	0.892	0.464	0.990	0.800	0.963

Table A2: Robustness test — excluding unallocated leave days from mothers' total

	FLFP rate amongst those with a basic education	FLFP rate amongst those with an intermediate education	FLFP rate amongst those with an advanced education	Gender wage gap (unadjusted)	Female wage and salaried workers (% of female employment)	Female share of employment in senior and middle mgmt. (%)	Attitudes: men have more rights to a job
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of gap between mothers and fathers leave at t-3	0.5771***	-0.2193	0.2441*	0.0076	-0.2268***	0.0599	-0.0008
	(0.1544)	(0.1431)	(0.1350)	(0.3345)	(0.0696)	(0.1744)	(0.0012)
Log of mothers' leave days at t-3	-0.0137***	-0.0031	0.0031	-0.0158*	0.0112***	-0.0008	0.0001*
	(0.0040)	(0.0036)	(0.0034)	(0.0089)	(0.0017)	(0.0043)	(0.0000)
Residual WBL Index	5.4495	2.7264	-1.9477	-1.4519	0.8797	0.2643	-0.1051***
	(3.3147)	(3.0900)	(2.9396)	(8.5993)	(1.0560)	(3.8116)	(0.0248)
Log of GDP per capita at t-3	-24.9543***	-13.9455*	-3.4007	-83.9825***	21.2104***	8.6438	0.3744***
	(7.9456)	(7.4023)	(6.9633)	(32.1110)	(1.7128)	(9.1946)	(0.0434)
Log of GDP per capita at t-3 squared	1.4499***	0.8509**	0.5731	4.5998**	-1.0907***	-0.8111	-0.0207***
	(0.4613)	(0.4297)	(0.4039)	(1.7985)	(0.1107)	(0.5452)	(0.0028)
% Female at childbearing age	0.2006	-0.3245**	-0.1681	-0.3925	0.2661***	0.4529***	0.0038***
	(0.1528)	(0.1422)	(0.1336)	(0.3217)	(0.0435)	(0.1672)	(0.0011)
Fertility rate, total (births per woman)	-0.4172	-3.2157***	-1.7741*	1.8919	1.5470***	0.7625	-0.0127*
	(1.1578)	(1.0794)	(1.0142)	(2.2812)	(0.2648)	(1.4524)	(0.0067)
Number of observations	1,709	1,713	1,706	1,077	4,762	1,005	1,831
R2	0.908	0.886	0.830	0.635	0.986	0.822	0.957
Adjusted R2	0.896	0.871	0.808	0.569	0.986	0.794	0.953

Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.

Table A3: Robustness test — multiplying unallocated leave days by % remuneration for mothers' total

	FLFP rate amongst those with a basic education	FLFP rate amongst those with an intermediate education	FLFP rate amongst those with an advanced education	Gender wage gap (unadjusted)	Female wage and salaried workers (% of female employment)	Female share of employment in senior and middle mgmt. (%)	Attitudes: men have more rights to a job
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of gap between mothers and fathers leave at t-3	0.7250***	0.1230	0.3619*	0.3018	-0.0265	-0.1239	-0.0050***
	(0.2201)	(0.2050)	(0.1951)	(0.4652)	(0.0778)	(0.4752)	(0.0019)
Log of mothers' leave days at t-3	-0.0121***	-0.0054**	0.0028	-0.0126**	0.0018**	-0.0002	0.0000
	(0.0024)	(0.0023)	(0.0021)	(0.0063)	(0.0008)	(0.0028)	(0.0000)
Residual WBL Index	6.0506*	3.0201	-2.1748	-3.4708	0.9165	0.3526	-0.1059***
	(3.3079)	(3.0915)	(2.9409)	(8.5914)	(1.0616)	(3.7861)	(0.0248)
Log of GDP per capita at t-3	-21.9597***	-14.4019*	-5.3777	-79.7424**	20.1229***	8.6661	0.3730***
	(7.9531)	(7.4286)	(6.9834)	(32.2539)	(1.7106)	(9.1969)	(0.0433)
Log of GDP per capita at t-3 squared	1.3573***	0.9012**	0.6779*	4.3710**	-1.0262***	-0.8039	-0.0206***
	(0.4614)	(0.4309)	(0.4048)	(1.8044)	(0.1107)	(0.5447)	(0.0027)
% Female at childbearing age	0.2052	-0.3888***	-0.1539	-0.4155	0.2382***	0.4564***	0.0035***
	(0.1511)	(0.1411)	(0.1324)	(0.3190)	(0.0435)	(0.1677)	(0.0010)
Fertility rate, total (births per woman)	-0.3629	-3.4828***	-1.8335*	1.5379	1.4997***	0.7498	-0.0119*
	(1.1558)	(1.0803)	(1.0149)	(2.2962)	(0.2663)	(1.4513)	(0.0067)
Number of observations	1,709	1,713	1,706	1,077	4,762	1,005	1,831
R2	0.908	0.886	0.830	0.635	0.986	0.822	0.957
Adjusted R2	0.896	0.871	0.808	0.569	0.986	0.794	0.953

Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.

Table A4: Family leave and female labor supply - results by region

Y = Female labor force participation rate	Region:						
	EAP	ECA	OECD high-income	LAC	MENA	SA	SSA
Log of gap between mothers and fathers leave at t-3	-1.2061***	1.2988	0.0257	-0.5928	1.1104***	-4.2409***	-0.9124***
	(0.3240)	(0.9267)	(0.1246)	(0.5099)	(0.2853)	(0.5538)	(0.1848)
Log of mothers' leave days at t-3	0.0652***	-0.0066***	0.0005	-0.0068	-0.1027***	0.3002***	0.0513***
	(0.0168)	(0.0024)	(0.0010)	(0.0279)	(0.0107)	(0.0437)	(0.0108)
Residual WBL Index	11.0297***	-0.4833	10.9231***	6.4666***	-2.1460	-5.0044	4.5139***
	(3.1565)	(3.4565)	(2.3234)	(2.2501)	(2.7793)	(5.0005)	(1.1982)
Log of GDP per capita at t-3	-29.4559***	-64.2699***	-22.8911***	-0.2043	9.5741	-57.4145***	-25.8850***
	(3.2480)	(4.7767)	(7.4189)	(8.5989)	(6.3798)	(11.3629)	(2.5452)
Log of GDP per capita at t-3 squared	1.6883***	4.1310***	1.3312***	0.4802	-0.8526**	3.2037***	1.8003***
	(0.2298)	(0.3129)	(0.3989)	(0.4897)	(0.3663)	(0.7738)	(0.1680)
% Female at childbearing age	-0.1798*	-0.1195	-0.2040**	0.5686***	0.6823***	0.3195**	0.2569***
	(0.0974)	(0.1353)	(0.0886)	(0.1049)	(0.0900)	(0.1321)	(0.0749)
Fertility rate, total (births per woman)	-0.2201	-2.3497***	1.9999**	1.5539**	4.6738***	-2.5259***	0.0247
	(0.6437)	(0.7367)	(0.8138)	(0.7490)	(0.5217)	(0.9351)	(0.3927)
Number of observations	581	597	947	810	500	187	1,275
R2	0.954	0.933	0.921	0.936	0.955	0.994	0.972
Adjusted R2	0.950	0.925	0.914	0.930	0.949	0.992	0.970

Note: * = 10 percent, ** = 5 percent, *** = 1 percent. Standard errors are in parentheses. Regressions also include country and year fixed effects.
EAP = East Asia Pacific; ECA = Europe and Central Asia; OECD = Organization for Economic Cooperation and Development; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.