

Filling the Gaps

Childcare Laws for Women's Economic Empowerment

S Anukriti

Lelys Dinarte-Diaz

Marina Elefante

Maria Montoya-Aguirre

Alena Sakhonchik



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Abstract

This paper aims to provide global evidence on whether and what attributes of laws governing the provision of childcare services affect women's labor market outcomes. It merges country-year-level data from the World Bank's Women, Business and the Law database, which documents childcare laws across countries, with data on women's labor force participation from ILOSTAT. Using a difference-in-difference estimation framework, the analysis finds that the enactment of childcare laws increases women's labor force participation

by 2 percent, on average. Moreover, the effect increases over time, reaching up to 4 percent five years after an enactment. This effect is driven by women who are married, have completed less than primary education, and are between the ages of 35 and 44. Lastly, regulation of the availability and affordability of childcare has a similar impact on female labor force participation, whereas the effect of quality regulation is smaller.

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Filling the Gaps: Childcare Laws for Women's Economic Empowerment*

S Anukriti[†] Lelys Dinarte-Diaz[‡] Marina Elefante[§]
Maria Montoya-Aguirre[¶] Alena Sakhonchik^{||}

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[†]The World Bank. Email: anukriti@worldbank.org

[‡]The World Bank. Email: ldinartediaz@worldbank.org

[§]The World Bank. Email: melefante@worldbank.org

[¶]Paris School of Economics. Email: maria.montoya@psemai.eu

^{||}The World Bank. Email: asakhonchik@worldbank.org

1 Introduction

The current global female labor force participation (FLFP) rate for women is roughly 47 percent, which is 25 percentage points (pp) lower than the participation rate for men (ILO-STAT). In some regions, the gender gap in LFP is as high as 50 pp. Gender inequality in labor market outcomes is problematic for several reasons. Not only does it imply a misallocation of talent, which has negative consequences for GDP ([Hsieh et al., 2019](#)), it also disempowers women within their families and in society because paid employment typically confers more autonomy for women than unpaid labor within the household ([Kabeer, 2008](#)). Thus, improving FLFP is not only valuable per se, but can also offer instrumental returns in other dimensions of gender equality and economic development.

Women face multiple barriers, such as lower educational attainment than men and gender discrimination in the labor market, that translate into limited access to the labor market, fewer job opportunities, lower returns to work experience, and pay gaps ([Frutero et al., 2020](#)). In this paper, we focus on the role of childcare responsibilities as a constraint to women's participation in market work. In almost all countries, women are designated as the primary caregivers for their households and are more likely than men to stay at home, work part-time, or pause their careers in order to provide care ([Staab, 2015](#)). Women account for about three-quarters of the total time spent in unpaid care work globally. In fact, women spend more time than men on unpaid care work activities in almost all countries, irrespective of a country's level of development. The gendered division of household care responsibilities has significant negative implications for women's labor

market outcomes.¹ In fact, countries with greater gender gaps in unpaid care responsibilities tend to have lower FLFP.

The COVID-19 pandemic has brought the issue of childcare and its impact on FLFP to the forefront of policy discussions. Between 2019 and 2020, global female employment declined by 4.2 percent compared to a 3 percent decrease in male employment (ILO, 2021). Women were not only over-represented in the hardest hit sectors, but also bore the brunt of the lockdowns with additional childcare and housework responsibilities, worsening the gender gaps in labor market outcomes.

As the world emerges from the pandemic and policymakers think about tackling women's increased domestic care burden, access to affordable childcare for families, especially working mothers, has been gaining momentum. An extensive literature has shown that access to affordable childcare services is a key component in improving maternal labor market outcomes. Olivetti and Petrongolo (2017) conduct a systematic review of both macro- and micro-level evidence from high-income countries on the impacts of family policies and finds that overall spending on early childcare is strongly associated with better labor market outcomes for women.² Empirical evidence on the benefits of access to childcare for maternal labor market outcomes in lower- and middle-income countries (LMICs) is also growing and aligns with the findings from developed countries. Halim et al. (2023) present a summary of 22 causal studies from LMICs that rigorously test if an

¹Virginia et al. (2015) show that discriminatory gender norms related to the provision of care decrease FLFP by 12 percent. Conversely, addressing primary caregivers' childcare needs could lead to a 10 pp increase in the LFP rate in countries such as Kenya, an 8 pp increase in Nigeria and South Africa, and a 5 pp increase in India.

²See Givord and Marbot (2015), Bettendorf et al. (2015), Geyer et al. (2015), Nollenberger and Rodríguez-Planas (2015), and Herbst and Barnow (2008) for evidence from France, the Netherlands, Germany, Spain, and the United States, respectively.

increase in access to childcare improves maternal labor force outcomes.³

In this paper, we specifically examine whether enactment of laws governing the provision of childcare in a country influences women's labor market outcomes in that country using a difference-in-difference estimation strategy. We utilize the World Bank's Women, Business, and the Law (WBL) database to obtain information on the dates of enactment and commencement of childcare laws and other indicators related to accessibility, affordability, and quality of childcare services across countries. We merge this data with panel data on women's labor market outcomes from ILOSTAT and other socio-demographic data from the Our World In Data database and the Barro-Lee Educational Attainment dataset. Our estimation strategy relies upon temporal and country-level variation in the presence of childcare laws to causally estimate their effect on FLFP.

The effect of childcare laws on women's participation in market work is, *a priori*, unclear. On the one hand, availability of childcare services can enable women to reallocate their time from unpaid care activities at home to paid market work, increase working hours, productivity, wages and income, and influence the type of employment. Women may also take advantage of work opportunities in the childcare industry to increase their LFP. On the other hand, women's willingness to do so will depend on the cost of childcare services relative to their potential labor market income, which in turn depends on the structure of the economy and local labor market conditions, among other things. In a 2016 household survey in the European Union (EU), over 40 percent of families cited

³See [Ajayi et al. \(2022\)](#), [Sanfelice \(2018\)](#), [Calderón \(2014\)](#), [Dang et al. \(2022\)](#), and [Clark et al. \(2019\)](#) for evidence from Burkina Faso, Brazil, Mexico, Vietnam, and Kenya, respectively.

cost as the main barrier to using formal childcare (European Commission 2016).⁴ The average net childcare costs amount to 17 percent of middle-income two-earner couples' median full-time earnings (OECD 2021). Relatively less information is available on the costs of childcare in LMICs, but existing studies suggest that childcare expenses are significant relative to families' earnings in many countries.⁵ Clark et al. (2019) show that high childcare costs discourage households in Kenya from using formal childcare facilities, which negatively affects mothers' participation in the labor market. Similar findings exist for Mozambique and Liberia (Bhatkal, 2014; Lokshin et al., 2000). Conversely, in rural Colombia, small monthly fees for community-based childcare centers more than tripled women's employment and increased their work hours by 75 hours per month (Attanasio and Vera-Hernandez, 2004).

The willingness to use formal childcare services and the potential for childcare regulation to impact FLFP also depend on the strength of social norms related to gender roles and women's work, and on the quality of childcare. According to the latest wave of the World Value Survey, 41 percent of respondents globally agree or strongly agree with the statement that "A pre-school child suffers with a working mother" and 51 percent agree or strongly agree with the statement that "On the whole, family life suffers when a woman works full time." Although existing studies on the impact of childcare quality on women's

⁴Another study from 27 EU member states highlights that approximately 25 percent of women who do not work or work part-time report that childcare is unaffordable (Mills et al., 2014).

⁵For example, a survey conducted in Edo state, Nigeria, in 2005 found that the average cost of a private childcare center kindergarten for one child was more than half the salary of someone earning the minimum wage (Olubor, 2009). A study of peri-urban areas in Accra (Ghana), Johannesburg (South Africa), Lagos (Nigeria), and Nairobi (Kenya) found that the average cost of a preschool child was one-quarter to nearly half of a person's monthly spending (Bidwell et al., 2014). In contrast, Latin American countries with broad public sector involvement in childcare have programs that are more affordable.

labor market outcomes are mostly qualitative in nature, they suggest that low quality discourages women from enrolling their children in childcare services (Halim et al., 2023; Zaid and Amin, 2021). Additionally, building parents' trust that children will be in a safe and stimulating environment could be a challenge, as regulations around quality of formal childcare arrangements are often either absent or insufficient to ensure child safety and inspire parent confidence (Devercelli and Beaton-Day, 2020).

We find that the enactment of childcare laws increases FLFP by 2 percent, on average. Moreover, the effect increases over time, reaching up to 4 percent five years after an enactment. This effect is driven by women who are married, have completed less than primary education, and are between the ages of 35 and 44 – these are subgroups for which a childcare law is more likely to be relevant and that are more “treatable” in terms of their LFP rate in the absence of the law. Lastly, the regulation of availability and affordability of childcare has a similar impact on FLFP, whereas the effect of quality regulation is smaller.

This paper contributes to the literature in two respects. First, while most of the existing studies focus on one country at a time and examine small-scale childcare programs, this paper is global in nature and evaluates the effect of childcare provision in formal center-based settings in countries spanning seven regions of the world. Second, we examine the associations between different pillars of childcare laws (availability, affordability, and quality) and women's labor market outcomes. The literature typically focuses on the impact of a single determinant, and no prior studies have been conducted around the impact of multiple determinants.

The remainder of the paper is organized as follows. Section 2 describes our data

sources. Section 3 presents the empirical approach used to estimate the effects of childcare laws on FLFP. Section 4 presents the main results and is followed by robustness checks in Section 5. Section 6 concludes the paper.

2 Data

Our analysis is based on data from 80 countries spanning a 20-year period (2000-2020). We combine information on childcare regulations, labor statistics, and socio-demographic indicators from the following sources to construct a country-year panel for our analysis.

2.1 Data sources

Childcare regulations. The World Bank's WBL database collects information on the legal environment pertaining to women's economic participation and opportunity in 95 countries ([Hyland et al., 2020](#)). In particular, the dataset covers laws and regulations governing the supply and parental demand for childcare services. The dataset includes information on the dates of enactment and commencement of a law and other indicators related to accessibility, affordability, and quality of childcare services applicable to children below the formal pre-primary school starting age, as this is where the largest legal policy gap exists. The WBL database maps current legal and regulatory measures adopted by each country to ensure or strengthen the following three pillars of childcare (see list of indicators within each pillar in [Table A1](#)):

- **Availability:** The childcare law expands access to childcare by supporting different types of childcare provision and its convenience.

- **Affordability:** The childcare regulation improves childcare service provision especially for low-income or vulnerable families through government support (financial or non-financial) to parents, private childcare centers, employers, or cost-regulating structures.
- **Quality:** The childcare regulation ensures a safe environment for children, contributes to healthier nutrition and school readiness, and promotes uptake.

Data collection builds on established WBL methodology and expertise and relies on desk research through the review and assessment of official laws and regulations as well as consultations with WBL experts in labor legislation. Both federal and local legislation applicable to a country's main business city are considered. For federal systems, where provision of childcare is not established at the national level, legislation applicable to the main business city is explored. Non-binding documents and instruments – typically referred to as policy notes, national strategies, guidelines, recommendations, declarations, and opinions – are not considered for the purposes of data collection. Official ministerial websites specifying or explaining certain regulatory aspects covered within the established three-pillar framework are cited in limited circumstances.

To measure the separate effect of childcare availability, affordability, and quality on FLFP, we construct a score for each pillar as a simple average over all variables included in each pillar, each of which is either a dummy variable (e.g., “Does the law mandate employers to provide or support childcare services?”) or is normalized between 0 and 1 (e.g., “What are the mandated minimum hours of operation of public childcare centers if regulated in the law?”). The score takes a value of 0 before the enactment of the law and

also when the law does not include any of the elements that are tracked in that pillar. A score equal to one means that the country's law has been enacted and includes all possible elements that are tracked for that pillar. We then standardize each score across the full sample.

Labor Market Outcomes We use ILOSTAT indicators on FLFP rates and other labor market indicators reported by the International Labor Organization. The data is available on a yearly basis for 80 of the 95 countries covered in the WBL dataset but its time coverage varies across countries, resulting in an unbalanced panel. The LFP rate is reported for 10-year age groups as well as by two aggregate categories of marital status where women are categorized as single or married.⁶ Our sample comprises women aged 25 or above.

Socio-demographic variables. Our analysis also requires country-year-level information on marriage rates and educational attainment. We obtain data on marriage rate per 1000 people and women's average age at marriage from the Our World In Data database. The marriage rate corresponds to the ratio of the number of marriages during a given year to total population. The average age at marriage for women corresponds to the mean age at first marriage for OECD countries. For other countries, figures are estimated indirectly from the proportions of single women by age.

The education data comes from the 2021 update of the Barro-Lee Educational Attainment dataset ([Barro and Lee, 2013](#)), which covers the years between 1995 and 2015. We obtain the share of women with primary education, secondary education, and tertiary

⁶Women in a civil union or cohabiting women are categorized as married; and widowed or divorced women are considered single.

education by 10-year-age bands. These variables are only available for the years that correspond to a population census. Thus, for the years with missing information, we assign the value of the previous closest year.

2.2 Descriptive Statistics

Table [A2](#) summarizes the characteristics of the resulting sample with and without controls, which differ in size due to the availability of marriage and education variables. The sample without controls, which results from merging the WBL dataset with the labor indicators from ILOSTAT, covers 80 countries and is an unbalanced panel of 918 country-year observations, where each country is observed for 11.5 years on average. Among these countries, 79 percent had enacted a law regulating childcare by 2022, and we observe 60 percent of them both before and after the law enactment in our data. The full estimation sample, which includes controls related to marriage and education, has 54 countries and 760 country-year observations. This smaller panel is more balanced, however, and countries appear, on average, for 14 years in the panel. Tables [A3-A5](#) detail the countries included and show some characteristics of the sample by country.

As explained in the next section, we also construct cohort-specific datasets where we include countries that enact a childcare law in a given year and its appropriate control units. The resulting stacked dataset has 11,899 and 9,497 country-year-stack observations for the baseline (without socio-demographic controls) and the full specification (with socio-demographic controls), respectively.

Summary statistics of key variables used in our analysis are reported in Table [1](#). The

FLFP rate ranges from 14 percent to 93 percent, with an average of 54 percent. For roughly half (55 percent) of the country-year observations in our data, a childcare law has been enacted, with the year of enactment ranging from 1976 to 2021 and commencing one year later on average. The average age at first marriage for women is 25.7 years. The ratio of marriages per 1,000 people ranges between 2.2 and 15.7, and is 5.8 on average. The mean share of women with primary, secondary, and tertiary education is 15.9 percent, 48.2 percent, and 29.2 percent, respectively.

3 Estimation Strategy

A simple comparison of countries where a childcare law has been enacted with those without such a law will yield biased estimates of the effects of childcare laws because countries that enact such laws may be different in terms of unobservables relevant for FLFP from those that do not. For example, if countries that have more progressive gender norms are more likely to pass childcare legislation, then we would expect to see differences in their FLFP rates even in the absence of such laws. Therefore, to causally identify the effects of childcare laws on women's labor market outcomes, we leverage the staggered enactment of childcare laws across countries and use a difference-in-difference estimation strategy. This approach compares the before-after differences in women's labor market outcomes between countries where a childcare law has been enacted and those where such a law has not been enacted yet. Specifically, we estimate the following two-way fixed-effect (TWFE)

model for a country c in year t :

$$Y_{ct} = \alpha + \beta Post_{ct} + \gamma_c + \theta_t + \pi_c t + X_{ct} + \epsilon_{ct} \quad (1)$$

where Y_{ct} corresponds to the outcome of interest, e.g., FLFP rate. $Post_{ct}$ is an indicator that equals one if $t \geq$ the year of childcare law enactment in country c ; if a country has never enacted a childcare law during our study period, we define $Post_{ct}$ to be equal to zero throughout. The country and year fixed effects are denoted by γ_c and θ_t , respectively. Lastly, $\pi_c t$ denotes country-specific linear time trends and X_{ct} represents a vector of country-year-level controls that includes the population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education. We use standard errors clustered at the country level for inference.

The advantage of using TWFE is that we can rule out two concerns related to causal identification of treatment effects. The first concern is that the results may be driven by time-invariant differences in FLFP across countries, such as time-invariant social norms about participation of women in the labor market. By including country fixed effects, we can rule out such concerns. The second concern is that women's labor market outcomes in countries that are included in our sample may evolve over time in a way that is common across countries. For example, trends in FLFP are likely to be correlated with trends in women's educational attainment and fertility, or macroeconomic shocks that are common across countries. The year fixed effects help us rule out this latter concern.

In a standard difference-in-difference model, the key identifying assumption is that the average outcome among the treated and comparison populations would have followed

“parallel trends” in the absence of treatment, conditional on X_{ct} . In our case, this implies that, in the absence of the enactment of the childcare law, women’s labor market outcomes for different countries in our sample would have evolved along parallel paths. We relax this assumption with the inclusion of country-specific linear time trends, that capture pre-existing linear differences in trends across countries. In addition, we explicitly test the assumption of parallel trends, as well as estimate the dynamic effects of childcare laws, by estimating an event-study version of equation (1) using the following specification:

$$Y_{ct} = \alpha + \sum_{k=-4}^5 \beta_k Post_{c,t+k} + \gamma_c + \theta_t + \pi_c t + X_{ct} + \epsilon_{ct} \quad (2)$$

where $k = 0$ is the year of enactment and $Post_{c,t+k}$ equals one if $k \geq 0$. The β_k coefficients capture the evolution of women’s labor market outcomes before and after the enactment of the childcare laws over a 10-year period in countries where the law has been enacted relative to countries where the law has never been enacted. For countries where a childcare law is never enacted during our study period, there is no unique reference year that can be used to split the sample period into pre- and post-treatment years since the enactment year varies across “treated” countries. Therefore, for never-treated countries, we follow the standard approach and define $Post_{c,t+k} = 1$ for $k = -1$, and 0 for all other t so that β_k can be interpreted as the effect of the childcare law t years from its enactment.

Although TWFE regressions similar to equation (1) are commonly used for staggered research designs, they deliver consistent estimates only under relatively strong assumptions about homogeneity in treatment effects. However, if treatment effects of the childcare law are heterogeneous across countries or time, the TWFE estimation does not deliver

consistent estimates of the true average treatment effect ([Goodman-Bacon, 2021](#)). Therefore, we estimate (1) on a stacked dataset as in [Cengiz et al. \(2019\)](#) to alleviate concerns related to the staggered nature of our treatment. We create a specific dataset for each treatment cohort (defined as a group of countries that enacted their childcare law in a given year), which includes all observations for those countries after the law enactment, and the appropriate controls, i.e., never-treated units, and not-yet treated units. This means that for a given treatment cohort k the dataset includes all periods for the countries that enact the law in year k , only the periods before law enactment for countries that get the law in a year different from k , and all periods for countries that never enact a childcare law in our period of analysis. Then, we stack the cohort-specific datasets and estimate equation (1) with country-cohort and year-cohort fixed effects.

[Sun and Abraham \(2021\)](#) show that when dynamic treatment effects are heterogeneous across adoption cohorts, the coefficients from equation (2) become difficult to interpret. Thus, for example, problems may arise if the average treatment effect in the third year after adoption of the law is different for countries that adopted the childcare law in 2010 as it is for countries that adopted in 2015. Therefore, for robustness checks, we also examine alternative estimators presented in [Callaway and Sant'Anna \(2021\)](#) and [Sun and Abraham \(2021\)](#), that deliver consistent estimates even in the presence of heterogeneity in treatment effects. Additionally, we present an estimator proposed by [De Chaisemartin and d'Haultfoeuille \(2020\)](#), though given the unbalanced nature of our panel, these estimates are considerably noisier.

4 Results

We first present our estimates for the effect of childcare laws on FLFP and then analyse if the treatment effects differ by women’s age, education level, and marital status.

4.1 Main Results

We begin our analysis by estimating the effect of childcare law enactment on FLFP using our main specification (equation 1). In Table 2, column (1) presents estimates of β from our baseline specification, which includes only the childcare law enactment indicator and country and year fixed effects. Column (2) controls for a vector of country-year characteristics (X_{it}) that includes the population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education. In column (3), we also include country-specific linear time trends. In columns (4) - (6), we use the same specification as in columns (1) - (3), but we replace the indicator for childcare law enactment with an indicator for childcare law commencement (i.e., the period when the law becomes effective).⁷ Our preferred estimates are those presented in column (3) for childcare law enactment and in column (6) for childcare law commencement.

In Panel A of Table 2, the estimated effect size of childcare law enactment or commencement on the FLFP rate in our preferred specification is approximately 1 pp or between 1.75 and 1.9 percent relative to the average FLFP rate for countries where the child-

⁷As we show in Table 1, our sample includes countries where a childcare law was enacted or became effective between 1976 and 2021. For the average country in our sample, the childcare law was enacted in 2007 and it commenced a year later, in 2008.

care law was not enacted or effective, i.e., for those with $Post_{ct} = 0$. To understand the magnitude of these estimated effects, we compare them with the estimated effects of childcare interventions implemented in LMICs on mothers' labor market outcomes. We rely on a recent evidence review of 22 studies conducted by [Halim et al. \(2023\)](#). Out of these studies, half evaluate the impacts of childcare services targeted to children aged three years or younger on women's labor market outcomes. In sum, the effects of childcare services on FLFP are between 11 percent to 29 percent in urban China ([Du and Dong, 2013](#); [Du et al., 2019](#)) and 37 percent in Colombia ([Attanasio and Vera-Hernandez, 2004](#)).⁸ Thus, our estimated effects of childcare laws on FLFP are one-fifth of the estimated effects of childcare services in these studies. This smaller effect of the childcare laws, relative to the provision of childcare services, is not surprising as the regulation of childcare precedes the actual provision of these services in most contexts. Moreover, enactment of legislation does not always translate into effective implementation.

In order to test for parallel trends and to study the dynamic effect of the childcare law enactment on FLFP rate, we estimate an event-study version of the TWFE model with indicators for different periods before and after the enactment of the law. The estimates from specification (2) are presented in Figure 1. First, the estimates are consistent with the parallel trend assumption: the coefficients for the years prior to the enactment of the childcare law in each country are all close to zero and exhibit no discernible differential pre-trends. Second, the treatment effect of childcare laws on FLFP increases over time. In

⁸One study finds no effects of public daycare on women's labor market outcomes in Chile ([Medrano Vera, 2009](#)). Other studies included in the review find effects of childcare services on women's employment that range from 10 percent ([Barros et al., 2013](#)) to 22 percent ([Rosero and Oosterbeek, 2011](#)).

fact, the effects are close to zero during the year of enactment (period 0) and one year after enactment (period 1), likely because the law becomes effective, on average, 1 year after enactment in our sample countries. Then, starting in the second year after the enactment, the estimated effect on FLFP is close to 1 pp and increases up to 2.2 pp (or 4 percent relative to the reference group, $Post_{ct} = 0$) five years after the enactment. This increase in treatment effect over time can be explained by the fact that once the law has been enacted, its adoption by firms and its dissemination to women may not take place immediately but rather in a gradual manner.

Considering the findings in Figure 1, we estimate specification (1) to produce two additional sets of results: a) excluding the year of enactment (or commencement) and b) excluding both the year of and one year after enactment. These results are presented in Panels B and C of Table 2. As expected, the magnitude of the estimated effects is larger in Panels B and C than in Panel A. If we exclude the enactment year or the commencement year, the estimated effect of the childcare law on FLFP is 1.27 pp and 1.64 pp, respectively. Similarly, if we exclude both the year of law enactment (or commencement) and the subsequent period, then the estimated effect is 1.67 pp and 1.30 pp, respectively. These results suggest that the enactment of the childcare law may have increased parents' willingness to use and utilization of formal childcare services for their children, which in turn increased the LFP of women, who tend to be the primary caregivers of children.

4.2 Heterogeneity

Next we examine whether the enactment of childcare laws had differential effects on FLFP by women's marital status, age, and education level. First, to study differences by marital status, we estimate specification (1) separately for married and single women. These results are presented in Figure 2. The estimated effect of childcare law enactment on FLFP of married women (2.2 pp) is larger than the effect on single women (1.7 pp). This is not surprising given that married women experience a heavier childcare burden, on average, than single women, making the childcare law more relevant for the former.⁹ Moreover, on average, the FLFP rate of single women (66.27 percent) is already higher than that for married women (54.74 percent) even in the absence of the law, making them less "treatable" by the law. These findings are consistent with previous literature on the differential effects of childcare policies on FLFP by women's marital status. For example, [Bick \(2016\)](#) examine women who are married (or in a long-term relationship) in West Germany, and find that increasing the provision of subsidized childcare increases the maternal LFP rate. Similar results are found by [Baker et al. \(2008\)](#) on the effect of subsidized childcare services on the labor supply of married (and cohabiting) women.

We also explore heterogeneity by age of women. We present three main results from this analysis in Figure 3. First, the effects are smaller and statistically insignificant for younger women (25-34 years old). Second, the aggregate effects appear to be driven by women aged 35-44. Lastly, although the effects on women aged 45 years or older are sta-

⁹The average number of children is typically higher for married women relative to single women.

tistically insignificant, the magnitude of the estimated effect is similar to that for women aged between 35 and 44 years. These results can be explained by several factors. First, younger women are more likely to already be in the labor force, which makes them less “treatable” compared to older women. Moreover, women between 35 and 44 years of age are more likely to have young children, making the need for childcare services more relevant to them. Simultaneously, women older than 45 years of age are more likely to be grandmothers who offer their working offspring a free, flexible, and reliable source of childcare. Once the law is enacted, their assistance with young children is no longer required, which may lead them to decide to participate in the labor force.

Lastly, we also test for heterogeneity by education level. We estimate the childcare enactment effects separating the sample by level of education completed. We create four groups: less than primary education, primary education, secondary education, and tertiary education. We present the results in Figure 4. We find that the effects of the enactment of childcare regulation on FLFP are driven by women with less than primary education, that is, women that are more likely to work in low-skilled jobs, where childcare services are not available. Studies from higher-income countries suggest that low-skilled women (usually poorer) often are most responsive to changes in costs and availability of childcare ([Morrissey, 2017](#)). However, impacts on maternal labor outcomes from childcare provision in LMICs are not concentrated among the most disadvantaged ([Halim et al., 2023](#)). A potential explanation could be the lack of regulation of access, affordability, and quality of childcare services in LMICs. In this sense, promoting regulation of childcare services can be an starting point to promote labor market outcomes of the most disadvan-

tagged women in these countries.

4.3 Decomposing the Childcare Law Effect

To this point, we have presented the positive effect of childcare enactment on FLFP rate. However, what specific element of the childcare attributes regulated in the law is driving this positive impact? Existing evidence documenting the positive impact of childcare availability and affordability on women’s labor market outcomes is compelling and broad for both higher and lower-income countries. Moreover, although the literature highlights childcare quality as a key factor that determines parental decision to use childcare services, this has not been rigorously evaluated yet.

Exploiting the information on childcare availability, affordability, and quality addressed by the childcare laws in the WBL dataset, we assess the contribution of each of these three pillars to women’s labor market outcomes. Specifically, we create standardized scores for each of the pillars and replace $Post_{ct}$ with these scores one by one in specification (1), which we estimate on the stacked dataset by law enactment cohort.

The results on the impacts of each childcare legislation pillar on FLFP rate are presented in Table 3. Columns (1) to (3) present the results including all years; columns (4) to (6) exclude the year of law enactment, and columns (7) to (9) exclude the year of enactment and the year after. Consistent with previous literature, the effect of the regulation of childcare availability on FLFP rate is positive and statistically significant across different samples, ranging from 0.53 pp (when we include all years) to 0.86 pp (when we exclude the year of law enactment and one year after). The estimated effects of regulating child-

care affordability (and quality) on FLFP rate are also positive but statistically significant only after excluding the year of enactment (and one period after). The magnitudes of the estimated effects of childcare availability and affordability are similar across samples, whereas the estimated impact of childcare quality is somewhat smaller.

The variations in the estimated effects could stem from both preference and supply factors. Firstly, it is possible that legislation aligns with existing evidence, with an emphasis on ensuring accessible and affordable childcare, while placing less emphasis on regulating quality. Secondly, quantifying quality is more challenging compared to measuring accessibility and affordability. As a result, the perceived quality of childcare may have a lesser impact on women’s decision to participate in the labor force compared to accessibility and affordability.

5 Robustness Checks

We conduct additional exercises to probe the robustness of our estimates that include estimating modified versions of specification (2) to test the dynamic effects of the child care enactment and conducting placebo tests. First, the fully dynamic version of the TWFE model estimated using OLS yields consistent estimates only under the strong assumption of treatment effect homogeneity (Roth et al., 2023). To allow for heterogeneity in treatment effects across time and treated units, we estimate the event study estimates following Callaway and Sant’Anna (2021) and Sun and Abraham (2021), and stacked TWFE as in Cengiz et al. (2019). The Callaway and Sant’Anna (2021) approach provides sensible estimates even under arbitrary heterogeneity in treatment effects and it makes transpar-

ent exactly which units are being used as a control group to infer the unobserved potential outcomes. Moreover, [Sun and Abraham \(2021\)](#) accounts for heterogeneous dynamic treatment effects across enactment groups and imposes parallel trends only for groups that are eventually treated and not for the never-treated groups. These results are presented in [Figure 5](#). Overall, we show that, independently of the estimation method used, the coefficients for years prior to the enactment of the law are close to zero and do not exhibit any differential pre-trend. Moreover, all estimators yield treatment effects that increase over time in the post-law-enactment years. In our setting, stacked TWFE is more appropriate than the alternative new difference-in-difference estimators because the latter rely either on balanced panels or on unbalanced panels whose observations are evenly spaced out.

In a second robustness check, we conduct a placebo test in two steps. First, we randomly assign the year of the law enactment for each country 50 times and create a new stacked dataset for each draw. Next, we use specification (1) to estimate the main results, excluding the year of enactment and the subsequent year. The results are presented in [Figure 6](#). We find that the positive effects of childcare law enactment on FLFP are statistically significant in only 2 out of 50 draws, boosting our confidence in our findings.

6 Conclusion

Our findings demonstrate that the enactment of childcare laws increases women's likelihood of participating in the labor force. Additionally, the impact on FLFP is similar when the law regulates access and affordability of childcare services, and higher compared to quality regulations.

Unlike previous studies that establish positive correlations between legal reforms and labor market outcomes, our study is the first to provide causal estimates of the impacts of childcare regulation on women's economic outcomes in a cross-country setting. Another unique contribution of this paper is the quantification of the effects of each aspect of childcare laws, namely accessibility, affordability, and quality, on FLFP. However, our study also opens up opportunities for further inquiry to deepen our understanding of the influence of laws on women's economic opportunities. For instance, what specific mechanisms can explain our results? What factors contribute to the establishment of regulations aimed at promoting childcare services? Is it driven by increasing awareness, pressure from the international community, labor demands, or a combination of these factors? What are the effects of childcare laws on women's employment rates and wages? Do firms respond by altering their recruitment and hiring policies, thereby introducing ambiguity into the final effect of the childcare law? Due to data limitations, we cannot explore these questions in our setting and leave them for further research.

Despite well-established empirical evidence on the positive effects of access to affordable childcare services for children's development and women's labor market participation, a substantial gap remains between the demand and supply sides of the childcare market. A recent World Bank study revealed that 40 percent of all children (nearly 350 million) who are below primary-school-entry age worldwide need childcare but do not have access to it, with LMICs accounting for nearly 80 percent of the gap ([Devercelli and Beaton-Day, 2020](#)). Our results highlight the role played by legislative changes in improving women's and children's access to childcare and other outcomes.

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7 Tables and Figures

Table 1: **Summary statistics**

| | N | Mean | St. Dev. | Min | Max |
|----------------------------------------------------|-----|---------|----------|-------|-------|
| Female labor force participation rate | 918 | 53.91 | 13.29 | 14.21 | 92.79 |
| Childcare law enacted (<i>Post_{ct}</i>) | 918 | 0.55 | 0.50 | 0 | 1 |
| Year of law enactment | 815 | 2007.84 | 8.93 | 1976 | 2021 |
| Year of law commencement | 815 | 2008.04 | 9.03 | 1976 | 2021 |
| Childcare availability score | 918 | 0.30 | 0.29 | 0 | 0.84 |
| Childcare affordability score | 918 | 0.18 | .22 | 0 | .91 |
| Childcare quality score | 918 | 0.32 | 0.34 | 0 | 1 |
| Average age at first marriage among women | 892 | 25.68 | 3.33 | 18.40 | 33.20 |
| Marriage rate (per 1,000 people) | 837 | 5.81 | 2.58 | 2.20 | 15.70 |
| Women with primary education (%) | 858 | 15.89 | 16.85 | 0.02 | 73.16 |
| Women with secondary education (%) | 858 | 48.26 | 17.46 | 2.65 | 97.16 |
| Women with tertiary education (%) | 858 | 29.20 | 19.27 | 0.11 | 81.59 |

Notes: This table presents summary statistics for our country-year panel dataset covering 80 countries for the period 2000-2020. The data is obtained by merging the WBL dataset on childcare regulations with the ILOSTAT indicators of yearly female labor force participation rates. Data on mean age at first marriage and marriage rates come from Our World in Data, while education data comes from [Barro and Lee \(2013\)](#).

Table 2: Childcare laws and female labor force participation
Dependent variable: Female labor force participation

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-----------------------------------------------------------------------------|------------------|------------------|--------------------|------------------|--------------------|--------------------|
| Panel A: All periods | | | | | | |
| Childcare law enacted | 1.206 (0.956) | 0.386 (0.922) | 0.976* (0.521) | | | |
| Childcare law commenced | | | | 0.840 (1.127) | -0.0824 (1.222) | 1.073* (0.543) |
| Observations | 11,899 | 9,497 | 9,497 | 12,171 | 9,715 | 9,715 |
| Control mean of dep var | 41.301 | 55.661 | 55.661 | 43.742 | 55.905 | 55.905 |
| Controls | | ✓ | ✓ | | ✓ | ✓ |
| Country time trend | | | ✓ | | | ✓ |
| Panel B: Excluding year of enactment/commencement | | | | | | |
| Childcare law enacted | 1.278 (1.051) | 0.401 (1.059) | 1.271* (0.633) | | | |
| Childcare law commenced | | | | 1.040 (1.309) | 0.0246 (1.478) | 1.723** (0.794) |
| Observations | 11,866 | 9,467 | 9,467 | 12,104 | 9,657 | 9,657 |
| Controls | | ✓ | ✓ | | ✓ | ✓ |
| Country time trend | | | ✓ | | | ✓ |
| Panel C: Excluding year of enactment/commencement and one year after | | | | | | |
| Childcare law enacted | 1.350 (1.159) | 0.357 (1.244) | 1.665** (0.771) | | | |
| Childcare law commenced | | | | 0.942 (1.228) | -0.0120 (1.352) | 1.374** (0.662) |
| Observations | 11,828 | 9,436 | 9,436 | 12,139 | 9,687 | 9,687 |
| Controls | | ✓ | ✓ | | ✓ | ✓ |
| Country time trend | | | ✓ | | | ✓ |

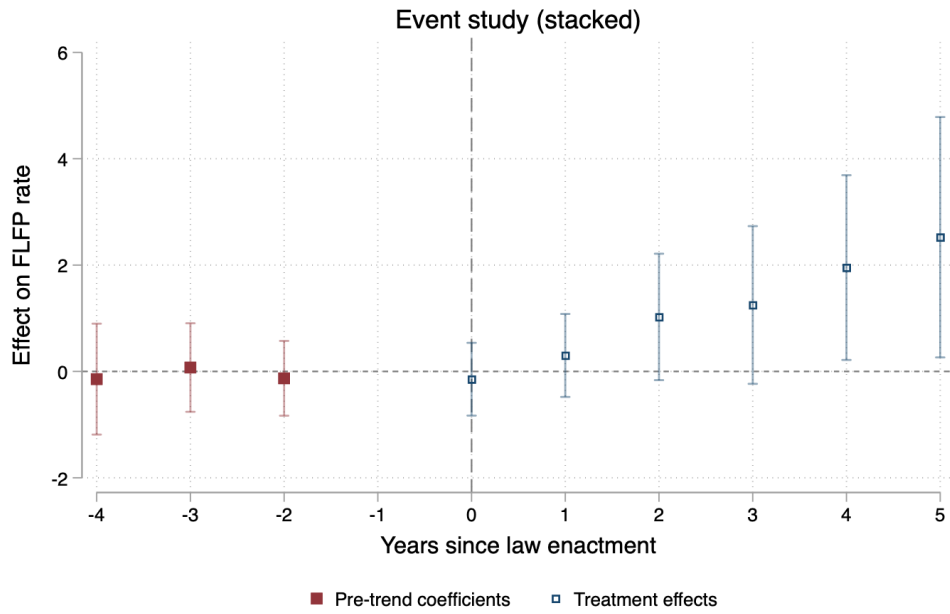
Notes: Each column represents a different regression estimated in an event-by-event stacked dataset as in [Cengiz et al. \(2019\)](#), where the dependent variable is the female labor force participation rate and the panel indicates the estimation sample. Panel A is estimated on the full sample, Panel B excludes the year of enactment of the law, and Panel C excludes the year of enactment and one year after. Childcare law enacted/commenced is a dummy indicator equal to one after the childcare law has been enacted/commenced. All regressions include year-cohort and country-cohort fixed effects. Columns 2, 3, 5, and 6 include the following controls: population marriage rate, average age at marriage for women, and share of women with primary, secondary and tertiary education. Columns 3 and 6 also include country-specific linear time trends. Standard errors clustered at the country level are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: **Childcare law pillars and female labor force participation**
Dependent variable: Female labor force participation

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|--------------------------------------------------|-------------|---------|---------|----------------------|---------|---------|--------------------------|---------|---------|
| | All periods | | | Excl. enactment year | | | Excl. enactment year + 1 | | |
| <i>Childcare law pillar (standardized score)</i> | | | | | | | | | |
| Availability | 0.532* | | | 0.675* | | | 0.860* | | |
| | (0.301) | | | (0.361) | | | (0.434) | | |
| Affordability | | 0.492 | | | 0.635* | | | 0.876* | |
| | | (0.310) | | | (0.374) | | | (0.471) | |
| Quality | | | 0.460 | | | 0.586 | | | 0.773* |
| | | | (0.302) | | | (0.354) | | | (0.421) |
| Observations | 9,497 | 9,497 | 9,497 | 9,467 | 9,467 | 9,467 | 9,436 | 9,436 | 9,436 |

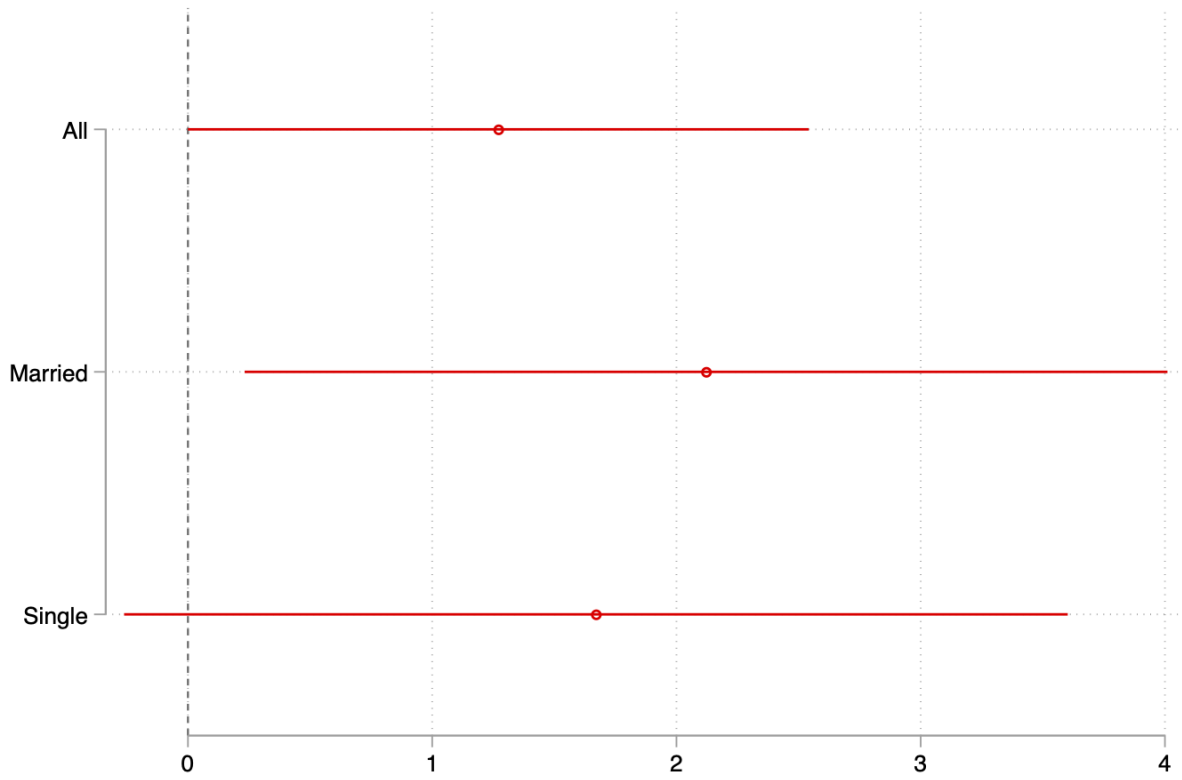
Notes: Each column represents a different regression estimated in an event-by-event stacked dataset as in [Cengiz et al. \(2019\)](#) (see equation 1) where the dependent variable is the female labor force participation rate. Columns 1-3 are estimated on the full sample, columns 4-6 exclude the year of enactment of the law, and columns 7-9 exclude the year of enactment and one year after. Treatment variables of childcare availability, affordability, and quality are standardized scores. The pillar scores are constructed as a simple average over all the variables included in each pillar, which are either dummy indicators or normalized between 0 and 1. The score takes a value of 0 before the enactment of the law or when the law has been enacted and does not include any of the elements that were tracked in that pillar. A score equal to one means that the country's law has been enacted and includes all possible elements that are tracked for that pillar. Then, these scores are standardized across the full sample. All regressions include year-cohort and country-cohort fixed effects as well as the following controls: population marriage rate, average age at marriage for women, and share of women with primary, secondary, and tertiary education, and country-specific linear time trends. Standard errors clustered at the country level are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Dynamic effects of childcare law on female labor force participation



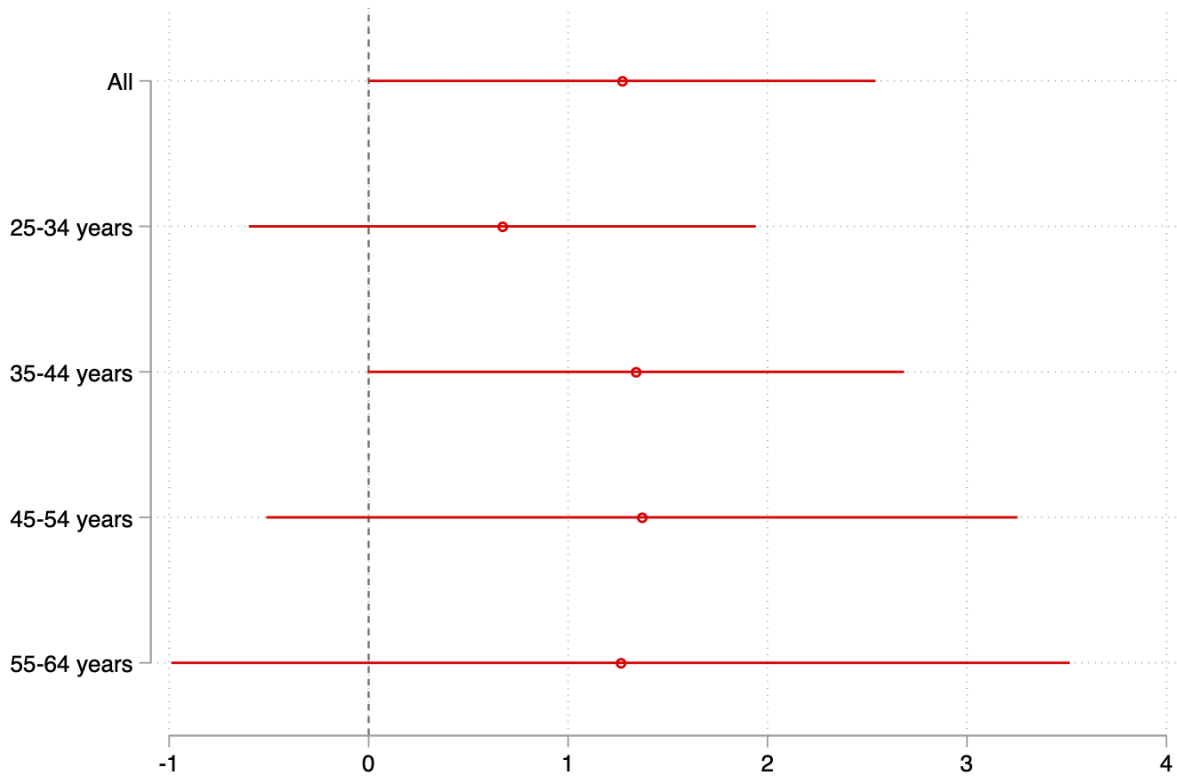
Notes: The figure shows the estimates of the stacked event-study (Equation 2). The outcome variable is the female labor force participation rate. The specification includes controls for the population marriage rate, the average age at marriage for women, and the share of women with primary, secondary and tertiary education, as well as country-specific linear time trends. The bars represent 95 percent confidence intervals. Standard errors are clustered at the country level.

Figure 2: Heterogeneous effects by marital status



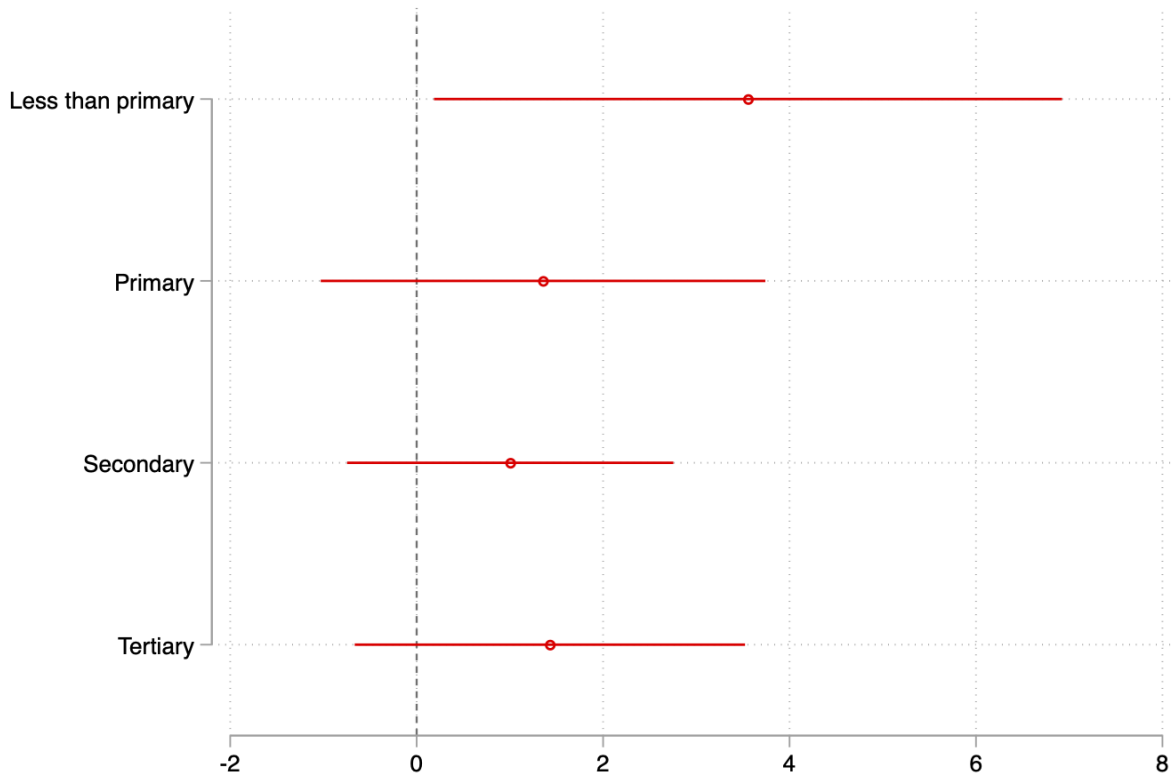
Notes: This figure shows the coefficient of the childcare law enactment on a regression estimated in an event-cohort stacked dataset where the dependent variable is female labor force participation by marital status specified on the y-axis. The year of enactment of the law is excluded from the estimation sample and the specification includes the following controls: population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education in the corresponding age group as well as country-specific linear time trends. The specification is equivalent to column (6) in Panel B of 2. The bars represent 95 percent confidence intervals.

Figure 3: Heterogeneous effects by age



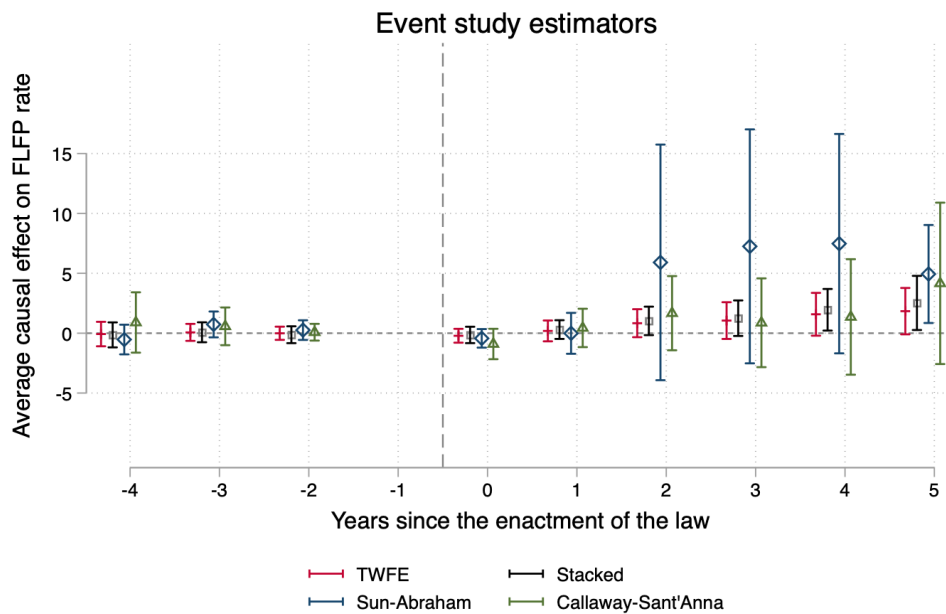
Notes: This figure shows the coefficient of the childcare law enactment on a regression estimated in an event-cohort stacked dataset where the dependent variable is female labor force participation in the age group specified on the y axis. The year of enactment of the law is excluded from the estimation sample and the specification includes the following controls: population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education in the corresponding age group as well as country-specific linear time trends. The specification is equivalent to column (6) in Panel B of 2. The bars represent 95 percent confidence intervals.

Figure 4: Heterogeneous effects by education



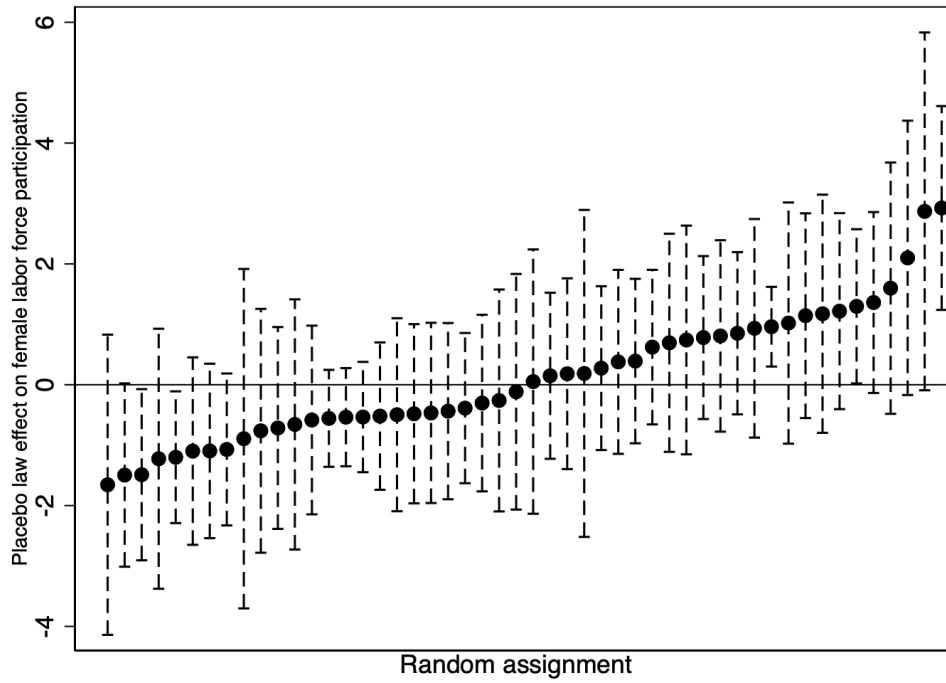
Notes: This figure shows the coefficient of the childcare law enactment on a regression estimated in an event-cohort stacked dataset where the dependent variable is female labor force participation in the education group specified on the y axis. The year of enactment of the law is excluded from the estimation sample and the specification includes the following controls: population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education in the corresponding age group as well as country-specific linear time trends. The specification is equivalent to column (6) in Panel B of 2. The bars represent 95 percent confidence intervals.

Figure 5: Alternative estimators of the dynamic effect of childcare law on female labor force participation



Notes: This figure overlays the event-study plots constructed using four different estimators: a dynamic version of the TWFE model, equation (2), estimated using OLS (in red with line markers); Cengiz et al. (2019), estimated on a stacked dataset with OLS (in black with square markers); Sun and Abraham (2021) (in blue with diamond markers); and Callaway and Sant'Anna (2021) (in green with triangle markers). Estimates according to De Chaisemartin and d'Haultfoeuille (2020) are relatively noisier and are excluded from this figure to preserve the scale (see Figure A1). The treatment group variable is given by the year in which the country enacted the childcare law. The bars represent 95 percent confidence intervals. Standard errors are clustered at the country level. All estimates include the following controls: population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and tertiary education. All estimates include country-specific linear time trends except for those based on Callaway and Sant'Anna (2021).

Figure 6: Placebo test



Notes: The figure shows point estimates and 95 percent confidence intervals of the coefficient of childcare law enactment of the main specification over 50 random assignments of a placebo year of enactment. The sample only includes years before the true year of childcare law enactment and excludes the placebo year of enactment from the estimation. The specification is equivalent to column 6 of panel B of Table 1.

Appendix

Table A1: WBL variables by childcare pillar

Availability

- Does the law regulate public provision of childcare services?
- Does the law regulate private provision of childcare services?
- Does the law mandate employers to provide/support childcare services?
- Does the law provide for flexible hours at public childcare centers?
- Does the law provide for flexible hours at private childcare centers?
- Does the law mandate min. operation hours at public childcare centers?
- How many min. hours for public childcare centers? (normalized)
- Does the law mandate min. operation hours at private childcare centers?
- How many min. hours for private childcare centers? (normalized)

Affordability

- Does the law establish free provision of childcare services?
- When fees are required by public care providers, are they regulated?
- When fees are required by private care providers, are they regulated?
- Does public provision of childcare services cover meals?
- Does the law establish meals at no additional cost to parents?
- Does the government provide financial support to parents for childcare?
- Does the government have programs to support low-income families?
- Do parents receive tax benefits for using childcare services?
- Does the government provide private childcare with financial support?
- Do private childcare centers receive tax benefits?
- Does providing childcare for employees result in support for employees?
- For example, support in form of tax benefits?

Quality

- Are public childcare centers required to obtain licenses?
- Are private childcare centers required to obtain licenses?
- Does the law mandate a teacher-to-child ratio for public childcare?
- Does the law mandate a teacher-to-child ratio for private childcare?
- Does the law mandate a max. group size at public childcare centers?
- Does the law mandate a max. group size at private childcare centers?
- Does the law require educators at public centers to undergo training?
- Does the law require educators at private centers to undergo training?
- Does the law require inspections for compliance with laws and others?
- Does the government require reporting of information by public centers?
- Does the government require reporting of information by private centers?
- Are there penalties imposed for noncompliance on public centers?
- Are there penalties imposed for noncompliance on private centers?

Table A2: **Sample characteristics**

| | Sample | |
|------------------------------------------|-------------|---------------|
| | No controls | With controls |
| Number of countries | 80 | 54 |
| Number of observations (country-year) | 918 | 760 |
| Mean obs. per country | 11.47 | 14.07 |
| Median obs. per country | 11.00 | 16.00 |
| Max obs. per country | 21.00 | 21.00 |
| Countries where law is enacted (%) | 0.79 | 0.85 |
| Countries w/only pre-law outcomes (%) | 0.10 | 0.07 |
| Countries w/only post-law outcomes (%) | 0.30 | 0.30 |
| Countries w/both pre and post law (%) | 0.60 | 0.63 |
| Countries where law is never enacted (%) | 0.21 | 0.15 |
| Number of observations (stacked dataset) | 11,899 | 9,497 |

Notes: The table summarizes the main characteristics of the dataset by estimation sample. The first column shows the characteristics of the estimation sample for the baseline specification, and the second column shows those for the full specification with marriage and education controls.

Table A3: Coverage by country

| Country | Childcare law | | Observations | | | Years covered | |
|------------------|---------------|------|--------------|-----|------|---------------|------|
| | Enacted | Year | All | Pre | Post | First | Last |
| Angola | Yes | 2016 | 5 | 4 | 1 | 2004 | 2019 |
| Argentina | Yes | 2006 | 14 | 2 | 12 | 2004 | 2020 |
| Australia | Yes | 2010 | 11 | 0 | 11 | 2010 | 2020 |
| Bangladesh | Yes | 2021 | 4 | 4 | 0 | 2006 | 2017 |
| Barbados | Yes | 1983 | 5 | 0 | 5 | 2015 | 2019 |
| Belgium | Yes | 2019 | 21 | 19 | 2 | 2000 | 2020 |
| Bhutan | No | - | 3 | - | - | 2018 | 2020 |
| Bolivia | No | - | 19 | - | - | 2000 | 2020 |
| Botswana | No | - | 4 | - | - | 2006 | 2020 |
| Brazil | Yes | 1996 | 6 | 0 | 6 | 2009 | 2015 |
| Bulgaria | Yes | 2008 | 21 | 8 | 13 | 2000 | 2020 |
| Cabo Verde | Yes | 2018 | 1 | 1 | 0 | 2015 | 2015 |
| Canada | Yes | 2015 | 21 | 15 | 6 | 2000 | 2020 |
| Chile | Yes | 2009 | 15 | 3 | 12 | 2000 | 2020 |
| Colombia | Yes | 2004 | 17 | 2 | 15 | 2002 | 2019 |
| Croatia | Yes | 1997 | 19 | 0 | 19 | 2002 | 2020 |
| Czech Republic | Yes | 2014 | 21 | 14 | 7 | 2000 | 2020 |
| Côte d'Ivoire | Yes | 2015 | 5 | 2 | 3 | 2012 | 2019 |
| Denmark | Yes | 2016 | 21 | 16 | 5 | 2000 | 2020 |
| Djibouti | Yes | 2019 | 1 | 1 | 0 | 2017 | 2017 |
| Ecuador | Yes | 2014 | 16 | 9 | 7 | 2005 | 2020 |
| Egypt, Arab Rep. | Yes | 1996 | 13 | 0 | 13 | 2008 | 2020 |
| Ethiopia | No | - | 2 | - | - | 2005 | 2013 |
| Fiji | No | - | 3 | - | - | 2005 | 2016 |
| France | Yes | 2003 | 16 | 0 | 16 | 2005 | 2020 |
| Georgia | Yes | 2016 | 11 | 7 | 4 | 2009 | 2020 |
| Ghana | Yes | 1998 | 6 | 0 | 6 | 2000 | 2017 |
| Guinea | Yes | 1984 | 2 | 0 | 2 | 2002 | 2019 |

Notes: The table summarizes the main characteristics of the baseline estimation sample by country. Columns 1 and 2 indicate whether the country has enacted a childcare law by 2022 and when it was enacted according to the WDL dataset. Columns 4-6 display the number of country-year observations, overall and before and after the law enactment. Finally, the last two columns show the first and last year observed in the dataset for the country.

Table A4: Coverage by country (continued)

| Country | Childcare law | | Observations | | | Years covered | |
|----------------------|---------------|------|--------------|-----|------|---------------|------|
| | Enacted | Year | All | Pre | Post | First | Last |
| Hong Kong SAR, China | Yes | 1976 | 11 | 0 | 11 | 2010 | 2020 |
| India | Yes | 2017 | 7 | 4 | 3 | 2000 | 2020 |
| Indonesia | Yes | 2003 | 21 | 3 | 18 | 2000 | 2020 |
| Iran, Islamic Rep. | Yes | 2011 | 16 | 6 | 10 | 2005 | 2020 |
| Jordan | Yes | 2018 | 4 | 1 | 3 | 2017 | 2020 |
| Kenya | Yes | 2017 | 4 | 3 | 1 | 2005 | 2019 |
| Korea, Rep. | Yes | 1991 | 21 | 0 | 21 | 2000 | 2020 |
| Lithuania | Yes | 1991 | 21 | 0 | 21 | 2000 | 2020 |
| Malawi | No | - | 4 | - | - | 2005 | 2020 |
| Malta | Yes | 2019 | 12 | 10 | 2 | 2009 | 2020 |
| Mauritania | No | - | 3 | - | - | 2012 | 2019 |
| Mauritius | Yes | 2000 | 20 | 0 | 20 | 2001 | 2020 |
| Mexico | Yes | 2019 | 19 | 17 | 2 | 2002 | 2020 |
| Moldova | Yes | 2014 | 21 | 14 | 7 | 2000 | 2020 |
| Mongolia | No | - | 12 | - | - | 2009 | 2020 |
| Namibia | Yes | 2015 | 6 | 4 | 2 | 2010 | 2018 |
| Nepal | Yes | 2002 | 2 | 0 | 2 | 2008 | 2017 |
| Nicaragua | No | - | 4 | - | - | 2001 | 2014 |
| Norway | Yes | 2005 | 21 | 5 | 16 | 2000 | 2020 |
| Pakistan | No | - | 11 | - | - | 2006 | 2019 |
| Panama | Yes | 2016 | 12 | 8 | 4 | 2003 | 2019 |
| Paraguay | Yes | 1998 | 20 | 0 | 20 | 2001 | 2020 |
| Peru | Yes | 2003 | 19 | 1 | 18 | 2002 | 2020 |
| Philippines | Yes | 2013 | 19 | 11 | 8 | 2001 | 2020 |
| Poland | Yes | 2011 | 21 | 11 | 10 | 2000 | 2020 |
| Portugal | Yes | 2011 | 21 | 11 | 10 | 2000 | 2020 |
| Romania | Yes | 2011 | 21 | 11 | 10 | 2000 | 2020 |
| Russian Federation | Yes | 2012 | 11 | 2 | 9 | 2010 | 2020 |
| Rwanda | No | - | 5 | - | - | 2014 | 2020 |

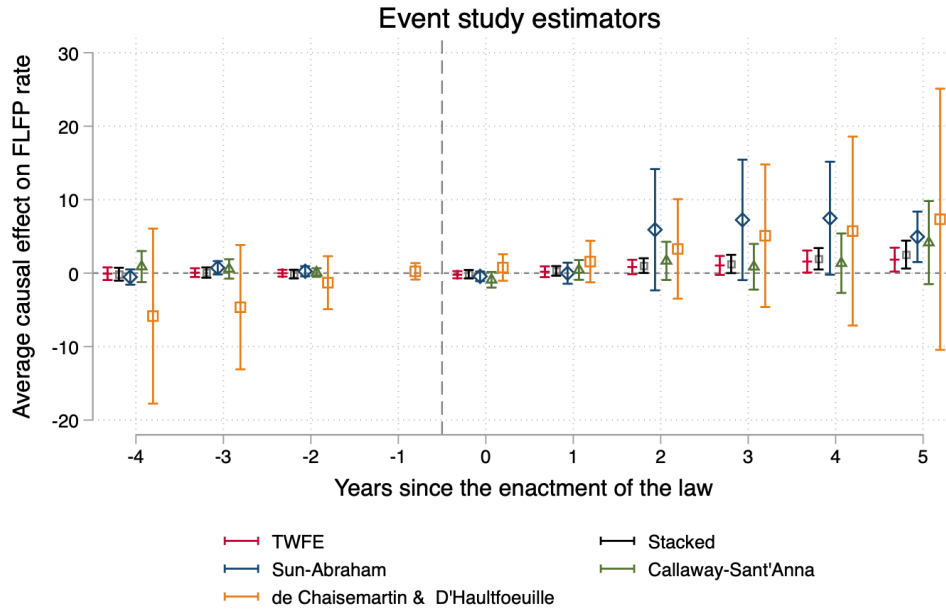
Notes: The table summarizes the main characteristics of the baseline estimation sample by country. Columns 1 and 2 indicate whether the country has enacted a childcare law by 2022 and when it was enacted according to the WDL dataset. Columns 4-6 display the number of country-year observations, overall and before and after the law enactment. Finally, the last two columns show the first and last year observed in the dataset for the country.

Table A5: Coverage by country (continued)

| Country | Childcare law | | Observations | | | Years covered | |
|----------------------|---------------|------|--------------|-----|------|---------------|------|
| | Enacted | Year | All | Pre | Post | First | Last |
| Senegal | No | - | 5 | - | - | 2015 | 2019 |
| Serbia | Yes | 2010 | 13 | 2 | 11 | 2008 | 2020 |
| Sierra Leone | No | - | 3 | - | - | 2003 | 2018 |
| Slovenia | Yes | 1996 | 1 | 0 | 1 | 2000 | 2000 |
| South Africa | Yes | 2004 | 21 | 4 | 17 | 2000 | 2020 |
| Spain | Yes | 2008 | 21 | 8 | 13 | 2000 | 2020 |
| Sri Lanka | No | - | 10 | - | - | 2010 | 2020 |
| Suriname | Yes | 2017 | 1 | 1 | 0 | 2016 | 2016 |
| Switzerland | Yes | 2008 | 21 | 8 | 13 | 2000 | 2020 |
| Tajikistan | Yes | 2013 | 3 | 3 | 0 | 2003 | 2009 |
| Tanzania | Yes | 2009 | 6 | 2 | 4 | 2001 | 2020 |
| Thailand | Yes | 1999 | 11 | 0 | 11 | 2000 | 2020 |
| Togo | No | - | 4 | - | - | 2006 | 2017 |
| Trinidad and Tobago | No | - | 9 | - | - | 2010 | 2020 |
| Tunisia | Yes | 2006 | 12 | 1 | 11 | 2005 | 2017 |
| Turkey | Yes | 2015 | 21 | 15 | 6 | 2000 | 2020 |
| Uganda | No | - | 2 | - | - | 2012 | 2017 |
| Ukraine | Yes | 2001 | 3 | 0 | 3 | 2018 | 2020 |
| United Arab Emirates | Yes | 1983 | 3 | 0 | 3 | 2017 | 2019 |
| United Kingdom | Yes | 2006 | 20 | 6 | 14 | 2000 | 2019 |
| United States | Yes | 2021 | 21 | 21 | 0 | 2000 | 2020 |
| Vietnam | Yes | 2019 | 11 | 9 | 2 | 2010 | 2020 |
| Zambia | Yes | 2011 | 4 | 0 | 4 | 2017 | 2020 |

Notes: The table summarizes the main characteristics of the baseline estimation sample by country. Columns 1 and 2 indicate whether the country has enacted a childcare law by 2022 and when it was enacted according to the WDL dataset. Columns 4-6 display the number of country-year observations, overall and before and after the law enactment. Finally, the last two columns show the first and last year observed in the dataset for the country.

Figure A1: Dynamic effects of childcare law on female labor force participation



Notes: This figure overlays the event-study plots constructed using four different estimators: a dynamic version of the TWFE model, equation (2), estimated using OLS (in red with line markers); [Cengiz et al. \(2019\)](#), estimated on a stacked dataset with OLS (in black with square markers); [Sun and Abraham \(2021\)](#) (in blue with diamond markers); and [Callaway and Sant'Anna \(2021\)](#) (in green with triangle markers); [De Chaisemartin and d'Haultfoeuille \(2020\)](#) (in yellow with square markers). The treatment group variable is given by the year in which the country enacted the childcare law. The bars represent 90 percent confidence intervals. Standard errors are clustered at the country level. All estimates include the following controls: population marriage rate, average age at marriage for women, and the share of women with primary, secondary, and higher education. All estimates include country-specific linear time trends except for those based on [Callaway and Sant'Anna \(2021\)](#).