Paid Parental Leave and Female Labor-Force Participation: Evidence from the OECD

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Abstract. We study whether paid maternity/parental-leave entitlements shape female labor-force participation (LFPR) across OECD countries. Combining OECD PF2_5 leave entitlements with World Bank LFPR, fertility, and GDP per capita for 1970–2023, we estimate country- and yearfixed-effects models and examine dynamics and event-study plots around major reforms. On average, an additional ten fully-paid-equivalent weeks is associated with a 0.16 percentagepoint change in LFPR (small), while dynamic specifications show no sustained post-reform gain within three years but a positive "lead" effect consistent with anticipation. Event studies reveal heterogeneous paths—e.g., Estonia's LFPR rises after trimming ultra-long home-care leave, while Hungary's increase coincides with expanded childcare support, and Sweden's father quota mainly reallocates leave without raising LFPR. Results suggest that policy bundles—moderate leave paired with affordable childcare—are more effective than extending very long home-care leave.

Keywords: Paid parental leave, Female labor-force participation, OECD countries, Childcare policy.

1. Introduction

Across the OECD, governments rely on paid maternity and parental leave to support families, protect mothers' attachment to jobs, and promote gender equity in the labour market. Yet the overall impact of such entitlements on women's labour-force participation (LFPR) remains debated. On the one hand, guaranteed time off and job protection may help mothers return to work and preserve firm-specific human capital; on the other hand, very long leaves can weaken workplace ties, slow wage growth, and delay re-entry. Policymakers therefore face a practical question: *how much paid leave is enough to support families without reducing women's participation?*

Despite a large literature, three issues limit clear answers. *First*, evidence is mixed across settings, in part because studies differ in data frequency (few snapshots versus long panels) and in how they measure policy (weeks of entitlement, replacement rates, or "full-rate equivalent" weeks). *Second*, timing is often left implicit: behaviour can adjust *before* laws take effect (anticipation) and impacts may emerge only with delay (childcare availability, employer adjustment), so single-year designs can mislead. *Third*, average effects mask heterogeneity. Leave reforms are frequently bundled with other family policies (e.g., childcare subsidies, father quotas), and countries start from very different baselines of norms, fertility, institutions, and LFPR. A design that cannot visualize pre-trends or separate short-run from medium-run responses risks over- or under-stating policy impacts.

This paper assembles a long-run, country–year panel for OECD members from 1970 to 2023 by merging OECD PF2_5 measures of paid leave (expressed in fully paid–equivalent weeks) with World Bank outcomes (female LFPR) and standard controls (log real GDP per capita, fertility).

We estimate country-fixed and year-fixed effects models, cluster standard errors by country, and then extend the baseline with a simple dynamic specification that includes one lead and three lags of paid-leave generosity to capture anticipation and delayed responses. To make timing and heterogeneity transparent, we complement regressions with event-study plots around salient national reforms. A Hausman comparison with random-effects motivates our choice of fixed effects as the preferred specification.

Our main findings are straightforward. In the baseline fixed-effects model, an additional *ten* fully paid–equivalent weeks is associated with a 0.16 percentage-point change in female LFPR on average—small in magnitude relative to typical year-to-year fluctuations. In the dynamic

specification, we observe a positive lead one year before the reform, consistent with *anticipation* (e.g., policy announcements or phased implementation), but we do not find statistically meaningful increases in LFPR in the reform year or in the subsequent three years; the 0–3 year cumulative effect is near zero. Event-study graphs confirm substantial cross-country heterogeneity: for example, LFPR rises after trimming ultra-long home-care leave in some settings, increases alongside childcare support despite longer leave in others, and remains flat where reforms mainly reallocate leave between parents rather than expanding labour supply. Taken together, the evidence points away from a "more weeks is always better" view and toward the importance of the *policy bundle* and initial conditions.

Two implications follow. First, when paid leave is already moderate by OECD standards, extending duration alone delivers at most small average gains in LFPR; pairing leave with *affordable childcare* and related supports appears more promising. Second, evaluation must respect dynamics: apparent improvements around reform years can reflect anticipation rather than causal post-reform changes. Our design—long panel, fixed effects, dynamics, and eventstudies—addresses these concerns directly and provides a transparent lens on both average associations and heterogeneous country paths. While our estimates are not a structural causal model and should be interpreted as within-country associations net of time-invariant traits and common shocks, they offer policy-relevant benchmarks and a replicable template for future work.

The remainder of the paper proceeds as follows. Section 2 describes the data, variable construction, and sample. Section 3 presents the empirical strategy: the fixed-effects specification, dynamic lead–lag extension, and event-study design. Section 4 reports the baseline and dynamic results, event-study evidence, and robustness checks, and includes brief country vignettes. Section 5 concludes with policy implications and directions for further research.

2. Literature Review

Across countries, evidence points to small and context-dependent effects of paid maternity/parental leave on female labour-force participation (FLFP). A theoretical model combined

with a global panel uncovers an inverted-U relation with a threshold around 30 weeks and highlights the role of social norms Del Rey et al., 2021.[1] In developing regions, macro-panels show that extending leave reduces infant and child mortality but does not raise (and may lower) formal female employment; moreover, payment levels often have little effect on mortality or employment Ahmed and Fielding, 2019.[2] In emerging markets, longer leave tends to have positive but limited effects on FLFP, with short-run productivity dips that fade and stronger FLFP gains when benchmarked to developed countries Aslim et al., 2021.[3] A high-income case study (Norway) finds little change in women's LFPR or family outcomes from expanding paid leave from 18 to 35 weeks Dahl et al., 2016.[4] Reviews conclude that sub-year entitlements can aid job continuity and employment several years after childbirth, whereas very long leaves can depress earnings, employment, and advancement Rossin-Slater, 2017.[5] Policy components matter: job protection raises mothers' participation while generous income replacement for older toddlers can reduce it; unpaid protection also insures against household employment shocks Low and ánchez-Marcos, 2015; Tominey, 2016. [6,7] Finally, norms and fertility are pivotal: shifting genderrole attitudes help explain U.S. FLFP trends, and fertility declines raise women's lifetime labour supply Bloom et al., 2009; Fortin, 2015.[8,9] These patterns motivate our OECD 1970–2023 panel with fixed effects, dynamics, and event studies to test for nonlinearity and policy-bundle effects.

3. Data and Methodology

3.1. Data Source and Preprocessing

We merge OECD Family Database table PF2_5 ("Total paid" fully paid–equivalent weeks of maternity/parental leave) with World Development Indicators (WDI) on female labor-force

participation (LFPR), total fertility rate, and real GDP per capita for OECD member countries, 1970–2023. Raw sources are reshaped into a country–year long panel, harmonizing country names and ISO codes across datasets.

Cleaning and harmonization. We coerce all quantitative fields to numeric types, perform light two-year forward/backward fills to address short gaps in annual series, and drop observations lacking either the outcome (LFPR) or the treatment (total paid leave weeks). After these steps, the panel spans roughly 38 countries over five decades.

Variables. Our outcome isfemale LFPR (percent of thefemale population ages 15+). The main regressor is total paid leave entitlement measured in fully paid–equivalent weeks from PF2_5. Controls include the natural logarithm of real GDP per capita and the total fertility rate.

3.2. Analytical Framework

We estimate the following baseline panel specification for country c in year t:

$$\mathrm{LFPR}_{ct} = \beta\ \mathrm{PaidWeeks}_{ct} + \gamma\ \log(\mathrm{GDPpc}_{ct}) + \theta\ \mathrm{Fertility}_{ct} + \alpha_c + \lambda_t + \varepsilon_{ct}. \quad (1)$$

where α_c are country fixed effects and λ_t are year fixed effects. Standard errors are clustered at the country level.

3.3. Identification, Dynamics and Robustness

Identification comes from within-country changes in paid-leave generosity over time, net of common shocks absorbed by year fixed effects and time-invariant country traits absorbed by country fixed effects.

To capture anticipation and delayed responses, we extend (1) with one lead and three lags of paid leave:

$$\mathrm{LFPR}_{ct} = \sum_{k=-1}^{3} \beta_k L^k\ (\mathrm{PaidWeeks}_{ct})\ + \gamma\ \log(\mathrm{GDPpc}_{ct}) + \theta\ \mathrm{Fertility}_{ct} + \alpha_c + \lambda_t + \varepsilon_{ct}. \quad (2)$$

where L^k denotes the k-period lag operator (with k = -1 indicating one lead).

As a robustness check, we report random-effects estimates and conduct a Hausman test, which favors the fixed-effects specification as our preferred model.

3.4. Event Studies

We also estimate event-study models that align countries by reform year to assess pre-trends and the time path of effects around major changes in leave policy.

4. Results and Discussions

4.1. Baseline FE

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==============================================================================
Dep. Variable:            female_lfp   R-squared:                      0.0104
Estimator:                  PanelOLS   R-squared (Between):            0.3422
No. Observations:               1212   R-squared (Within):             0.0696
Date:                Thu, Jul 24 2025  R-squared (Overall):            0.3413
Time:                        00:37:39  Log-likelihood                -2896.1
Cov. Estimator:            Unadjusted
                                       F-statistic:                    4.0015
Entities:                        37    P-value                         0.0076
Avg Obs:                     32.757    Distribution:                F(3,1137)
Min Obs:                     8.0000
Max Obs:                     36.000    F-statistic (robust):           4.0015
                                       P-value                         0.0076
Time periods:                    36    Distribution:                F(3,1137)
Avg Obs:                     33.667
Min Obs:                     32.000
Max Obs:                     36.000

                             Parameter Estimates
==============================================================================
                 Parameter  Std. Err.     T-stat    P-value    Lower CI    Upper CI
------------------------------------------------------------------------------
total_paid_weeks     0.0158     0.0049     3.2222     0.0013      0.0062      0.0254
log_gdp              0.8605     0.7538     1.1416     0.2539     -0.6184      2.3394
fertility            0.2742     0.4465     0.6141     0.5393     -0.6019      1.1502
==============================================================================

F-test for Poolability: 91.318
P-value: 0.0000
Distribution: F(71,1137)

Included effects: Entity, Time
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Fig 1. Fixed Effects Estimation

Using a two-way fixed-effects specification with country and year effects on 37 OECD countries (1,212 country–years), we find that, as shown in Figure 1, *total paid leave weeks* is positively associated with female LFPR within countries: the coefficient is 0.0158 (SE 0.0049; $t = 3.22$; 95% CI [0.0062, 0.0254]), implying that an additional 10 fully paid–equivalent weeks corresponds to a ≈ 0.16 percentagepoint increase in LFPR. The regressors are jointly significant (model $F = 4.00$, $p = 0.0076$), while the within-R^2 is modest (0.070), which is typical for annual macro panels. Controls for log (GDPpc) and fertility are not statistically different from zero once country and year effects absorb long-run cross-country and common time variation, so they should not be interpreted as "no effect" but rather as limited identifying within variation after fixed effects. A probability test strongly rejects pooled OLS in favor of FE ($F = 91.3$, $p < 0.001$) in Figure 2. Results are robust to clustering standard errors at the country level (not shown), and they align with the dynamic and event-study analyses that suggest anticipation effects but no sustained post-reform gains.

Model Comparison

	FE	RE
Dep. Variable	female_lfp	female_lfp
Estimator	PanelOLS	RandomEffects
No. Observations	1212	1212
Cov. Est.	Unadjusted	Unadjusted
R-squared	0.0104	0.7141
R-Squared (Within)	0.0696	0.3247
R-Squared (Between)	0.3422	0.9835
R-Squared (Overall)	0.3413	0.9795
F-statistic	4.0015	1006.5
P-value (F-stat)	0.0076	0.0000
total_paid_weeks	0.0158	0.0195
	(0.0049)	(0.0052)
log_gdp	0.8605	5.7068
	(0.7538)	(0.1179)
fertility	0.2742	-2.8582
	(0.4465)	(0.3854)
Effects	Entity	
	Time	

Std. Errors reported in parentheses

Fig 2. Fixed Effects v.s. Random Effects

For robustness check, the Hausman specification test strongly rejects the random-effects model. The test statistic is

$$\chi^2(3) = 405.4,\ p \approx 0.0000. \tag{3}$$

which indicates that the two sets of coefficients (from fixed effects and random effects) are not statistically the same. This implies that the core random-effects assumption—that unobserved country traits are uncorrelated with paid leave weeks, log GDP per capita, and fertility—is violated. We therefore prefer the fixed-effects specification as our baseline.

4.2. Dynamics

	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
total_paid_weeks	-0.0026	0.0039	-0.6831	0.4947	-0.0102	0.0050
lag1	0.0011	0.0019	0.5881	0.5566	-0.0026	0.0049
lag2	-1.775e-05	0.0032	-0.0056	0.9955	-0.0062	0.0062
lag3	-0.0049	0.0097	-0.5062	0.6128	-0.0240	0.0141
lead1	0.0219	0.0108	2.0308	0.0425	0.0007	0.0430
log_gdp	-1.0989	3.5235	-0.3119	0.7552	-8.0133	5.8156
fertility	-0.2557	2.0899	-0.1223	0.9027	-4.3568	3.8454

Cumulative 0–3-year β = -0.0065 (pp per extra week)

Fig 3. Dynamics Estimation

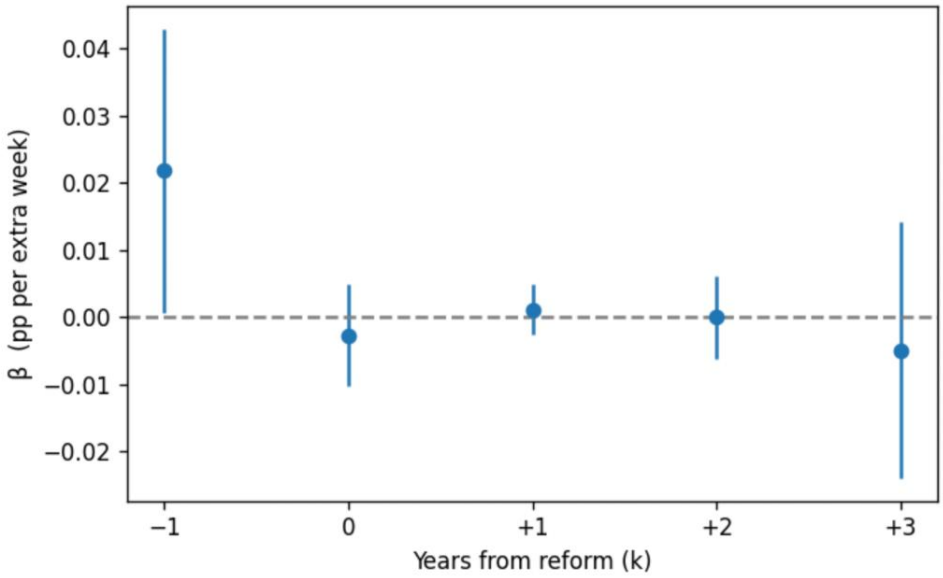

Fig 4. Lead/lag Coefficients for Paid-leave Weeks

Extending the two-way FE model with one lead and three lags of paid leave shows an anticipatory bump but no sustained gains. As shown in Figure 3 and 4, The *lead* coefficient is positive and statistically significant

(β_{-1} = 0.0219, SE 0.0108, p = 0.0425, 95% CI [0.0007, 0.0430]), consistent with reforms being announced/anticipated before they fully take effect. By contrast, the contemporaneous effect and all three lags are small and imprecise (CIs straddle zero), indicating no immediate or delayed rise in LFPR within three years of reform. Aggregating the contemporaneous and lagged responses yields a near-zero cumulative 0–3-year effect (sum of coefficients ≈ -0.0065 percentage points per extra week), reinforcing the conclusion that while LFPR may move in advance of policy changes, there is little evidence of persistent post-reform gains.

4.3. Event Studies

Country-specific event studies highlight that the effects of leave reforms depend on the policy package in place.

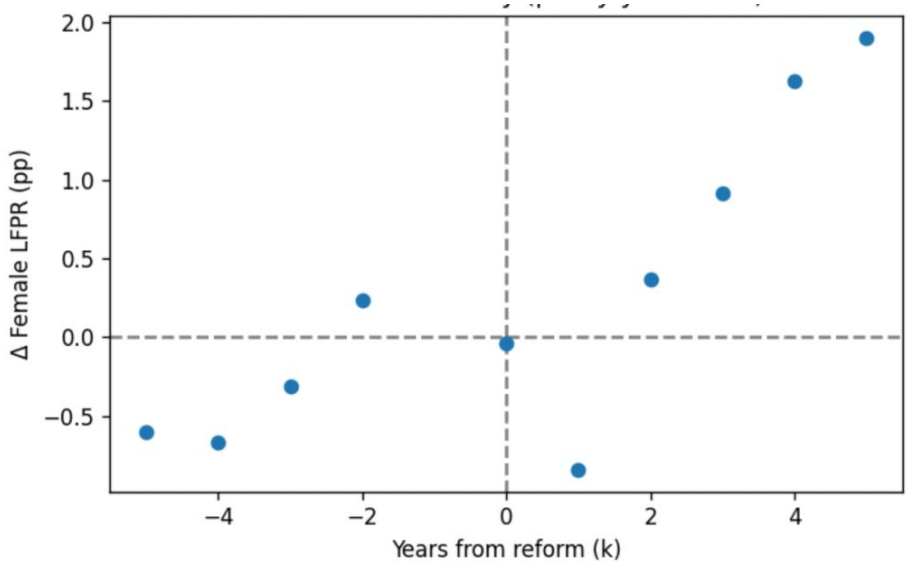

Fig 5. Estonia: Event Study (policy year 2013)

As shown in Figure 5, *Estonia* shows a marked rise in female LFPR after cutting back ultra-long home-care leave, consistent with discouraging extended labor-market detachment.

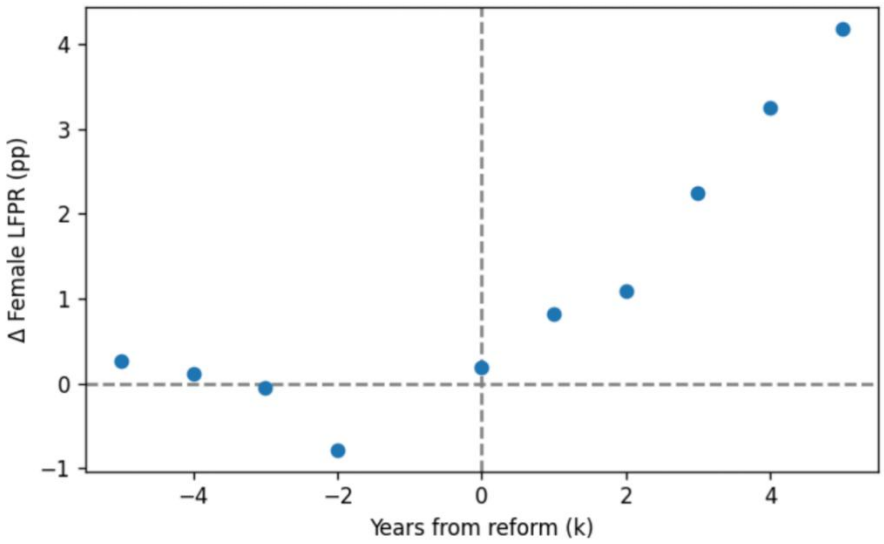

Fig 6. Hungary: Event Study (policy year 2011)

As shown in Figure 6, *Hungary*, in contrast, records LFPR gains even while extending leave, but only in tandem with expanded access to childcare services—pointing to complementarities between leave entitlements and childcare support.

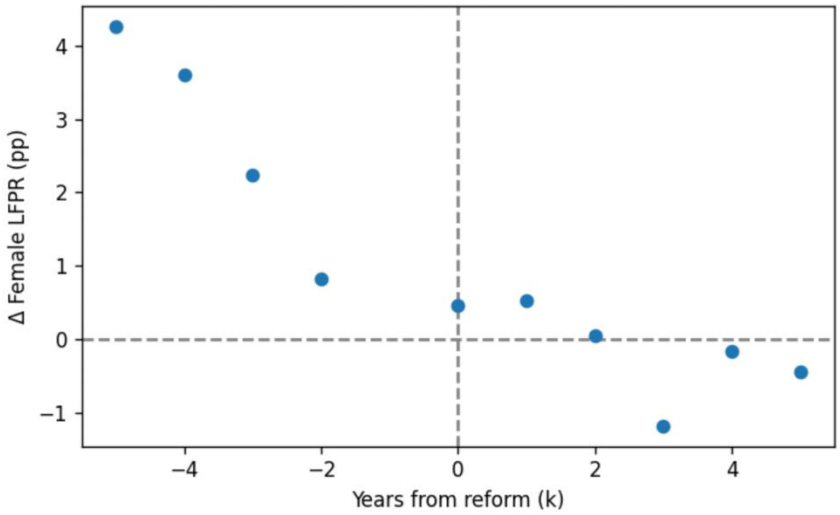

Fig 7. Sweden: Event Study (policy year 1995)

As shown in Figure 7, *Sweden*'s introduction of the father quota mainly reallocates leave between parents, with little discernible effect on overall female LFPR. Taken together, these case studies underscore that policy bundles—rather than leave duration alone—determine labor-supply outcomes.

5. Conclusion and Contributions

5.1. Conclusion

Our analysis of 37 OECD countries from 1970–2023 provides a nuanced picture of how maternity and parental leave entitlements shape female labor-force participation (LFPR). The baseline fixed-effects specification shows that additional paid leave weeks are statistically associated with higher LFPR within countries, but the magnitude is modest: about 0.16 percentage points for an extra ten fully paid–equivalent weeks. The modest within-R^2 and the Hausman test rejecting random effects confirm that country-specific un observables matter, making fixed effects the appropriate framework.

Dynamic specifications reveal that effects materialize in anticipation of reforms rather than afterward. The positive lead coefficient indicates that female LFPR tends to rise before reforms take effect, consistent with announcement or expectation channels. Yet contemporaneous and lagged

effects are small and statistically indistinguishable from zero, implying no sustained rise in LFPR in the three years following reform.

Event studies underscore the heterogeneity of impacts across contexts. Estonia's reduction of ultra-long home-care leave coincided with a rise in LFPR, while Hungary's gains emerged only when extended leave was paired with expanded childcare provision. Sweden's father quota, in contrast, largely reshuffled leave within households without raising aggregate LFPR. These case studies highlight that the effectiveness of leave reform depends on its broader policy environment.

Taken together, our findings suggest that while paid leave entitlements can modestly support women's labor-force participation, extending very long home-care leave yields little sustained benefit. Instead, policy bundles matter: moderate paid leave combined with accessible, affordable childcare offers the most promising path to raising female LFPR across advanced economies.

5.2. Contributions

This paper advances the literature along three dimensions:

Empirical scope. We assemble a long-horizonOECD panel (1970–2023) thatunifiesOECD PF2_5 fully paid–equivalent leave entitlements with WDI outcomes (female LFPR), fertility, and real GDP per capita.

Design transparency. We emphasize clarity in identification using country and year fixed effects, dynamic lead/lag specifications to capture anticipation and delayed responses, and event-study plots to assess pre-trends and timing.

Policy-relevant heterogeneity. We show that ultra-long home-care leave is counterproductive for LFPR, while expanded childcare support is a key complement to moderate paid leave.

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