Work From Home and Child Penalties

Omar Bamieh[*], Candan Erdemli[‡], Alice Kügler[‡], Lennart Ziegler[‡]

March 2026

[Preliminary draft. Please do not circulate.]

Abstract

We study whether work from home (WFH) mitigates child penalties in the labor market. Using unique Austrian administrative data that record the number of days worked from home for the universe of employees since 2021, we document that mothers with young children substantially increase their use of WFH, while fathers do so to a much lesser extent. Exploiting the COVID-19 shock in a difference-in-differences design, we show that expanded access to WFH increases mothers' employment, earnings, and job continuity after childbirth. These effects operate primarily through higher rates of mothers returning to their pre-birth employers. Our findings suggest that remote work is a significant and low-cost policy lever to reduce child penalties.

[*]Universidad Andrés Bello - Institute for Economic Policies
[‡]Central European University - Department of Economics

1 Introduction

Gender inequality in labor-market outcomes widens sharply following the birth of the first child, a pattern commonly referred to as the child penalty (Kleven et al., 2019, 2024). This divergence reflects the unequal allocation of childcare responsibilities, with mothers disproportionately adjusting their labor-market behavior toward more flexible forms of work, including part-time employment, self-employment, and informal arrangements (Berniell et al., 2021; Kleven et al., 2019). In the aftermath of the COVID-19 pandemic, work from home (WFH) has emerged as a salient margin of workplace flexibility (Aksoy et al., 2022, 2023; Barrero et al., 2021). This expansion of WFH raises the question of whether remote work can mitigate child penalties.

Remote work enables employees to organize their workdays more flexibly. This may particularly benefit parents of young children, who must coordinate their work with childcare responsibilities. Remote work can also substantially reduce time spent commuting, which is an important determinant of the gender pay gap, as mothers prefer shorter commutes (Le Barbanchon et al., 2021; Bütikofer et al., 2025).

In this paper, we exploit unique population-wide data on WFH days in Austria to analyze how parents use remote work options. Since 2021, Austrian employers have been required to report the number of remote work days on employee pay slips, enabling us to precisely measure annual work-from-home intensity across the entire Austrian workforce. To the best of our knowledge, Austria is the only country that provides this type of data. Comparisons with self-reported WFH measures from the Austrian Labor Force Survey indicate that the administrative records accurately capture actual remote work patterns. These features allow us to extend the analysis beyond the existing literature, which primarily relies on time-use surveys to study the link between parenthood and WFH (Zarate, 2025; Arntz et al., 2022; Harrington and Kahn, 2023).

The first part of our study examines the extent to which mothers and fathers use remote work options. We compare workers with and without children of various ages, while controlling for a comprehensive set of worker and job characteristics. Because remote work days are reported for the entire population, we can also account for differential selection into WFH-friendly firms by estimating firm fixed effects. Our estimates show that, compared to childless women, mothers with young children (below the age of ten) are more likely to work from home. For mothers with older children, these differences gradually diminish and disappear by age fifteen. For fathers, by contrast, there are much smaller differences in the extent of WFH by parental status or by the

age of their children. These findings support the hypothesis that parents use WFH arrangements to balance the demands of work and childcare. As fathers are typically less involved in childcare duties, their preferences for remote work are less affected by children.

In the second part of the analysis, we use a difference-in-differences design to assess the causal effect of WFH on the labor market outcomes of women with small children. Given that our descriptive evidence suggests that women with small children have a strong preference for remote work, the next step is to assess whether WFH mitigates child penalties. To do this, we exploit the fact that COVID-19 significantly increased remote work opportunities for some workers but not for others. Workers who perform jobs that cannot be done from home, or who work for employers that are reluctant to allow remote work, were not affected by the shift toward WFH in the post-pandemic era. Our difference-in-differences design compares the period before and after COVID across workers with low and high remote work potential.

We use the post-COVID-19 period (2021-2023), during which we can measure the number of days worked from home for all Austrian workers, and leverage this information to classify workers' work-from-home potential based on the occupations and sectors in which they work. In addition, our data structure allows us to implement an AKM decomposition (Abowd et al., 1999) of the number of days worked from home and separate the worker component of remote work (reflecting individual preferences or skills) from the firm component (capturing firms' remote-work policies). This is a unique advantage of our data, and it allows us to study whether firms offering remote-work arrangements increase women's likelihood of returning to the same employer after their first birth.

Our difference-in-differences estimates show that remote work enables women with small children to return to work sooner, thereby reducing the drop in earnings experienced by women immediately after having their first child. These results suggest that working from home has the potential to mitigate child penalties. Importantly, these effects operate through the following mechanism: women working for firms offering remote-work arrangements are more likely to return to the same employer after first birth.

Taken together, our findings suggest that mothers use WFH to reduce the trade-off between work and family responsibilities. As remote work becomes more widely available (Barrero et al., 2023), it has the potential to reduce gender inequalities in the labor market. These are important findings, as policymakers are struggling to

reduce gender pay gaps while investing large amounts of money in family policies, such as generous paid parental leave. Yet, the literature shows that the effects of these policies on mothers' careers have been modest at best (Diallo et al., 2025; Corekcioglu et al., 2024; Dahl et al., 2016; Schönberg and Ludsteck, 2014; Lalive et al., 2014; Lalive and Zweimüller, 2009). Our results suggest that a far cheaper—and potentially more effective—policy lever to promote women's careers would be to better regulate remote work arrangements.

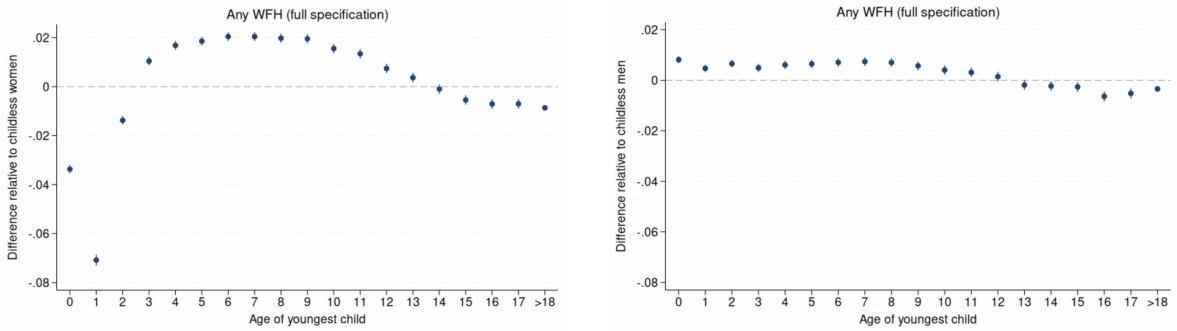
There is limited evidence on how WFH can mitigate child penalties (Arntz et al., 2022; Harrington and Kahn, 2023). Closest to our work, Zarate (2025) finds that remote work reduces the child penalty in employment, mainly by helping mothers remain in their pre-birth jobs. Whereas Zarate (2025) directly compares child penalties for women with different teleworkable jobs, our difference-in-differences strategy addresses the fact that highly teleworkable jobs might also offer other child-friendly amenities, such as employer-provided childcare. More precisely, our strategy assumes that, among all the amenities offered by firms, firms' attitudes toward working from home were the amenity most affected by COVID.

2 Parents' use of remote work

At a descriptive level, it appears that women with small children are more likely to work from home than women with older children or than childless women; this is consistent with the idea that working from home allows mothers to balance work and family life. This pattern is much weaker for men. Figure 1 reports the likelihood of working from home for parents with children of different ages, relative to individuals without children. These variables have been residualized to net out differences in the year of observation, age, nationality, marital status, level and field of education, extent of work (full-time or part-time), worker type (blue collar, white collar or civil servant) and firm fixed effects. Our estimates show that mothers with young children (age 3-10) are about 2 percentage points more likely to work from home, which corresponds to a 9-percent increase compared to childless women. This gap disappears for women with older children, suggesting that women work less from home once children are sufficiently old to be independent. Women with children younger than three are less likely to work from home; however, female labor force participation among women with such young children is very low, suggesting that these results are likely driven by selection. By

contrast, there are only small differences of about 0.5 percentage points in the likelihood of working from home between fathers with children of younger ages and childless men. Because fathers are less involved in childrearing to begin with, the presence of small children affects their work-from-home choices to a much smaller extent.

Figure 1: Women with small children work often from home, men much less



Notes: The figure reports the difference in the likelihood of working form home in a given year for parents with children of different ages compared with individuals without children. The right panel shows men, and the left panel shows women.

These results suggest that women with small children have a strong preference for remote work, relative to women with older children and to women without children. Given these preferences, we expect WFH to be beneficial to mothers' careers. The remainder of the paper examines the effects of working from home on the labor market outcomes of women with small children.

3 Classifying work-from-home jobs

Using the number of days worked from home between 2021-2023 for the full Austrian population, we apply two methods to classify the WFH potential of jobs and firms. First, for each worker i, we compute the leave-one-out mean of the number of days worked from home at the occupation-sector cell level $c(i)$, defined as the average number of days worked from home among all other workers in the same cell. Occupations are classified as white-, and blue-collar jobs, and civil servants,

$$\text{WFH}_{c(i)} = \frac{1}{N_{c(i)} - 1} \sum_{\substack{j \in c(i) \\ j \neq i}} WFH_j \tag{1}$$

where c denotes a sector-occupation cell and N_c is the number of workers in cell c. This measure of WFH potential is used to classify all workers, both before and after 2021, according to the cell c to which they belong, which allows us to assign women to groups of high and low WFH potential based on their job prior to the birth of their first child. This ensures that WFH potential is predetermined with respect to fertility and is not a consequence of having children. Within a difference-in-differences framework, we compare women with high and low WFH potential before and after 2020, under the implicit assumption that working from home became more common after COVID-19 for jobs with high WFH potential, but much less so for other jobs.

Second, because the administrative data record the number of remote-work days for all workers across all firms, we can infer separate worker and firm components of remote work from worker flows between firms. Analogous to the AKM wage equation of Abowd et al. (1999), our model expresses remote-work days (WFH_{it}) as

$$WFH_{it} = \alpha_i + \psi_{J(i,t)} + \beta X_{it} + \varepsilon_{it} \tag{2}$$

In this equation, the fixed effects α_i and $\psi_{J(i,t)}$ measure worker- and firm-specific WFH components, respectively. X_{it} denotes a vector of time-varying controls, including calendar year effects and the worker's years of experience with the firm, and the error term ε_{it} captures all time-varying unobserved determinants of WFH. This model allows firms to offer different degrees of remote-work flexibility, and workers to differ in their preferences for remote work. For our analysis, we take $\psi_{J(i,t)}$ as a measure of the work-from-home friendliness of firms, and we study whether women who worked for employers supportive of WFH (high-$\psi_{J(i,t)}$) before having their first child are more likely to return to work for the same employer after childbirth. This measure of job continuity is important, as it may affect mothers' careers.

4 COVID-19 difference-in-differences

In this section, we corroborate the descriptive evidence presented in the previous section by exploiting the differential effect that COVID-19 had on the expansion of remote work across workers, depending on the teleworkability of their jobs.

We consider all women who have small children (aged at most five years) at any point

between 2015-2023, and we employ a standard difference-in-differences framework:

$$y_{it} = \sum_{\substack{k=2015 \\ k \neq 2019}}^{2023} \beta_k (\mathbb{1}(t = k) \times WFH_i) + \alpha WFH_i + \theta_{o(i)} + \psi_{s(i)} + \tau_t + \varepsilon_{it} \tag{3}$$

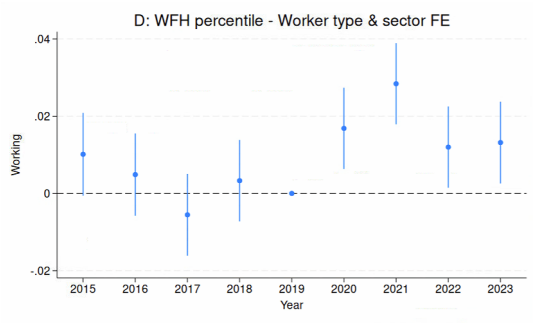
where WFH_i is either the WFH potential, $\text{WFH}_{c(i)}$, computed at the sector-occupation level across all workers based on equation (1), or the firm-level WFH fixed effect, $\psi_{J(i,t)}$, calculated from equation (2). The outcome y_{it} for individual i is either earnings, employment, or job continuity (returning to the same employer at which the worker was employed prior to the birth of her first child) at time t. Importantly, the occupation fixed effects $\theta_{o(i)}$ and sector fixed effects $\psi_{s(i)}$ of the jobs held prior to childbirth control for any differences within the work-from-home cells defined by WFH_i.

The coefficients of interest, β_k, capture the effect of WFH on the labor market outcomes of women with small children. The standard parallel trends assumption applies; in our case, this requires that trends in outcomes for women with different WFH potential (or employed at firms with different WFH policies) diverge only after 2019, that is, only after the pandemic made working from home substantially more common for jobs that can be performed remotely.

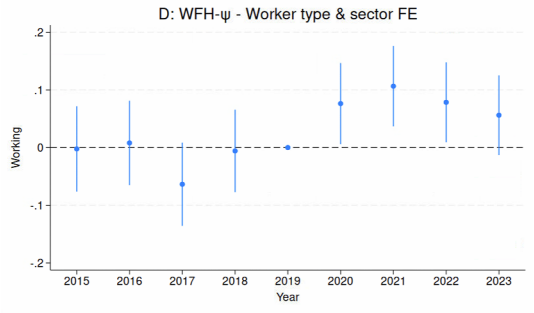
An important advantage of this identification strategy is that it accounts for the fact that firms with high WFH components may also provide other family-friendly amenities, such as employer-provided childcare. In our setting, the comparison before and after COVID-19, under the assumption that the pandemic affected WFH much more than other firm-provided amenities, allows us to identify the effect of WFH net of these confounding factors.

Figure 2 reports the estimates of β_k. Regardless of which of the two measures of WFH potential is used, leave-one-out means or the firms' fixed effects, these results show that WFH increases the probability that women return to work after childbirth, which in turn translates into higher earnings compared with women who cannot work from home.

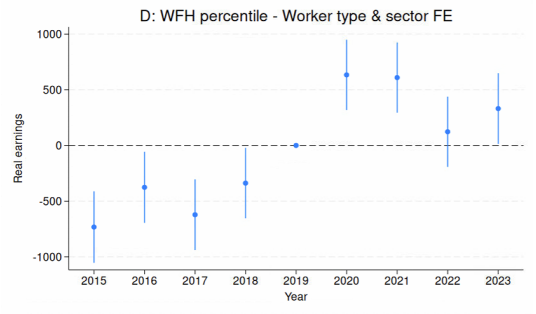
Figure 2: WFH increases labor supply and earnings of mothers with small children



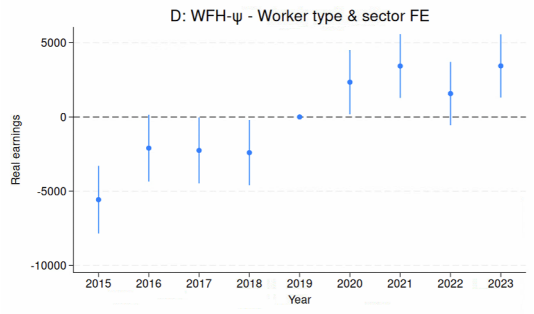
(a) Panel A



(b) Panel B



(c) Panel C

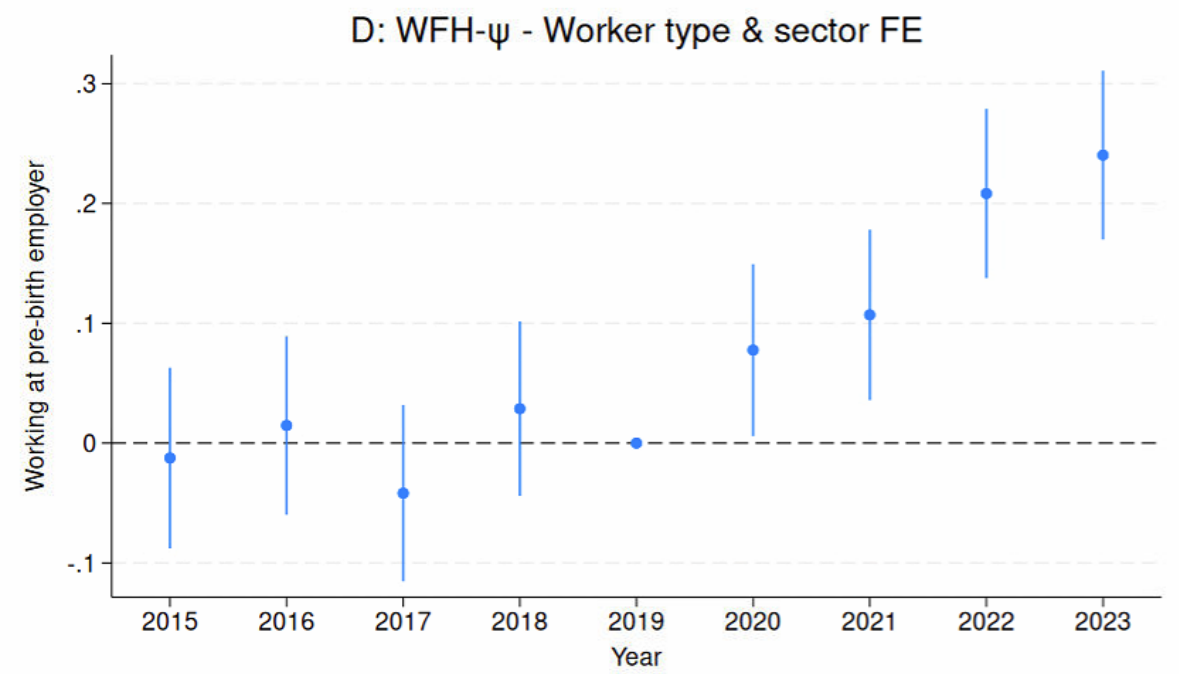


(d) Panel D

Notes: The figure reports the difference-in-differences estimates from equation (3), where the outcome is either employment (top panel) or earnings (bottom panel). Work-from-home potential is defined using the leave-one-out mean of remote-work days at the occupation × industry cell level in the left panel, while the right panel uses the firm fixed effects from the AKM decomposition of remote-work days.

One important mechanism through which WFH can help mothers balance work and childrearing is by promoting their job continuity with the employer for whom they worked before having children. Figure 3 reports the difference-in-differences estimates where the outcome is the probability that mothers work for the same employer they worked for before having their first child. These results show that mothers working for WFH-friendly firms are more likely to return to the same employer than mothers working for employers that do not support WFH, as measured by the WFH firm fixed effects from the AKM decomposition of days worked from home. These findings align with those reported by Zarate (2025) for four Latin American countries using a different empirical strategy.

Figure 3: WFH-friendly employers support mothers' job continuity after childbirth



Notes: The figure reports the difference-in-differences estimates from equation (3), where the outcome is employment at the same employer with whom the mother was employed before the birth of her first child. Work-from-home potential is defined using the firm fixed effects from the AKM decomposition of remote-work days.

5 Conclusions

Remote work expanded sharply in the wake of COVID-19, transforming work arrangements across a wide range of occupations and sectors. And while WFH has persisted well beyond the acute phase of the pandemic, its broader labor-market consequences remain poorly understood. This is particularly true for women with young children, for whom WFH may simultaneously relax time and commuting constraints while reshaping career trajectories, hours worked, and bargaining power within firms. Understanding whether the post-COVID diffusion of WFH mitigates or amplifies gender gaps in labor market outcomes is therefore a first-order question.

Our descriptive evidence shows that mothers systematically adjust their use of remote work in response to children, whereas fathers' work-from-home choices are much less affected. Comparing workers with and without children of different ages, and controlling for rich worker, job, and firm characteristics (including firm fixed effects), we

find that mothers with young children (below age 10) are significantly more likely to work from home than childless women. This gap narrows with children's age and disappears by age 15. For fathers, WFH use is much more similar across parental status and child age, consistent with more limited childcare responsibilities.

This descriptive evidence is corroborated by a difference-in-differences design exploiting the COVID-19 shock, which expanded WFH only in teleworkable jobs. We show that women with young children employed in WFH-friendly firms or in teleworkable occupations and industries experience higher job continuity with the same employer, greater employment probabilities, and higher earnings than comparable women in non-teleworkable jobs or firms.

This result is particularly important because governments simultaneously aim to reduce gender pay gaps, largely driven by the arrival of children (the so-called child penalties), while regulating work from home. Recognizing that WFH can mitigate child penalties is therefore crucial for guiding policymakers and avoiding regulations that inadvertently discourage WFH.

References

Abowd, J. M., Kramarz, F., and Margolis, D. N. (1999). High wage workers and high wage firms. *Econometrica*, 67(2):251–333.

Aksoy, C. et al. (2022). Remote work and the labor market: Evidence from the COVID-19 pandemic. *Labour Economics*, 81:102216.

Aksoy, C. et al. (2023). The dynamics of remote work adoption. *Journal of Economic Perspectives*, 37(3):3–24.

Arntz, M., Ben Yahmed, S., and Berlingieri, F. (2022). Working from home, hours worked and wages: Heterogeneity by gender and parenthood. *Labour Economics*, 76:102169.

Barrero, J. M., Bloom, N., and Davis, S. J. (2021). Why working from home will stick. *National Bureau of Economic Research Working Paper*, (w28731).

Barrero, J. M., Bloom, N., and Davis, S. J. (2023). The evolution of work from home. *Journal of Economic Perspectives*, 37(4):23–50.

Berniell, I. T. et al. (2021). The role of work-from-home possibilities during the COVID-19 shock. *Journal of Development Economics*, 152:102695.

Bütikofer, A., Karadakic, R., and Willén, A. (2025). Parenthood and the gender gap in commuting. *Journal of Public Economics*, 248:105371.

Corekcioglu, G., Francesconi, M., and Kunze, A. (2024). Expansions in paid parental leave and mothers' economic progress. *European Economic Review*, 169:104845.

Dahl, G. B., Løken, K. V., Mogstad, M., and Salvanes, K. V. (2016). What is the case for paid maternity leave? *Review of Economics and Statistics*, 98(4):655–670.

Diallo, Y., Lange, F., and Renée, L. (2025). Can paternity leave reduce the gender earnings gap?

Harrington, E. and Kahn, M. E. (2023). Has the rise of work-from-home reduced the motherhood penalty in the labor market.

Kleven, H., Landais, C., and Leite-Mariante, D. (2024). The child penalty atlas. *Review of Economic Studies*. Forthcoming.

Kleven, H., Landais, C., and Søgaard, J. E. (2019). Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics*, 11(4):181–209.

Lalive, R., Schlosser, A., Steinhauer, A., and Zweimüller, J. (2014). Parental leave and mothers' careers: The relative importance of job protection and cash benefits. *Review of Economic Studies*, 81(1):219–265.

Lalive, R. and Zweimüller, J. (2009). How does parental leave affect fertility and return to work? Evidence from two natural experiments. *Quarterly Journal of Economics*, 124(3):1363–1402.

Le Barbanchon, T., Rathelot, R., and Roulet, A. (2021). Gender differences in job search: Trading off commute against wage. *Quarterly Journal of Economics*, 136(1):381–426.

Schönberg, U. and Ludsteck, J. (2014). Expansions in maternity leave coverage and mothers' labor market outcomes after childbirth. *Journal of Labor Economics*, 32(3):469–505.

Zarate, P. (2025). Remote work and child penalties. Manuscript, available at SSRN: https://ssrn.com/abstract=5360652.