Public Paid Leave and Private Benefits: Firm Responses to State Family and Medical Leave Programs

Johanna Catherine Maclean
George Mason University and NBER*

Stefan Pichler
University of Groningen†

Nicolas R. Ziebarth
ZEW Mannheim, University of Mannheim, and Cornell University‡

March 17, 2026

Abstract

We study how employers respond to the introduction of state-level family and medical leave programs (PFML). Since 2017, six U.S. states have implemented such programs, allowing private-sector employees to take paid leave for their own or a family member's illness or caregiving needs. To examine potential crowd-out effects, we use firm-level data from the 2009–2023 National Compensation Survey (BLS) and implement event-study and difference-in-differences designs. We find that employers—particularly medium-sized firms—reduce the provision of paid benefits following adoption: paid family leave falls by 5 percentage points, personal leave by 7 percentage points, and paid vacation days by 4 percentage points.

Keywords: PFML, TDI, family leave, parental leave, medical leave, social insurance, entitlement programs, fringe benefits, crowding-out, National Compensation Survey

JEL classification: I12, I18, J22, J28, J32, J38, J88, H75

*George Mason University, Schar School of Policy and Government, Mason Square, Van Metre Hall Room 652, 3351 Fairfax Drive, Arlington, VA 22201, USA, phone: +1-703-993-8566, e-mail: jmaclea@gmu.edu

†University of Groningen, Department of Economics, Econometrics and Finance, Nettelbosje 2, 9747AE Groningen, Netherlands, Phone: +31 50 36 37779, e-mail: s.pichler@rug.nl. Stefan Pichler is also a research fellow of KOF Swiss Economic Institute at ETH Zurich, the Aletta Jacobs School of Public Health, IZA Bonn, and ZEW Mannheim.

‡ZEW Mannheim, Labour Markets and Social Insurance, L7, 1, D-68161 Mannheim, Germany, phone: +49-(0)621 1235-151, e-mail: nicolas.ziebarth@zew.de. Nicolas Ziebarth is also affiliated with IZA Bonn.

§First and foremost, we thank the Bureau of Labor Statistics for making the data accessible to us. In particular, we thank Maury Gittleman and Michael Lettau for their patience and for answering numerous data-related questions. Further, we thank participants at 2025 World Labor Conference in Toronto, the 2025 dggö (German Association of Health Economists) conference in Paderborn, the Groningen-ZEW Workshop and the 2025 WRIEC (World Risk and Insurance Economics Congress) in Calgary for helpful comments and suggestions. In particular, we thank our discussants, Katja Kaufmann, as well as Naoki Aizawa, Annett Bergemann, Neil Cholli, Bruce Meyer, Cameron Ellis, Meghan Esson, Tice Sirmans and Gerard van den Berg for very helpful comments and suggestions and Katherine Reed for excellent research assistance. Moreover, we thank participants at the X for their helpful comments and suggestions. This research was conducted with restricted access to Bureau of Labor Statistics (BLS)

1 Introduction

Whether public entitlement programs crowd out privately provided fringe benefits is a central question in public economics. Under standard assumptions, theory predicts that firms reduce the voluntary provision of substitutable benefits when public programs expand, whereas the case for complementary benefits is less clear. Empirical research has therefore examined the crowding out and crowding in of private provision of benefits in response to government programs, most prominently in the context of U.S. employer-sponsored health insurance (Cutler and Gruber, 1996; Clemens, 2015). Related work has shown that Medicaid reduces demand for private long-term care insurance (Sloan and Norton, 1997; Brown and Finkelstein, 2008; Braun et al., 2019) and serves as a safety net when take-up of private disability insurance is low (Autor et al., 2014; Cabral and Cullen, 2019; Stepner, 2019; Cao et al., 2026).

This paper is the first to study employer responses to state-level paid family and medical leave (PFML) programs in the United States. Since 2017, several states have implemented universal paid leave programs that allow workers to take compensated leave for their own health conditions or caregiving needs. We examine how firms adjust their voluntary provision of leave and other fringe benefits in response to these new public entitlements. To do so, we use firm–job level data from the Bureau of Labor Statistics' National Compensation Survey (NCS), the only nationally representative dataset that provides detailed information on employer-provided fringe benefits in the United States. Exploiting the NCS rotating panel from 2009 to 2023, we estimate event-study and difference-in-differences models to assess how firms modify their benefit offerings following the introduction of state PFML programs. Importantly, unlike employer-sponsored health insurance, firm-provided benefits generally do not affect eligibility for state PFML, making this setting particularly well-suited to study employer responses to public insurance expansions.

We find little evidence that firms reduce employer-provided group insurance plans for short-term disability insurance (STDI) or long-term disability insurance (LTDI) after states introduce universal medical leave benefits. One explanation is the relatively low employer cost

data. The views expressed here do not necessarily reflect the views of the BLS. Generous funding from the Center for Equitable Growth under Award Number #92653 (PI: Nicolas Ziebarth) and the National Institute on Mental Health of the National Institutes of Health under Award Number 1R01MH132552 (PI: Johanna Catherine Maclean) is gratefully acknowledged. The views expressed herein are those of the authors and do not necessarily reflect the views of the funding institutions. Neither our employers nor we have any relevant or material financial interests related to the research described in this paper. We take responsibility for all remaining errors in and shortcomings of the paper.

of these benefits (per hour worked: $0.04 for STDI and $0.07 for LTDI). Firms may also use these insurance products to attract workers, and complementary disability coverage may improve worker productivity following health shocks (cf. Powell and Seabury, 2018).

By contrast, we find evidence of crowding out for directly provided paid leave benefits. After the introduction of state PFML programs, firms reduced paid family leave by 5 percentage points, paid personal leave by 7 percentage points, and paid vacation days by 4 percentage points. These benefits are typically provided directly by employers rather than through insurers and are relatively costly: paid vacation costs firms $1.24 per hour worked on average, while paid personal leave costs $0.22. Heterogeneity analyses show that medium-sized firms drive these effects. Smaller firms rarely offer such costly benefits, while larger firms may continue to provide them to attract and retain workers even after public programs expand. Indeed, we find suggestive evidence that large firms increase the provision of relatively inexpensive non-mandated group benefits, such as LTDI or dental insurance, following the introduction of PFML programs—consistent with positive spillovers documented in related work (Cengiz et al., 2019; Maclean et al., 2025).

Our findings contribute to three strands of literature. First, we add to research on the crowding out of private workplace benefits by public entitlement programs, which has primarily focused on health insurance. We show that public paid leave programs crowd out certain employer-provided leave benefits while leaving others largely unaffected. Second, we contribute to the literature on interactions across social insurance programs (Fevang et al., 2017; Stepner, 2019) by showing that such interactions also operate through firms' benefit provision. Third, our results inform the literature on employer mandates and paid leave policies (Summers, 1989; Gruber, 1994; Ruhm, 1998; Buchmueller et al., 2011; Maclean et al., 2025) by documenting how paid leave expansions reshape the composition of employer-provided benefits.

2 Paid Leave in the United States

FMLA. The Family and Medical Leave Act (FMLA) of 1993 is the primary federal law governing leave from work. It grants eligible employees in firms with at least 50 workers the right to take up to 12 weeks of job-protected but unpaid leave for childbirth, their own illness, or the illness of a family member (cf. Waldfogel, 1999). Eligibility requires at least 1,250 hours of work

in the previous year. Due to these restrictions, a substantial share of the U.S. workforce—close to half according to some estimates—is not covered (Jorgensen and Appelbaum, 2014). Several states have therefore enacted additional leave provisions, such as the California Family Rights Act (CFRA) (Civil Rights Department, 2024).

2.1 State-Level TDI, WC, and Paid Sick Leave Mandates

TDI and WC. In addition to FMLA, nearly all states mandate Workers' Compensation (WC) insurance, which provides paid leave and medical coverage for work-related injuries and illnesses (Cabral et al., 2022). Several states also operate Temporary Disability Insurance (TDI) programs covering non–work-related health shocks. Five states introduced TDI programs in the 1940s: Rhode Island (1942), California (1946), New Jersey (1948), and New York (1949); Puerto Rico and Hawaii followed later. TDI typically provides wage replacement for up to 26 weeks of sickness and up to 52 weeks for childbirth (SSA, 2016, 2023). State agencies administer these programs and finance them through payroll deductions.

Employer Mandates for Paid Sick Leave. As of today, 18 states and the District of Columbia mandate paid sick leave. These laws typically require workers to accrue one hour of paid sick leave for every 40 hours worked, with unused leave rolling over to the following year. Monitoring is relatively light, and medical documentation is rarely required. Evidence suggests that these mandates substantially increased coverage and reduced inequality in access to sick leave (Maclean et al., 2025). Eligible workers take roughly two additional sick days in the first year after gaining access, labor costs increase modestly, and there is little evidence of substantial employment effects (Pichler and Ziebarth, 2020). Some studies also find crowding-in of complementary benefits as firms adjust compensation packages (Maclean et al., 2025).

2.2 State Paid Family and Medical Leave (PFML) Programs

CA and NJ. California implemented the first state-level paid family leave program in 2004 through the *California Paid Family Leave Act*. The program provides paid leave to care for sick family members or newborn children.[1] New Jersey introduced a similar program in 2009.

[1] Definitions of eligible family members vary across states and may include grandparents or grandchildren; see Table A1.

Because our data begin in 2009, these early programs do not provide identifying variation and are therefore excluded from the main analysis.

Identifying variation. Our empirical analysis exploits the introduction of state-level paid family and medical leave (PFML) programs in Rhode Island (2014), New York (2018), the District of Columbia (2020), Washington (2020), Massachusetts (2021), and Connecticut (2022).[2] Table A1 summarizes all 13 state-level (+ D.C.) PFML provisions enacted to date.

Benefits and funding. In most states, PFML programs provide up to 12 weeks of paid leave. Employees apply for benefits through state agencies, and benefits typically replace a share of prior wages, ranging from roughly 50% (NY) to up to full wage replacement in some states. Programs are financed through payroll contributions ranging from about 0.23% (NJ) to 1.2% (CO, MI, and RI) of wages, usually shared between employers and employees. In our analysis, treatment begins when benefit payments start; see Table A1.

2.3 Employer-Provided Family and Medical Leave Benefits

In Table A2, we compile examples of family and medical leave benefits voluntarily provided by firms. In particular, we document employer-provided leave benefits in states that later introduced public PFML programs, listing fringe benefits before and after their adoption. Examples include Minnesota, Maine, Delaware, and Maryland. This descriptive evidence allows us to assess qualitatively whether firms that continued to offer such benefits after program adoption adjusted their generosity. For comparison, we also collected information on firms in states that did not introduce FML programs, that is, our control states. Table A2 shows that...

3 National Compensation Survey (NCS)

The National Compensation Survey (NCS), conducted by the Bureau of Labor Statistics (BLS), provides detailed information on wage and non-wage compensation in the United States. The survey underlies several official statistics on labor costs and compensation and is used, among other purposes, to inform wage adjustments for federal employees.

[2] Rhode Island and New York previously operated TDI programs that overlap with medical leave benefits. We therefore examine these states separately and exclude them from the main control group.

The NCS is a rotating, nationally representative panel at the firm-job level. Firms remain in the sample for three to five years.[3] We employ the restricted-access version, which includes county identifiers that allow us to match establishments to state-level PFML programs; see Section 2. Human resource administrators report wage and non-wage benefits by job type to BLS field economists, reducing response errors that may arise when employees are unaware of their benefits. Further details on sampling and survey design are in the NCS documentation (BLS, 2022, 2025a).

We use the end-of-March survey wave because many fringe benefits are collected only at the end of the first quarter. Defining event time such that $t = 0$ corresponds to the March following the start of PFML benefit payments, we observe three full post-enactment years for Rhode Island, New York, and Washington; two years for the District of Columbia and Massachusetts; and one year for Connecticut.

[Insert Table 1 about here]

Sample Selection. We keep the microdata at the firm-job level and restrict the sample to private-sector establishments. As discussed above, we exclude states with long-standing TDI programs because their benefits overlap with PFML programs. Table 1 reports summary statistics. Our main sample contains 474,544 firm-job observations covering the years 2009 to 2023. Using the Consumer Price Index, we convert all monetary values to 2023 U.S. dollars.

Outcome Variables. Our main binary outcomes capture employer-provided family and medical leave benefits. We hypothesize that firms reduce the provision of substitutable benefits once states introduce PFML programs. Prior to PFML adoption, 16% of jobs offered paid family leave and 38% offered short-term disability insurance (Table 1). Firms typically self-insure paid family leave, whereas short-term disability insurance is often provided through commercial insurance plans.

We further examine employer responses in long-term disability insurance (36%), paid personal leave (43%), and paid vacation days (77%). In addition, we study benefits that may be easier to adjust, such as dental insurance (48%), as well as broader health coverage, including medical (71%) and prescription drug insurance (69%).

[3]Technically, the NCS is an establishment-level survey. We routinely use BLS-provided weights. We use the terms "firm", "employer", and "establishment" interchangeably.

In robustness analyses, we examine total annual paid leave hours (156 hours pre-treatment). We also test whether PFML programs affect wages ($31.67), paid working hours (1,804 annually), or actual hours worked (1,654 annually).

Covariates. Table 1 also reports job characteristics used as controls. These include indicators for full-time work (75%) and union coverage (8%), as well as occupation and industry classifications. The most common occupations in the sample are food preparation and serving, production, and transportation and material moving. The most common industries are retail trade, manufacturing, and administrative, support, and waste management services.

The NCS is uniquely suited for our analysis because it provides nationally representative information on employer-provided fringe benefits at the firm-job level over time.

4 Empirical Approach

Because states adopted PFML programs at different times, we employ staggered difference-in-differences (DD) methods following Callaway and Sant'Anna (2021) (CS). The CS estimator is robust to bias arising from treatment-effect heterogeneity and dynamic treatment effects across states.

In contrast to a simple 2×2 DD design with a single treatment parameter, the staggered CS framework defines treatment groups by their year of adoption g and estimates a sequence of event-time effects. The group-time average treatment effects are defined as

$$ATT(g,t) = \mathbb{E}\left[Y_{i,t}(g) - Y_{i,t}(\infty) \mid G_i = g\right],$$

where $ATT(g,t)$ measures the average treatment effect for units first treated in period g evaluated in period $t \geq g$. The term $\mathbb{E}[Y_{i,t}(\infty) \mid G_i = g]$ denotes the untreated potential outcome for group g at time t.

Under the parallel trends assumption, $ATT(g,t)$ is identified by comparing the change in outcomes for the treated group between periods $g-1$ and t with the corresponding change for the never-treated group ($G_i = \infty$) (Roth et al., 2023):

$$ATT(g,t) = \mathbb{E}\left[Y_{i,t} - Y_{i,g-1} \mid G_i = g\right] - \mathbb{E}\left[Y_{i,t} - Y_{i,g-1} \mid G_i = \infty\right]. \tag{1}$$

The estimator is implemented using the corresponding sample analogues:

$$\widehat{ATT(g,t)} = \frac{1}{N_g} \sum_{i:G_i=g} \left[Y_{i,t} - Y_{i,g-1} \right] - \frac{1}{N_{g'}} \sum_{i:G_i=g'} \left[Y_{i,t} - Y_{i,g-1} \right].$$

Throughout the analysis, we exclude the six states with pre-existing TDI programs prior to 2009; see Section 3. Standard errors ($\mu_{f,j,t}$) are clustered at the state level (Bertrand et al., 2004).

5 Results

This section presents our empirical results. Given the structure of the NCS data, we focus on the extensive margin—that is, whether firms discontinue or maintain fringe benefits after the introduction of state PFML programs. While firms could theoretically adjust the generosity of existing policies, such intensive-margin responses are unlikely because many benefits are standardized insurance products and employer-provided leave benefits are already relatively limited in international comparison (Pichler et al., 2026). Our results show that PFML programs crowd out several employer-provided leave benefits, particularly paid family leave, paid personal leave, and paid vacation days, while we find little evidence of adjustments in disability insurance or wages.

5.1 Employer-Provided Paid Family Leave and Short-Term Disability Insurance

Figure 1a and b display event studies for two non-mandated fringe benefits that are potential substitutes for PFML: *paid family leave* and *short-term disability insurance* (often referred to as "medical leave" today). *A priori*, we expect crowding out of these benefits, that is, we expect (some) firms to eliminate the provision of these benefits once states introduce universal PFML coverage.

[Insert Figure 1 and Table 2 about here]

Figure 1b shows little evidence that firms reduce STDI provision. Two years after PFML implementation, we can rule out reductions larger than four percentage points at the 95% confidence level. One explanation is that STDI is relatively inexpensive, costing roughly four cents per hour worked or 0.1% of gross wages, see Table 1 (Pichler and Ziebarth, 2024). Further, firms may continue to offer these benefits to differentiate their jobs, to attract qualified labor.

In contrast, we do find evidence that firms cut voluntarily provided paid family leave once PFML programs are introduced. Column (1) of Table 2 reports an Average Treatment Effect on the Treated (ATT) of -4.7 percentage points relative to a pre-reform baseline of 15.6% of jobs offering paid family leave; that is, we find a significant and large crowding-out effect of 30%.

5.2 Firm-Provided Paid Personal Leave and Vacation Days

Figures 1c and d show event studies for two additional paid leave benefits that may substitute for PFML: *paid personal leave* and *paid vacation days*. Absent medical and family leave benefits, employees typically use their paid personal leave and vacation days for pregnancy-related care needs or in case of sickness (Cronin et al., 2026). However, while state-provided PFML typically covers up to 12 weeks of paid family leave and up to 24 weeks of medical leave (Table A1), paid personal leave and vacation days typically only cover 5-15 days per year (BLS, 2025b).

Because of broad pre-treatment provision and take-up of these fringe benefits—43% of jobs offer paid personal leave and 77% offer paid vacation days (Table 1)—costs amount to roughly $1.24 per hour worked (Pichler and Ziebarth, 2024) or 4% of total compensation (BLS, 2025c), whereas newly introduced PFML payroll taxes are 1.2% in CO, MI, and RI. Firms typically self-insure when providing these benefits.

Figures 1c and d show clear crowding-out effects for paid personal leave and vacation days. Moreover, they increase over time. Three years after PFML implementation, 15% fewer jobs offer paid personal leave and 10% fewer jobs offer paid vacation days. Averaging across post-treatment years, the estimated ATT effects are -7 percentage points (-16%) for paid personal leave and -4 percentage points (-5%) for paid vacation days (Table 2).

5.3 Other Fringe Benefits

Finally, Figures 1e and f report results for two potentially complementary benefits: *dental insurance* and *long-term disability insurance (LTDI)*. There is some suggestive evidence that dental insurance declines in the third year after PFML adoption. However, the average ATT estimates are not statistically significant for either dental insurance or LTDI (Table 2, columns (5) and (6)). Appendix Figure B2 shows similarly inconclusive results for medical and prescription drug coverage.

5.4 Effect Heterogeneity

Figure 2 presents heterogeneous effects across job characteristics and firm size. We stratify the analysis by full-time versus part-time jobs, union versus non-union jobs, and firm size. The figure reports ATT estimates and 95% confidence intervals for all six outcomes.

[Insert Figure 2 about here]

For STDI and LTDI, we find little evidence of systematic effects across subgroups. Most point estimates are close to zero, with the exception of suggestive crowding-in effects for LTDI among large firms, although these effects lose statistical significance after correcting for multiple hypothesis testing.

In contrast, we consistently find crowding-out effects for paid family leave, paid personal leave, paid vacation days, and dental insurance among full-time jobs, unionized jobs, and medium-sized firms. One explanation is that part-time jobs (baseline 6.4%) and small firms (baseline 10.1%) are substantially less likely to offer these benefits in the first place.

Medium-sized firms drive most of the observed crowding-out effects. At the same time, large firms are somewhat *more* likely to offer benefits such as dental insurance or LTDI after PFML adoption, that is, we find suggestive evidence for "crowding-in." One possible explanation is that large firms use these benefits to differentiate themselves in the labor market and attract skilled workers. This pattern is consistent with recent evidence by Cengiz et al. (2019) and Maclean et al. (2025), who document similar positive spillover effects of benefit regulation.

5.5 Robustness

Appendix Figure B1 examines alternative adjustment margins, including wages (a), hours worked (c), paid hours worked (d), and total paid leave hours per year (b). We find no systematic evidence that PFML programs affect these outcomes.

Overall, the results show substantial crowding-out of employer-provided paid leave benefits among medium-sized firms, no evidence for crowding out among small firms and even some evidence of crowding-in among large firms.

6 Conclusion

We empirically assess whether the newly introduced state-level PFML programs crowd out substitutive and non-substitutive employer-provided fringe benefits. To test for such crowding-out effects, we use representative firm-job level data from the BLS, using staggered difference-in-difference models and variation from four states and D.C.

First, there is little evidence that PFML crowds out relatively inexpensive (and potentially complementary) short- and long-term disability insurance group policies. Second, we find clear evidence that medium-sized firms in particular reduce their provision of (substitutive) paid personal leave, paid vacation and paid family leave when states start offering universal public programs and levy payroll taxes on firms. Third, among large firms, we find evidence for crowding-in, likely to differentiate jobs and attract qualified labor, see Maclean et al. (2025).

While overall access to family and medical leave has increased, future research will provide more evidence on how utilization affects labor costs, hiring, and long-term labor market outcomes.

References

A Better Balance (2025). *Paid Leave Program Implementation Timelines*. A Better Balance. https://www.abetterbalance.org/resources/paid-leave-program-implementation-timelines/, retrieved February 23, 2026.

Autor, D., M. Duggan, and J. Gruber (2014). Moral hazard and claims deterrence in private disability insurance. *American Economic Journal: Applied Economics 6*(4), 110–41.

Bertrand, M., E. Duflo, and M. Sendhil (2004). How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics 119*(1), 249–275.

BLS (2022). *National Compensation Survey*. Bureau of Labor Statistics. https://www.bls.gov/ebs/publications/september-2022-landing-page-employee-benefits-in-the-united-states-march-2022.htm, retrieved July 19, 2025.

BLS (2025a). *Employee Benefits: New Handbook of Methods Available*. Bureau of Labor Statistics. https://www.bls.gov/ebs/notices/2025/new-hom-notice.htm, retrieved March 11, 2026.

BLS (2025b). *Paid leave benefits: Average number of sick and vacation days by length of service requirement*. Bureau of Labor Statistics. https://www.bls.gov/charts/employee-benefits/paid-leave-sick-vacation-days-by-service-requirement.htm, retrieved March 13, 2026.

BLS (2025c). *Paid Time Off: Measuring the cost of paid leave benefits*. Bureau of Labor Statistics. https://www.bls.gov/ecec/factsheets/ecec-leave-benefits-factsheet.htm, retrieved March 13, 2026.

Braun, R. A., K. A. Kopecky, and T. Koreshkova (2019). Old, frail, and uninsured: Accounting for features of the US long-term care insurance market. *Econometrica 87*(3), 981–1019.

Brown, J. R. and A. Finkelstein (2008). The interaction of public and private insurance: Medicaid and the long-term care insurance market. *American Economic Review 98*(3), 1083–1102.

Buchmueller, T. C., J. DiNardo, and R. G. Valletta (2011). The effect of an employer health insurance mandate on health insurance coverage and the demand for labor: Evidence from hawaii. *American Economic Journal: Economic Policy 3*(4), 25–51.

Cabral, M., C. Cui, and M. Dworsky (2022). The demand for insurance and rationale for a mandate: Evidence from Workers' Compensation insurance. *American Economic Review 12*, 1621–1668.

Cabral, M. and M. R. Cullen (2019). Estimating the value of public insurance using complementary private insurance. *American Economic Journal: Economic Policy 11*(3), 88–129.

Callaway, B. and P. H. Sant'Anna (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics 225*(2), 200–230.

Cao, Y., B. Fischer-Weckemann, J. Geyer, and N. R. Ziebarth (2026). Fundamentally reforming the DI system: Evidence from germany. *Journal of the European Economic Association forthcoming*.

Cengiz, D., A. Dube, A. Lindner, and B. Zipperer (2019). The Effect of Minimum Wages on Low-Wage Jobs. *The Quarterly Journal of Economics 134*(3), 1405–1454.

Civil Rights Department (2024). *Family, Medical, and Pregnancy Disability Leave for Employees in California*. https://calcivilrights.ca.gov/family-medical-pregnancy-leave/, retrieved February 19, 2026.

Clemens, J. (2015). Regulatory redistribution in the market for health insurance. *American Economic Journal: Applied Economics 7*(2), 109–34.

Cronin, C. J., M. C. Harris, and N. R. Ziebarth (2026). The anatomy of U.S. sick leave schemes: Evidence from public school teachers. *The Review of Economics and Statistics forthcoming*.

Cutler, D. M. and J. Gruber (1996). Does Public Insurance Crowd out Private Insurance?*. *The Quarterly Journal of Economics 111*(2), 391–430.

Fevang, E., I. Hardoy, and K. Røed (2017). Temporary disability and economic incentives. *The Economic Journal 127*(603), 1410–1432.

Gruber, J. (1994). The incidence of mandated maternity benefits. *American Economic Review 84*(3), 622–641.

Jorgensen, H. and E. Appelbaum (2014). Expanding federal family and medical leave coverage: Who benefits from changes in eligibility requirements? CEPR Reports and Issue Briefs.

Maclean, J. C., S. Pichler, and N. R. Ziebarth (2025). Mandated sick pay: Coverage, utilization, and crowding-in. *Journal of the European Economic Association 23*(5), 1868–1907.

National Partnership for Women and Families (2024). *Voters Show Bipartisan Support for Permanent Paid Sick Days and Paid Family and Medical Leave*. https://nationalpartnership.org/wp-content/uploads/2023/02/state-paid-family-leave-laws.pdf, retrieved August 23, 2024.

Pichler, S., C. Prinz, S. Thewissen, and N. R. Ziebarth (2026). The economics of paid sick leave. *Journal of Economic Perspectives forthcoming*.

Pichler, S. and N. R. Ziebarth (2020). Labor market effects of U.S. sick pay mandates. *Journal of Human Resources 55*(2), 611–659.

Pichler, S. and N. R. Ziebarth (2024). Sick Leave and Medical Leave in the United States: A Categorization and Recent Trends. IZA Policy Papers 206, Institute of Labor Economics (IZA).

Powell, D. and S. Seabury (2018). Medical care spending and labor market outcomes: Evidence from workers' compensation reforms. *American Economic Review 108*(10), 2995–3027.

Roth, J., P. H. Sant'Anna, A. Bilinski, and J. Poe (2023). What's trending in difference-in-differences? a synthesis of the recent econometrics literature. *Journal of Econometrics 235*(2), 2218–2244.

Ruhm, C. J. (1998). The economic consequences of parental leave mandates: Lessons from Europe. *The Quarterly Journal of Economics 113*(1), 285–317.

Sloan, F. A. and E. C. Norton (1997). Adverse selection, bequests, crowding out, and private demand for insurance: evidence from the long-term care insurance market. *Journal of Risk and Uncertainty 15*, 201–219.

SSA (2016). *Annual Statistical Supplement: Temporary Disability Insurance Program Description and Legislative History*. Social Security Administration. https://www.ssa.gov/policy/docs/statcomps/supplement/2016/tempdisability.html, retrieved August 19, 2014.

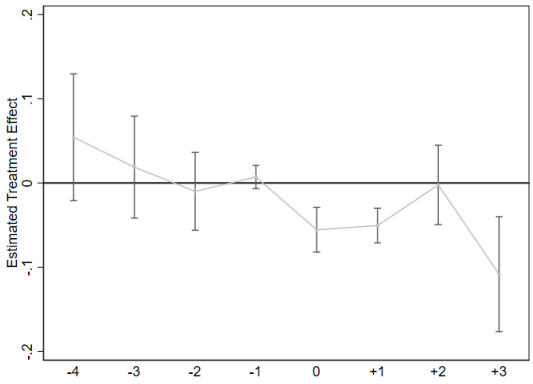
SSA (2023). *Annual Statistical Supplement to the Social Security Bulletin*. Social Security Administration. https://nosscr.org/wp-content/uploads/2024/05/Annual-Statistical-Supplement-to-the-Social-Security-Bulletin-2023.pdf, retrieved August 19, 2025.

Stepner, M. (2019). The long-term externalities of short-term disability insurance. Technical report. https://michaelstepner.com/research/, retrieved February 22, 2026.

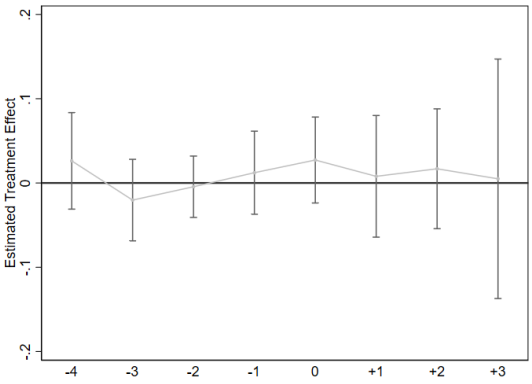
Summers, L. H. (1989). Some simple economics of mandated benefits. *American Economic Review 79*(2), 177–183.

Waldfogel, J. (1999). The impact of the Family and Medical Leave Act. *Journal of Policy Analysis and Management 18*(2), 281–302.

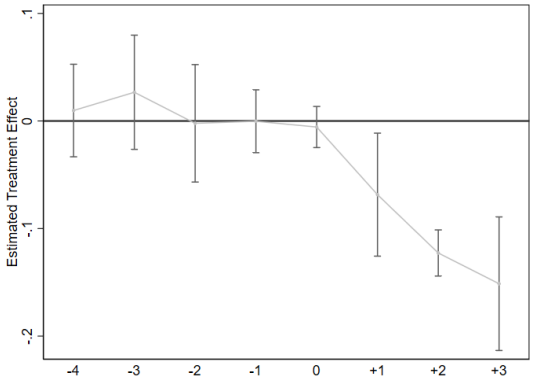
Figure 1: State-Level PFML and Employer-Provided Benefits



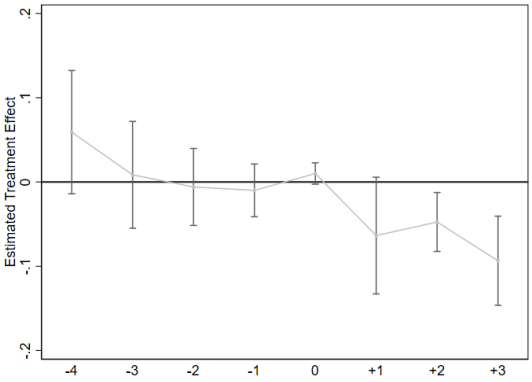
(a) Family leave



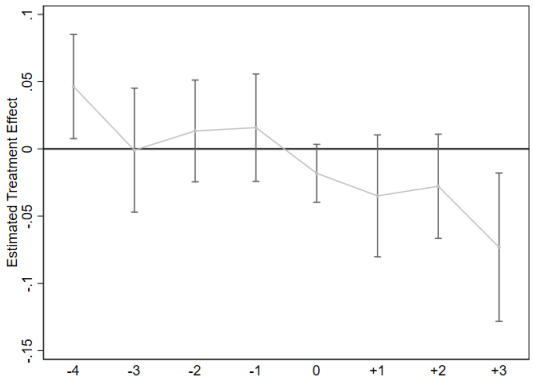
(b) Short-term disability insurance



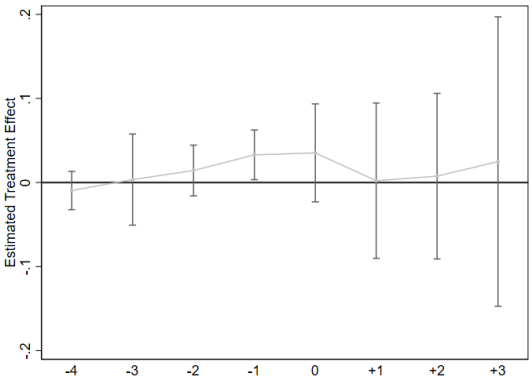
(c) Paid personal leave



(d) Paid vacation



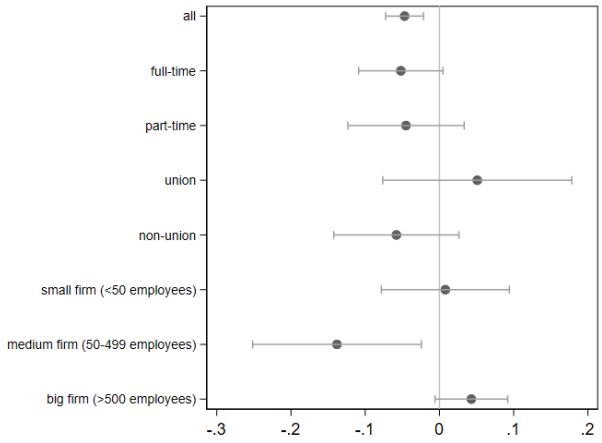
(e) Dental insurance



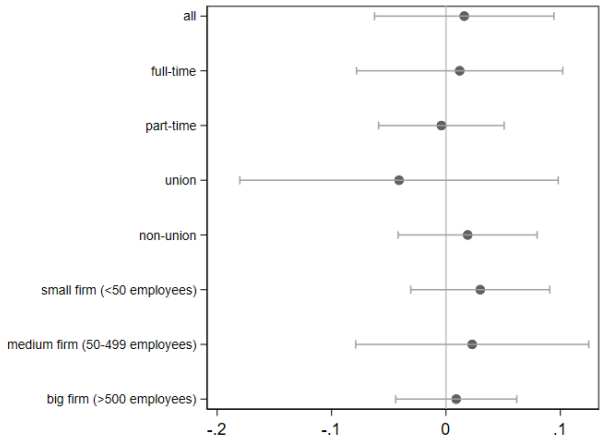
(f) Long-term disability insurance

Notes: NCS data from 2009-2023. All graphs show Callaway and Sant'Anna (2021) event studies. Standard errors are clustered at the state level and the gray bars depict 95% confidence intervals. For more information about the PFML reforms, see Table A1.

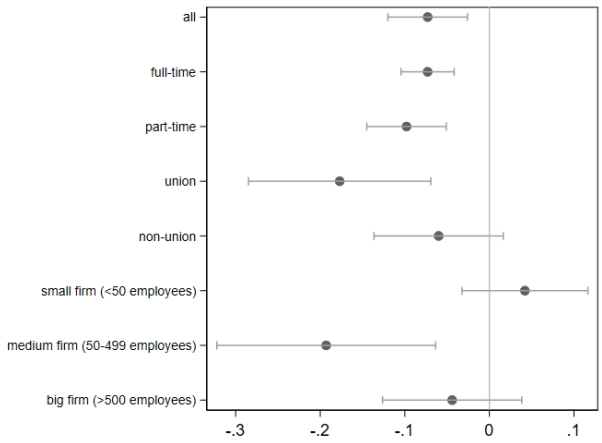
Figure 2: State-Level PFML and Employer-Provided Benefits: Effect Heterogeneity



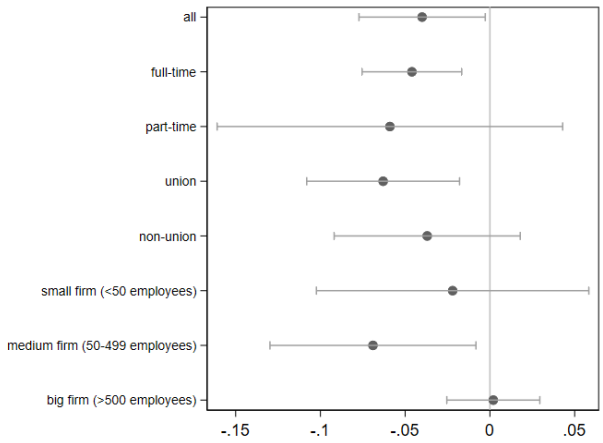
(a) Family leave



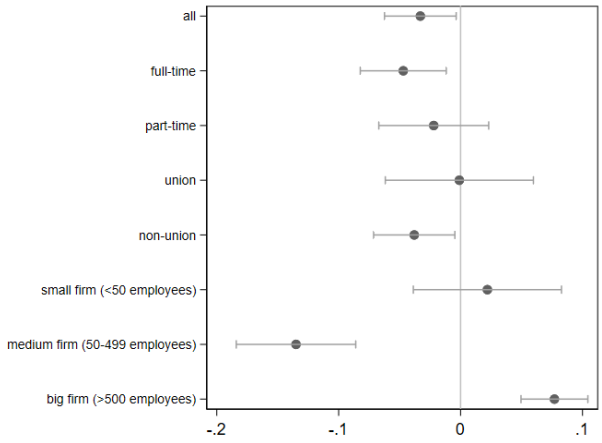
(b) Short-term disability insurance



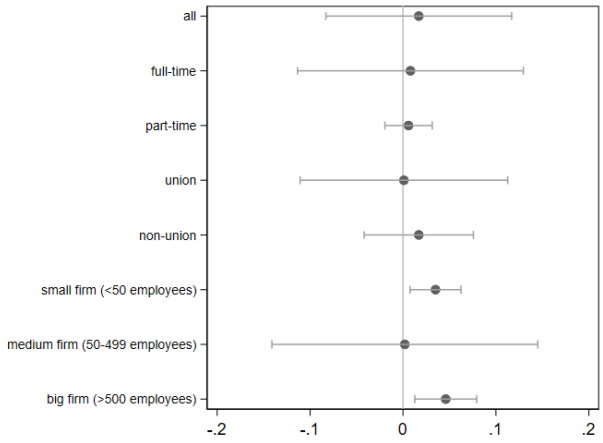
(c) Paid personal leave



(d) Paid vacation



(e) Dental insurance



(f) Long-term disability insurance

Notes: NCS data from 2009-2023. All graphs show Callaway and Sant'Anna (2021) event studies. Standard errors are clustered at the state level and the gray bars depict 95% confidence intervals. For more information about the PFML reforms, see Table A1.

Table 1: Descriptive Statistics, National Compensation Survey (NCS)

	All	Treated States, pre-mandate	Control States
Main outcomes			
Family leave offered (binary)	0.146	0.156	0.142
Short term disability offered (binary)	0.369	0.381	0.366
Long term disability offered (binary)	0.344	0.361	0.340
Personal leave offered (binary)	0.407	0.433	0.402
Paid vacation offered (binary)	0.778	0.771	0.780
Dental insurance offered (binary)	0.418	0.485	0.407
Job characteristics			
Full-time employment (binary)	0.746	0.723	0.749
Part-time employment (binary)	0.254	0.277	0.251
Non-unionized (binary)	0.922	0.904	0.926
Unionized (binary)	0.0776	0.0956	0.0745
Hourly wage (in $2022)	26.76	31.67	25.85
Annual hours worked	1711.4	1654.5	1721.3
Annual hours paid	1853.1	1804.2	1861.3
Annual paid leave hours paid	146.8	156.1	145.0
Other fringe benefits			
Medical insurance offered (binary)	0.692	0.706	0.690
Prescription drug insurance offered (binary)	0.679	0.689	0.677
Sick leave offered (binary)	0.664	0.733	0.648
Main occupations (by share)			
Food preparation & serving	0.102	0.0946	0.103
Production	0.0860	0.0563	0.0912
Transportation & material	0.0851	0.0664	0.0881
Health practitioners & technicians	0.0645	0.0622	0.0651
Installation, maintenance, & repair	0.0457	0.0384	0.0471
Business & financial operations	0.0434	0.0532	0.0416
Management	0.0433	0.0556	0.0410
Construction & extraction	0.0423	0.0402	0.0426
Main industries (by share)			
Retail trade	0.133	0.126	0.135
Manufacturing	0.118	0.0950	0.121
Admin, support, waste mgmt; remed. services	0.0711	0.0673	0.0715
Professional, scientific, technical services	0.0678	0.0945	0.0633
Construction	0.0529	0.0517	0.0530
Finance & insurance	0.0509	0.0517	0.0509
Wholesale trade	0.0455	0.0391	0.0467
Transportation & wharehousing	0.0452	0.0341	0.0471
Firm size	691.6	873.3	638.9
Observations	474544	67365	400919

Notes: NCS data from 2009-2023 (BLS, 2022). Data are yearly and at the firm-job level; they are weighted by BLS provided weights. Minimum and maximum values not available due to data confidentiality reasons. According to BLS' definition, "medical insurance" is health insurance without drug coverage.

Table 2: State-Level FML and Employer-Provided Benefits

Outcome	**Paid family leave**	**Short-term disability insurance**	**Paid personal leave**	**Paid vacation**	**Dental insurance**	**Long-term disability insurance**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Pretreatment mean: *(in treated localities)*	0.1555	0.3814	0.4334	0.7705	0.4847	0.3613
Panel A						
FML enacted	-0.047***	0.001	-0.073***	-0.040**	-0.006	0.016
	(0.013)	(0.051)	(0.024)	(0.019)	(0.049)	(0.042)
Year FE	X	X	X	X	X	X
State FE	X	X	X	X	X	X
Panel B						
FML enacted	-0.062***	0.040*	-0.048	-0.050**	-0.023	0.024
	(0.014)	(0.024)	(0.030)	(0.022)	(0.016)	(0.040)
Year FE	X	X	X	X	X	X
State FE	X	X	X	X	X	X
Employee + mandate controls	X	X	X	X	X	X

Source: NCS 2009-2022 (BLS, 2022). FE=fixed-effects. Each column in each panel stands for one Callaway and Sant'Anna (2021) model accounting for possible biases due to treatment dynamics and heterogeneity; ***, **, and * = statistically different from zero at the 1%, 5%, and 10% level. All models are weighted using NCS weights provided by the BLS. Employee and mandate controls: unionized job and part-time employment as well as indicators for PTO and sick pay mandates. Standard errors clustered at the state level and reported in parentheses. All models have 474,544 firm-job observations. Sample omits all six TDI states (CA, NJ, NH, NY, RI, HI) and focuses on private sector firms only.

Appendix

Table A1: Overview of State-Level Medical and Family Leave Benefits in the U.S.

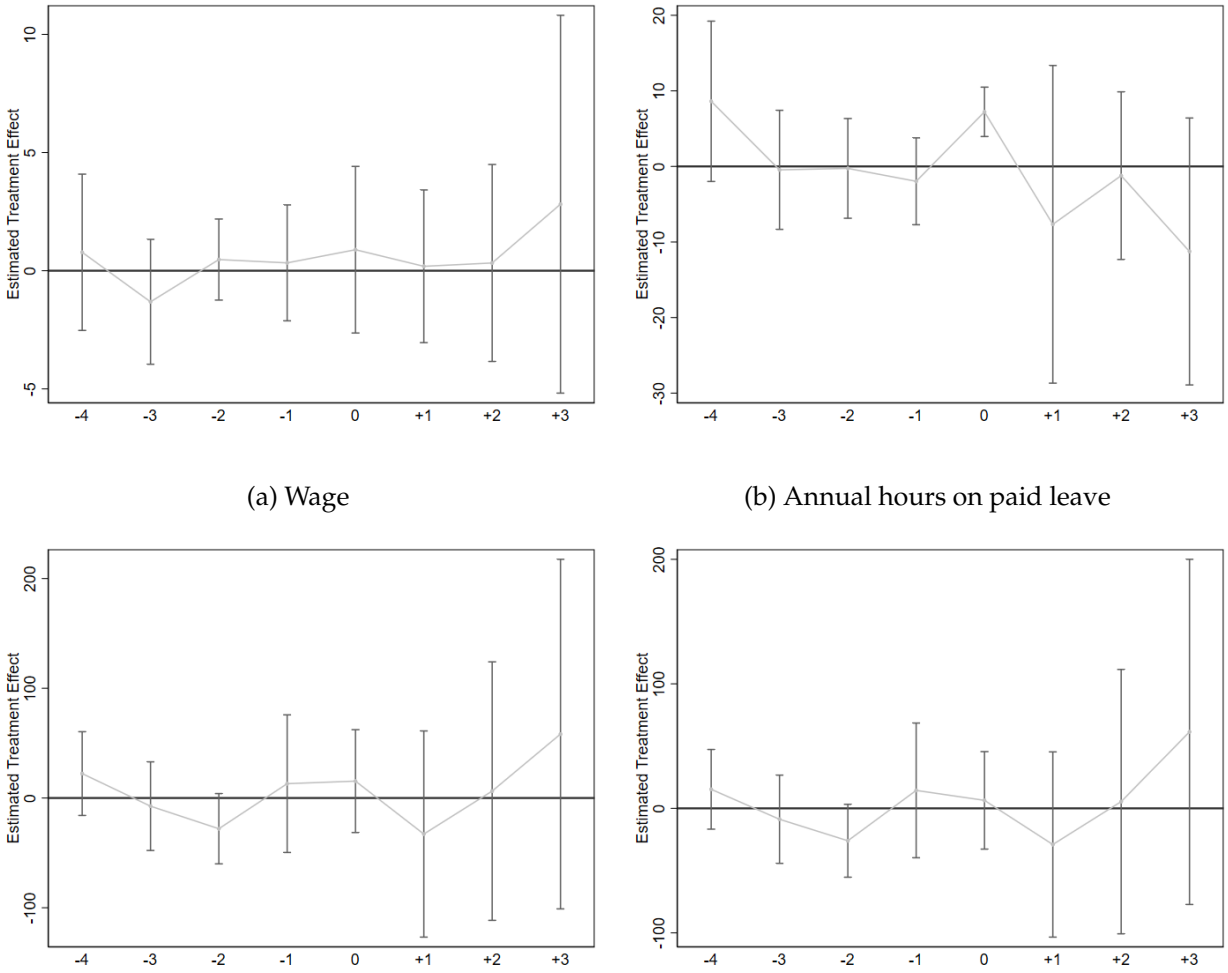
Region (1)	Law Passed (2)	Law Effective - Premium (3)	Law Effective - Benefits (4)	Content (5)
California	September 26, 2002	Jan 1, 2004	July 1, 2004	TDI already in place since 1946; 52 weeks for own disability; 6 weeks (8 weeks starting from 2020) for family (including grandchildren, siblings, and parents of a spouse or domestic partner); benefits of 70% of wages; premium of 1.1% of wages paid by employee only
New Jersey	May 2, 2008	Jan 1, 2009	Jun 30, 2009	TDI already in place since 1948; 26 weeks for own disability; 6 weeks (12 weeks starting from 2020) for family (including grandchildren, siblings, parents of a souse or domestic partner, and other persons with close relationships); benefits of 85% of wages; premium of 0.23-1% of wages jointly paid
Rhode Island	July 11, 2013	no change	Jan 1, 2014	TDI already in place since 1942; 30 weeks for own disability; 4 5 (2022) 6 (2023) weeks for family; benefits of 60% of wages; premium of 1.2% of wages paid by employee only
New York	April 1, 2016	July 1, 2017	Jan 1, 2018	TDI already in place since 1949; 26 weeks for own disability; 8 10 (2019) 12 (2021) weeks for family (including grandchildren, siblings starting from 2022); benefits of 50-67% of wages; premium of 0.873% of wages jointly paid
Washington D.C.	February 17, 2017	July 1, 2019	July 1, 2020	2 6 (2021) weeks for own disability, 6 12 (2022) weeks for family (including siblings); benefits of 90% of wages; premium of 0.26% of wages paid by employer only
Washington	July 5, 2017	Jan 1, 2019	Jan 1, 2020	12 weeks for own disability, 12 weeks for family (including grandchildren, siblings, parents of a spouse or domestic partner, and other persons with close relationships); benefits of 90% of wages; premium of 0.74% of wages jointly paid (employers with <50 employees are not required to pay);
Massachusetts	June 28, 2018	Oct 1, 2019	Jan 1, 2021	20 weeks for own disability, 12 weeks for family (including grandchildren, siblings, and parents of a spouse or domestic partner); benefits of 80% of wages; premium of 0.88% of wages jointly paid (employers with <25 employees are not required to pay);
Connecticut	June 25, 2019	Jan 1, 2021	Jan 1, 2022	12 weeks for own disability and family (including grandchildren, siblings, parents of a souse or domestic partner, and other persons with close relationships); benefits of 95% of wages; premium of 0.5% of wages paid by employee only
Oregon	August 9, 2019	Jan 1, 2023	September 3, 2023	12 weeks for own disability and family (including grandchildren, siblings, parents of a souse or domestic partner, and other persons with close relationships); benefits up to 100% of wages; premium of 1% of wages jointly paid (employers with <25 employees are not required to pay)
Colorado	November 3, 2020	Jan 1, 2023	Jan 1, 2024	12 weeks for own disability and family (including grandchildren, siblings, parents of a souse or domestic partner, and other persons with close relationships); benefits of 90% of wages; premium of 0.9-1.2% of wages jointly paid (employers with <10 employees are not required to pay)
Maryland	April 9, 2022	July 1, 2025	July 1, 2026	12 weeks for own disability and family (including grandchildren, siblings, and parents of a spouse or domestic partner); benefits of 90% of wages; jointly paid premium depending on analysis of Secretary of Labor (employers with <15 employees are not required to pay)
Delaware	May 10, 2022	Jan 1, 2025	Jan 1, 2026	6 weeks for own disability and family (grandparents not included); employers with <25 employees only covered for parental leave; benefits of 80% of wages; premium of 0.8-1% of wages jointly paid
Minnesota	May 25, 2023	Jan 1, 2026	Jan 1, 2026	12 weeks for own disability and family (including grandchildren, siblings, parents of a spouse or domestic partner, and other persons with close relationships); benefits of 90% of wages; premium of 0.7-1.2% of wages jointly paid
Maine	July 11, 2023	Jan 1, 2025	May 1, 2026	12 weeks for own disability and family (including grandchildren, siblings, parents of a spouse or domestic partner, and other persons with close relationships); benefits of 90% of wages;

Table A2: Overview of Firm-Level Medical and Family Leave Benefits in the U.S.

State (1)	Firm (2)	Benefit Type (3)	Max Duration (4)	Replacement Rate (5)	Notes and Source (6)
Minnesota	Target	Parental	4 Weeks	100%	https://corporate.target.com/careers/pay-and-benefits
	Best Buy	Medical (own condition only)	6 weeks	100%	
		Parental	4 weeks	100%	https://corporate.bestbuy.com/wp-content/uploads/2025/07/B
	UnitedHealth	Parental	6 weeks	N/A	https://www.unitedhealthgroup.com/careers/en/life/benefits
		Caregiver Leave (”Family Medical”)	2 weeks	N/A	
	U.S. Bank	Parental Leave (also for adoption and fathers)	10 weeks	100%	https://careers.usbank.com/global/en/benefits/us
		Pregnancy Leave (just giving birth)	9 weeks	100%	

Sources: See last column, own collection, own illustration. All firms listed are considered large firms according to the definition in the NCS.

Figure B1: State-Level FML: Wages, Hours Worked and Paid



(a) Wage

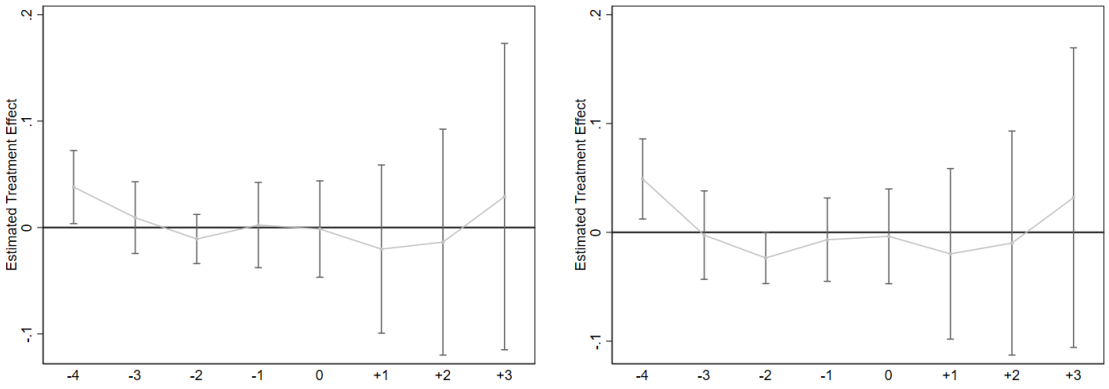
(b) Annual hours on paid leave

(c) Annual hours worked

(d) Annual hours paid

Notes: NCS data from 2009-2023. All graphs show Callaway and Sant'Anna (2021) event studies. Standard errors are clustered at the state level and the gray bars depict 95% confidence intervals. Event studies include year and firm fixed effects. For more information about the FML reforms, see Table A1.

Figure B2: State-Level FML and Employer-Provided Benefits (II)



(a) Medical insurance

(b) Prescription drug insurance

Notes: NCS data from 2009-2023. All graphs show Callaway and Sant'Anna (2021) event studies. Standard errors are clustered at the state level and the gray bars depict 95% confidence intervals. Event studies include year and firm fixed effects. For more information about the FML reforms, see Table A1.