

Family-Friendly Workplace Policies

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Motivation

- Persistent gender inequalities in the labor market and, in large parts, related to arrival of children [e.g., Kleven et al. '19, Bertrand '20]
- Public family policies, such as parental leave, public child care: Evidence on effectiveness mixed [e.g. Olivetti and Petrongolo '17]
- Goldin (2014) argued that changes have to originate in the workplace.

→ Can the design of more family-friendly workplaces contribute to close remaining gaps?

What About the Role of Firms?

Two related motives for firms to design more family-friendly workplaces

1. Costs of career breaks due to childbirth are not solely borne by mothers but also firm:
 - workers may not return to the firm, or return after lengthy career breaks
 - Replacement costs and vacancy costs [Bilal et al. '22, Dube et al. '10, Mortensen and Pissarides '99]
 - Replacement workers might not be as productive b/c of imperfect substitution [Jäger and Heining '22, Kline et al. '19, Mercan et al. '22, Becker '62]
2. Family-friendliness as HR tool to retain mothers and attract workers
 - might be particularly effective in tight labor markets and if (firm-specific) labor supply elasticities are low [e.g. Sharma '23]

Questions:

- Are these incentives strong enough for employers to design family-friendly workplaces?
- And if so, what are the labor market consequences for providing such amenities?

This Paper: Firm-provided childcare

Use panel data on firm-provided childcare over 14 years, linked to matched labor market admin data in Germany

1. Which firms offer child care?

- Positive selection of firms and by 'pam' also of workers
- Plausibly increased dispersion in utilities across firms

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1. Which firms offer child care?
 - Positive selection of firms and by 'pam' also of workers
 - Plausibly increased dispersion in utilities across firms
2. Does firm-provided childcare allow firms to retain women who have given birth?
 - Yes. Prob. to return to employer within two years \uparrow 10%
 - Larger effect for high-wage mothers

This Paper: Firm-provided childcare

3. Does introduction allow firms to retain and attract workers in general? If so, of which workers?
 - higher employment growth over 4-years
 - disproportionate growth through women, mothers and female talent
 - No effects on average wages, but heterogeneity across incumbents and new hires
4. To guide the empirical analysis and highlight firms' incentives:
 - we build model with **monopsonistic employers** which decide whether or not to provide an amenity (childcare)
 - we think of childcare as a **productive amenity**

Data & Setting

- Use matched employer-employee data (LIAB) which combines
 - administrative
 - and survey data
- Establishments surveyed each year from 1993 onwards. Information on provision of childcare for years 2002, 2004, 2008, 2012, and 2016 (every four years) → We directly observe the amenity
- Around 7000 establishments which have at least 3 years of data on amenities
- Complete work histories of all individuals ever employed at any point in time between 1993 and 2014 in survey establishments

Institutional Background: Public Child care

Public child care for under-3s:

- expanded since mid 2000s: from 13.6% (2006) to 32.7% (2016)
[3-6 year olds: 92% (2010)]
- But still largely oversubscribed, in particular for 1-2 year olds
- In particular in West, operating hours quite restricted

Institutional Background: **Firm-provided** child care

- Firms receive some public funding under some conditions
- Normally higher quality than public substitutes (e.g. higher staff-child ratio) and better opening times/more days open
- Running costs of providing on-site nursery slot to firm: 500 EUR - 1500 EUR per month; reserving a slot: around 200-500 EUR a month
- Firms charge worker after wage is paid out

▶ Targeted Interview

More and More Firms Do Provide Childcare

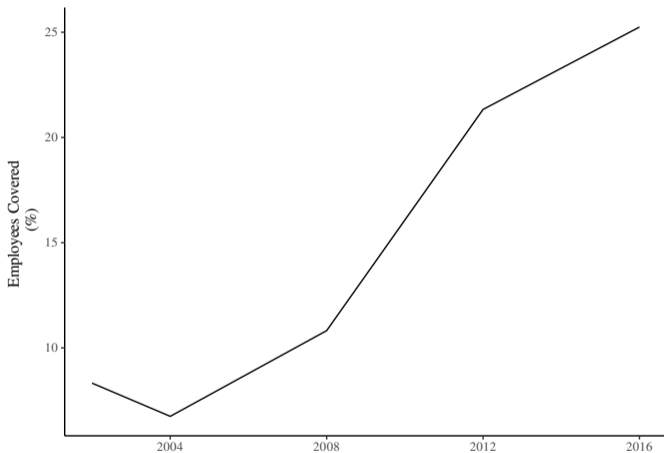


Figure: Evolution of Establishment Child Care Coverage

Notes: Percentage of workers in firm with childcare. Estimates constructed with the cross-sectional sample of establishments.

Which Firms Provide Child Care?

$$x_{jt}^v = \beta^v Provision_{jt} + \theta_{I(j)t}^v + \rho_{R(j)t}^v + \epsilon_{jt}^v$$

	(1)		(2)
Below Vocational	-0.010** (0.005)	Sector Union Agreement	-0.012 (0.040)
Vocational	-0.024* (0.013)	Firm Union Agreement	0.099*** (0.038)
Uni.Graduate	0.034*** (0.012)	Share of Mothers	0.014*** (0.003)
Avg.Wage	0.102*** (0.018)	Share 16-24	0.001 (0.004)
Avg.Tenure	0.132*** (0.028)	Share 25-39	0.036*** (0.009)
Avg.Experience	0.006 (0.008)	Share +39	-0.037*** (0.011)
Share of Women	0.008 (0.011)	Productivity	0.251*** (0.059)
Small (below 100)	-0.114*** (0.010)		
Medium (100-499)	-0.179*** (0.022)		
Large (+500)	0.293*** (0.025)		
Sh.Women in Top Executive Pos.	-0.007 (0.014)		
Obs.	21,813		

Providers:

- Are larger (in terms of number of workers)
- Are more productive (measured as (log) revenue per FTE worker)
- Pay higher wages
- Have a more stable workforce
- Are more educated (higher college share)
- Have a higher share of mothers, but not women more generally

⇒ **"better" firms more likely to provide childcare** (e.g., Dube et al. '22, Sockin '22, Quimet and Tate '23, Goldin et al. '20)

Additional Findings

- Employers (and hence mothers) in firms that provide childcare appear to be positively selected \leftrightarrow “disadvantaged” mothers have reduced access to amenity [▶ Mothers](#)
- Replacement costs matter: Firms respond to firm-specific staffing shocks [▶ Replacement costs](#)
- In Progress: Expansions in public childcare appear to reduce likelihood that firms introduce childcare

Are Amenities Productive for Firms? Retention Effects of 1st Time Mothers

- Sample:
 - 1st time mothers in establishments that provide childcare at time of birth and continue to do so for the next four years (“treated”)
 - 1st time mothers in establishments that do not provide childcare at time of birth and do not do so (yet) for the next four years (“control”)
- We estimate the following regression separately for each month since childbirth:

$$y_{ijlstm} = \beta_m \text{Childcare}_{jt} + X_{itm=0} \alpha_m^\top + Z_{jt} \gamma_m^\top + \theta_{stm} + \rho_{ltm} + \epsilon_{ijlstm}$$

- Mother i , employed at firm j at birth, has retention status $y_{ijlstm} \in \{0, 1\}$, $m \in [0, 48]$ months after start of maternity
- $\text{Childcare}_{jt} = 0$ (control) for all m or $\text{Childcare}_{jt} = 1$ for all m (treated)

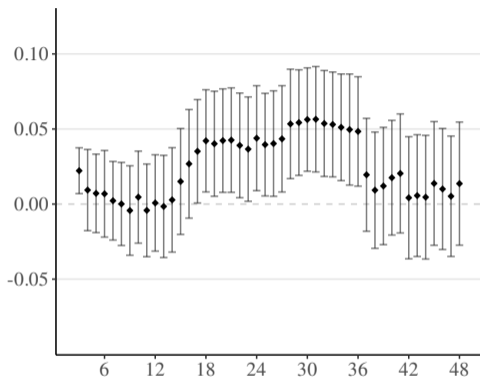
Are Amenities Productive for Firms? Retention Effects

- Difference in post-birth career outcomes for **1st time mothers** in providing firms vs. non (not-yet) providing firms

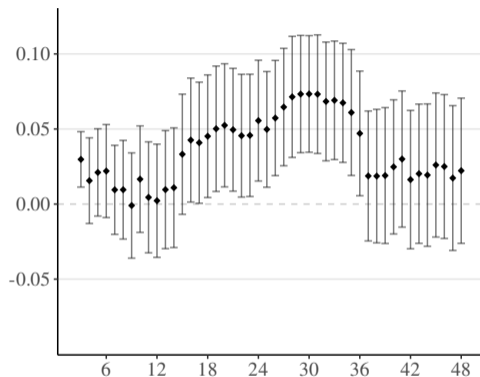
$$y_{ijlstm} = \beta_m \text{Childcare}_{jt} + X_{itm=0} \alpha_m^\top + Z_{jt} \gamma_m^\top + \theta_{stm} + \rho_{ltm} + \epsilon_{ijlstm}$$

- $X_{itm=0}$: mothers pre-birth characteristics (age, nationality, education, experience, tenure, occupation, earnings, commuter status and full-time status measured at birth)
- Z_{jt} establishment characteristics at birth: size, average wages, experience and tenure; share of females and educational composition
- ρ_{ltm} and θ_{stm} year of childbirth-LLM fixed effects and year of childbirth-industry fixed effects,
- SE clustered at pre-birth firm

Differences in actively working at pre-birth firm

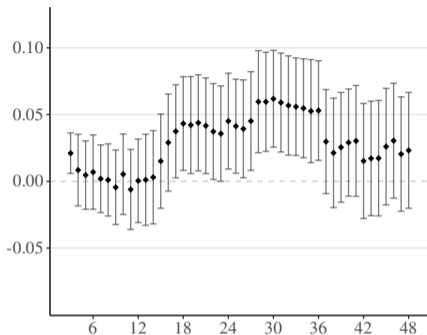


(a) Providers vs Non-Providers

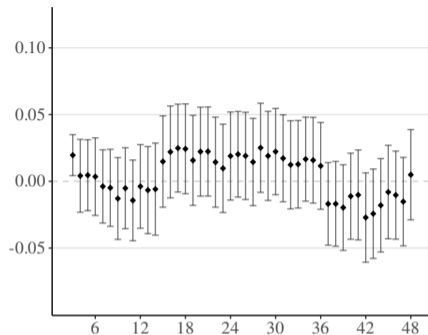


(b) Providers vs Will-be-Providers

→ Around 5 pp higher retention probability (around 10 percent compared to mean)



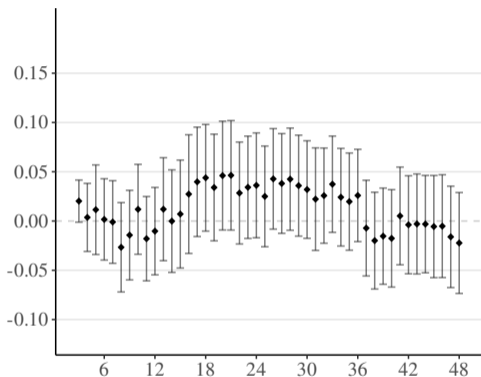
(a) Working in same pre-birth job



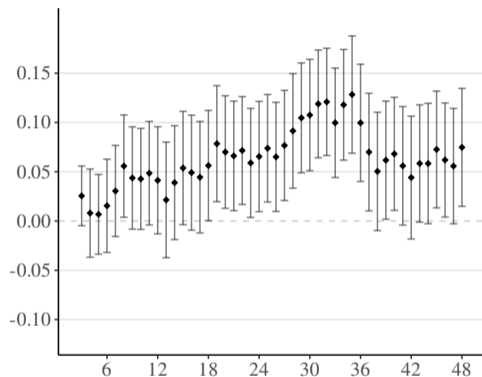
(b) Overall Employment

- Mothers in childcare-firms more likely to continue on pre-birth career
- No significant differences in overall employment (mothers in control firms move)
- Retention is driven by regular and part-time employment [▶ Part-time](#)

Heterogeneity by Pre-Maternity Wage: Return to Same firm



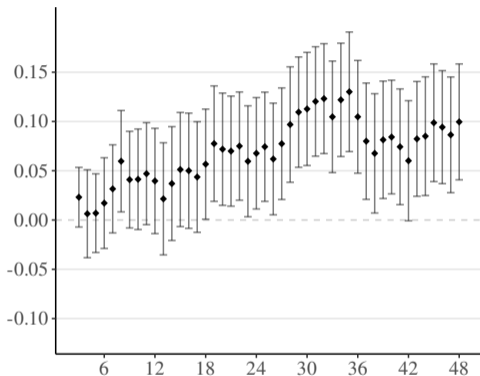
(a) Low Wage



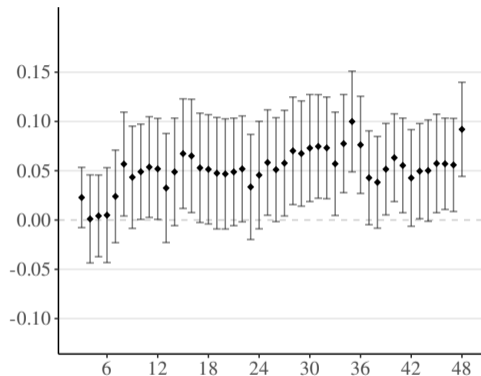
(b) High Wage

→ large and prolonged retention effect (up to 25%) for high-wage mothers

Further results: High-wage mothers



(a) Working in same pre-birth job



(b) Overall Employment

→ sizable and prolonged employment effect for high-wage mothers

Does the provision of FFWP correlate with employment growth?

- Employment should grow in particular for demographic groups which value the amenity:
 - Female and (potentially) male parents of young children
 - Workers in childbearing age

$$\underbrace{\frac{L_{jt}^d - L_{jt-\tau}^d}{\sum_d L_{jt-\tau}^d}}_{\text{Emp. contribution from demographic } d} = \beta^d \text{Introduction}_{jt} + X_{jt-\tau} \alpha^{d\top} + \theta_{l(j)t}^d + \rho_{s(j)t}^d + \epsilon_{jt}^d$$

- Compare relative changes in demographic's contribution to total employment growth over the next 4 years in firms that introduced childcare vs. those that did not
- Results for separate sources of variation: i) introducers + never-takers ii) only within introducers
- Conditional on firm controls (e.g. equally sized firms), industry-time, local labor market-time fixed-effects

Employment Growth I

	(1)	(2)	(3)
Panel A: Total and Gender Decomposition			
	Total	Female	Male
Introduction	6.430*** (2.265)	3.799** (1.488)	2.631** (1.045)
Avg.	100.000	40.798	59.202
% of Total Effect	100.000	59.079	40.921
Panel B: Women by Age			
	Below 25	25-39	+40
Introduction	0.558 (0.423)	1.605*** (0.530)	1.636* (0.915)
Avg.	3.665	12.479	24.654
% of Total Effect	8.677	24.954	25.448

- Firms grow disproportionately more through women in child-bearing age

Employment Growth II

	(1)	(2)	(3)
Panel C: Mothers by Child Age			
	Total	Below 3	Above 3
Introduction	0.901*** (0.299)	0.384*** (0.115)	0.517** (0.220)
Avg.	5.054	1.138	3.915
% of Total Effect	14.015	5.977	8.038
Panel D: Top 10% Occupations by Gender			
	Total	Female	Male
Introduction	2.426*** (0.692)	0.834*** (0.224)	1.592*** (0.523)
Avg.	7.761	1.437	6.324
% of Total Effect	37.726	12.974	24.752

- Firms grow disproportionately more through mothers and top-10% occupations
- Results are robust to provider vs will-be provider comparison

▶ Robustness

▶ Channels

Additional Findings: Changes in workforce composition

- Firms increase female talent in firm and share of working mothers [▶ Changes in composition](#)
- Fertility of incumbent workers increases [▶ Fertility](#)

Wage Growth within firms: All Workers

Panel A. Total and by Gender

	All	Male	Female	Wage Gap
Introduction	-0.002 (0.007)	-0.001 (0.008)	-0.002 (0.007)	-0.005 (0.008)
Obs.	12,301	10,630	10,913	9,270

Panel B. Residual Wages Total and by Gender

Introduction	-0.002 (0.005)	-0.002 (0.006)	0.004 (0.006)	-0.007 (0.005)
Obs.	12,301	10,630	10,913	9,270

Panel C. Mothers

	Raw	Residual
Introduction	0.002 (0.012)	0.015 (0.011)
Obs.	5,867	5,867

- not much happening to wage growth overall...

Wage Growth: Incumbent Workers

Panel A. Residual Wages Total and by Gender				
	All	Male	Female	Wage Gap
Introduction	0.004 (0.005)	-0.003 (0.005)	0.011** (0.006)	-0.013*** (0.005)
Average	0.021	0.022	0.030	-0.008
Obs.	11,964	10,186	10,513	8,714

- no evidence for negative wage growth for incumbents
- suggests wages of incumbent female workers growing more

Change in Hiring Premium: New Hires

- Hiring premium $\omega_{ijt} \equiv w_{ijt} - w_{ij't-\rho}$ where j' is the wage at the last employer

$$\bar{\omega}_{jt} - \bar{\omega}_{jt-\tau} = \beta^d \text{Introduction}_{jt} + X_{jt-\tau} \alpha^{d\top} + \theta_{l(j)t}^d + \rho_{s(j)t}^d + \epsilon_{jt}^d$$

Panel A. Total and by Gender				
	All	Male	Female	Wage Gap
Introduction	-0.023* (0.014)	-0.012 (0.017)	-0.046*** (0.020)	0.036* (0.022)
Mean	0.041	0.047	0.041	0.0046
Obs.	9,142	7,220	6,477	4,886

- Job-to-job wage growth for female new hires is smaller in introducing firms (consistent with compensating differentials)

Stylized Framework - Main features

- Imperfect competition in the labor market based on CCHK (2018)
- Extended with endogenous amenities (Dube et al. 2023, Lamadon et al. 2022)
- Innovation of model ***Productive amenities***: Childcare increases output at the firm
 - motivated by positive effects of firm-provided childcare on shortening career breaks
 - and increasing retention of mothers after birth

▶ Model

Stylized Framework - Main Implications

- Wages do not necessarily have to decrease:
 - positive productivity effect (partly passed on to workers) might outweigh negative pass-through of costs to wages (compensating differential)
- Firm's that decide to introduce will:
 - expand employment
 - increase share of mothers
- Firms more likely to introduce family-friendly amenities
 - When workers value childcare more
 - When workers, in particular women and mothers, have inelastic labor supply to firms
- If productivity effects increasing in firm's TFP, model reproduces stylized fact that introduction correlates with productivity

Work-in-Progress: Estimating the Labor Supply Elasticity to the Firm

Estimates of separation wage elasticities, using worker's residualised own wages (c.d. on age, education, occupation, nationality, LLM, industry, etc.) following Autor et al. '24

- Men: -1.25***
- Women aged 20-45: -1.014**
- Mothers: -0.874***

Two findings:

1. →lower LS elasticities to firms ϵ_j for women and mothers
2. Additional finding: ϵ_j is lower in childcare-providing firms for all workers

Conclusion

- Firms can have sufficient incentives to provide family-friendly workplaces (Goldin, 2014, Goldin et al., 2020)
 - increased retention of mothers, in particular high-wage mothers
 - Increased employment growth, in particular of mothers and women
 - Changing workforce at firm: i) more working mothers ii) more female talent
- voluntary adoption of firm-childcare can increase employment of women and mothers without necessarily lowering their wages

Open questions for future work

- Next steps: Introducing amenities may further increase monopsony power of firms?
- Advantaged women have better access to firm-provided childcare \Rightarrow further increasing inequality?
- Role of public childcare:
 - for firms' decision to provide amenity and firms' ability to hire
 - as an equalizer: Children from "disadvantaged" families benefit more from public childcare than children from "advantaged" families

Literature

- Growing literature on firm amenities in US
 - e.g. Ouimet and Tate '23, Sockin '22, Dube et al. '22
- Family-friendly workplace policies
 - Liu et al. '22, Goldin et al. '20, Corradini et al. '23, Hotz et al. '18
- *Public* Family Policies, esp. child care
 - Olivetti and Petrongolo '17, Havnes and Mogstad '11, Kleven et al. '23, Bauernschuster and Schlotter '15, Lim and Duletzki '23 + many others
- Cost of fertility or parental leave for firms
 - Ginja et al. '23, Gallen '19, Huebener et al. '22, Brenoe et al. '23
- Literature on mandated benefits: mandated benefits lowered hiring and wages of target groups
 - Summers '89, Gruber '94, Ruhm '98

Firm-provided child care: Targeted Interview

- Survey by German Economic Institute
 - Reasons stated: "retain parents, reduction of care-related absenteeism, attract skilled workers..."

Firm-provided child care: Targeted Interview

- Survey by German Economic Institute
 - Reasons stated: "retain parents, reduction of care-related absenteeism, attract skilled workers..."
- targeted interviews with selected firms and accredited provider organizations
 - secure competitive advantage in the market, strengthen employer brand
 - stressed advantage of guaranteeing parents access to firm-provided care
 - parents appreciate proximity to their young child and the added flexibility

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Replacement Costs and Provision

- Does provision change with replacement costs?
 - We proxy replacement costs with measures of staffing shortages at the firm level
- A firm may face staffing problem (sp) due to shocks but also due to persistent characteristics (e.g. bad management)

$$sp_{jt} = \underbrace{\mu_j}_{\text{Persistent Staffing Problems}} + \underbrace{\tilde{\zeta}_{jt}}_{\text{Staffing Shocks}} \quad (1)$$

- Using **pre-provision data**, take permanent component of reported recruitment problems and deviation from permanent component
- We measure general recruitment needs and the need for skilled workers

Replacement Costs and Provision

$$Introduction_{jt} = \beta \zeta_{jt-\tau} + \gamma \mu_j + \theta_{I(j)t} + \rho_{R(j)t} + \epsilon_{jt}^v$$

	(1)	(2)	(3)
Staffing Shock	0.105** (0.041)		0.085** (0.041)
Persistent Staffing Problems	-0.055 (0.042)		-0.004 (0.043)
Skill Shock		0.133*** (0.024)	0.129*** (0.024)
Persistent Skill Problems		-0.087*** (0.023)	-0.083*** (0.024)
Obs.		10,810	
Establishments.		5,383	

- Lagged increase in replacement cost associated with higher likelihood of introduction

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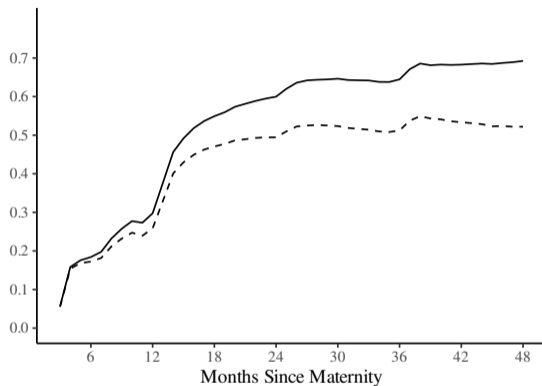
Pre-birth Characteristics of Mothers in Providing Firms

	Without Firm Controls (1)	With Firm Controls (2)
Age	0.852*** (0.23)	0.178 (0.21)
(log-)Wage	0.305*** (0.07)	-0.027 (0.02)
(log-)Tenure	0.103* (0.05)	0.039 (0.03)
(log-)Exp.	0.008 (0.03)	0.007 (0.02)
FT Emp.	0.018 (0.03)	-0.049** (0.02)
German	-0.020 (0.02)	-0.012 (0.01)
Voc.Train.	-0.125*** (0.04)	-0.001 (0.02)
Uni.Grad.	0.140*** (0.04)	-0.003 (0.02)
High Pay Occ.	0.101*** (0.02)	0.014 (0.01)
Previous Job (log-)Wage [†]	0.152** (0.07)	-0.024 (0.04)
Previous Firm Avg.(log-)Wage [‡]	0.244*** (0.08)	0.038* (0.02)
Previous Job (log-)Tenure ^{††}	0.082 (0.11)	0.086 (0.08)
Hired from Emp. ^{‡‡}	0.023 (0.06)	0.039 (0.03)

- Mothers at providing employers positively selected
- Higher wages, education, and career trajectories pre-birth
- Differences disappear once we control for establishment characteristics (main drivers of provision)
- ↔ positive assortative matching of mothers to firms, but limited sorting into family-friendly workplaces that are otherwise similar

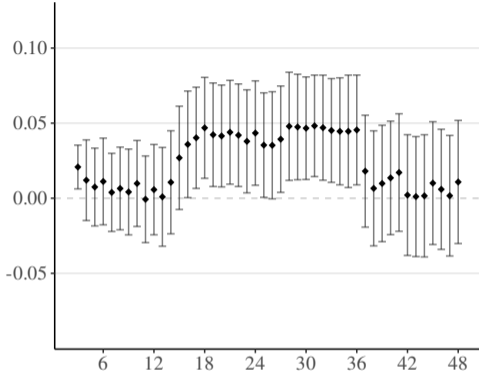
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Background: Return Of Mothers To Original Employer

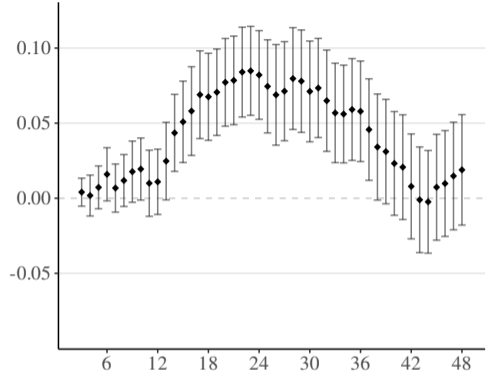


— Overall Employment - - Employed in Incumbent

Percentage of females working overall and for their incumbent employer after entering maternity leave. Longitudinal sample of first time mothers entering maternity leave from a survey establishment.



(a) Regular employment at incumbent firm



(b) Working part-time at incumbent firm

- Worker retention driven by regular employment and part-time margin

Robustness: Providers vs. Will-be-Providers

	(1)	(2)	(3)
Panel A: Total and Gender Decomposition			
	Total	Female	Male
Introduction	4.547* (2.546)	2.676 (1.681)	1.871 (1.207)
Avg.	100.000	40.798	59.202
% of Total Effect	100.000	58.853	41.147
Panel B: Women by Age			
	Below 25	25-39	+40
Introduction	0.357 (0.468)	1.303** (0.634)	1.016 (1.005)
Avg.	3.665	12.479	24.654
% of Total Effect	7.847	28.650	22.356
Panel C: Mothers by Child Age			
	Total	Below 3	Above 3
Introduction	0.907*** (0.347)	0.485*** (0.155)	0.421* (0.246)
Avg.	5.054	1.138	3.915
% of Total Effect	19.944	10.675	9.268
Panel D: Top 10% Occupations by Gender			
	Total	Female	Male
Introduction	2.503*** (0.745)	0.800*** (0.262)	1.703*** (0.549)
Avg.	7.761	1.437	6.324
% of Total Effect	55.054	17.589	37.465

- Very similar pattern when comparing to future-introducers

Employment Growth: Channels

	(1)	(2)		(3)	
	Total	Hires		Separations	
Introduction	6.430*** (2.265)	4.559** (1.903)		-1.924** (0.910)	
Avg.	100.000	25.843		28.116	
		↙	↘	↙	↘
		From	From Non-	Into	Into Non-
		Employment	Employment	Employment	Employment
Introduction		2.284* (1.201)	2.275*** (0.871)	-0.524 (0.791)	-1.400*** (0.451)
Avg.		11.625	14.218	9.807	18.309

- Growth both through hiring, incl. poaching from other firms
- Reduced separation into non-employment

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Changes in Firm's Workforce Composition

	(1)	(2)	(3)	(4)
Panel A. Share of Women Among Workforce:				
	Total	25-39	Top 10% Occupation	Top 10% Earners
Introduction	0.213 (0.278)	0.412* (0.216)	0.786*** (0.190)	-0.483 (0.852)
Avg.	40.798	12.479	1.437	24.399
Panel B. Share of Mothers Among Workforce:				
	Total	Below 3		
Introduction	0.218* (0.116)	0.225*** (0.073)		
Avg.	5.054	1.138		

- Firms increase female talent in firm and share of working mothers

Changes in Firm's Workforce Composition

	(1)	(2)	(3)	(4)
Panel A. Share of Women Among Workforce:				
	Total	25-39	Top 10% Occupation	Top 10% Earners
Introduction	0.213 (0.278)	0.412* (0.216)	0.786*** (0.190)	-0.483 (0.852)
Avg.	40.798	12.479	1.437	24.399
Panel B. Share of Mothers Among Workforce:				
	Total	Below 3		
Introduction	0.218* (0.116)	0.225*** (0.073)		
Avg.	5.054	1.138		

- Firms increase female talent in firm and share of working mothers
- Additional result: Increased share of new hires, mainly through poaching [▶ composition II](#)

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Changes in Firm's Workforce Composition II

	(1)	(2)	(3)	(4)	(5)
Panel C. Workforce Composition and Average Tenure/Experience:					
	Part-Time	Vocational	University	Tenure	Experience
Introduction	0.184 (0.480)	-0.083 (0.313)	0.012 (0.284)	-0.016 (0.014)	-0.017*** (0.005)
Avg.	14.162	74.568	16.981	7.444	8.176
Panel D. Share of New Hires:					
	All	From Employment	From FT Employment		
Introduction	1.995** (0.842)	1.838*** (0.661)	1.483*** (0.570)		
Avg.	24.193	10.812	7.691		

- Increased share of new hires, mainly through poaching (out of FT employment)

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Changes in Fertility of Incumbent Workers

	(1)	(2)	(3)
Panel A. Introducers vs Non-Introducers			
	Total	Incumbent Firm	Other Firm
Introduction	1.158*	1.397**	-0.239
	(0.594)	(0.563)	(0.252)
Obs.	8,590	8,590	8,590
Avg.	11.963	10.676	1.287
Panel B. Introducers vs Will-Be-Introducers			
	Total	Incumbent Firm	Other Firm
Introduction	1.101*	1.259**	-0.158
	(0.627)	(0.596)	(0.245)
Obs.	8,590	8,590	8,590
Avg.	11.963	10.676	1.287
Observations		8,590	

- Fertility of incumbents increases by close to 6% relative to baseline

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A Framework of Productive Amenities with Imperfect Competition in the Labor Market - Main features

Model where provision of amenities can have double dividend:

1. Some firms might introduce amenities to compete for workers, especially if firm-specific LS elasticity for women/mothers is low
2. Increased retention of mothers and shortening leaves increases effective LS to firms

→ Wages do not necessarily have to decrease (positive productivity effect will (partly passed on to workers) might outweigh negative pass-through of costs to wages)

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Worker Side

- The labor market consists of two types of workers, parents (M) and non-parents (N), who supply their labor to firms.

$$U_{ij}^{\{M,N\}} = \begin{cases} \varepsilon^M \ln(w_j^M) + c \times D_j + \mu_{ij} \\ \varepsilon^N \ln(w_j^N) + \mu_{ij}, \end{cases}$$

- Typ I extreme value distribution idiosyncratic preferences imply ε^M and ε^N translate into firm specific labor supply elasticities of wages.
- we present evidence that $\varepsilon^M \leq \varepsilon^N$ when we estimate elasticities for mothers of small children versus other groups.
- Increases motive for firms to compensate inelastic parents with childcare provision
 - Philippe and Skandalis (2023) and Le Barbanchon et al. (2020) on the job search and commuting behavior of females and esp. mothers

Firms

- Firms j differ with respect to their total factor productivity A_j . Choose wages, potentially differentiated by groups, and make binary child care choice D priced at p per hired parent
- For simplicity, we assume that parents and non-parents are perfect substitutes so that $Y_j = A_j \left[g(D_j)M(w_j^M, D) + N(w_j^N) \right]$.
- We model child care provision as a 'productive amenity':
- We assume that by providing child care, firms increase parents' effective labor supply, $M_j(w_j^M, D_j)$, by a factor of $g(1) - g(0) \geq 0$.
- We interpret $g(D)$ here as the probability of retention after giving birth and shortened leaves.
- Optimal wages:

$$w_j^M = \frac{\epsilon^M}{1 + \epsilon^M} (A_j g(D_j) - pD_j), \quad w_j^N = \frac{\epsilon^N}{1 + \epsilon^N} A_j. \quad (2)$$

- The first part component is the standard markdown of wages, inversely related to the firm-specific labor supply elasticity. The second part, only present for parents, captures the pass-through of a fraction of the amenity costs to workers.

Optimal Child Care Provision

- Effects of provision: (i) direct production benefits (ii) Employment growth from new workers who value amenity, but also loss of workers from wage changes

Optimal Child Care Provision

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1st set of introducing firms:

- Very productive firms with high A increase wages. Productivity increases and by rent-sharing pass-through to workers outweighs costs of provision.

2nd set of introducing firms:

- For other firms with intermediate productivity levels, introduction is not as clear cut.
- have to trade off the benefits versus the reduced attractiveness from decreased wages.
- Concretely, they require sufficient positive employment growth such that provision is profitable

Characterization of Marginal Firm(s) I

Can characterize the cutoff for marginal firms (all firms with $A_j > A^*$ provide):

$$A^* = p \left[\Delta g + \frac{c}{1 + \varepsilon^M} \right]^{-1}.$$

- Provision is **positively related to A**
 - consistent with descriptive evidence: positive correlation of provision with firm size, avg. wages at the firm (for all workers), and revenue per worker.

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- Threshold A^* decreasing in productivity benefit Δg
- Threshold A^* decreasing in **worker valuation of amenity c** . (i.e. how much child care intro increase employment growth)
 - c expected to be lower with higher availability of public substitutes
 - Empirically: public expansion indeed reduces number of introducing firms

Characterization of Marginal Firm(s) II

Can characterize the cutoff for marginal firms (all above provide):

$$A^* = p \left[\Delta g + \frac{c}{1 + \epsilon^M} \right]^{-1}.$$

- Inelastic labor supply of parents, i.e. **low value of ϵ^M** , reduces A^* and thus increases number of providers at the margin.
- Intuition: for small values ϵ^M compensatory reductions in wages do not lead to strong increases in separations.
- **Market power of firms over parents, hence, make introductions more likely**
- Preliminary estimates: lower firm-specific labor supply elasticities of parents

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