Can Parental Leave be Shared?

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Motivations

- Paid parental leave is offered by most OECD countries
- The leave is most of the time taken by mothers
  - Increase the gender gap in participation and earnings associated with the birth of a child (Kleven et al., 2019)
  - Does not improve the short- or long-run outcomes of children (Rasmussen, 2010; Dustmann and Schonberg 2012; Dahl et al., 2016)

Motivations

- To provide incentives for fathers to take leave, **parental leave sharing** policies introduced in many European countries
- Very different design across European countries
  - short and well compensated *Daddy month* in Scandinavian countries and also (to some extent) in Germany
  - longer leave offered in France, UK, Belgium, Italy, the Netherlands, etc... with flat benefits but possibility of better compensated part-time leave

Key questions

- What are the consequence of different design of parental leave sharing?
- Lot of research highlighting the success of daddy month in Scandinavian countries but much less evidence on recent reforms
- Are recent reforms effective ?
- Do they reduce earning gaps between parents ? Or are mothers shifting to inactivity and fathers working more to compensate ?

The French reform

- We study a French reform of parental leave that affected all births after the 1st of January 2015
- *First-time parents*: increased the maximum leave from a total of six months to share to six *non-transferable* months per parent
- *Second-time parents*: reduced the max leave from 36 to 24 months per parent
  - Parents have to share the leave to cover 36 months after birth before public preschool
  - Important reduction as about 33% of mother took a third year of leave!
- Other characteristics unchanged

▸ Discussion reform other countries

Method: Regression discontinuity design

- Compare households over a two months window around the implementation of the reform in the 1st of January 2015
  - parents whose child is born in December 2014 with parents whose child is born in January 2015
  - Use 'local randomization approach'

Outline

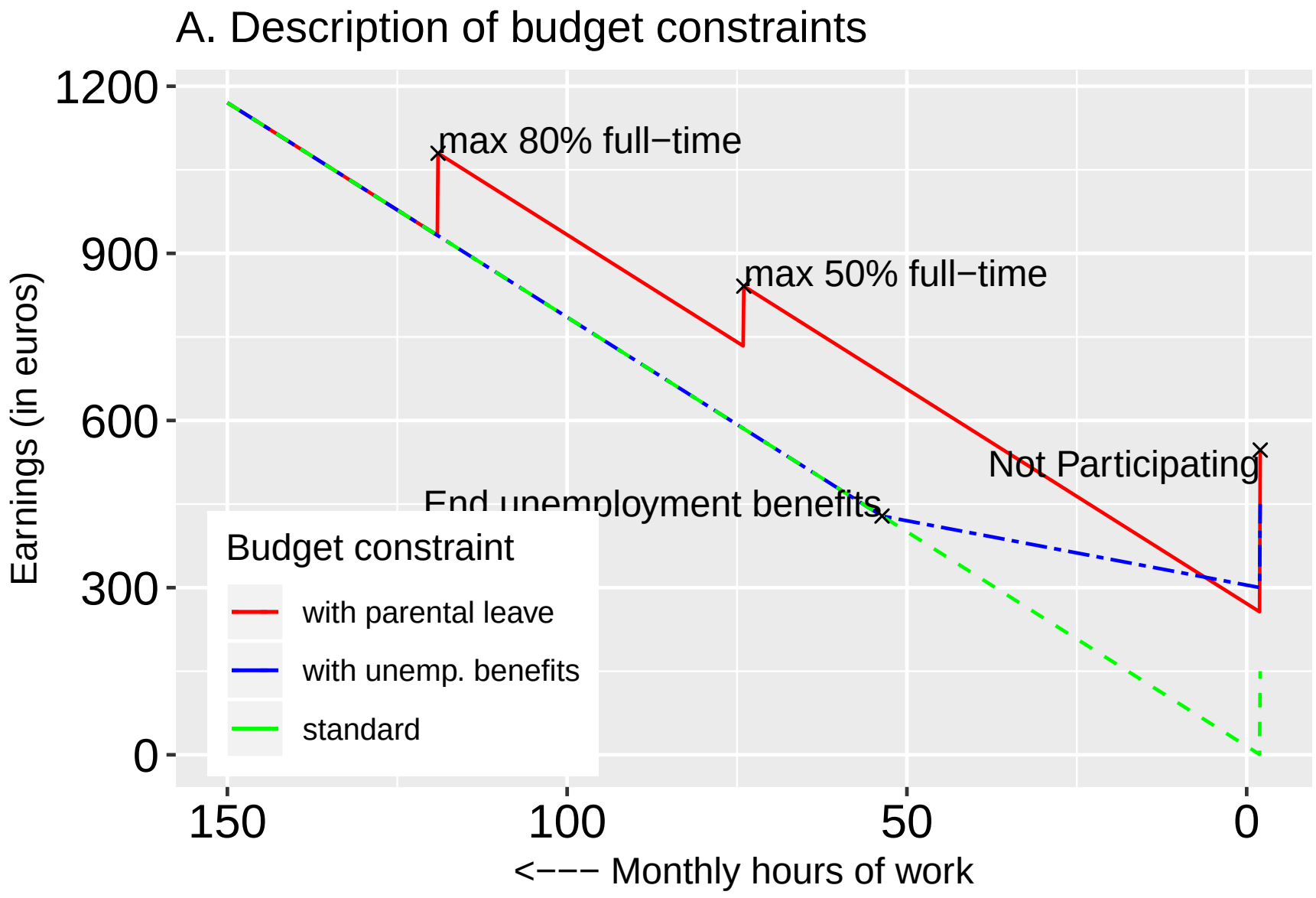
1. Characteristics of the French system
2. The Data and Sample
3. Empirical Approach
4. Results: Effects of the reform on the take-up of parental leave
5. Mechanisms
6. Effects of the reform on household income
7. Additional outcomes

Characteristics of the French system

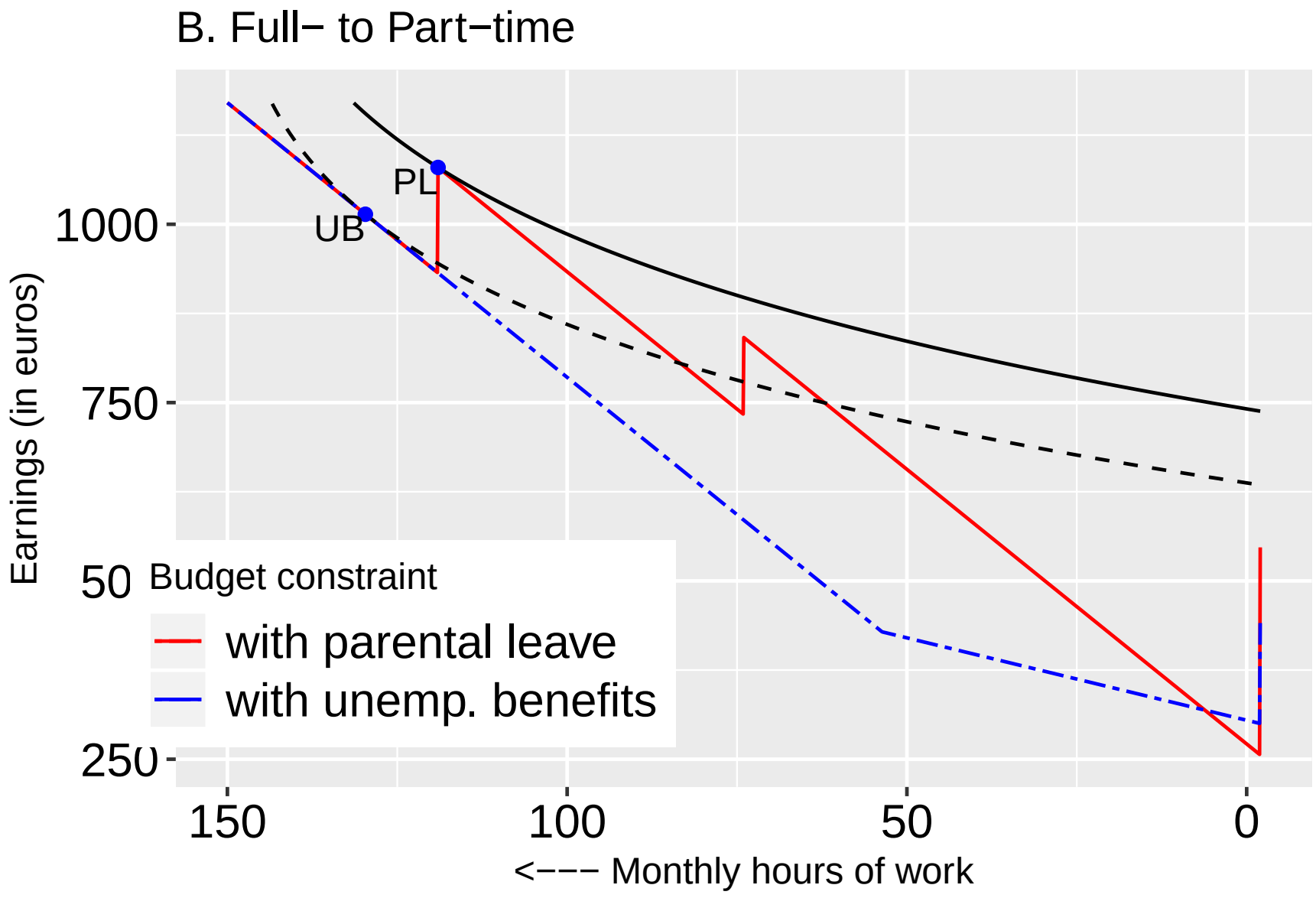
- Part-time parental leave is possible until 80% of full-time work
- Benefits are
  - flat: 400€ full-time, 250€ if 50% part-time work, 150€ if 80% part-time
  - not means tested
  - do not affect income taxes or the eligibility to other welfare programs
  - except unemployment benefits which are suspended
- **Take-up does not require to change hours worked if already working part-time before birth**

▸ Overview

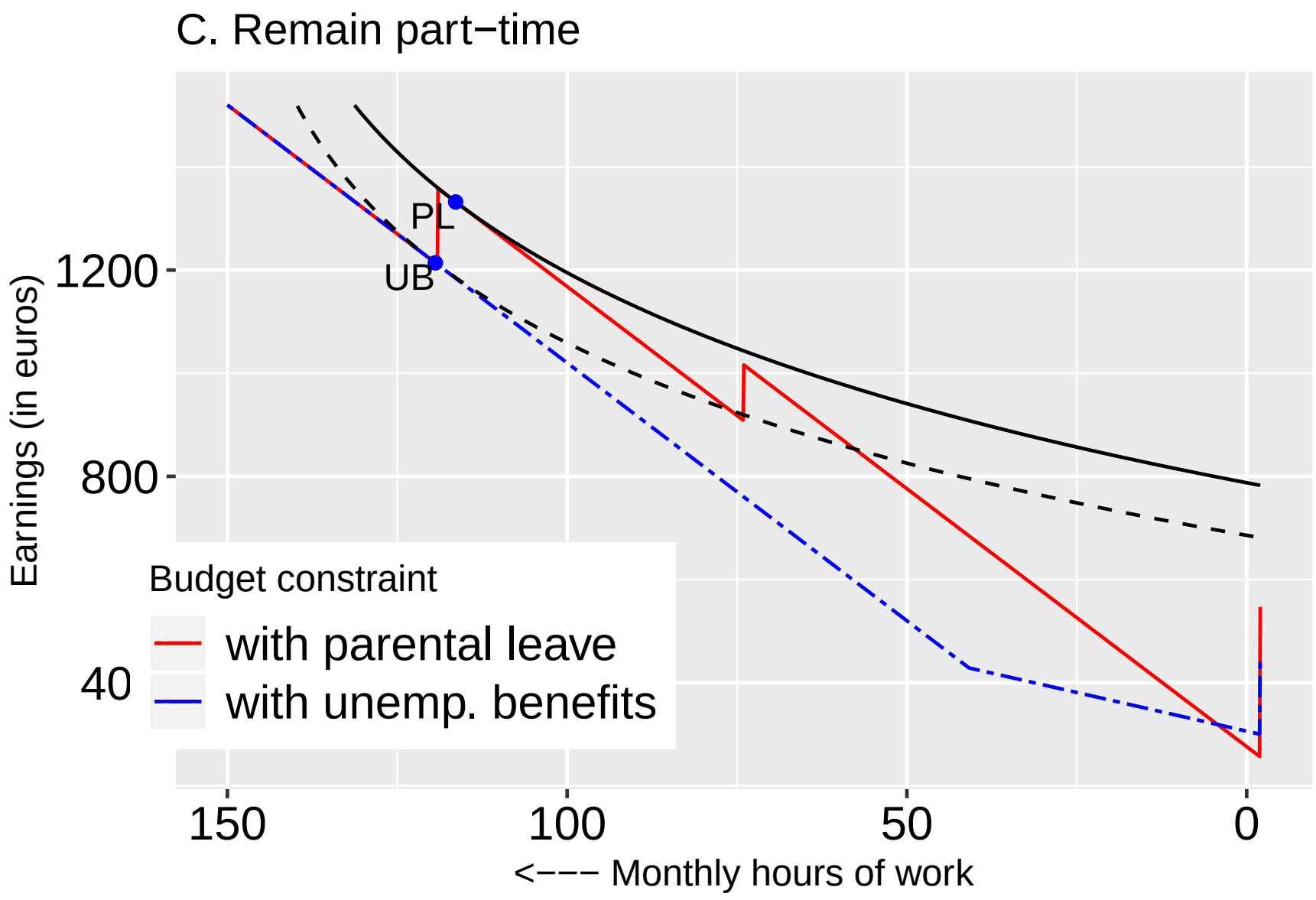
Budget Constraint



From full- to part-time



Part-time to part-time with paid benefits



Key predictions 1/2

1. First-time fathers should take more parental leave
2. The reduction of parental leave from 36 to 24 months should increase the labor supply of mothers in the third year after birth
    - Effects on fathers ambiguous when mothers have lower earnings in labor market as fathers might increase labor supply to compensate loss of benefits

Key predictions 2/2

2. Without stigma or participation costs, parental leave benefits should be taken by any parent of an eligible child observed as working part-time after the reform
   - In particular by the 5 to 7% of eligible fathers working part-time in the population
   - After the reform they can receive at least 150€ of benefits without changing their labor supply and without diminishing the parental leave available to the mother

The data

Two main sources:

1. administrative data from the French families benefits administration (CNAF)
2. complemented with data from the French labor force survey

▸ Empirical approach

Administrative data

- data from the *Caisse Nationale des Allocation Familiales* (CNAF)
  - Cover all population except agricultural workers (1.7% of births)
  - Automatic registration implies (quasi?) complete coverage
- Monthly administrative files that contain detailed information on all family benefits
- Data on earnings and unemployment benefits obtained from annual tax returns
  - Fiscal information is retrospective: data on earnings from two years before the date of the file
- Focus on two headed households

Empirical approach

- Comparing outcomes of households that had a child one month before and after the implementation of the reform in the 1st of January 2015
  - RDD with local randomization hypothesis (Cattaneo et al., 2020)
  - valid if the timing of birth in the chosen window around the eligibility cutoff to the reform is random

Empirical approach

- Smallest possible window allowed by the data: December 2014 and January 2015
  - Despite this restriction about 126 000 households of first- and second-time parents in the reform year

Dealing with calendar effects

- discontinuity at the first of January affects also change the eligibility to preschool (*école maternelle*)
  - birth in Dec 2014 implies admission to preschool in Sep 2017.
  - birth in Jan 2015 have to wait until Sept 2018 to be unconditionnally admitted
- follow Schoberg and Ludsteck (2014) and Lalive et al. (2013) using difference-in-differences (DD) approach
  - using as a control group households that had a birth one year before the reform during the same months

Empirical specification

- Standard difference-in-differences model estimated with OLS:

$$Y_{it} = \beta_0 + \beta_1 G_i + \beta_2 T_i + \beta_3 (G_i \times T_i) + u_{it} \quad (1)$$

- Y_{it} is an outcome of household i observed in period t
- G_i is a dummy equal to one if the birth occurred in January relative to December
- T_i equals to one if the birth occurred in the year of the reform, in Dec 2014 or Jan 2015

LATE of a parental leave

- As we observe take-up and outcomes we can calculate the LATE of taking a parental leave using 2SLS
- Wald-DiD LATE estimates from a fuzzy difference-in-differences (fuzzy-DD) model (De Chaisemartin and D'Haultfoeuille, 2017):

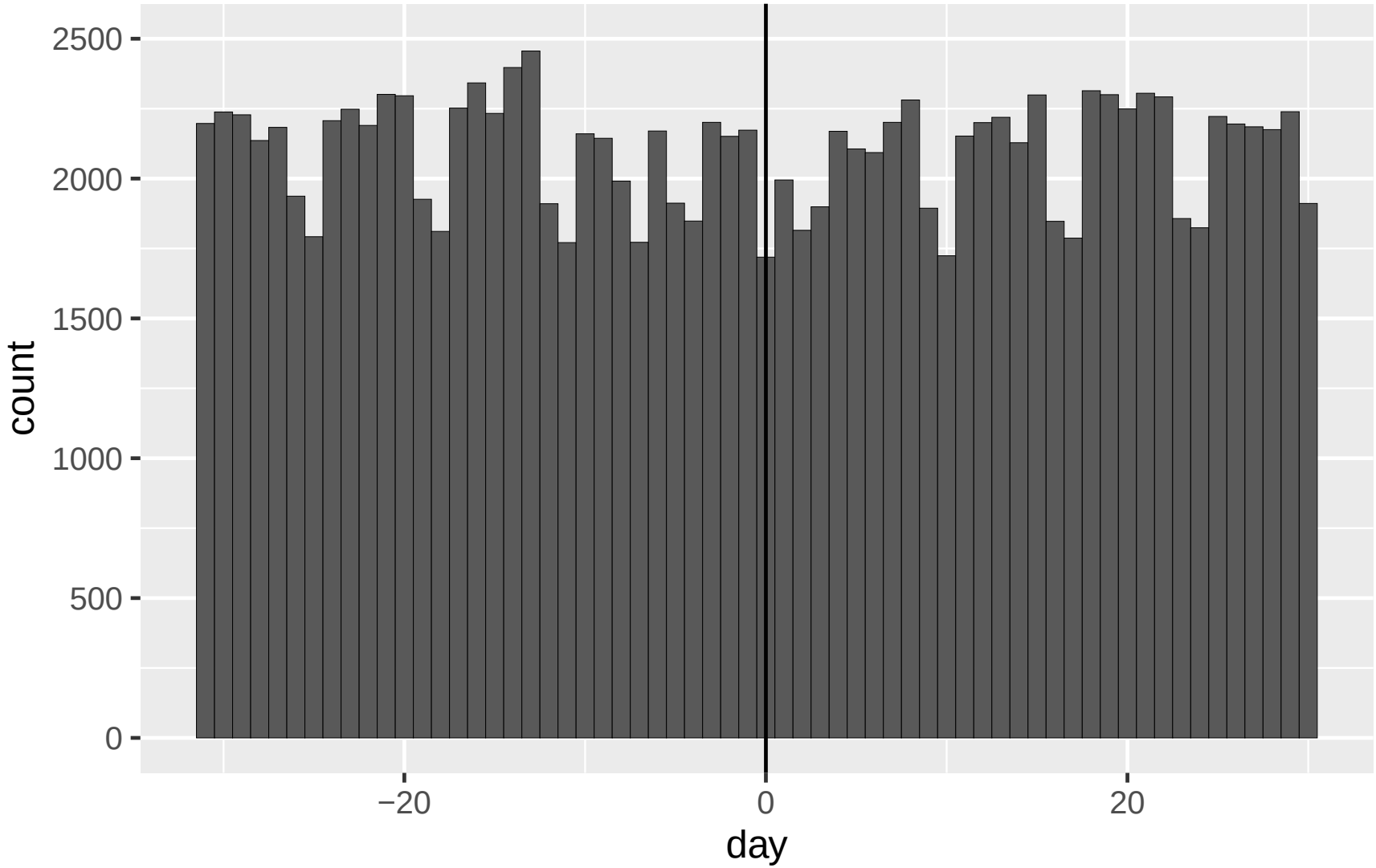
$$Y_{it} = \gamma_0 + \gamma_1 G_i + \gamma_2 T_i + \gamma_3 NoLeave_i + u_{it} \tag{2}$$

- γ_3 captures the LATE of not taking any parental leave on the outcome.
- use 2SLS with $(G_i \times T_i)$ as instrument for $NoLeave_i$ Move to validity

Validity of the empirical approach

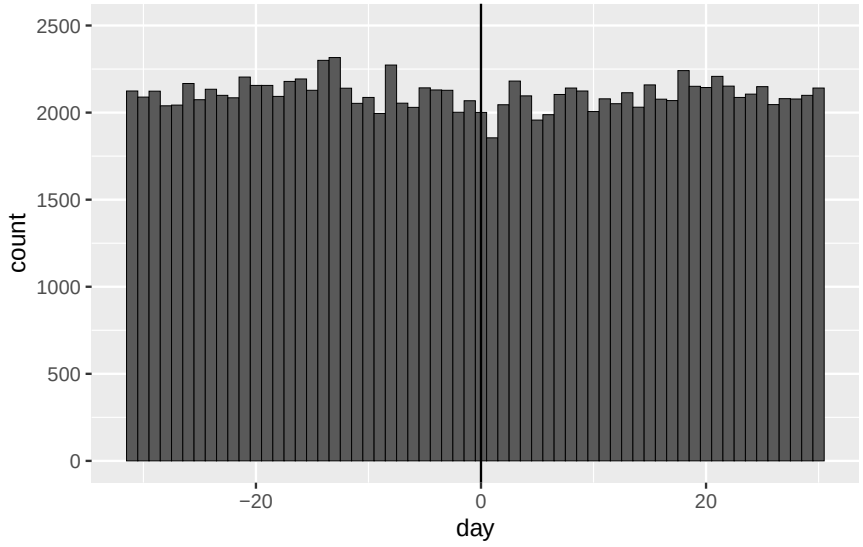
- Manipulation of the day of birth by households due to the reform ?
  - test for the smoothness of the density of daily birth
- Local randomization hypothesis validity ?
  - Balancing tests: test for differences in characteristics of households with a first or second child born in December and January the year of the reform

Validity: daily birth distribution around 1st Jan 2015



Validity: ADJUSTED daily birth distribution around 1st Jan 2015

Adjusted with days of the week and days off fixed effects using birth in November and February



Cattaneo et al. (2018) test cannot reject the null of no density jump around the 1st Jan on observed or adjusted series (p-value = 0.14 and 0.82)

Validity: balancing tests first-child

	December 2014	January 2015	Difference	T-stat	p-value	N
First-time parents: Full sample						
Share Single Parent	15.0%	15.4%	-0.4%	-1.31	0.19	54 253
First-time parents: Only two headed households						
Age mother	28.9	28.9	0.0	-0.17	0.86	46 028
Age father	31.7	31.7	0.0	0.00	1.00	46 028
Earnings of father in 2013	19 839	20 104	-265	-1.49	0.14	46 028
Earnings of mother in 2013	15 657	15 602	55	0.29	0.77	46 028
Share mothers with zero earnings in 2013	16.5%	15.8%	0.6%	1.81	0.07	46 028

Validity: balancing tests second-time parents

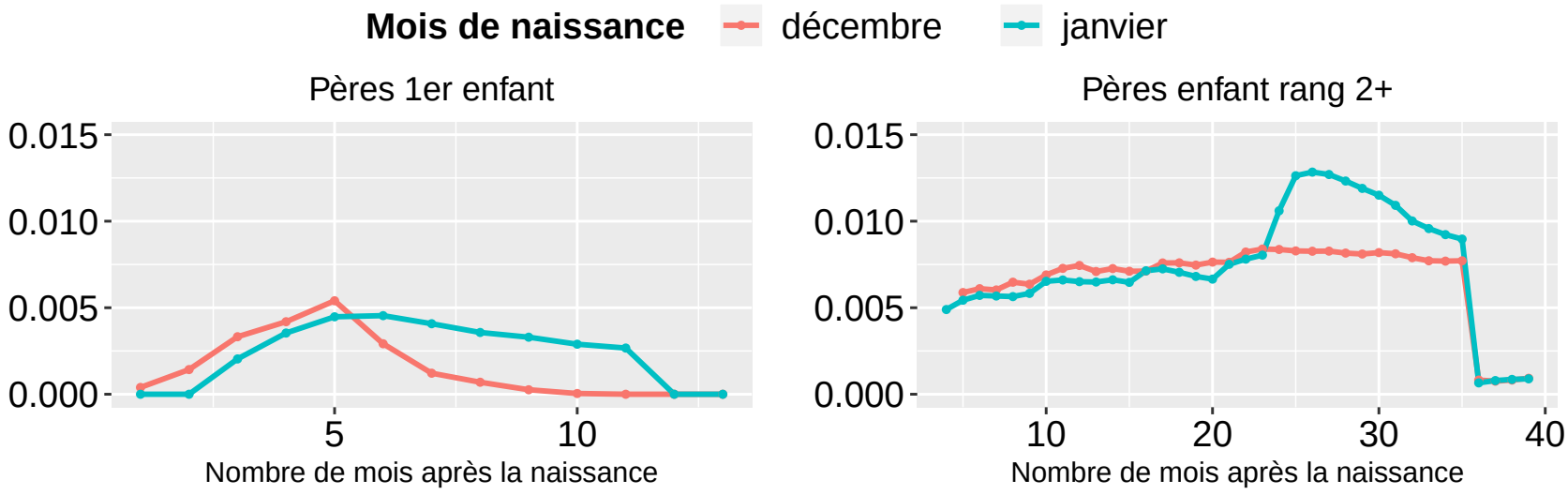
	December 2014	January 2015	Difference	T-stat	p-value	N
Second-time Parents: Full sample						
Share Single Parent	13.0%	12.7%	0.3%	1.39	0.16	72 012
Second-time Parents: Only two headed households						
Age mother	32.1	32.1	0.0	-0.53	0.60	62 749
Age father	35.3	35.4	-0.1	-1.21	0.23	62 749
Number of children	2.6	2.6	0.0	-1.49	0.14	62 749
Number children aged 3 and 5	0.6	0.6	0.0	-0.77	0.44	62 749
Earnings of father in 2013	21 527	21 773	-246	-1.46	0.15	62 749
Earnings of mother in 2013	13 193	13 064	129	0.80	0.42	62 749
Share mothers with zero earnings in 2013	26.6%	26.7%	-0.1%	-0.14	0.89	62 749
Quartiles of the earning distribution of the second-time mother in 2013 *Only strictly positive earnings included*						
Q1 earnings	9 092	9 172	-80	-0.41	0.67	46 033
Median earnings	16 879	16 998	-119	-1.01	0.31	46 033
Q3 earnings	22 811	22 920	-109	-0.86	0.38	46 033

Predicted take-up by fathers working part-time

	First child, 4-12 months of age	Second child, 24-36 months of age
A. Share of parent working part-time		
Mother	13.7	27.5
Father	4.7	6.8
B. Characteristics of fathers working part-time		
Median monthly wage	970	1040
Median hourly wage	11.6	9.3
Share with >1 year of seniority in the firm	66.3	77.5
Share working part-time previous year	68.9	64.3
N	146	189

Results: Effects on take-up of part-time leave

Zoom sur l'effet de la réforme sur les pères



▸ summary ▸ Detailed comparisons

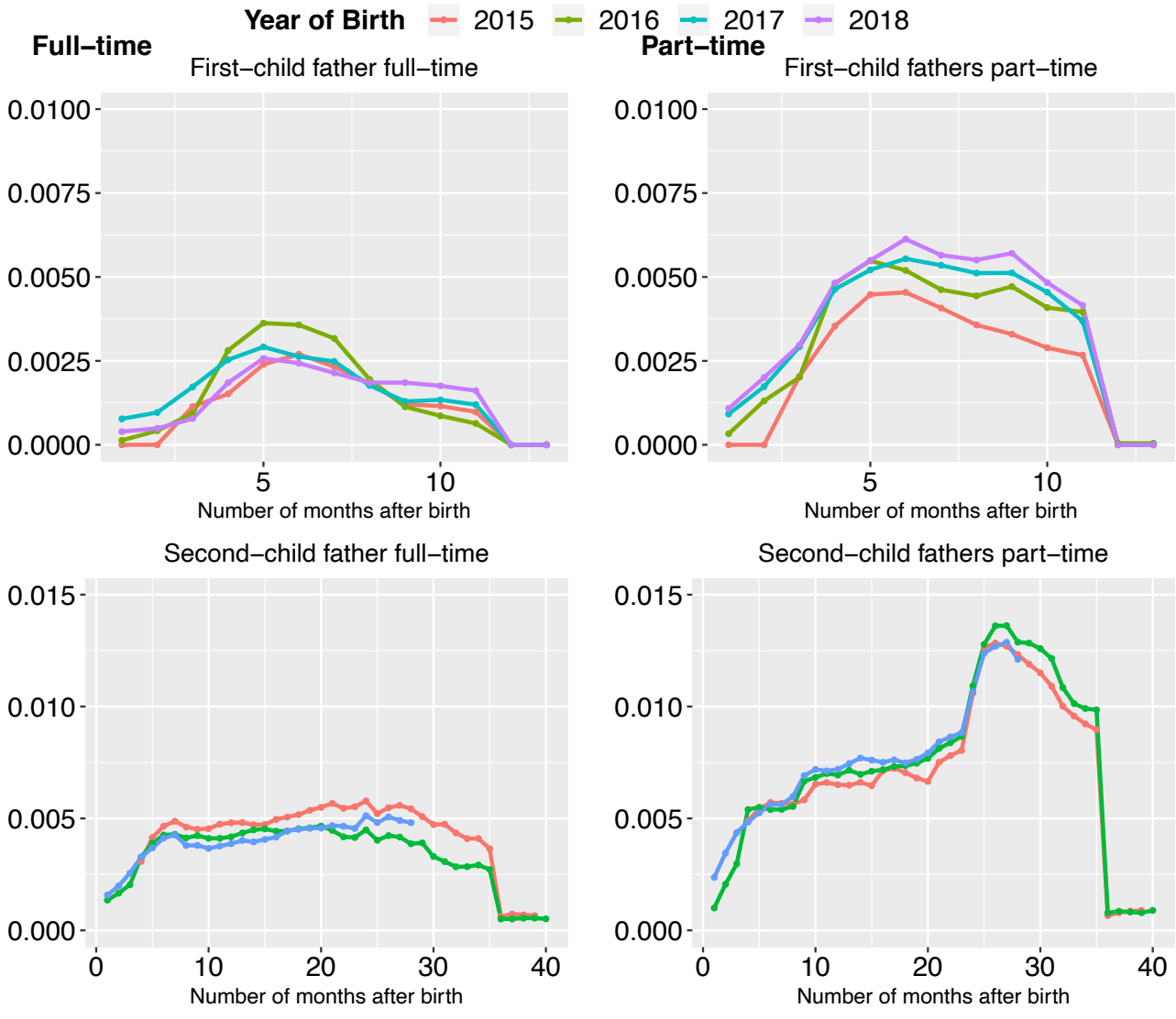
Summary: probability to take at least a month of leave

Birth in	Before reform (December 14)		After reform (January 15)	
A. First-time parents, before first anniversary				
	Share of leave	Nb months if leave	Share of leave	Nb months if leave
	A1. Mothers			
Full-Time	14.9	4.3	13.7	4.0
Part-Time	13.6	4.1	13.2	4.3
	A2. Fathers			
Full-time	0.4	3.2	0.5	3.2
Part-time	0.7	3.2	0.9	3.8
B. Second-time parents, third year after birth				
	B1. Mothers			
Full-Time	20.6	9.4	5.7	5.9
Part-Time	18.6	9.5	5.0	4.6
	B2. Fathers			
Full-Time	0.6	8.5	0.8	6.6
Part-Time	1.1	8.5	1.8	6.9

Regression results: Effect of reform on take-up

Dependent variable: Probability to take at least one month of paid leave				
Outcome	Full-time leave		Part-time leave	
	(1)	(2)	(3)	(4)
A. First-time parents, before first anniversary of the child				
	A1. Mothers			
After reform	-0.009***	-0.002	-0.006*	0.008*
	(0.003)	(0.005)	(0.003)	(0.004)
	A2. Fathers			
After reform	0.002***	0.002***	0.002**	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
N	46,550	94,566	46,550	94,566
B. Second-time parents				
	B1. Mothers, from 30 to 36 months of age			
After reform	-0.149***	-0.146***	-0.136***	-0.136***
	(0.002)	(0.004)	(0.002)	(0.004)
	B2. Fathers, from 24 to 36 months of age			
After reform	0.002**	0.003***	0.008***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
N	61,716	125,056	61,716	125,056
Method	Simple Diff.	Diff-in-Diff	Simple Diff.	Diff-in-Diff

Did the take-up of father increased later?



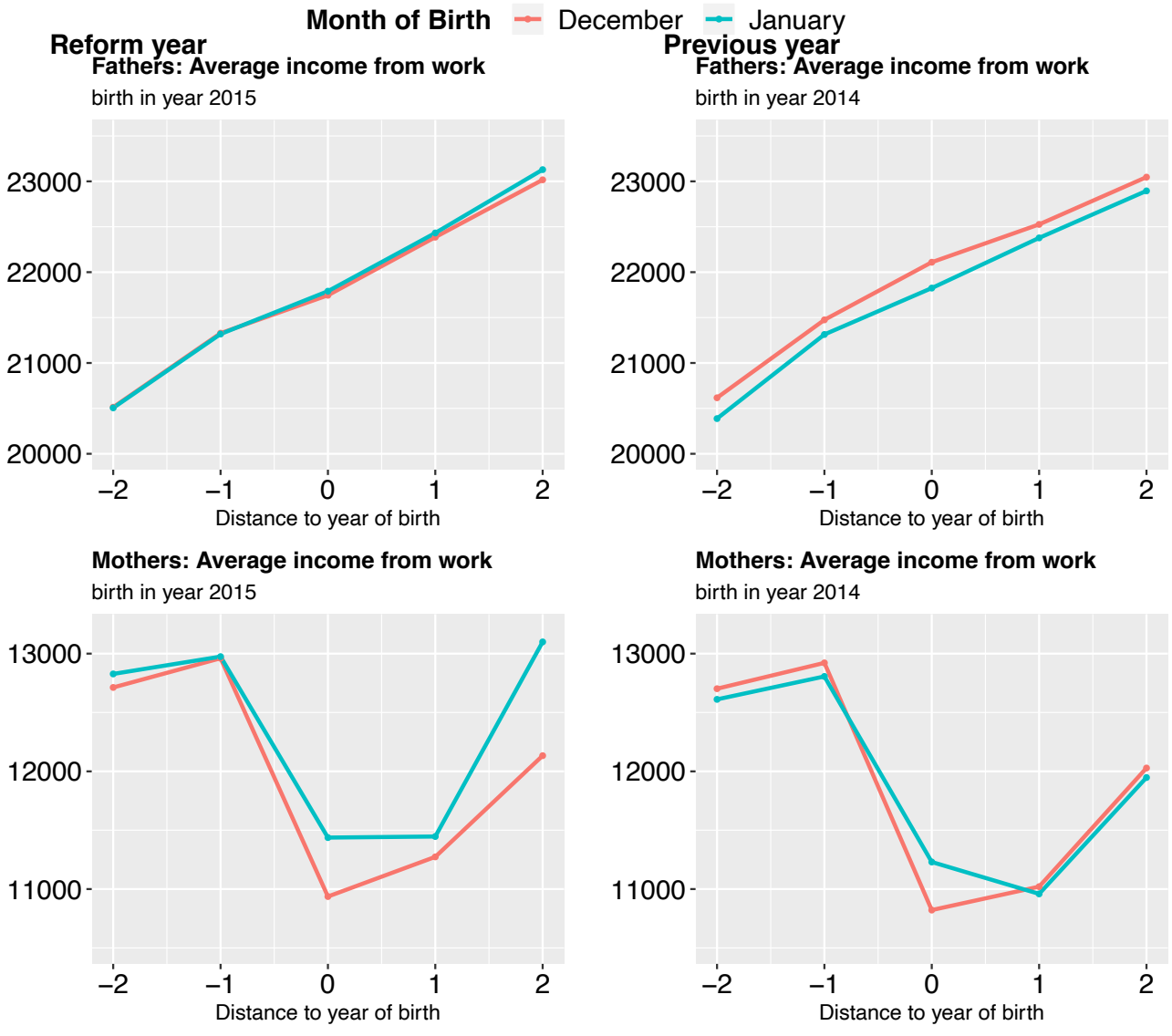
Estimates of Non-Take-Up Rates

Birth in	2015	2016	2017
	A. First-time parents, from 4 to 12 months of age		
	A1. Fathers		
Share Part time work	4.1	5.3	5
Share Part time paid leave	0.9	1.2	1.2
Estimated Non-take-up rate	78	77.4	76
	A2. Mothers		
Share Part time work	17.1	15.4	14.4
Share Part time paid leave	13.2	11.9	11.9
Estimated Non-take-up rate	22.8	22.7	18.1
	B. Second-time parents		
	B1. Fathers, from 25 to 36 months of age		
Sare Part time work	6	5.2	na
Share Part time paid leave	1.8	1.8	1.6
Estimated Non-take-up rate	70	65.4	
	B2. Mothers, from 12 to 23 months of age		
Sare Part time work	23.8	23.7	22.7
Share Part time paid leave	19.1	18.1	17.8
Estimated Non-take-up rate	19.7	23.6	21.5

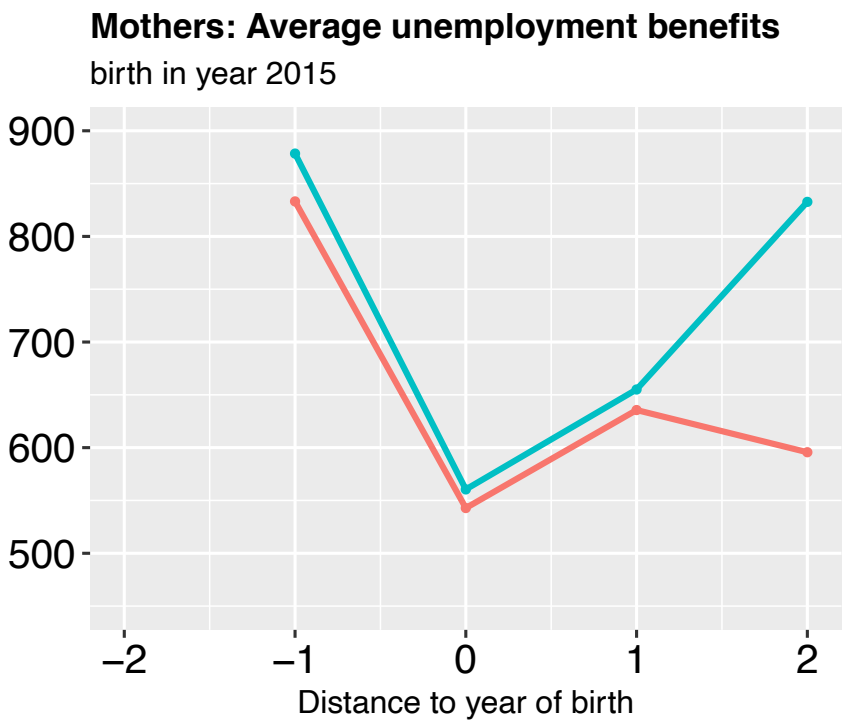
Mechanisms

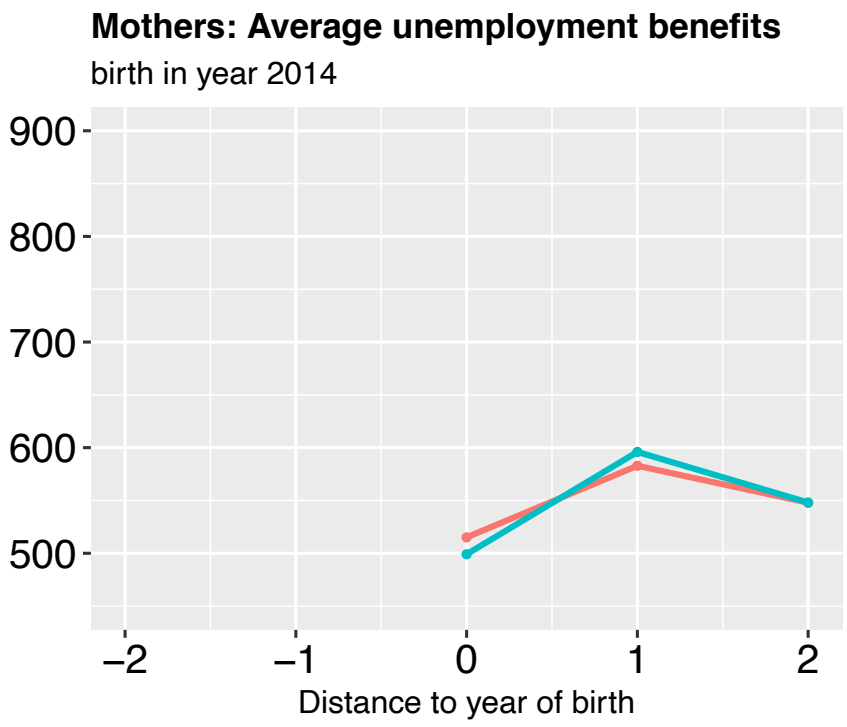
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Baseline	Father independent worker	Local pre-reform participation rates of fathers in department		Pre-birth quartile in the earning distribution of the father			
			Above median	Below median	Q1	Q2	Q3	Q4
	A. First-time parents							
After reform	0.004***	0.009**	0.008***	0.001	0.004***	0.004	0.010***	0.0001
	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.003)
N	23,349	1,837	46,540	46,857	23,349	23,345	23,353	23,350
	B. Second-time parents							
After reform	0.011***	0.020***	0.020***	0.003	0.006**	0.013***	0.013***	0.013***
	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)	(0.004)	(0.004)	(0.003)
N	121,987	10,664	60,276	61,711	30,075	30,737	30,789	30,386

Effect of the reform on Earnings (second-time parents)



Unemployment

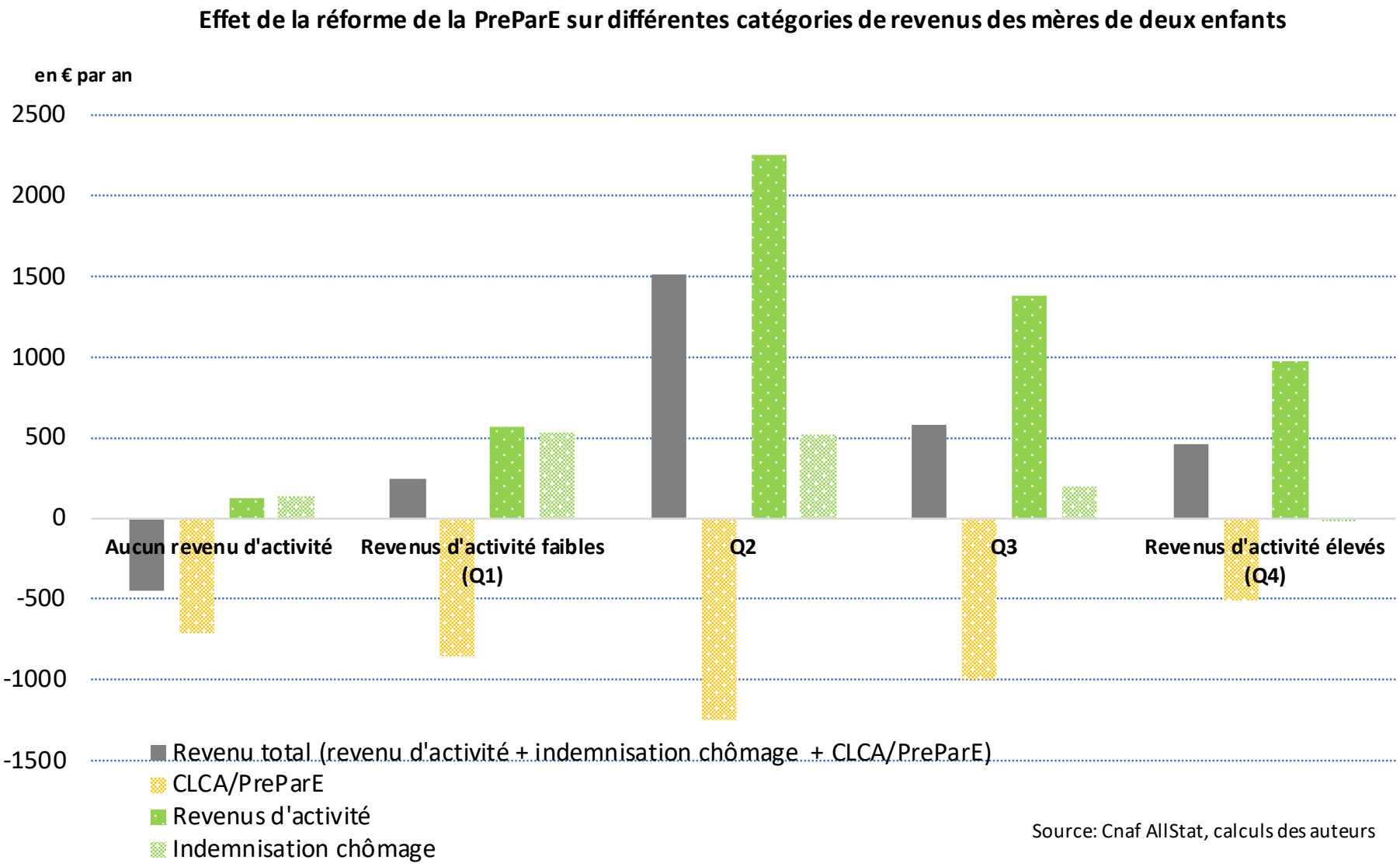




Regression Results

	A. ITT Estimates									
Outcomes	Prob. parental leave in the third year		Paid benefits of parental leave		Fathers' Earnings		Mothers' Earnings		Unemployment benefits of mother	
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
After reform	-0.286***	-0.282***	-819.2***	-896.4***	103.2	264.4	966.3***	1 047.1***	237.0***	236.8***
	(0.003)	(0.005)	(43.7)	(60.2)	(142.2)	(198.7)	(119.1)	(165.7)	(20.9)	(28.2)
	B. LATE of not taking parental leave in the third year using the reform as instrument									
Parental leave			-2,725.4***	-2,942.9***	609.5	1,127.5	3,480.0***	3,657.9***	829.0***	858.8***
			(158.9)	(222.3)	(501.5)	(716.2)	(422.1)	(598.5)	(73.5)	(101.4)
Estimation method	Simple Diff.	Diff-in-Diff	Simple Diff.	Diff-in-Diff	Simple Diff.	Diff-in-Diff	Simple Diff.	Diff-in-Diff	Simple Diff.	Diff-in-Diff

Decomposition of effects on household income (ITT)



Source: Cnaf AllStat, calculs des auteurs

Conclusion: Little impact of the reform on fathers

- Very little effects on the take-up of fathers
  - First-time fathers: 0.2 p.p. increase from 0.7% to 0.9% after the reform for part-time leave
  - Second-time fathers: 0.8 p.p. increase from 1% to 1.8% after the reform
- Implies most fathers working part-time did not take a paid parental leave
  - 90% of first-time fathers and 70% of second-time fathers that are working part-time do not take the paid parental leave benefits
  - For comparisons, non-take-up rates of 20% for mothers
- Information or stigma ? Hard to disentangle the two but little evidence of diffusion of information
- Probably not most efficient policy to attract fathers relative to 'Daddy month' approaches

Thanks for your attention !

Identification

- Monotonicity + Common trend assumptions + the treatment effect must be stable over time (De Chaisemartin and D'Haultfoeuille, 2017).
- Problematic in our setting as changes in business cycle conditions over one year are likely to affect the treatment effect of a parental leave on labor market outcomes
  - In practice, 'calendar effects' are statistically insignificant for most outcomes
  - little differences between difference-in-differences and simple differences estimates
  - Also estimated the time-corrected Wald estimates proposed by (De Chaisemartin and D'Haultfoeuille, 2017) and changes-in-changes estimate proposed by Athey and Imbens (2006)
  - For all outcomes reported in the paper, we could not reject the hypothesis of equality between these alternative estimates of the LATE with standard Wald-DiD estimates and simple differences

The French reform in perspective

- Reforms in Germany, Norway or Sweden analyzed by by Kluve and Tamm (2013), Rege and Solli (2013) and Ekberg et al. (2013)
- '*Daddy month*': short non-transferable paid leave of one or two months
  - high replacement rates from 67% of previous earnings in Germany to 80% in Sweden and even 100% in Norway
  - large take-up rates from 20 to 30% in Germany to 70% in Sweden and 60% in Norway
- did not increase the time devoted to childcare or housework (Kluve and Tamm, 2013; Ekberg et al., 2013).

back

Overview of the reform

Period	**Before the reform:** *Births before 1st January 2015*	**After the reform:** *Births after 1st January 2015*
	A. First child	
Length	6 months max to be taken consecutively after the end of the maternity leave, each month can be taken by any parent	6 months max for the mother & 6 months max for the father
Benefits	≈ 400€ full-time, 250€ up to 50% part-time, 150€ up to 80%	Unchanged
Age of child	6 months max after the end of the maternity leave	Before 1st anniversary
Eligibility of the parent	Earnings corresponding to one year of work at the minimum wage in last 2 years.	Unchanged
	B. Second children	
Length	36 months max, each month can be taken by any parent	24 months max per parents, exceptional prolongation for a few months possible for low income households, 36 months max in total for both parents.
Benefits	Similar to those for a first-child	Unchanged
Age of child	Before 3rd anniversary	Unchanged
Eligibility of the parent	Earnings corresponding to one year of work at the minimum wage in last 4 years, in last 5 years if more than 2 children. Previous period of leave counts as work	Unchanged

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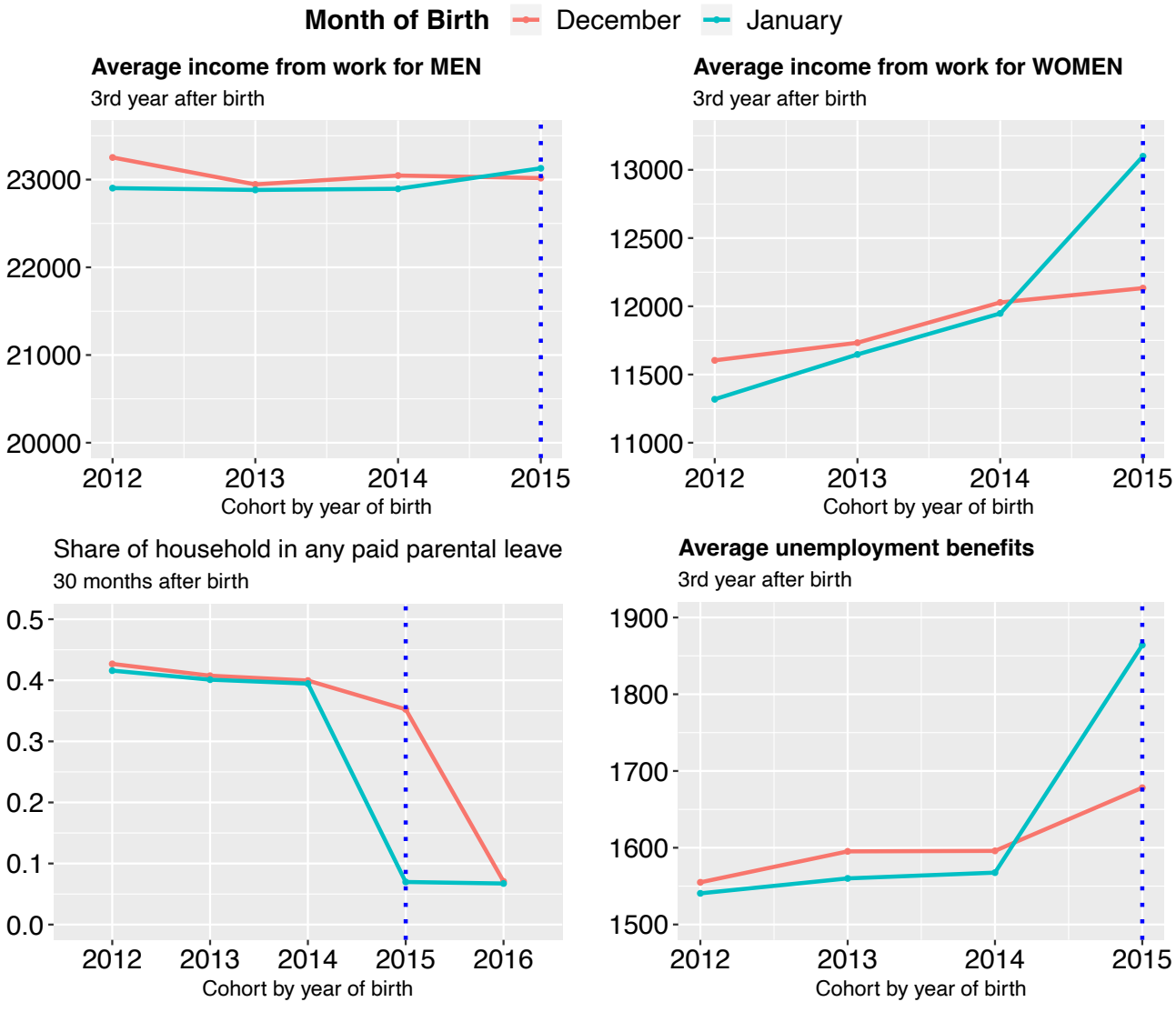
Parallel Trends



Other outcomes

	(1)	(2)	(3)	(4)	(5)
Outcome	Same social security code	Pregnancy	Number of child	Divorced	Solidarity income
	A. Third year after birth				
After reform	0.007***	0.0002	0.004**	0.002	-0.001
	(0.002)	(0.0002)	(0.002)	(0.002)	(0.002)
N	62,749	57,217	57,217	57,217	57,217
	B. Fifth year after birth				
After reform	0.008***	0.0004	0.0003	-0.004	-0.001
	(0.003)	(0.0003)	(0.001)	(0.002)	(0.002)
N	62,749	55,065	55,065	55,065	55,065
Method	Simple Diff.	Simple Diff.	Simple Diff.	Simple Diff.	Simple Diff.