Income Constraints and Female Labor Supply during Parental Leave

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12TH YOUNG ECONOMISTS CONFERENCE
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Motivation

- Austrian women aged 25-54, childless vs. mothers (ch<15y) (OECD 2012):
  Employment rate (2009):
  childless: **82.2%**; with children: **74.6%**
  Part-time employed (2009):
  childless: **27.2%**; with children: **52.1%**
- Unadjusted gender pay gap in Austria 2019:
  19.6% or **14.9%** for full-time employees (Eurostat 2020)
- For 2019: **15.3%** hourly wage (Böheim et al. 2021)
  $\Rightarrow$ **6-11%** after controlling for observable characteristics

Motivation

- Kleven et al. (2019a) - Denmark:
  part of gender inequality attributed to children:
  40% (1980) $\Rightarrow$ **80%** (2013)
- Kleven et al. (2019b) - country comparison:
  Austria: 2nd highest child penalties
- $\Rightarrow$ Public Policies?

Related Literature

Expansions of parental leave:

- Lalive et al. (2013):
  Austrian PL reforms (1990–2000)
- Schönberg and Ludsteck (2014):
  German PL reforms (1979–1993)
- Dahl et al. (2016): Norwegian PL reforms (1987–1992)

Expansions of institutional childcare:

- Nollenberger and Rodriguez-Planas (2015)
- Kunze and Liu (2019)
- Havnes and Mogstad (2011)

Both:

- Kleven et al. (2022): Do family policies reduce gender inequality? Evidence from 60 years of policy experimentation

Motivation

- Extended work absences could lead to depreciation of human capital, firm- and job-specific skills
- Processes within the firm, colleagues or clients could change
- Mothers who work part-time during parental leave could
  - Keep in touch with colleagues and clients
  - Keep up with changes within the firm
  - Avoid depreciation of human capital
  - Have an easier re-entry when fully returning to work
  - Send a strong signal to the employer about commitment
- Employers could suffer when women get discouraged from working during parental leave
  (Brenøe et al., 2023 & Ginja et al.,2023)

Research Question

- Gap in the literature concerning the limiting effect of income constraints during parental leave
- $\Rightarrow$ How do income constraints affect female labor supply during parental leave?

Data

Arbeitsmarkdatenbank: AMDB des AMS Österreich und des BMA

- Linked employer-employee data
- Employment, Unemployment, Maternal Leave, Parental Leave, Births; Income
- Drawbacks: top-coded income, no working hours

Sample restrictions:

- First time mothers
- Private sector workers
- 20-45 years old

Which women actually work during parental leave?

Births between Jan 2008 and Sep 2009: 44,350
10% working during months 6-11
89% of those work during parental leave

- Age at birth: 29.7 vs 28.5
- Income in y3-2 bb.: 65,231 vs. 53,496
- White collar: 82.0% vs. 73.4%
- Days unemployed: 129 vs. 174
- Living in Vienna: 25.2% vs. 21.2%

Which women actually work during parental leave?

Births in 2005: 25,428
28% working during months 6-23
86% of those work during parental leave

- Age at birth: 28.6 vs 28.0
- Income in y3-2 bb.: 60,607 vs. 51,612
- White collar: 80.7% vs. 71.7%
- Days unemployed: 120 vs. 158
- Living in Vienna: 22.8% vs. 21.1%

Background & Institutional Setting

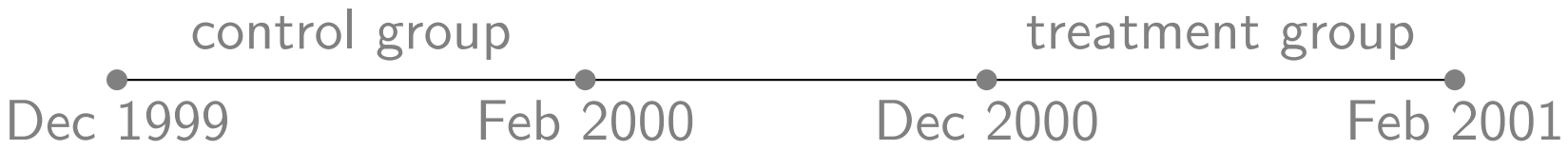
- low involvement of fathers
- children below the age of 3 in institutional childcare: 2000: **7.7%** $\Rightarrow$ 2019: **27.6%** (Statistics Austria, 2020)
- **38.2%** of women with a child aged below three years are working (2019):
  - **28.8%** below 16 hours per week
  - **50.8%** between 16 and 35 hours per week
  - **20.2%** above 35 hours per week

Parental Leave Reform of 2000/2002

- Abolish working requirements
- Duration: 18+6 $\Rightarrow$ 30+6
- Change in income thresholds
  - PL benefits: **€3,500/year** $\Rightarrow$ **€14,600/year**
  - Job protection:
    €3,500/year $\Rightarrow$ $\frac{1}{4}$ of the duration higher earnings allowed
  - Applied to births after June 30, 2000
  - Higher thresholds applied from 2002 onwards

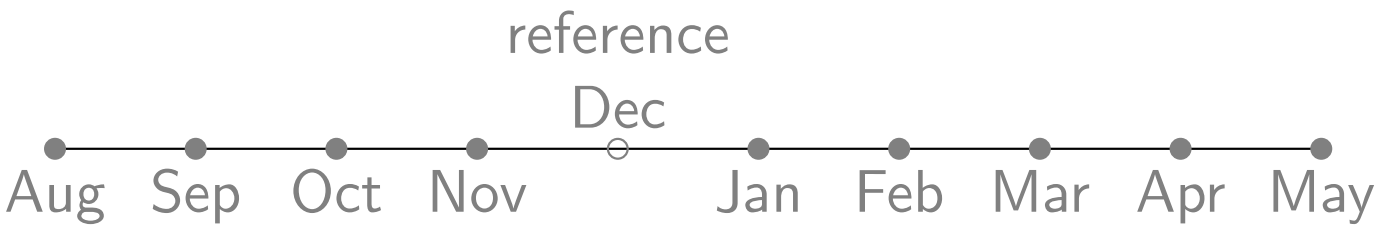
Empirical Approach - 2000/2002 Reform

Births: (Dec 2000 – Feb 2001) vs. (Dec 1999 – Feb 2000)



Labor market outcomes in:

- 2001–2002 for treatment group
- 2000–2001 for control group

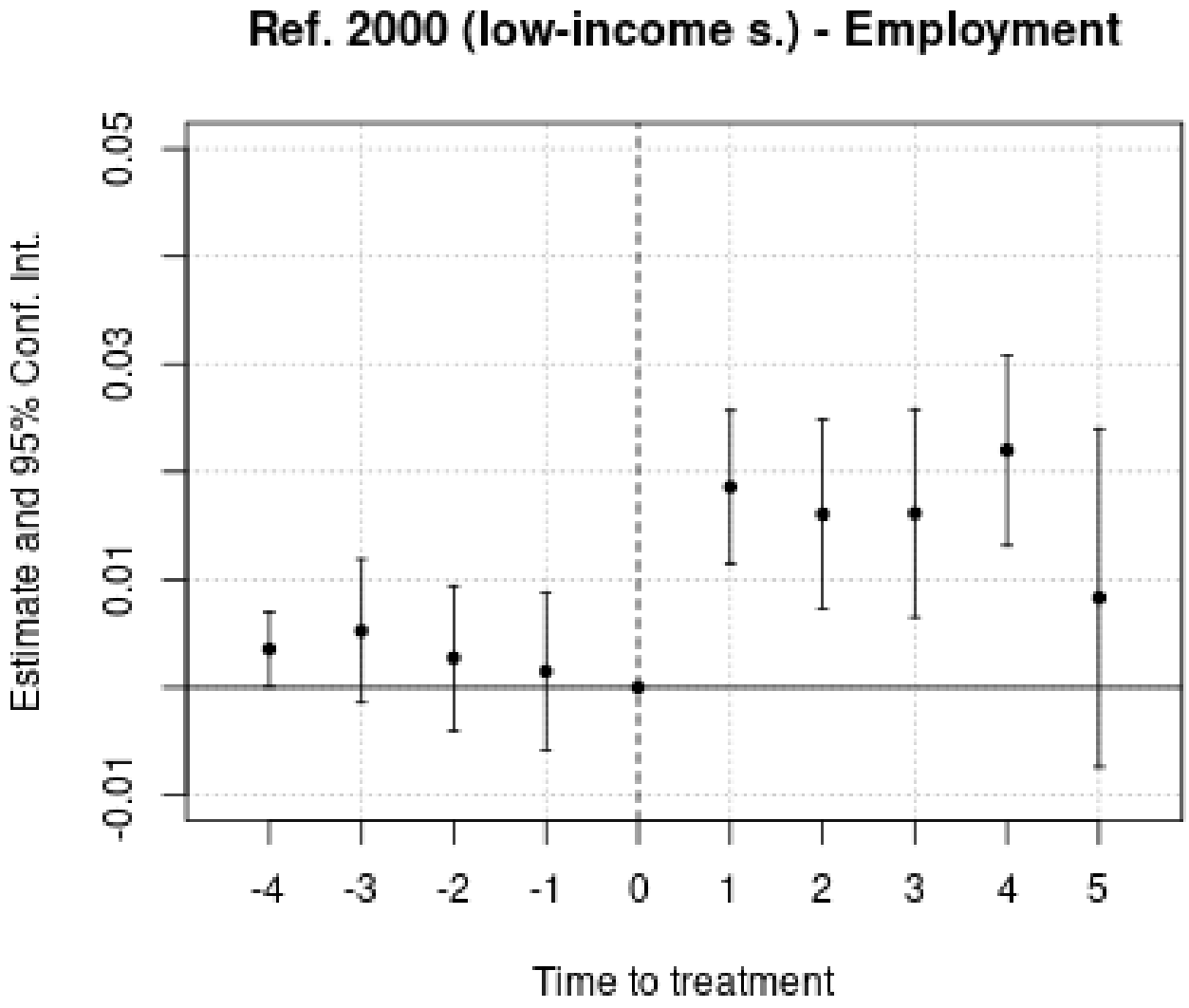


Empirical Approach - 2000/2002 Reform

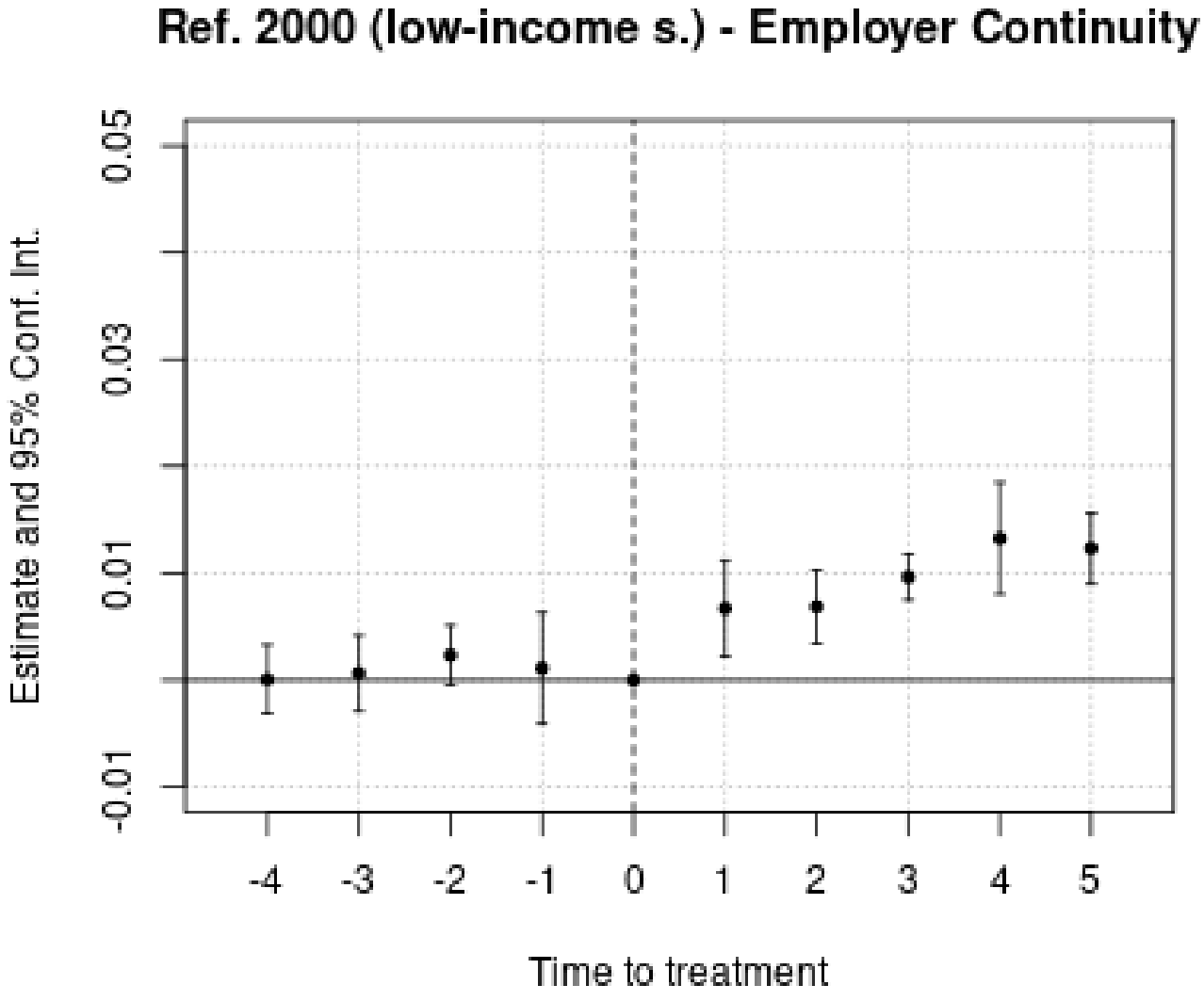
$$Y_{ictm} = \sum_{n \epsilon \{Dec,Jan,Feb\}} \alpha_n \, \mathbb{1}\{m = n\} +$$
$$+ \sum_{u \epsilon \{Aug,Sep,Oct,Nov,Jan,Feb,Mar,Apr,May\}} \beta_u \, \mathbb{1}\{t = u\} + \theta \, D_c +$$
$$+ \sum_{u \epsilon \{Aug,Sep,Oct,Nov,Jan,Feb,Mar,Apr,May\}} \gamma_u \, D_c \, \mathbb{1}\{t = u\} + \varepsilon_{ictm}$$

- Y_{ictm} ... labor market outcomes of mother i of birth cohort c in calendar month t who gave birth in calendar month m
- α_n ... birth-month fixed effects (seasonality)
- D_c ... treatment indicator (birth: Nov 2000 — Feb 2001)
- θ ... overall mean difference between treatment and control
- $\mathbb{1}\{t = u\}$ ... event-time indicators (relative to Dec)
- β_u ... monthly time profile in control group
- γ_u ... difference in time profiles between treatment and control
- $\Rightarrow$ parameters of interest: γ_u for the months January to May

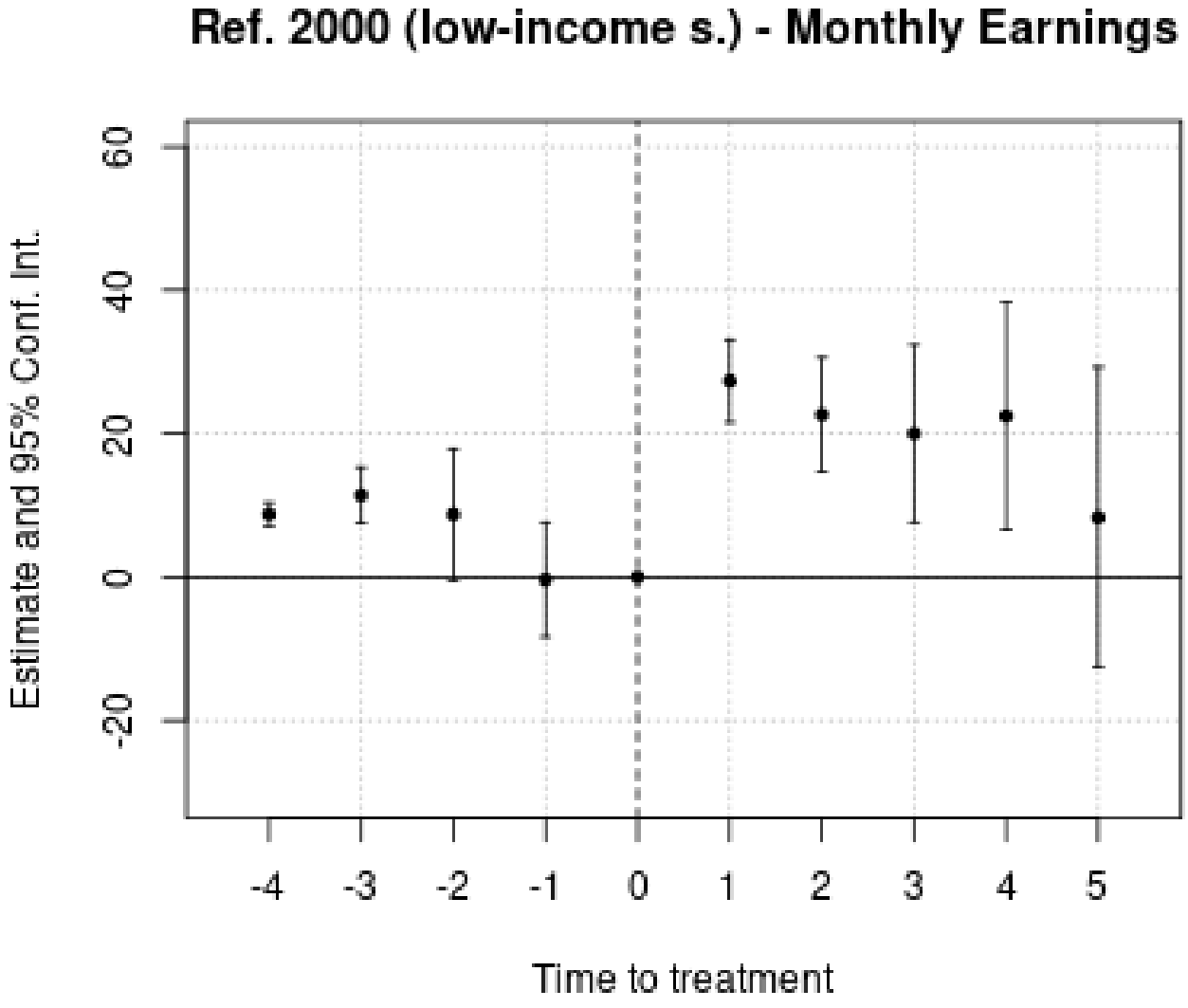
Reform 2000 (low-income): Effect on Employment



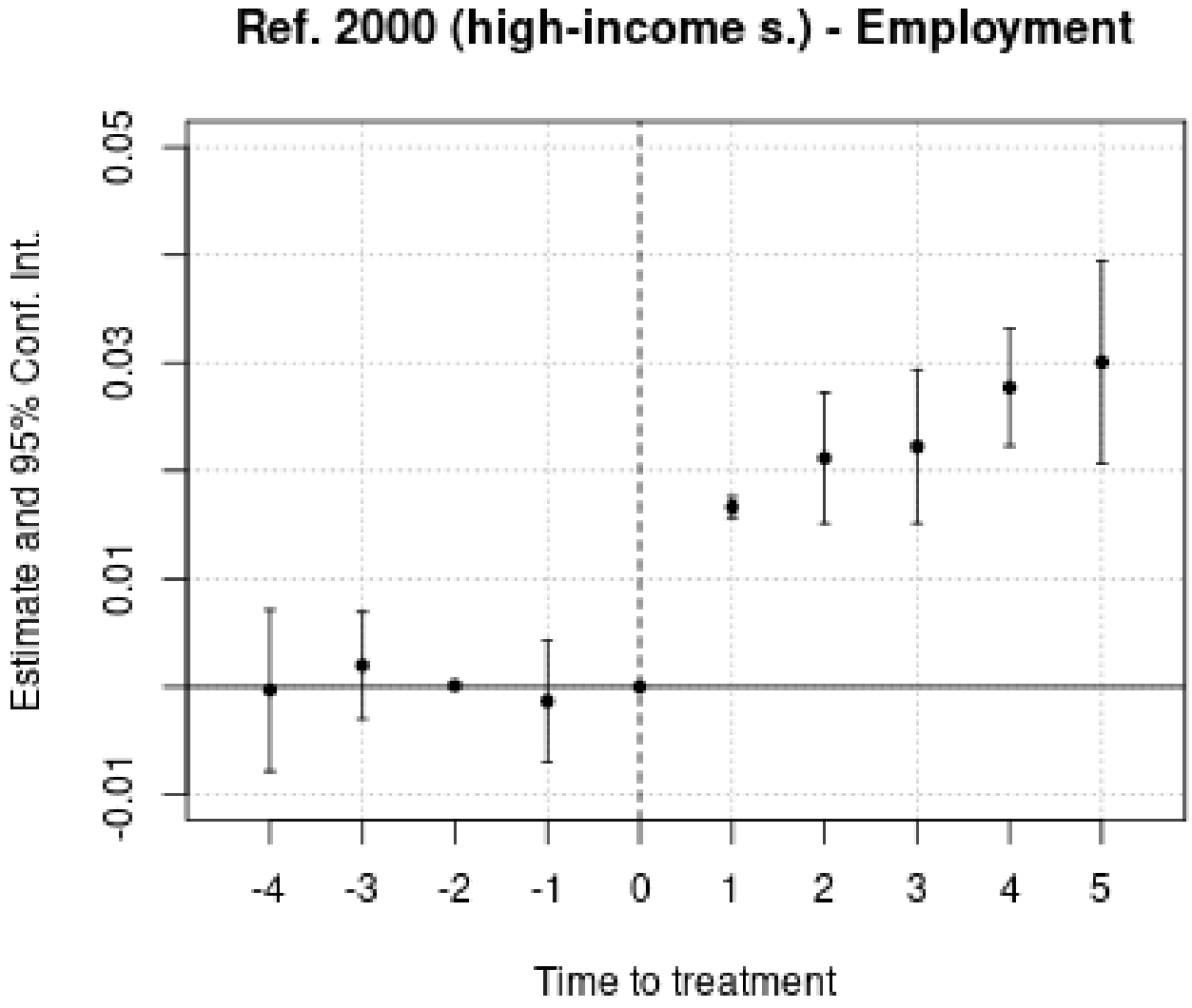
Reform 2000 (low-income): Effect on Employer Continuity



Reform 2000 (low-income): Effect on Monthly Earnings



Reform 2000 (high-income): Effect on Employment



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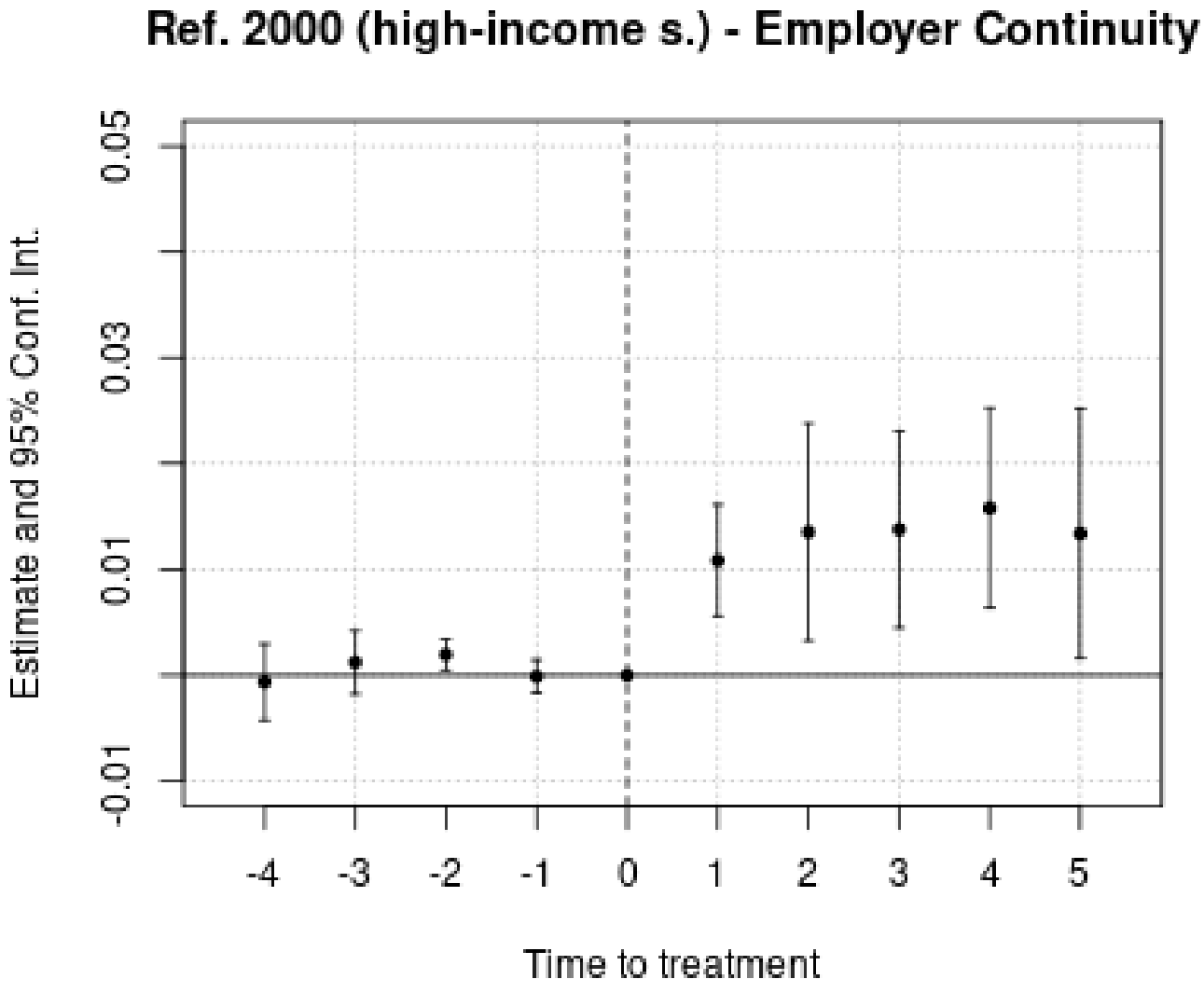

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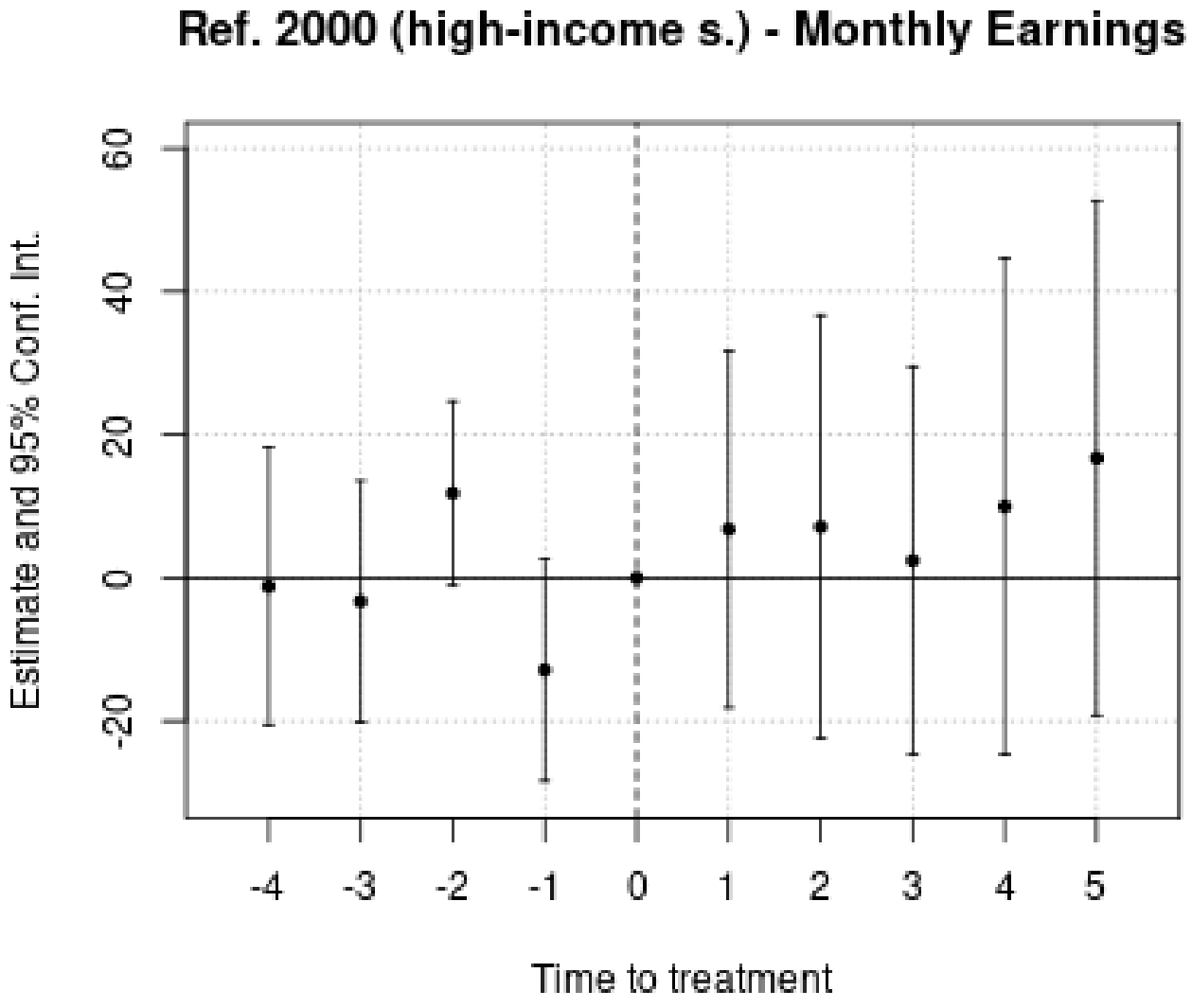
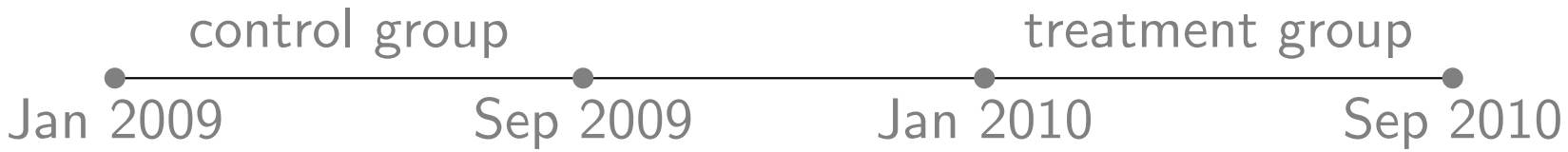


Parental Leave Reform of 2010

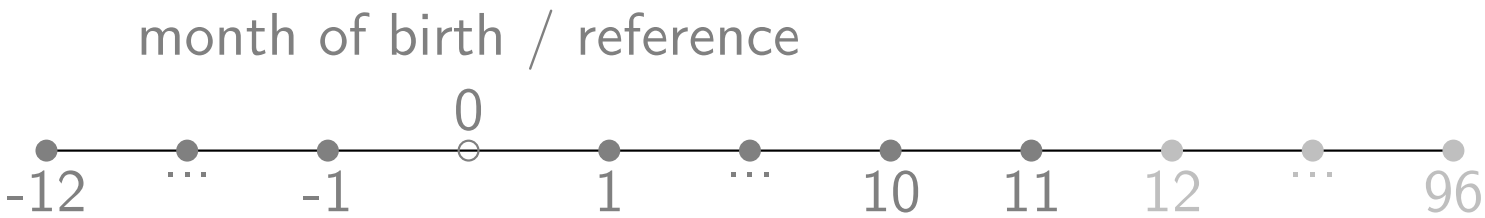
- Previously available PL options: 15+3, 20+4, 30+6
- Introduction of 12+2 flat-rate and income-related benefits
- Introduction of individual income threshold for flat-rate versions
- **2010**: change in income limit only for income-related benefits
  - PL benefits: **€16,200/year** ⇒ **€5,800/year**
  - Applied to births after December 31, 2009
  - Transition period between October 1 and December 31, 2009

Empirical Approach - 2010 Reform

Births: (Jan 2010 – Sep 2010) vs. (Jan 2009 – Sep 2009)



Labor market outcomes between 12 months before birth until 96 months later (Effect of the income constraints is seen until 11 months after birth; in the 12th month after birth the effect of the introduction of the shorter income-related benefit can be seen)



Empirical Approach - 2010 Reform

$$Y_{ictm} = \sum_{n \epsilon \{Jan,...,Sep\}} \alpha_n \ \mathbb{1}\{m = n\} +$$
$$+ \sum_{u \epsilon \{-12,...,-1,0,1,...,11,...,96\}} \beta_u \ \mathbb{1}\{t = u\} + \theta \ D_c +$$
$$+ \sum_{u \epsilon \{-12,...,-1,0,1,...,11,...,96\}} \gamma_u \ D_c \ \mathbb{1}\{t = u\} + \varepsilon_{ictm}$$

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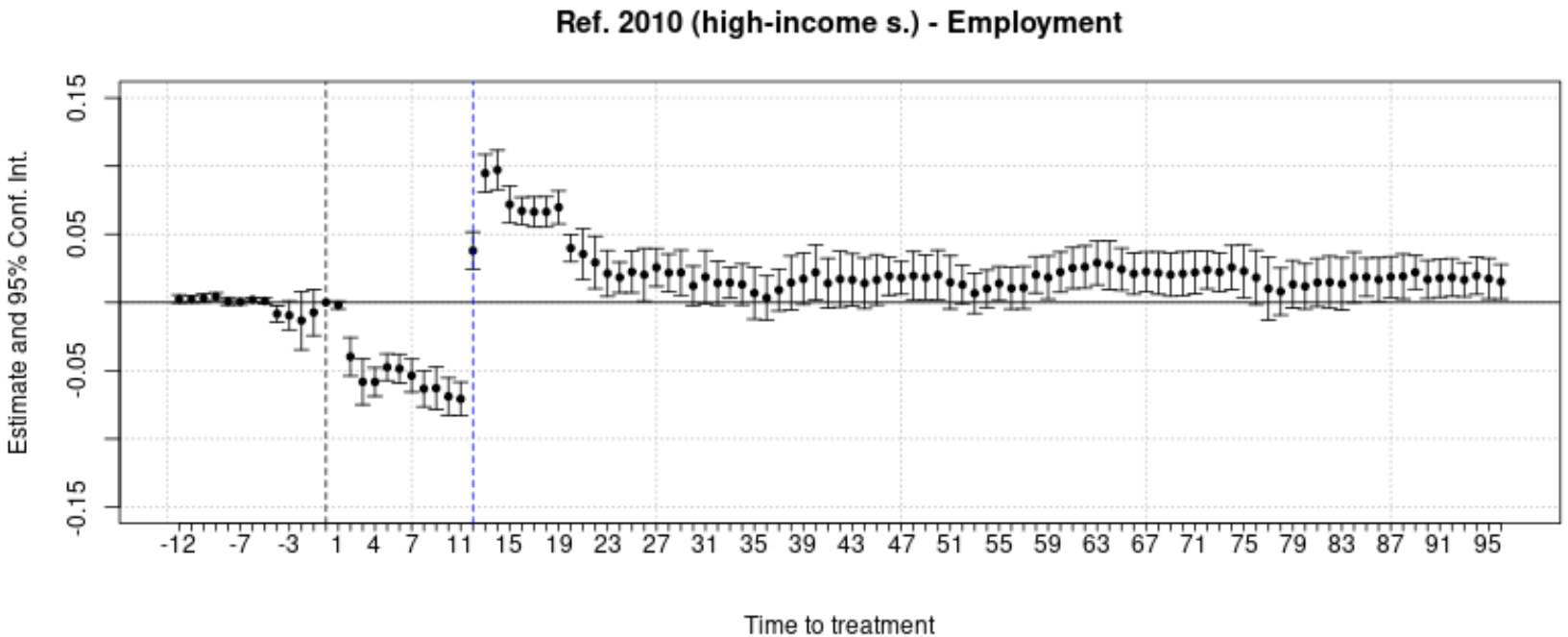
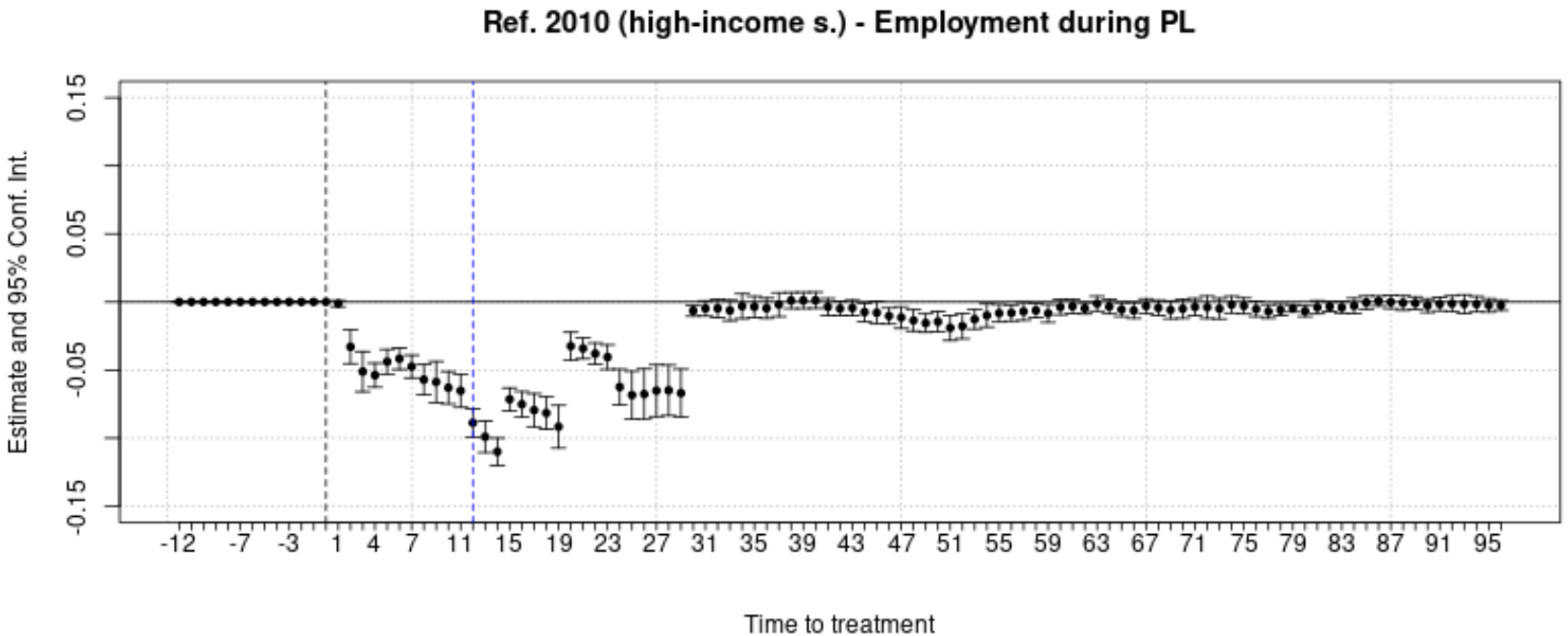
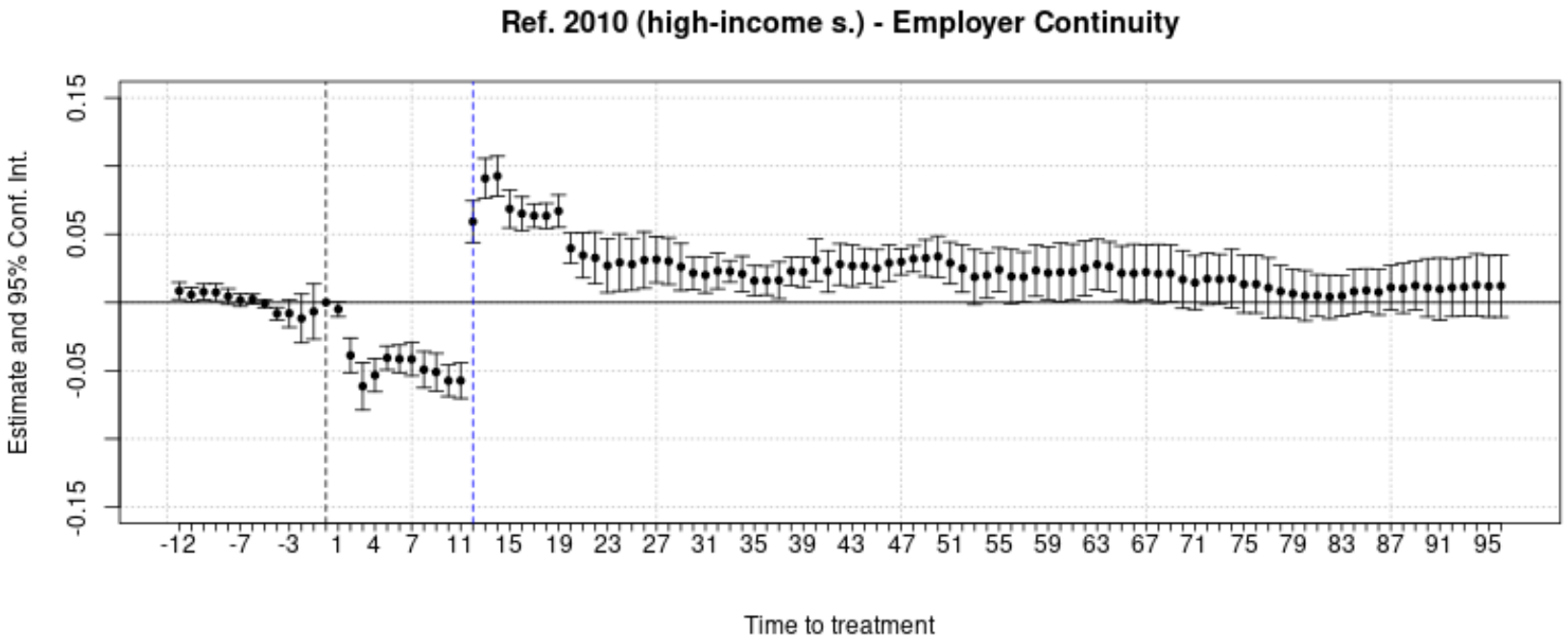
Reform 2010 (high-income): Effect on Employment



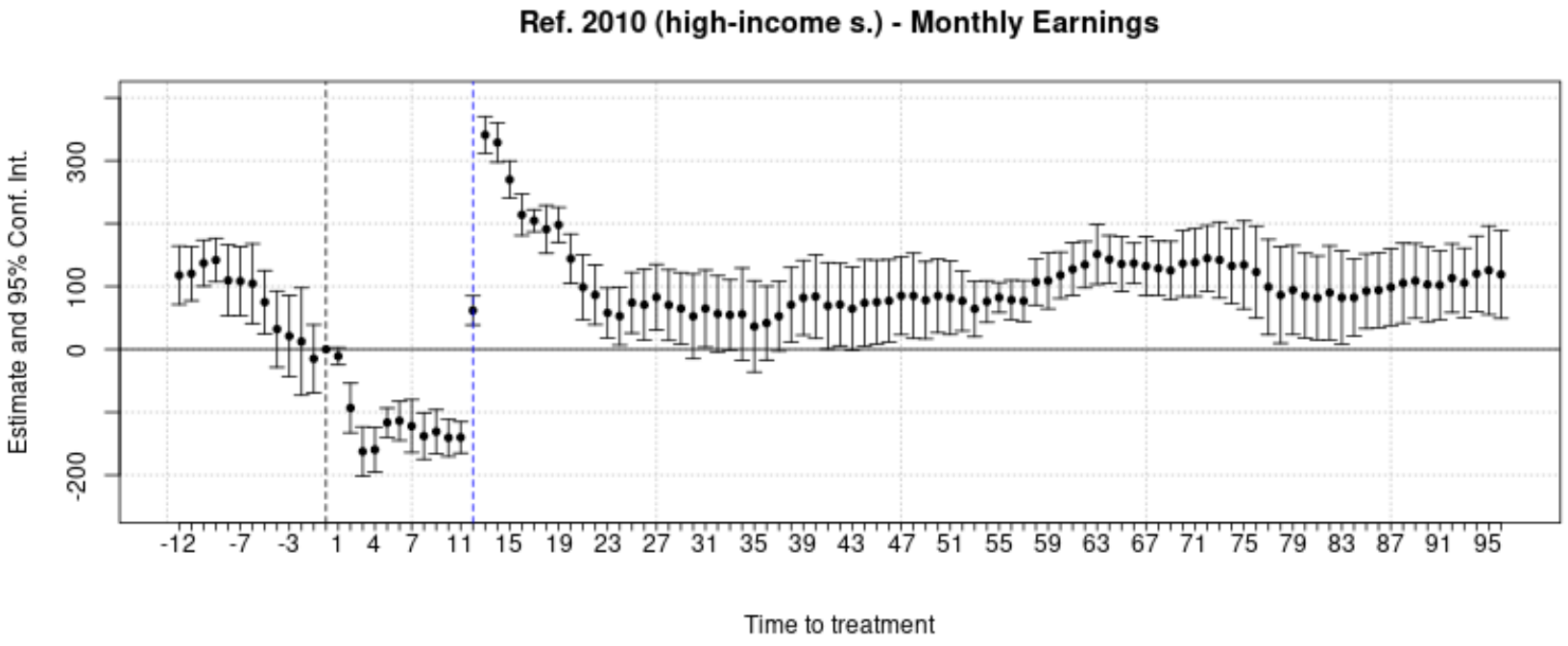
Reform 2010 (high-income): Effect on Employment during PL



Reform 2010 (high-income): Effect on Employer Continuity



Reform 2010 (high-income): Effect on Monthly Earnings



Discussion

- Income thresholds during parental leave negatively affect mothers' labor supply in the first years after birth
- Working in a reduced form during parental leave could strengthen mothers' attachment to the employer / labor market and improve their career prospects
- A related and important question:
  - Does part-time work during parental leave actually improve mothers' careers?

Discussion

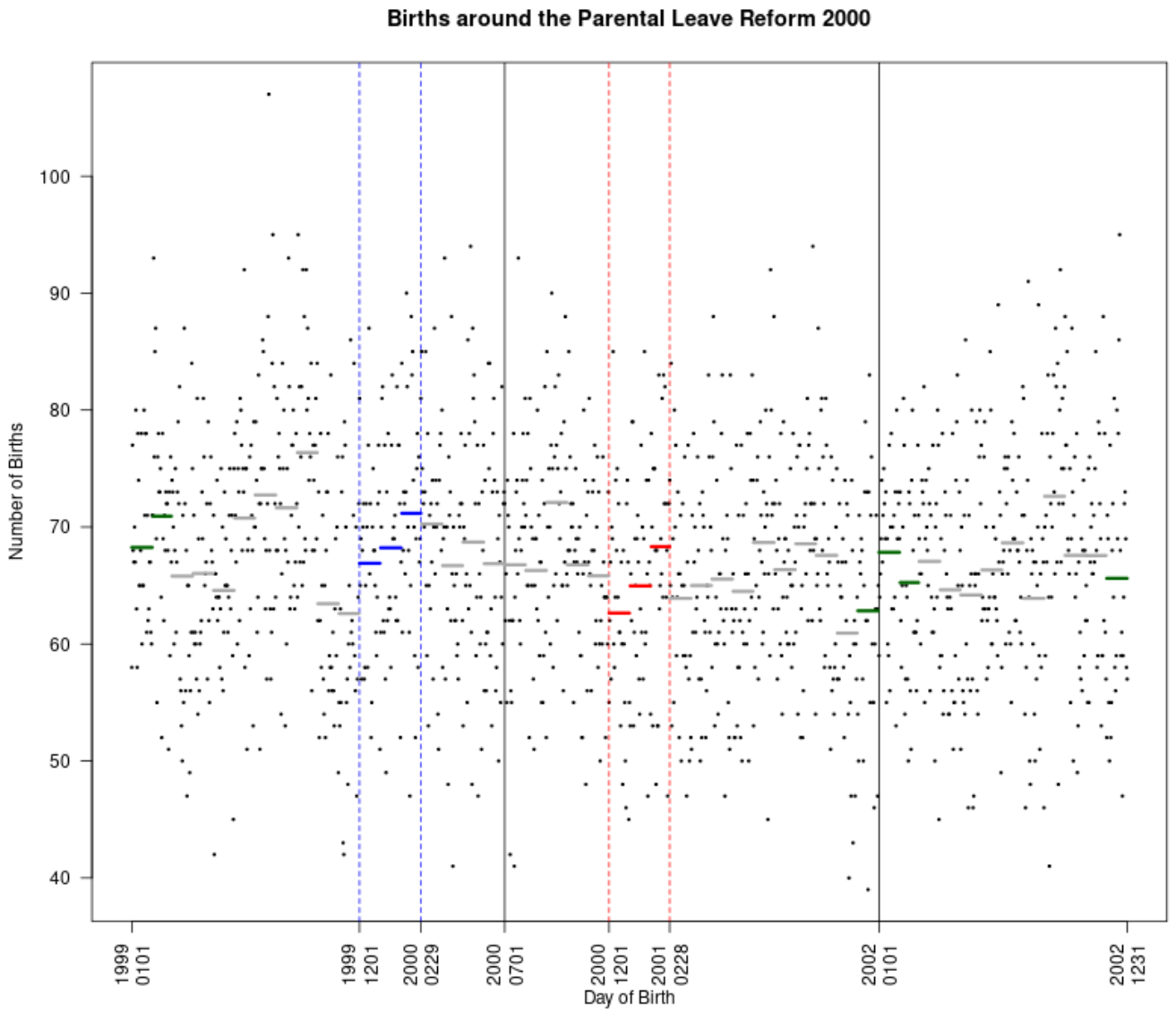
AK survey (2023):

- 60% dissatisfied with Austrian PL system
- 62% view complicated rules as problematic
- 51% view income constraints as problematic
- 9% even had to pay back PL benefits
  (either due to exceeding the income limit or due to missing medical examinations)
- Very long processing time
- Overboarding bureaucracy

Discussion

- Different goals for PL than for other means-tested benefits
- Income constraints make some flexible arrangements between parents more complicated / unfair
- Firms could suffer when workers that are hard to substitute are detered from part-time work during the baby break (Brenøe et al., 2023 & Ginja et al.,2023)
- BUT fairness / austerity concerns
- BUT "lock-in" effect

No bunching of births - reform 2000/2002



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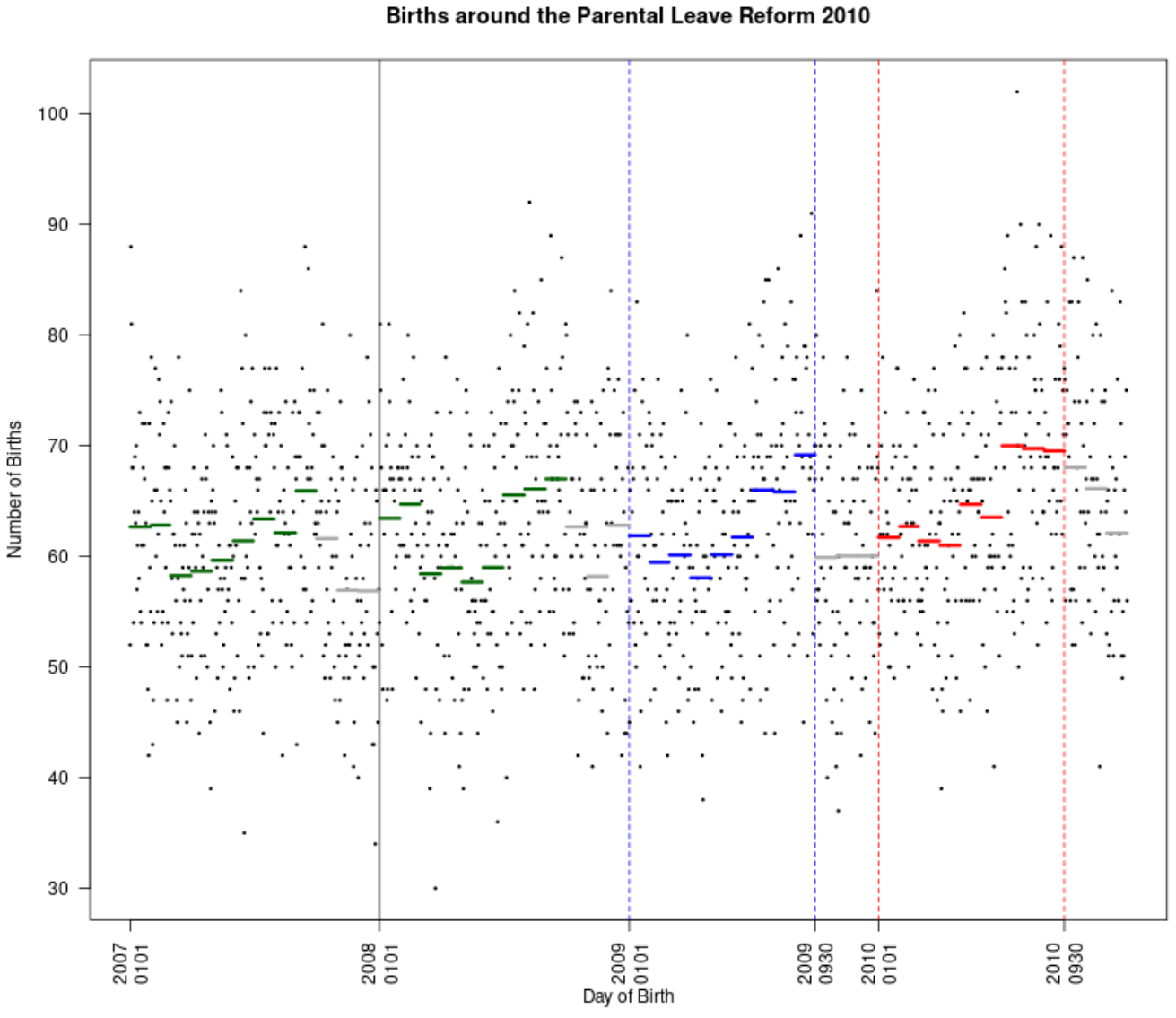
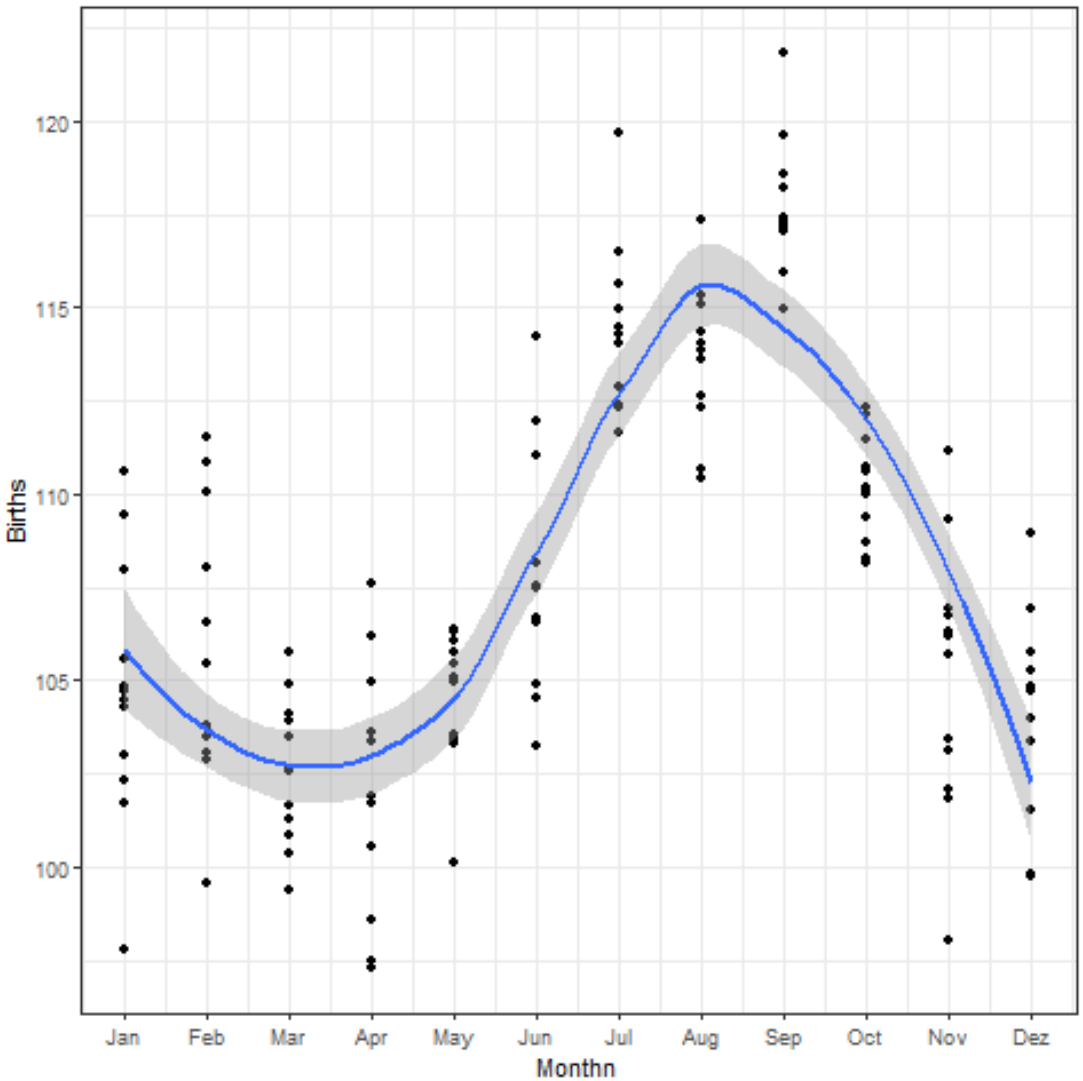


Appendix: Birth seasonality (2005–2016)
First Order Births



Comparison of treatment and control group Parental Leave Reform of 2000/2002

Reform 2000 (low-income sample): Sample sizes per birth-month

	Dec	Jan	Feb
Treatment	712	786	734
Control	769	830	799

Comparison of treatment and control group Parental Leave Reform of 2000/2002

Reform 2000 (low-income sample):
Overview - characteristics of mothers
(mean or share; note that income data is reported in 2020 prices)

	Treatment	Control
Age at birth	25.8	25.8
White Collar	48.4%	49.2%
Tenure (days)	552	593
Experience (days)	1,597	1,654
Unemployment (days)	244	249
Cumulative income in the years 2&3 bb.	23,130	23,986
Daily wage in the 2nd year bb.	48.8	48.5

Comparison of treatment and control group Parental Leave Reform of 2000/2002

Reform 2000 (high-income sample): Sample sizes per birth-month

	Dec	Jan	Feb
Treatment	1230	1228	1179
Control	1305	1285	1265

Comparison of treatment and control group Parental Leave Reform of 2000/2002

Reform 2000 (high-income sample):
Overview - characteristics of mothers
(mean or share; note that income data is reported in 2020 prices)

	Treatment	Control
Age at birth	29.2	29.1
White Collar	80.2%	80.6%
Tenure (days)	1,790	1,785
Experience (days)	3,286	3,229
Unemployment (days)	109	110
Cumulative income in the years 2&3 bb.	64,957	63,923
Daily wage in the 2nd year bb.	93.4	91.8

Comparison of treatment and control group
Parental Leave Reform of 2010

Reform 2010 (high-income sample): Sample sizes per birth-month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Treatment	428	442	435	446	530	482	559	572	566
Control	419	356	412	439	450	438	490	524	547

Comparison of treatment and control group
Parental Leave Reform of 2010

Reform 2010 (high-income sample):
Overview - characteristics of mothers
(mean or share; note that income data is reported in 2020 prices)

	Treatment	Control
Age at birth	32.1	32.0
White Collar	97.9%	97.8%
Tenure (days)	1,864	1,855
Experience (days)	3,580	3,591
Unemployment (days)	83.8	84.1
Cumulative income in the years 2&3 bb.	88,098	85,303
Daily wage in the 2nd year bb.	127	124

Sample Overview

Year	Births	FOBs	Income	Fathers	Checked	Income
1997	84.045	34.952	29.990	21.550	0	13.863
1999	78.138	32.386	27.508	21.659	0	14.100
2000	78.268	31.584	27.449	22.907	0	15.119
2001	75.458	30.862	26.827	22.560	0	15.104
2004	78.968	31.531	26.878	25.368	20.777	17.220
2005	78.190	31.136	26.726	26.434	23.297	17.965
2007	76.250	30.192	25.945	26.879	24.850	18.524
2008	77.752	30.938	26.509	28.061	26.018	19.343
2009	76.344	30.670	26.393	27.922	26.013	19.402
2010	78.742	32.092	27.935	29.302	27.258	20.698
2011	78.109	32.507	28.393	29.722	27.769	21.519
2013	79.330	33.694	29.972	31.306	29.368	23.134
2015	84.381	35.189	31.781	32.797	30.859	25.205