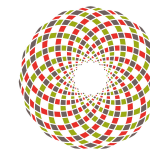


Parenthood and labour market outcomes

Isabelle Sin



Te Pūnaha Matatini
Data ■ Knowledge ■ Insight

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Motivation: What role does parenthood play in the gender wage gap?

- Women in New Zealand earn less on average than men
- 9.4% lower median hourly pay in June quarter 2017 (SNZ)
- Difference can't be explained by:
 - Observable characteristics (age, education, skills etc)
 - Productivity (Sin, Stillman, and Fabling, 2017)
- Use newly combined NZ data to ask what is the role of parenthood in this gender wage gap?



Research questions

- How do first-time mothers and fathers change their employment when they have children?
- How have their hours worked, monthly earnings, and hourly earnings changed when they return to work after becoming parents?
- How do these changes differ by pre-parenthood income?
- By time out of employment?
- (By age, ethnicity, and other characteristics?)



SNZ data confidentiality

Access to the data presented was managed by Statistics New Zealand under strict micro-data access protocols and in accordance with the security and confidentiality provisions of the Statistics Act 1975.

Our findings are not Official Statistics. The opinions, findings, recommendations, and conclusions expressed are those of the authors, not Statistics NZ, the Ministry for Women, Motu Economic and Public Policy Research, Te Pūnaha Matatini, New Zealand Work Research Institute, or AUT.



Data

Monthly wage
earnings from
tax data

Birth records

DIA data:
Parents
having first
child in NZ

IDI
(Integrated Data
Infrastructure)

Survey data (HLFS)
on hours worked
and hourly wages



Data: Wage earnings data from the IDI

- Monthly wage earnings data from tax records (IRD)
- Covers full population of NZ from 1999 to present

But

- No data on hours worked or hourly wages

We graphically analyse for first-time parents (~13,700 mothers + similar fathers) in 2005 between 2000 and 2015:

- Employment (any wage income)
- Monthly wage earnings (average among positive values)



Data: Hours worked and hourly wages from Household Labour Force Survey (HLFS)

- Hours worked: quarterly data
- Hourly wages: annual data (NZ Income Survey)
- 2006 to 2015

But

- Survey - small sample of population
- Each individual included for 2 years only

First-time parents in 2003-10 and a comparison group of “never parents”, restricting to ages 20-49, 62,445 person-years total



Data: Skill measures from IDI

Two measures of skill/earning potential:

- (Education as at 2013 Census - some years after child's birth)
- Income quartile based on monthly wage earnings within gender and single year of age in 2003 (second year before parenthood)
 - use average earnings in months worked only
 - those who worked <4 months assigned to separate group
- Similar results



Framework

- Employment(/hours) for parents is a constrained choice
- Tradeoffs:
 - Income from work/cost of alternative childcare
 - Preference for raising children/work
 - Human capital depreciation/slower accumulation
- Constraints:
 - Biological
 - Childcare
 - Financial
 - Ability to find work with required conditions (eg flexibility)

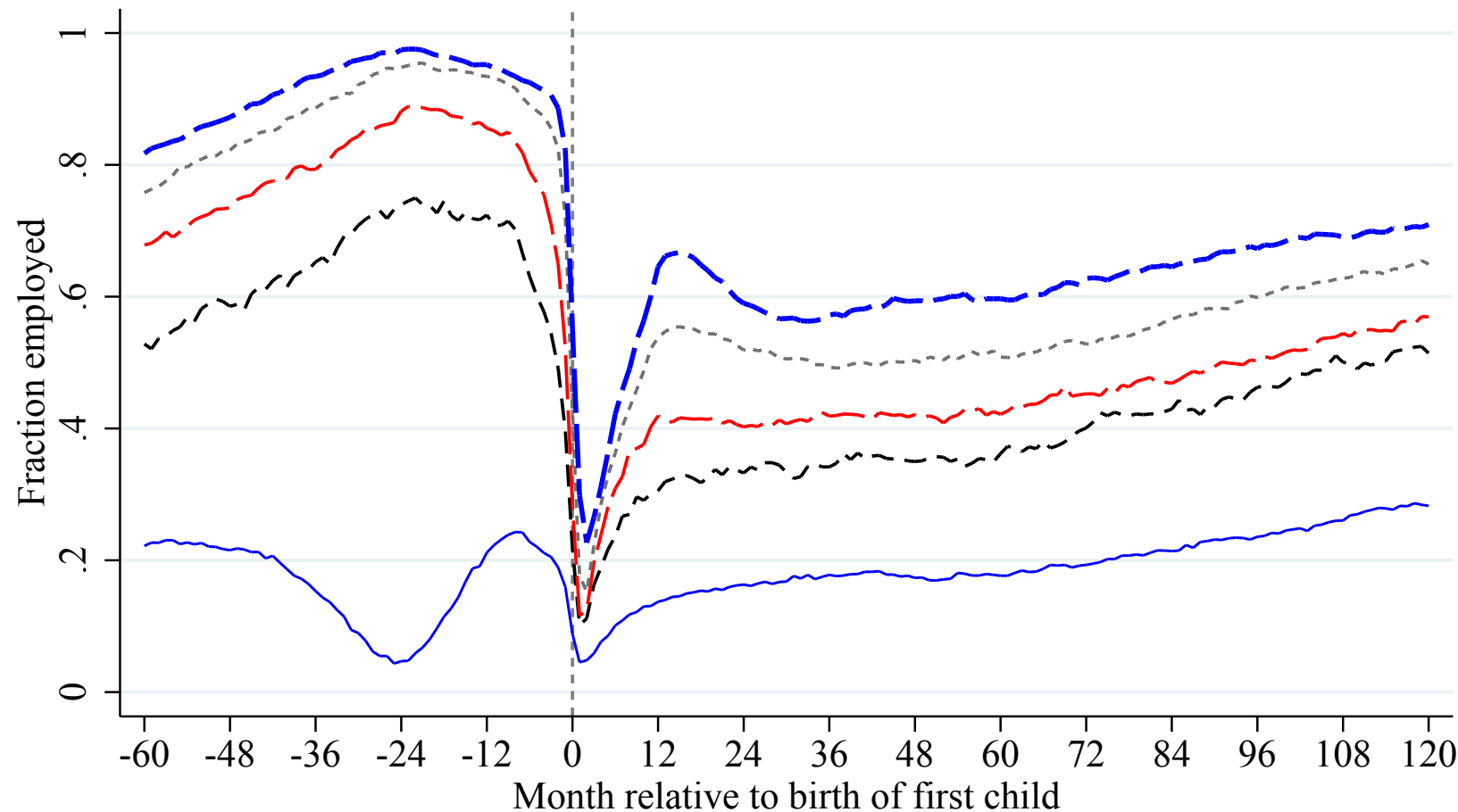


Findings:

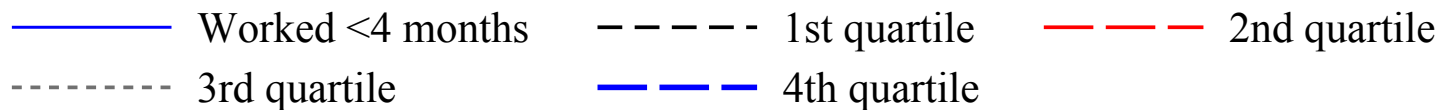
1. Employment
2. Monthly wage income
3. Hours worked
4. Hourly wages



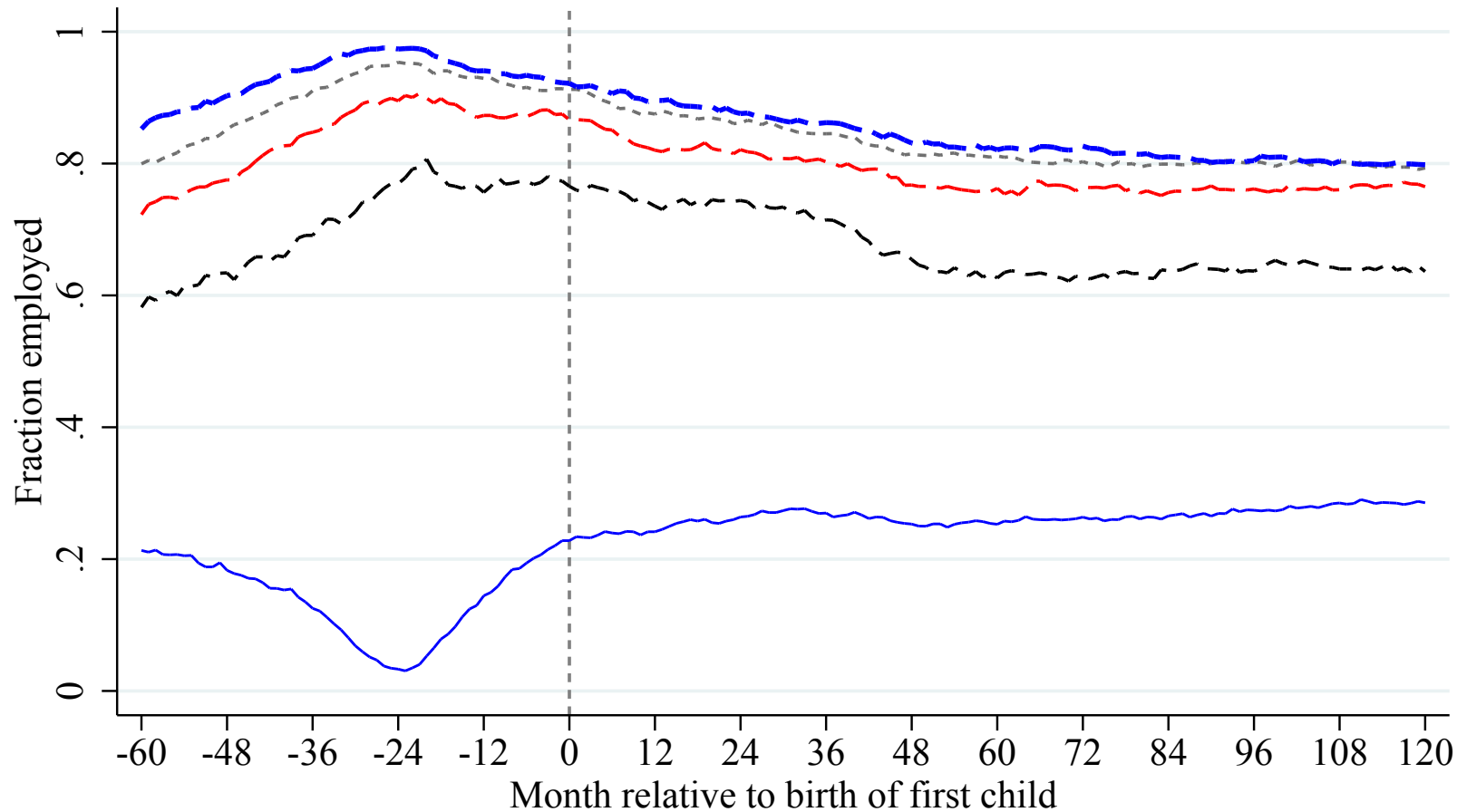
1. Mothers' **employment** rates by pre-parenthood income



Monthly income quartile for age and gender in 2003



1. Fathers' employment rates by pre-parenthood income

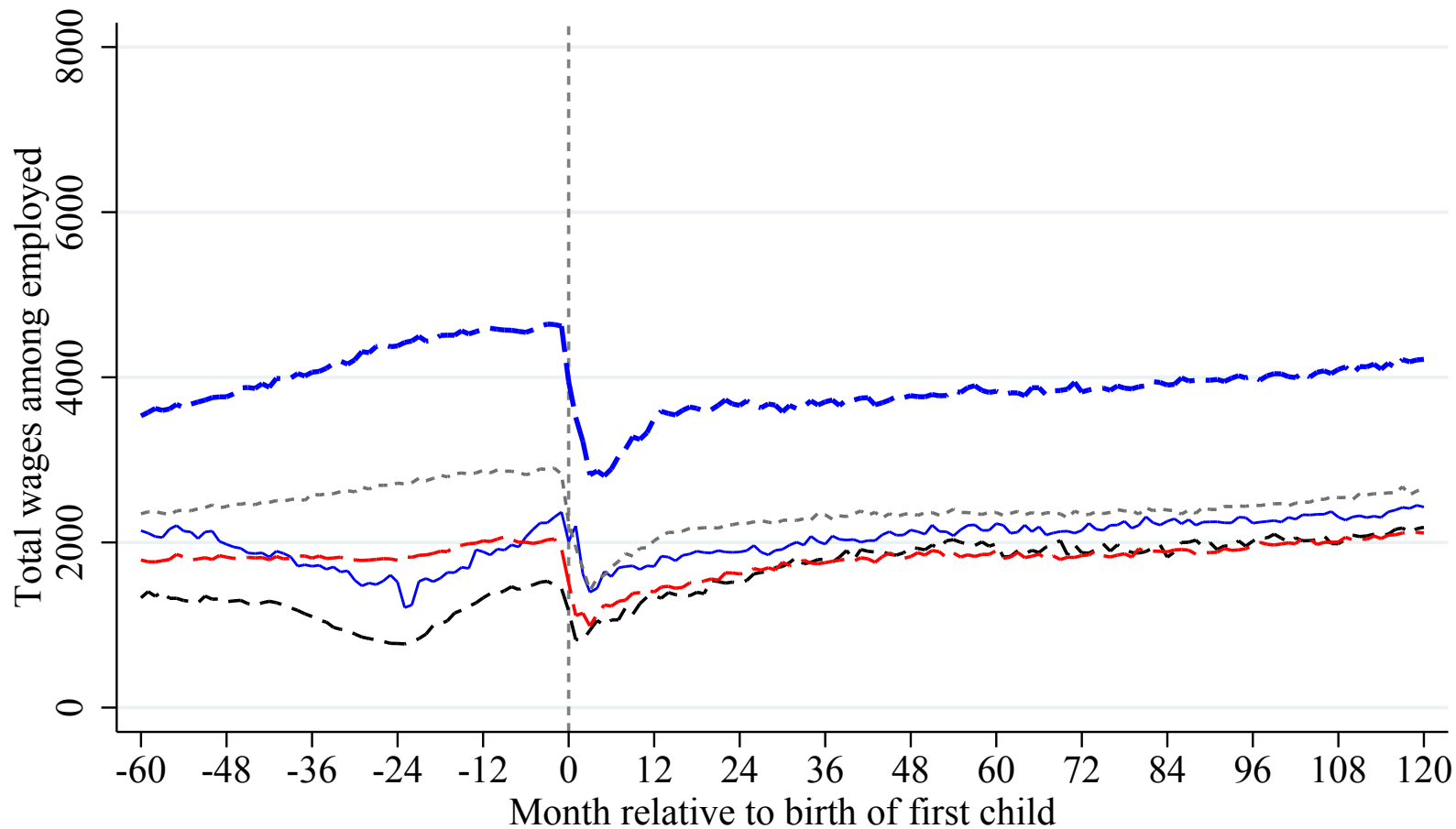


Monthly income quartile for age and gender in 2003

— Worked <4 months - - - - 1st quartile - - - - 2nd quartile
- - - - 3rd quartile - - - - 4th quartile



2. Monthly earnings of employed women by pre-parenthood income

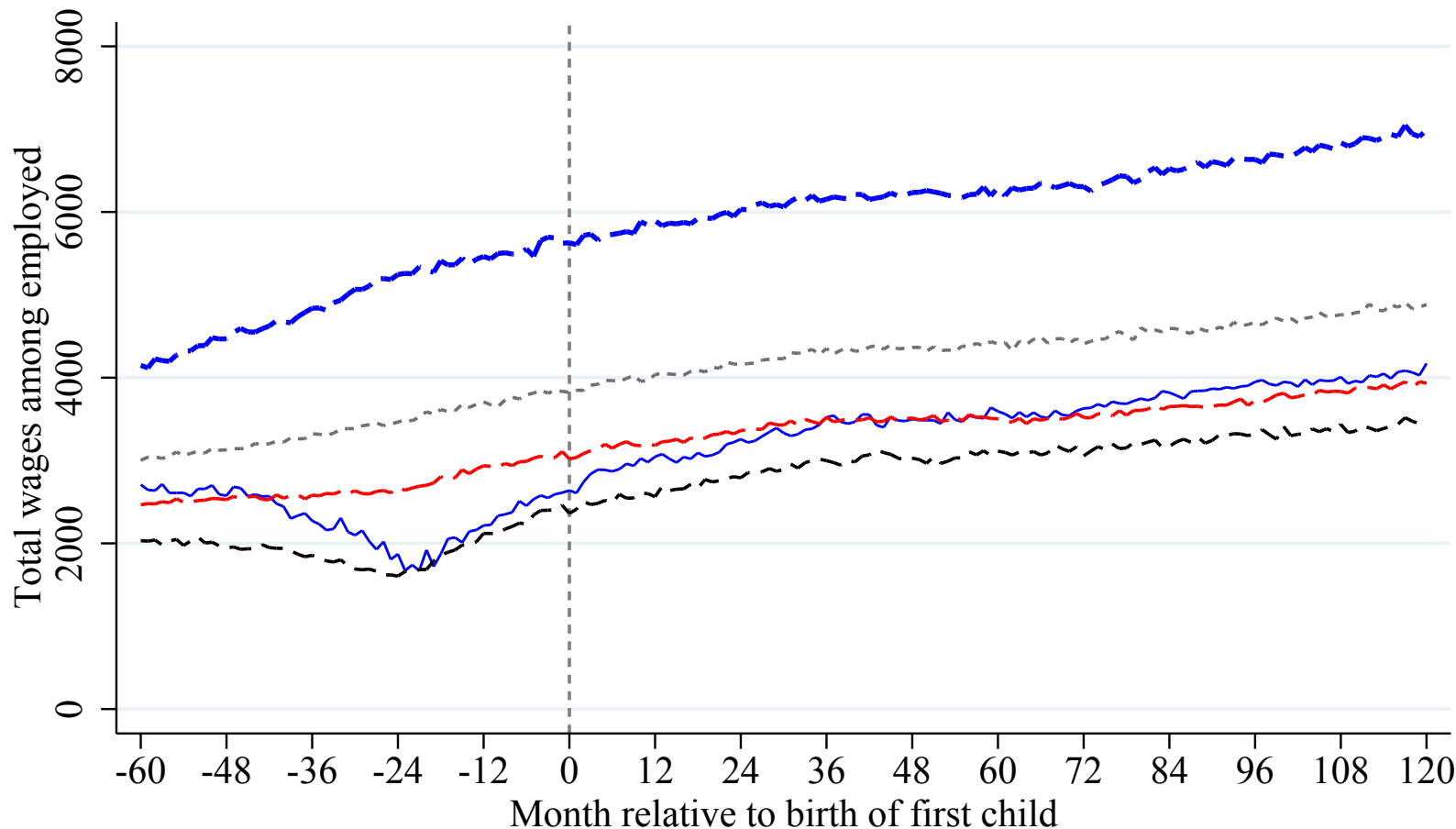


Monthly income quartile for age and gender in 2003

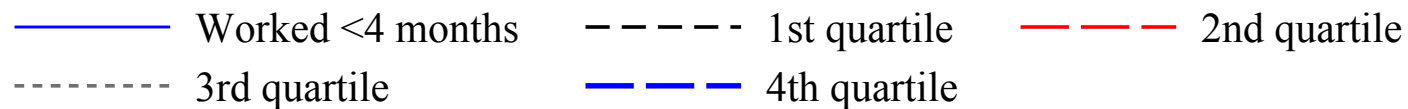
- | | | |
|----------------------|--------------------|--------------------|
| ——— Worked <4 months | ----- 1st quartile | ----- 2nd quartile |
| ----- 3rd quartile | ----- 4th quartile | |



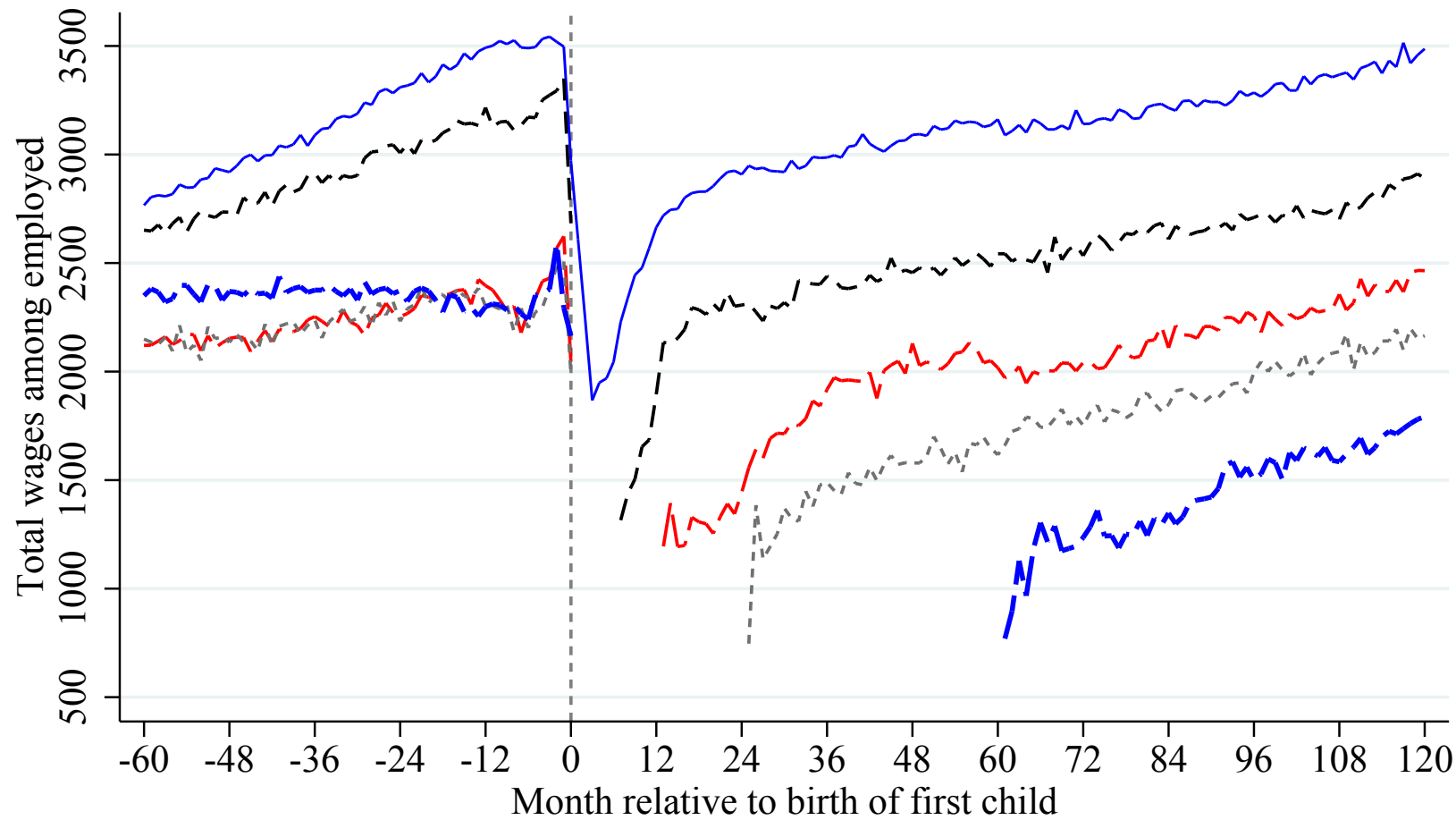
2. Monthly earnings of employed men by pre-parenthood income



Monthly income quartile for age and gender in 2003



2. Monthly earnings of employed women by time out of employment

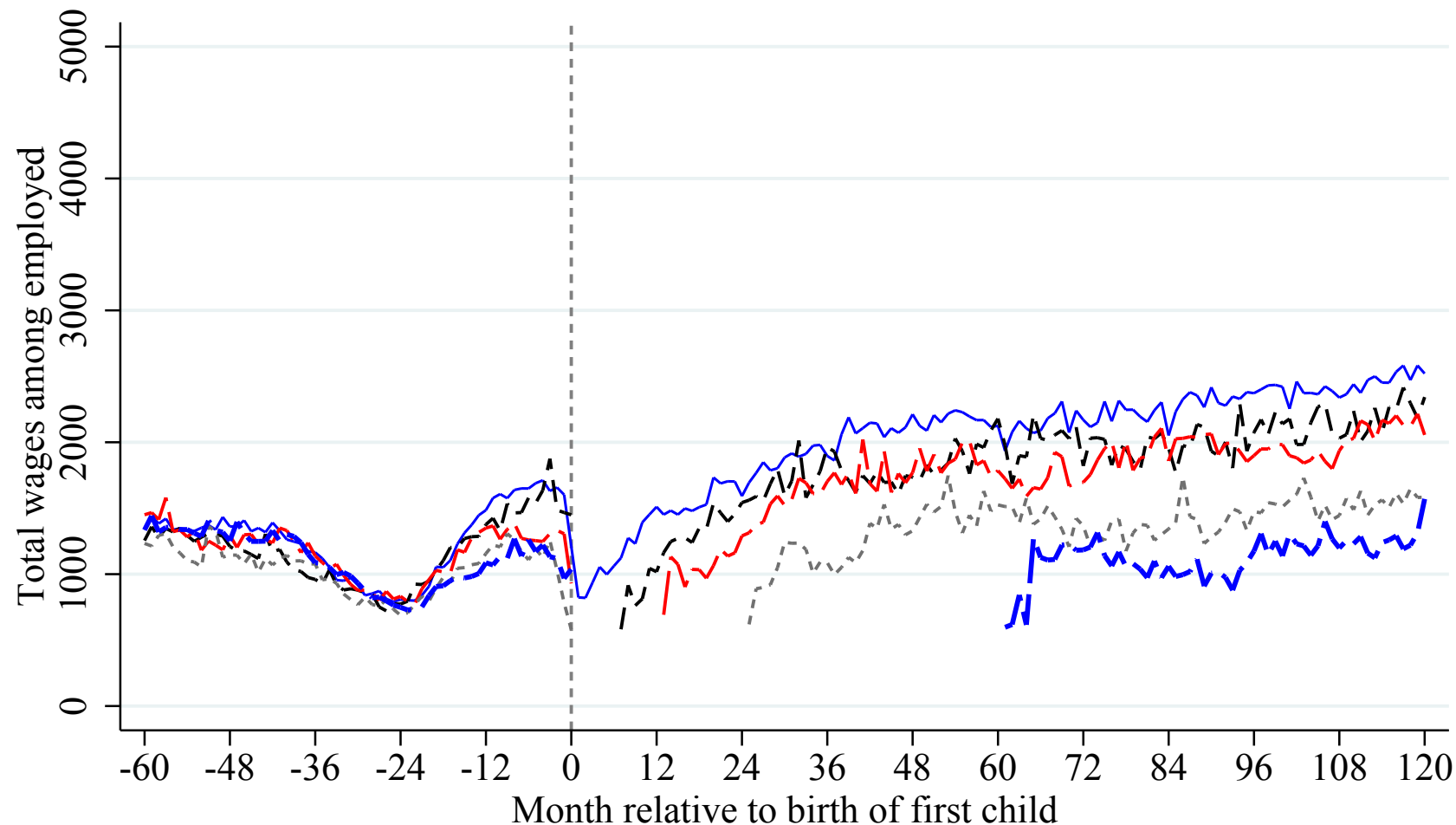


First month back earning wages after child's birth

- month 1-6
- - - - month 7-12
- - - - month 13-24
- month 25-60
- month not by month 61



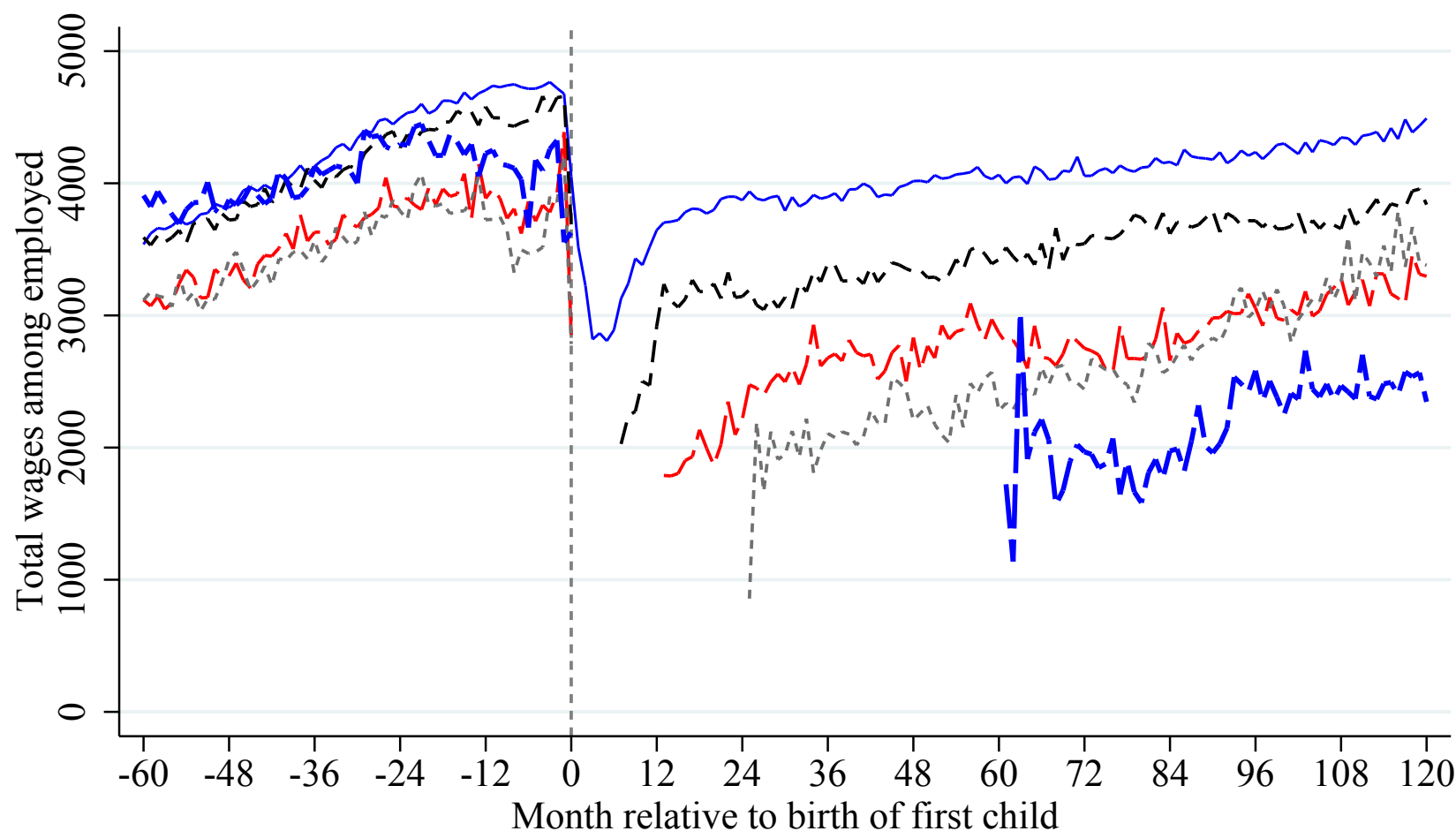
2. Monthly earnings of employed women by time out of employment: lowest income quartile



First month back earning wages after child's birth

- month 1-6
- - - - month 7-12
- - - - month 13-24
- - - - month 25-60
- - - - not by month 61

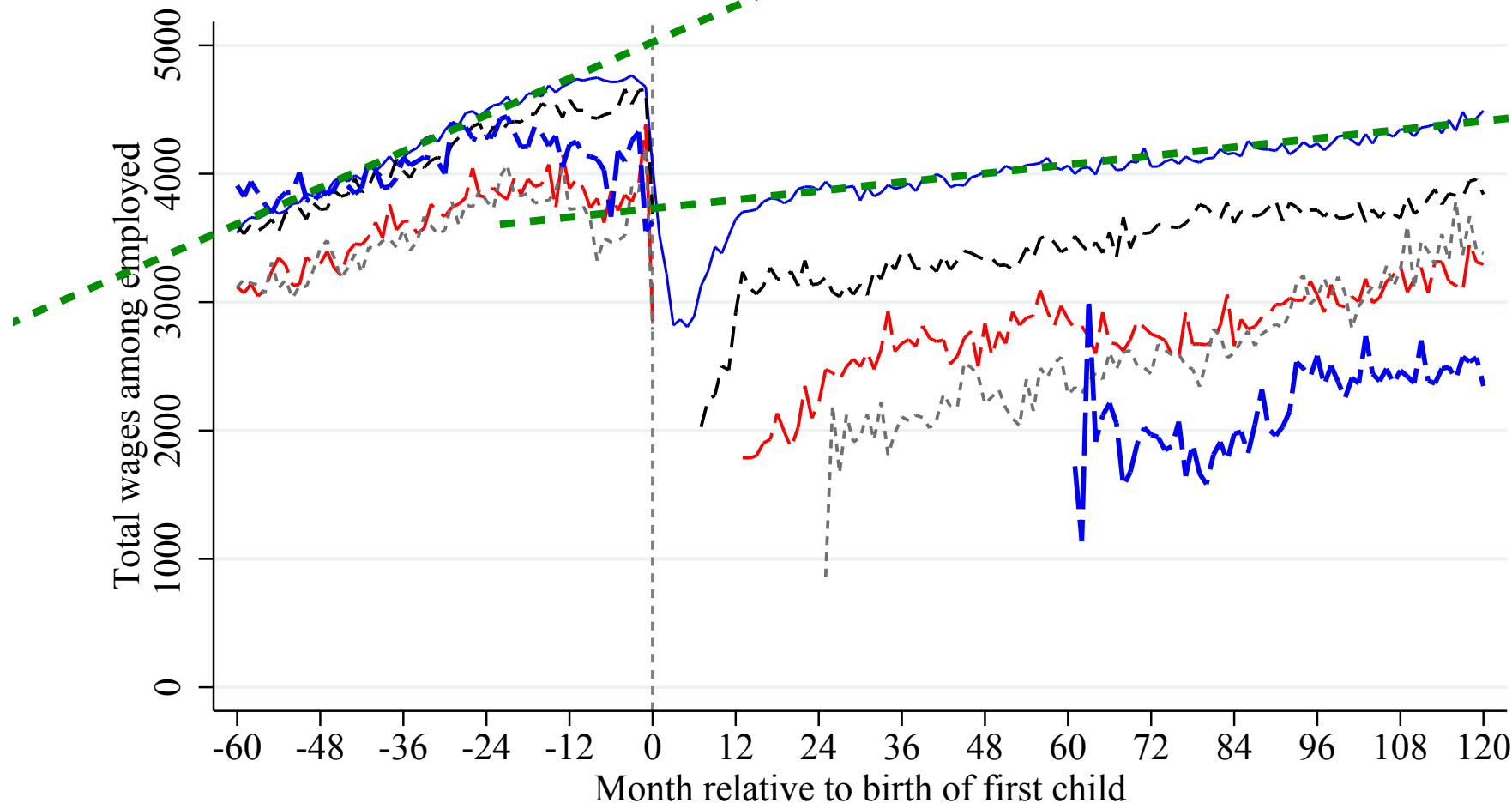
2. Monthly earnings of employed women by time out of employment: highest income quartile



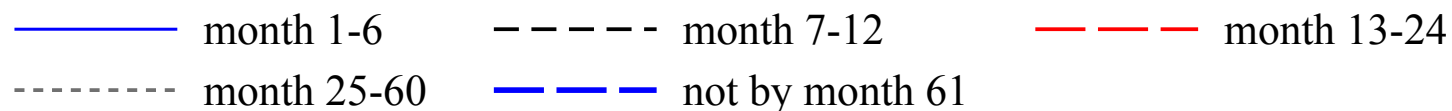
First month back earning wages after child's birth

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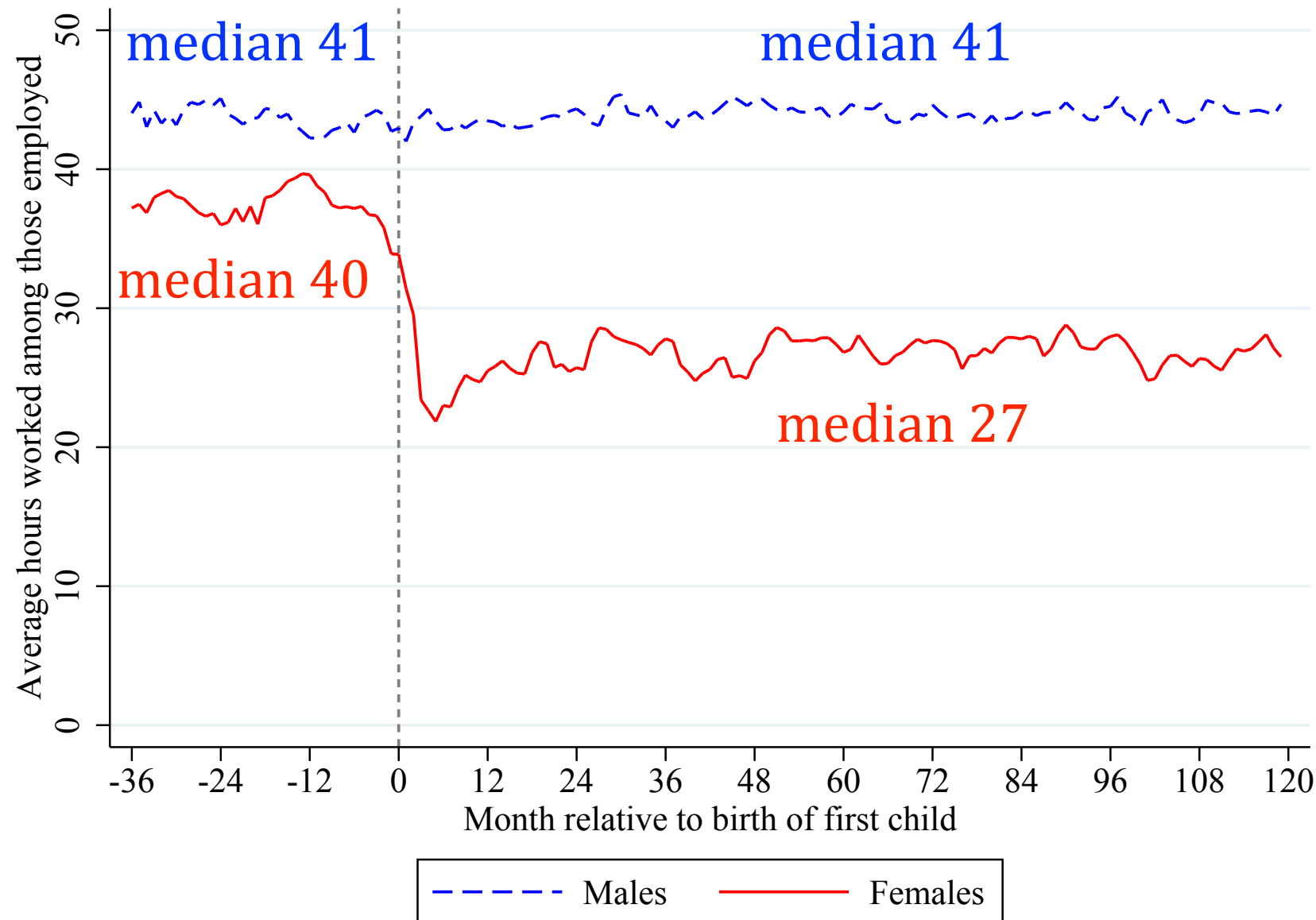
2. Monthly earnings of employed women by time out of employment: highest income quartile



First month back earning wages after child's birth



3. Hours worked among those employed



4. How are **hourly wages** affected by parenthood?

Two main challenges:

- Women who have children may differ systematically from those who don't, e.g. more family-oriented
- Women who work (more) after having children may differ systematically from those who don't, e.g. more ambitious

Solution:

- Allow wages to differ for future parents
- Control for pre-parenthood earnings (proxy for earnings potential)



4. How are hourly wages affected by parenthood? - by time out of work

<i>Dep var: ln(hourly wage)</i>	(1)
Female * Parent * Returned in months 1 to 6	-0.013 (0.025)
Female * Parent * Returned in months 7 to 12	-0.058 (0.038)
Female * Parent * Returned in months 13+	-0.077** (0.036)
Parent	-0.010 (0.016)
Other controls	Yes
<i>Observations</i>	42,597
<i>R-squared</i>	0.248

Robust standard errors in parentheses. Asterisks denote: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Other controls include: gender interacted with Ever a parent; for females who are ever parents, FE for each return to work category; Ever a parent interacted with pre-parenthood income quartile; age quadratic interacted with gender; Year FE; and Education FE.



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Female * Parent * Returned in months 7 to 12	-0.058 (0.038)	
Female * Parent * Returned in months 13+	-0.077** (0.036)	Men's hourly wages are not significantly affected by parenthood
Parent	-0.010 (0.016)	
Other controls	Yes	
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<i>Dep var: ln(hourly wage)</i>	(1)	
Female * Parent * Returned in months 1 to 6	-0.013 (0.025)	Mothers who return to work within six months experience an insignificant 2.3% decrease in hourly wages
Female * Parent * Returned in months 7 to 12	-0.058 (0.038)	
Female * Parent * Returned in months 13+ Parent	-0.077** (0.036)	
	-0.010 (0.016)	
Other controls	Yes	
<i>Observations</i>	42,597	
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Female * Parent * Returned in months 7 to 12	-0.058 (0.038)	
Female * Parent * Returned in months 13+	-0.077** (0.036)	Mothers who return to work in month 13 or later experience a significant 8.3% decrease in hourly wages
Parent	-0.010 (0.016)	
Other controls	Yes	
<i>Observations</i>	42,597	
<i>R-squared</i>	0.248	

Robust standard errors in parentheses. Asterisks denote: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Other controls include: gender interacted with Ever a parent; for females who are ever parents, FE for each return to work category; Ever a parent interacted with pre-parenthood income quartile; age quadratic interacted with gender; Year FE; and Education FE.



Discussion

- Parenthood increases the existing gender pay gap
- Motherhood penalty strongly related to time away from work and reduced hours—women out of work longer experience larger fall in hourly pay

Consider:

- To what extent is reduced work focus a choice/a necessity/ culturally dictated? Why do more men not choose to be the primary caregiver?
- Are mothers' skills undervalued? Are mothers discriminated against?
- What can/should employers/policymakers do to increase mothers' options (lower barriers to working)?

