

Empirical  
evidence of the  
gender pay gap  
in NZ

Parenthood  
and labour  
market  
outcomes



NEW ZEALAND  
WORK RESEARCH INSTITUTE



Ministry for  
**Women**  
minitanga mō ngā  
Wāhine 

Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975.

The results presented are the work of the authors, not of Statistics NZ.

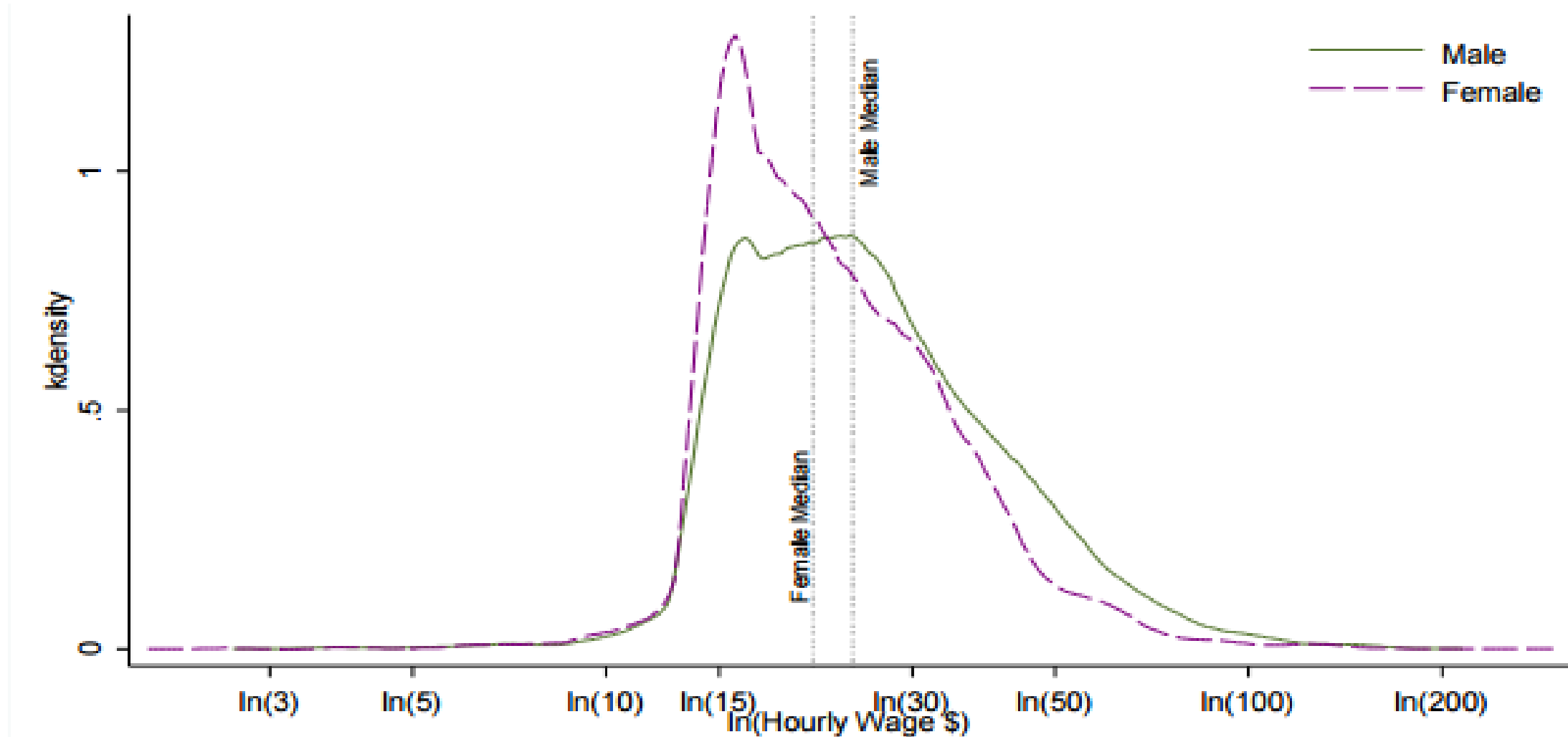
# Research objectives – Gender pay gap research

- ✓ Estimate size of the gender pay gap, controlling for all observables
- ✓ Apportion the gap into ‘explained’ and ‘unexplained’
- ✓ Correct for sample selection bias
- ✓ Check whether results change if we switch to propensity score matching
- ✓ Check how the gap fares across the wage distribution

- Income Survey 2015
- Representative sample of individuals from approximately 15,000 households
- Focus on working age population (age 16 to 64)
- Drop small number of earners at tails of distribution
- Exclude self-employed
- Final sample = 13,737 (6,834 males and 6,903 females)

# Portrait of wages

Figure 1: Usual hourly wage distribution, by gender (2015)



# Education gains

- Five categories of educational attainment:  
No qualification; school; post-school; bachelors; postgraduate.
- Females overtaking males in all levels (except post-school)
- Males more likely to have no qualifications

Let's compare to educational differences to early research:

## Bachelor's degree or higher

- |        |               |                 |
|--------|---------------|-----------------|
| • 1997 | Males = 14.3% | Females = 12.4% |
| • 2015 | Males = 22.5% | Females = 30.5% |

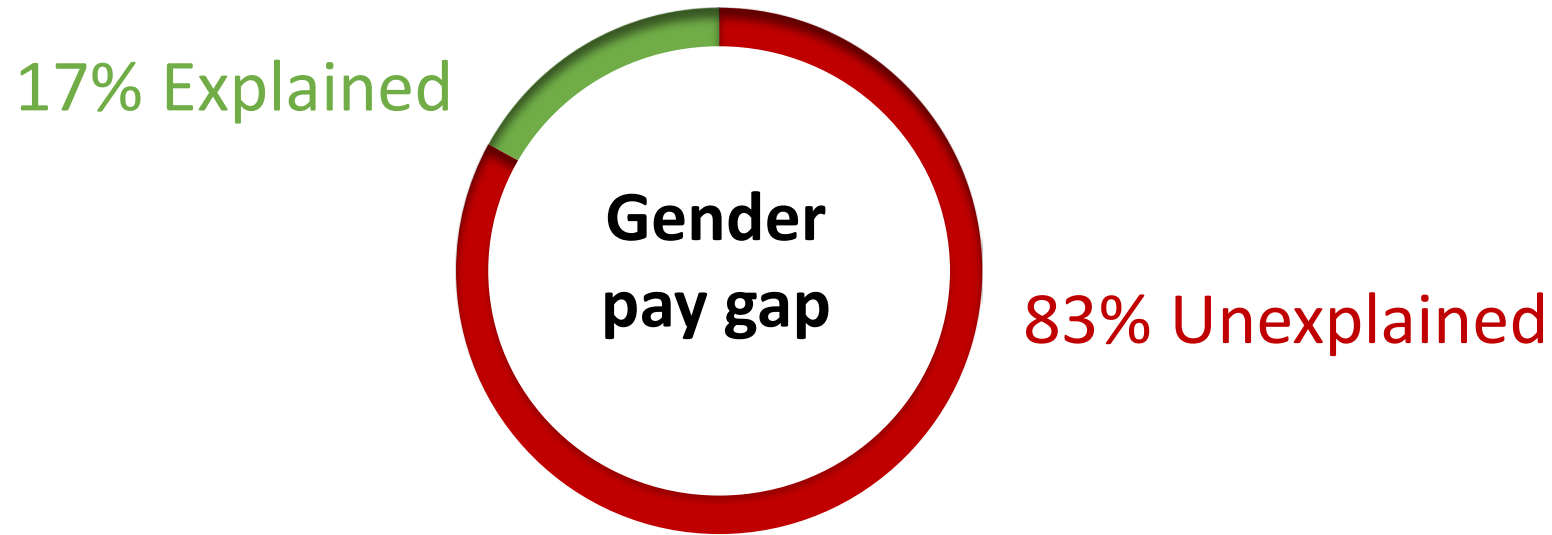
## Oaxaca Decomposition

Separates wage differences into two components:

1. Explained component – male / female differences in average characteristics
2. Unexplained component – male / female differences in returns to characteristics

Unexplained problematic to interpret, but important to track over time.

# Oaxaca decomposition (Total gap = 12.71%)



## Comparisons with international evidence:

- Difficult to compare
- Christofides et al (2013) finds unexplained = 74% in Denmark; 76% in Germany; 45% in the United Kingdom
- OECD (2012) finds figures ranging from 15% to 100%

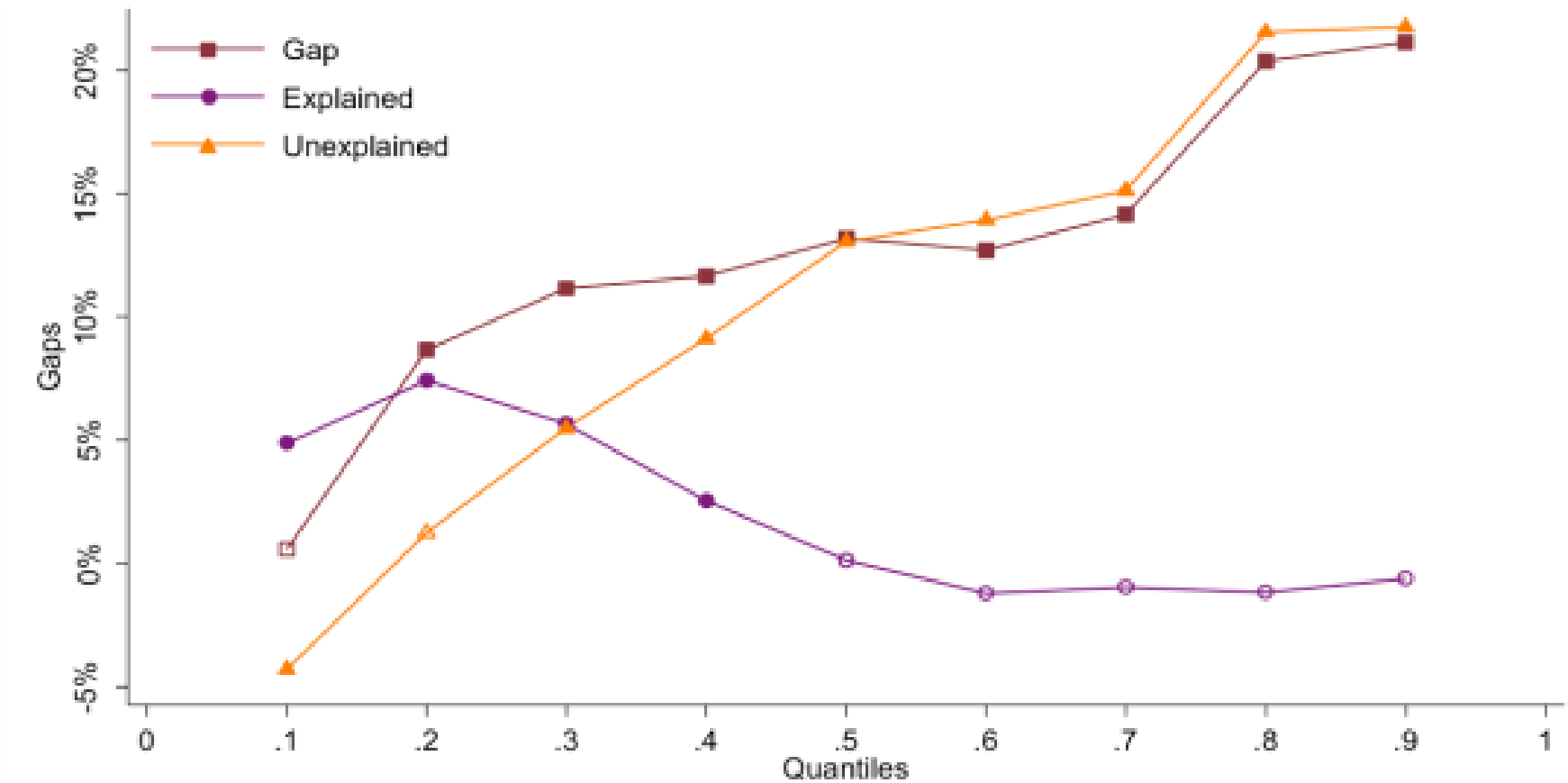


# Unexplained

- Unobserved differences in characteristics, e.g. subject of degree
- Different preferences regarding non-pecuniary aspects of the job
- Discrimination
- Unconscious bias
- ??

# Quantile Regression

Figure 3: Gender pay gaps across wage distribution



Note: Hollow markers indicate insignificant gaps at 10% significance level. Source: 2015 IS. Author's compilation.

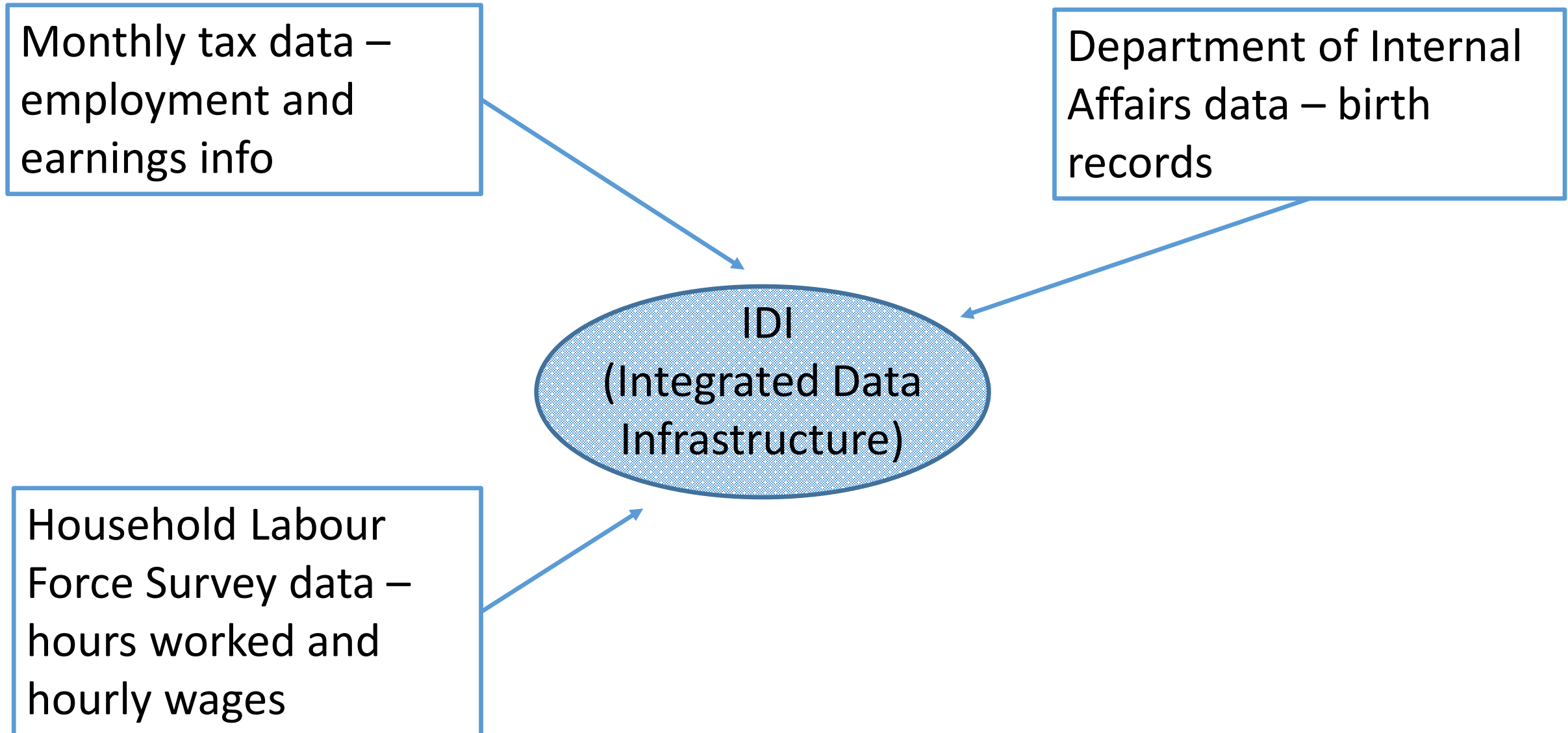
# Summary of key findings

- Gender pay gap in 2015 = 12% and unchanged since 2003
- Regardless of approach undertaken the majority of the gap remains unexplained
- This result persists after correcting for selection bias
- The size of the gap depends heavily on the location in the wage distribution
- Strong evidence pointing to a glass ceiling effect in NZ

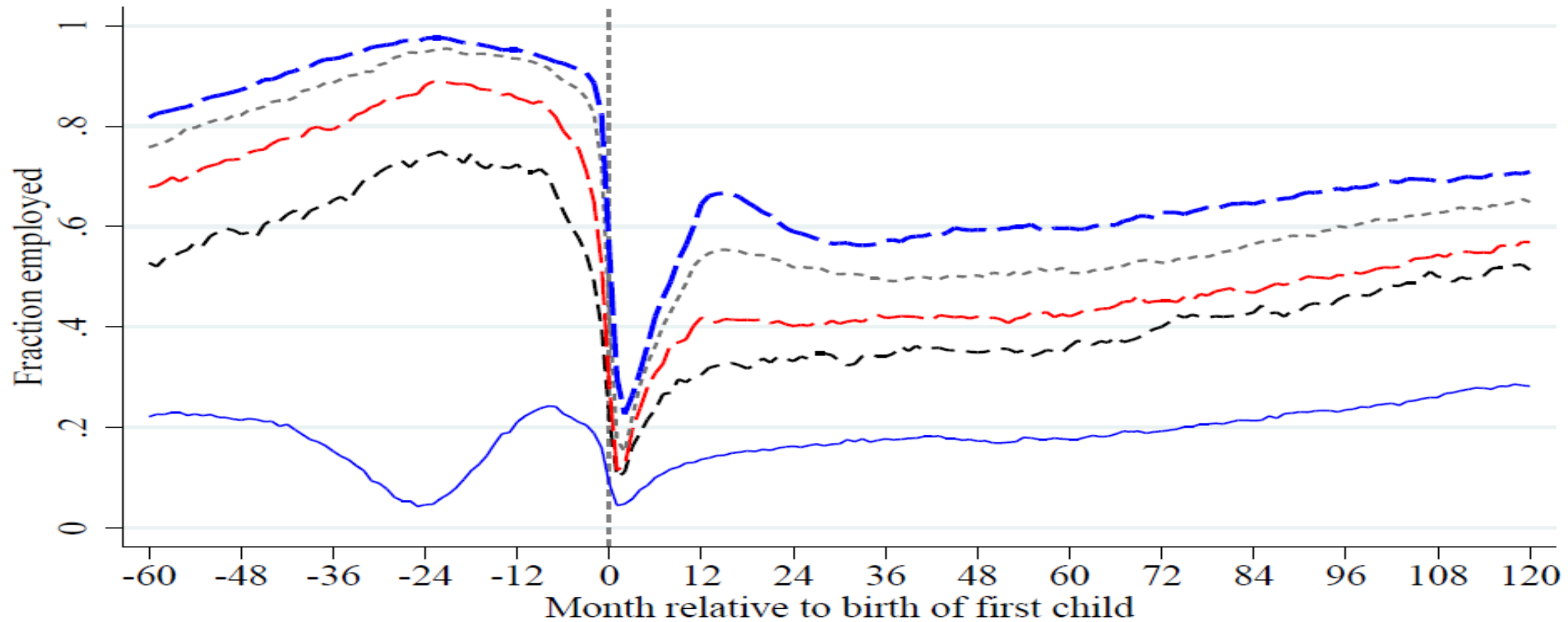
# Research objectives – Parenthood research

- ✓ How do first-time mothers and fathers' employment patterns change after they have children?
- ✓ How have their hours worked, monthly earnings, and hourly earnings changed when they return to work post-parenthood?
- ✓ How do these changes differ by pre-parenthood income?
- ✓ How do these changes differ by time out of employment?

# Data



# Mothers' employment rates by pre-parenthood income



Monthly income quartile for age and gender in 2003

— Worked <4 months

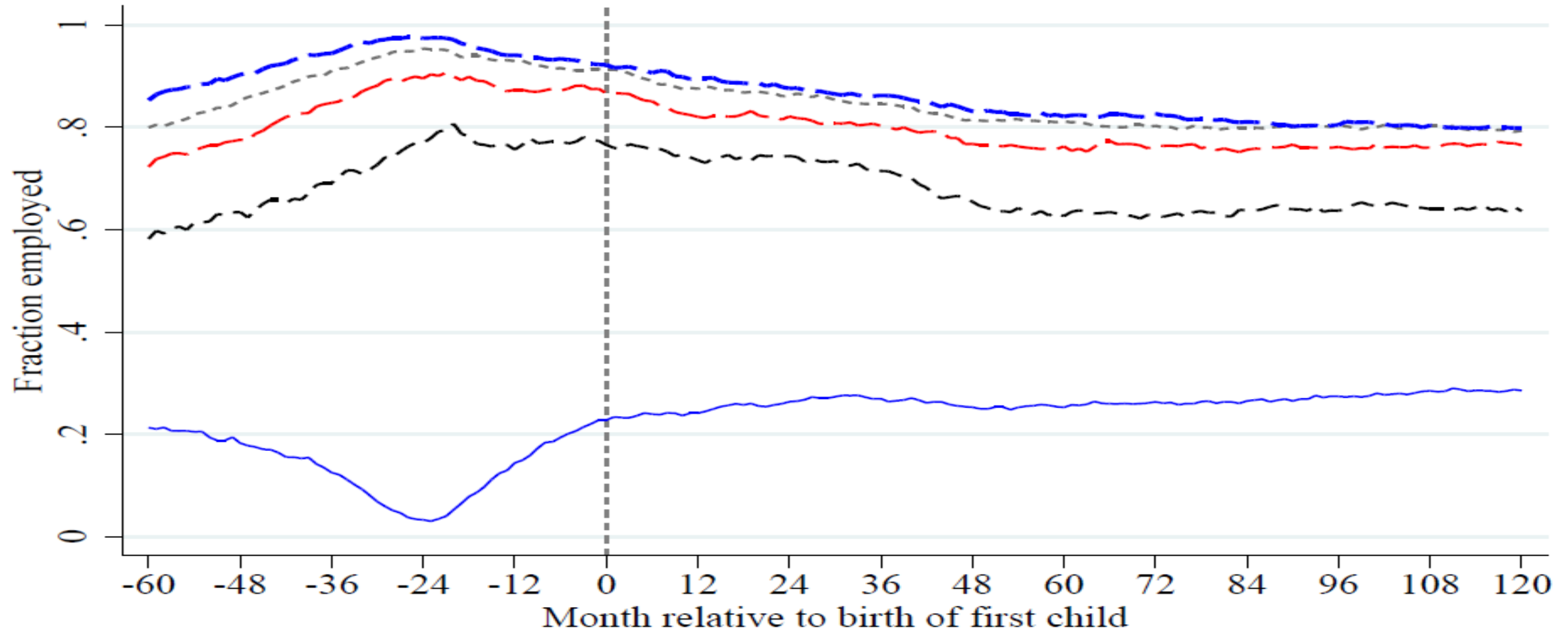
- - - 1st quartile

- - - 2nd quartile

- - - 3rd quartile

- - - 4th quartile

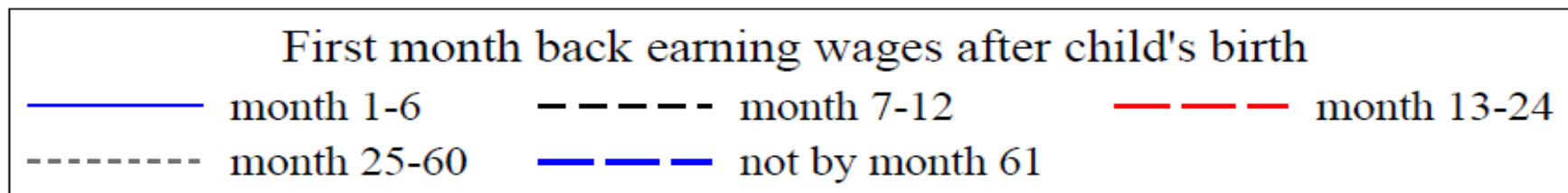
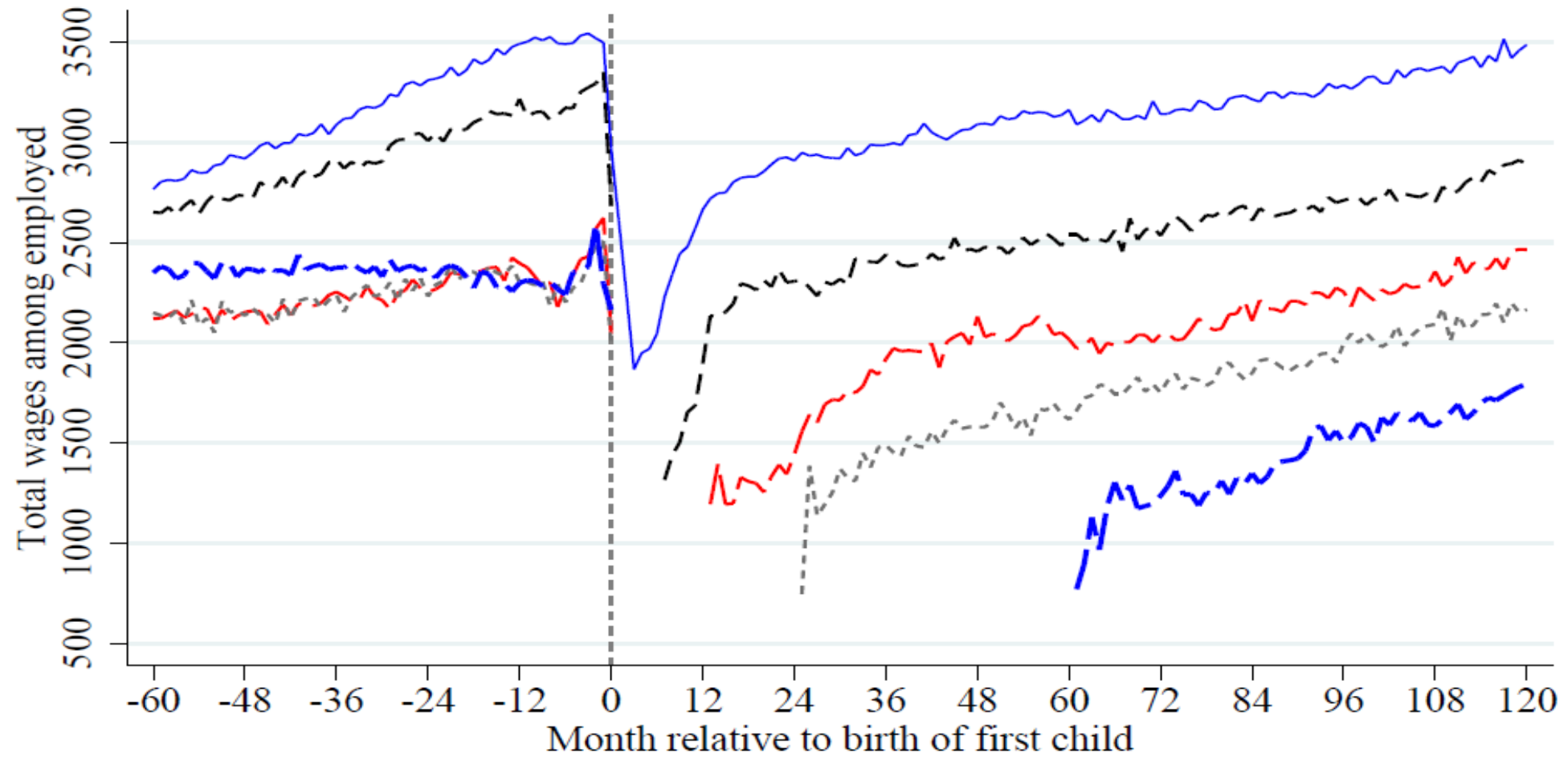
# Fathers' employment rates by pre-parenthood income



Monthly income quartile for age and gender in 2003

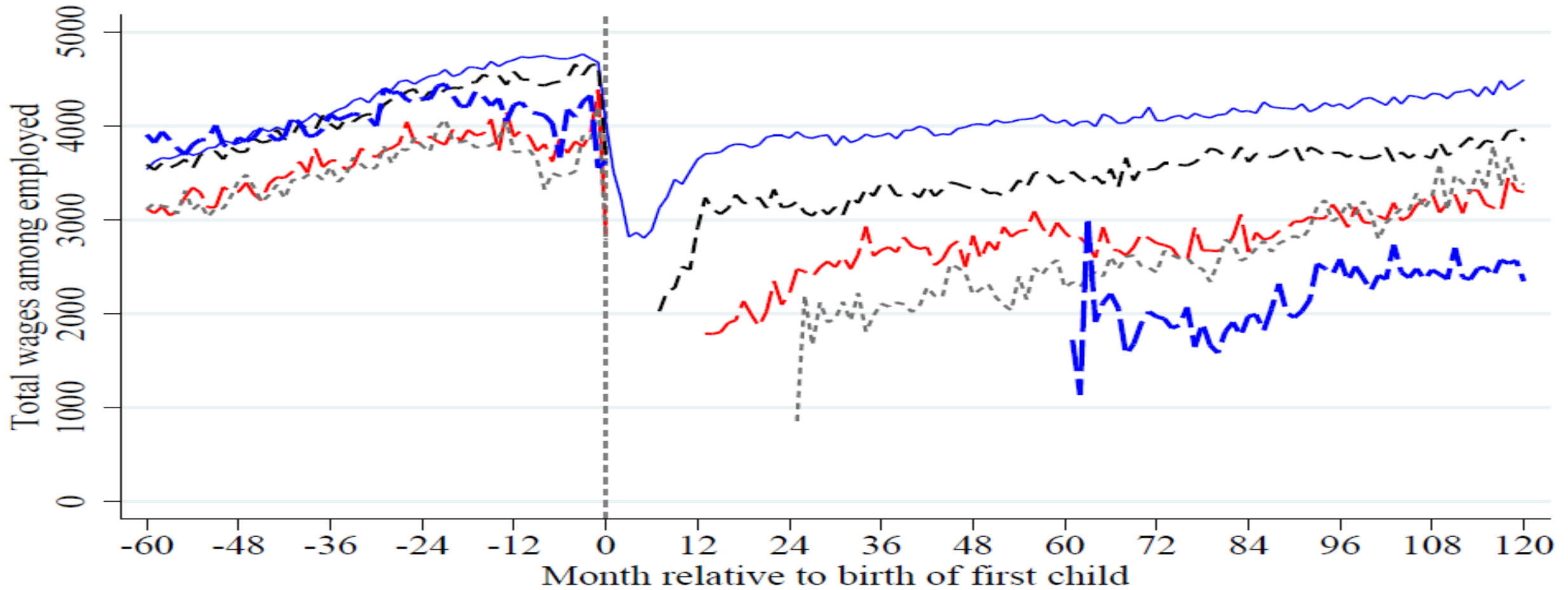
- Worked <4 months
- 1st quartile
- 2nd quartile
- 3rd quartile
- 4th quartile

# Employed women's monthly earnings by time out of employment

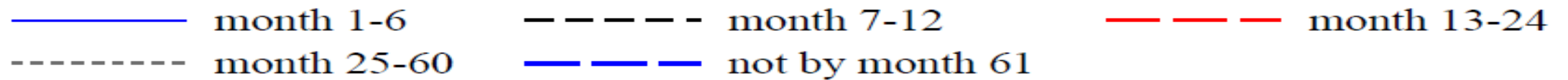




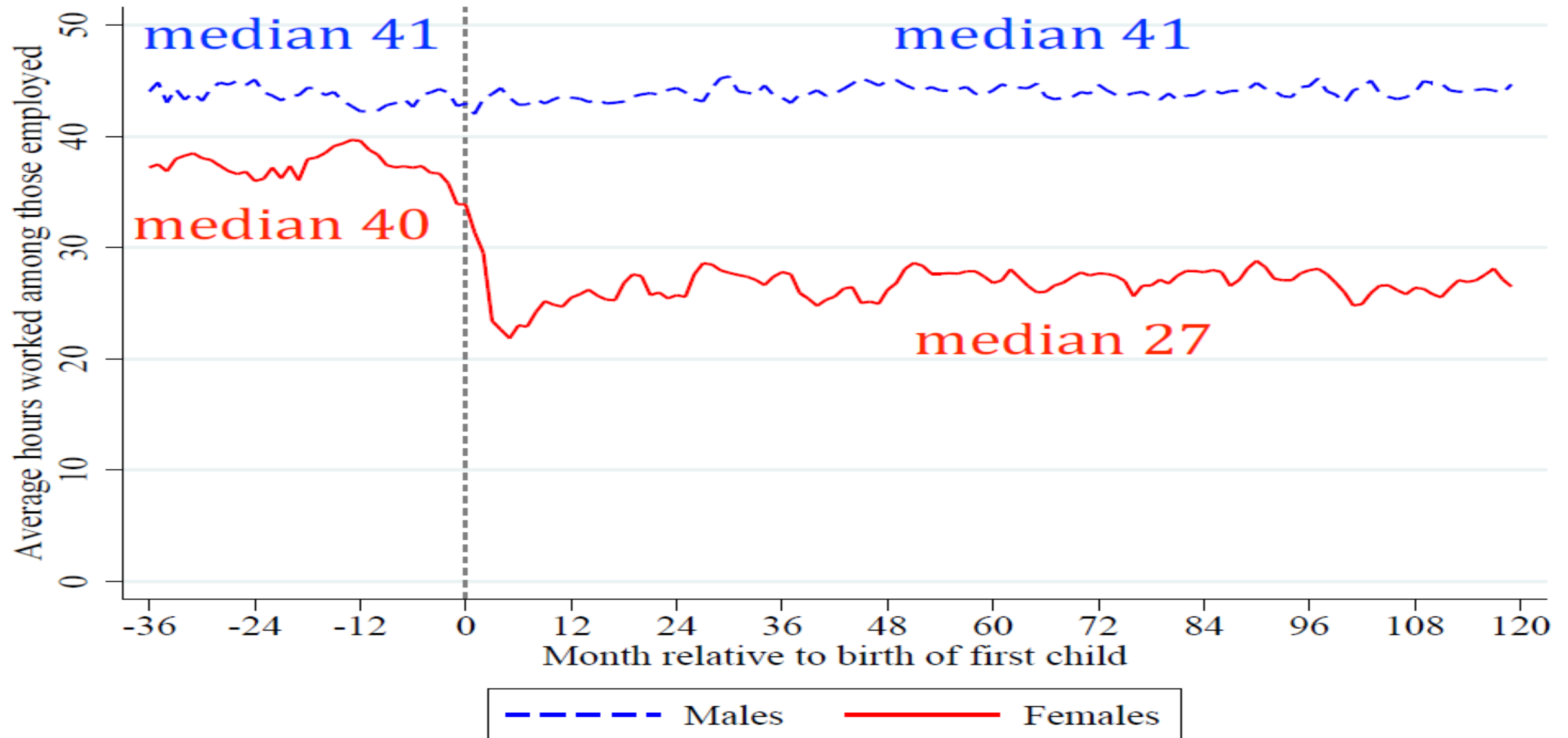
# Employed women's monthly earnings by time out of employment



First month back earning wages after child's birth



# Hours worked among those employed



# Impact on hourly wages

- ✓ The average women earns **4.4%** lower hourly wages as a parent than if she hadn't had children.
- ✓ No significant wage effect of parenthood for men
- ✓ The magnitude of this effect is greater for women who are out of work for longer: insignificant if return within six months, rising to **8.3%** if take more than a year out of employment.
- ✓ But even women who return to work quickly experience slower earnings growth after having children than before.

# Summary of key findings

- ✓ The IDI analyses supplemented by regression models indicate that the gender pay gap increases with parenthood.
- ✓ Motherhood penalty increases with time away from work and reduced hours – women out of work for longer experience a larger decline in hourly pay.

## Scope for future research:

- ✓ Social and cultural aspects potentially associated with motherhood penalty and trends in gender differences in roles of being the primary caregiver?
- ✓ What policy measures can be adopted to lower employment barriers for mothers?

# Thank you very much for your time

Both reports available at :

<http://women.govt.nz/work-skills/income/gender-pay-gap>

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<https://workresearch.aut.ac.nz/>

# What next?

- Policy options –
  - In the UK, from March 2018, organisations with 250+ employees [must report](#) on their gender pay gap.
  - In Iceland, from January 2018, organisations with 25+ workers must prove they pay men and women equally for equal work.
  - In France, new regulations from March 2018 that firms must prove they close the gender pay gap in three years or face fines. This includes introduction of software that firms should use if 50+ employees to monitor wage discrepancies.
- Carrot versus Stick approach?