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# Risk-taking behaviour and fatherhood

Douglas Yee | 63rd NZAE Annual Conference

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# Disclaimer

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These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI, please visit <https://www.stats.govt.nz/integrated-data/>.

# Introduction

# Being a good role model

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- Child upbringing may introduce natural time-constraints that prevent men from engaging in risk-behaviour; fathers are:
  - More likely to abstain from physical activity (Allender et al., 2008).
  - Less likely to engage in criminal and “reckless” behaviour after family-formation events (Reeves, 2006).
- Fathers also become more “careful”
  - More responsible and alert while driving (Taubman-Ben-Ari & Noy, 2011)
- Role model behaviour can also be influenced by:
  - Cultural factors (Tichenor et al., 2011; Hennecke et al., 2022)
  - Age (Elniö et al., 2019; Schytt and Bergström., 2014).

# Research Question

What is the effect of fatherhood on a man's risk-taking behaviour?

# Fatherhood on risk

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- Benchmark study on the effect of fatherhood on risk-preferences comes from Görlitz and Tamm (2020):
  - Uses self-reported risk measures from the German Socio-Economic Panel
  - Parenthood has a positive effect shown on risk-aversion from as early as 2 years prior to childbirth
  - Most significant effects arise:
    - In the year of childbirth for women.
    - One year after childbirth for men.
  - Validity of self-reported measures?

Data

# Integrated Data Infrastructure (IDI)

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- Population-wide linked administrative data.

DIA Births → Personal Details → DIA Marriages  
↓  
ACC Claims

- Restrictions:
  - First-born children only.
  - No multiple births.
  - Children born between 2007 and 2018 (inclusive).
  - Fathers aged 20 – 37 at birth of first child.
  - Work-related accidents not considered.



# Method

# Method

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- I use the identification strategy of Fadlon and Nielsen (2019) to identify two groups:
  - A treatment group that experiences childbirth at time  $\tau$ ; and
  - A control group that experiences childbirth at time  $\tau + \Delta$ .
- Rationale: if the event were not to occur, the outcomes of the treatment and control group would run parallel.
  - Differences in outcomes attributed to  $\Delta$
- I select  $\Delta = 4$  years, outcomes can be analysed for up to 2 years.

# Data structure

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- 4-year panel, with two-years on either side of childbirth
- Outcome variables:
  - Non-work injury claims (Sport OR Household)
  - Sport injury claims
  - Household injury claims
- Information aggregated to the half-year level.

# Regression model

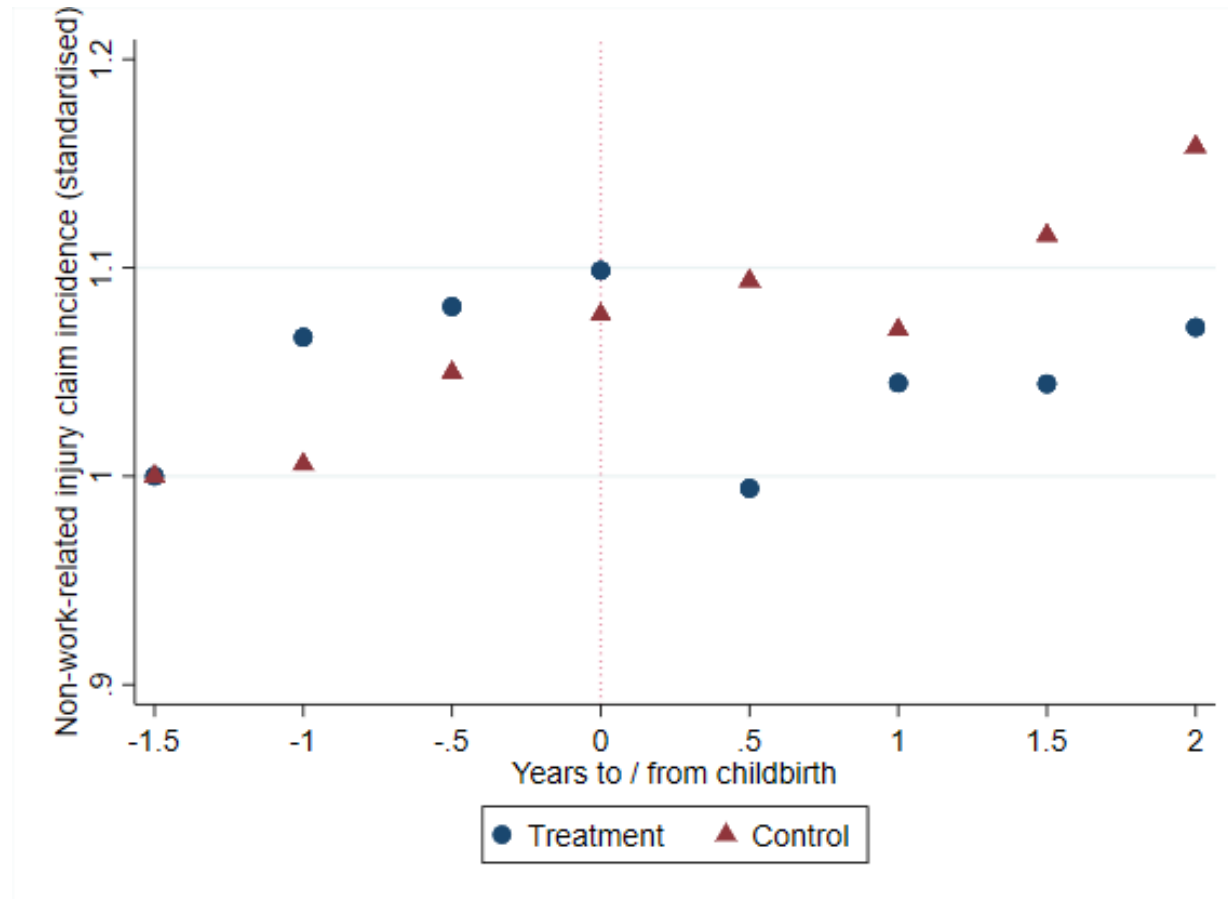
- Dynamic difference-in-differences model

$$y = \alpha + \beta treat + \sum_{r=-1}^2 \gamma_r \times I_r + \sum_{r=-1}^2 \delta_r \times I_r \times treat + \sigma X_{it} + \lambda T_{it} + \epsilon_{it}$$

- $r$  is the event window in years, and moves in 0.5-year increments, it measures the observation window from six months prior.
- $\delta_r$  is the parameter of interest
- $r = -1.5$  is the reference time-window
- Standard errors clustered at individual level
- Assumptions
  - Parallel trends
  - No anticipation effects

# Results

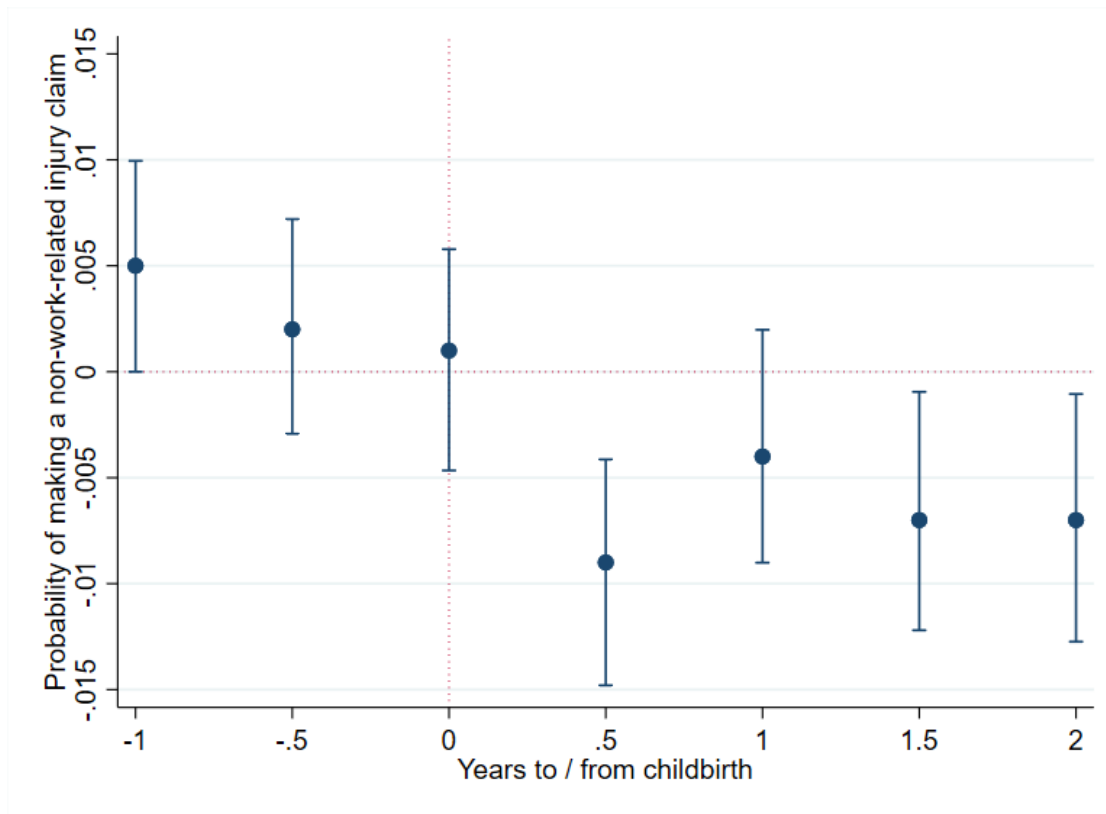
# Event timeline of injury claims incidence for the population of interest



Note: The injury incidence is standardised to the observation window from 2-to-1.5-years pre-childbirth for each respective treatment group.

Source: Own calculations based on data in Stats NZ's IDI.

# Non-work-related injury claims (whole sample)



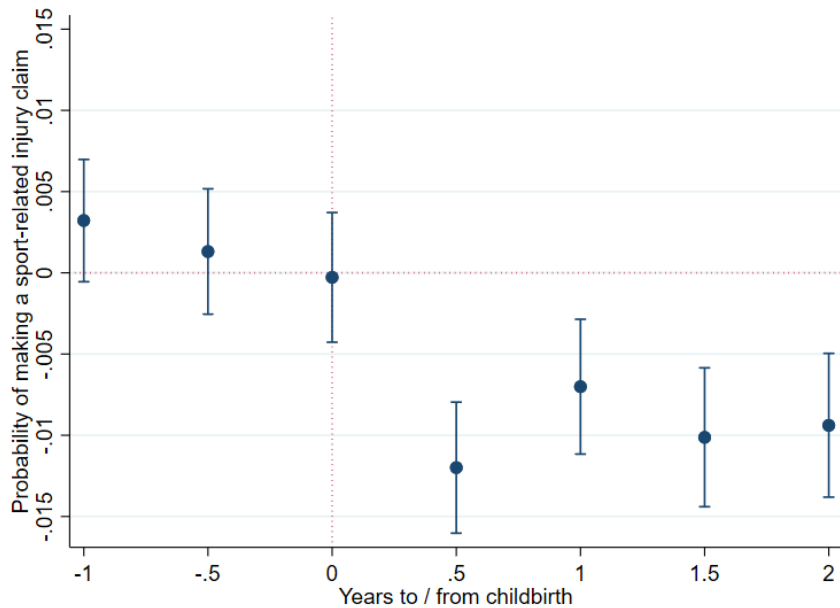
Notes. The estimated coefficients measure  $\delta_r$ , which is the period  $r$  ATT. The x-axis measures the observation window from 6 months prior, where  $r = 0$  is the six-month period beginning at childbirth. The y-axis is the proportion of fathers who were involved in a non-work-related accident and reported this to the ACC. The reference period is the observation window from 1.5 years to 1 year prior to childbirth.

Source: Own calculations based on data in Stats NZ's IDI.

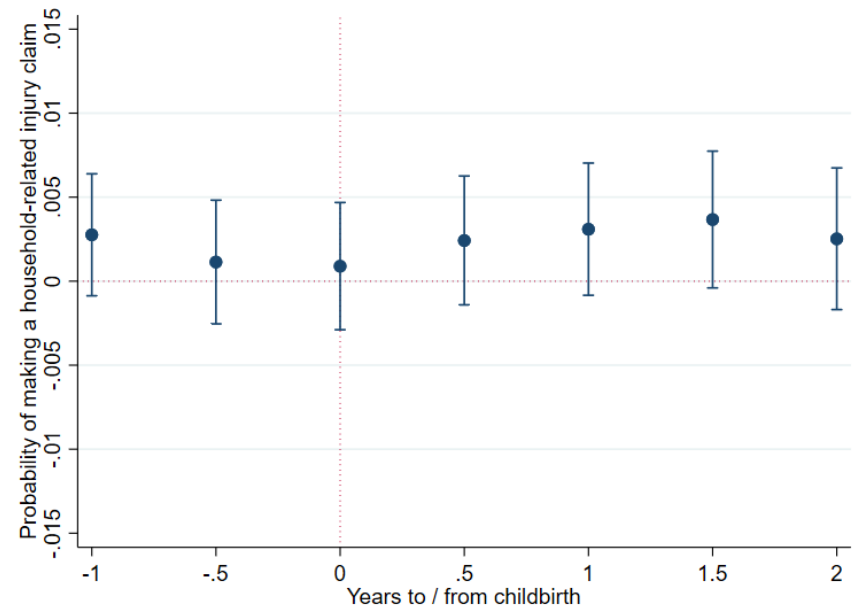
[F-Test](#)

# Non-work-related injury claims (whole sample)

## Sport



## Household



Notes: The estimated coefficients measure  $\delta_r$ , which is the period  $r$  ATT. The x-axis measures the observation window from 6 months prior, where  $r = 0$  is the six-month period beginning at childbirth. The y-axis is the proportion of fathers who were involved in a non-work-related accident and reported this to the ACC. The reference period is the observation window from 1.5 years to 1 year prior to childbirth.

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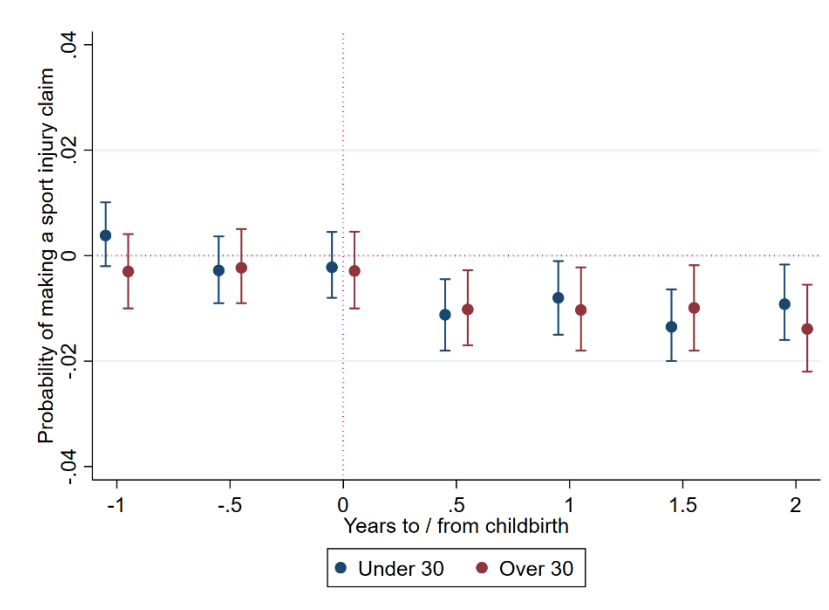
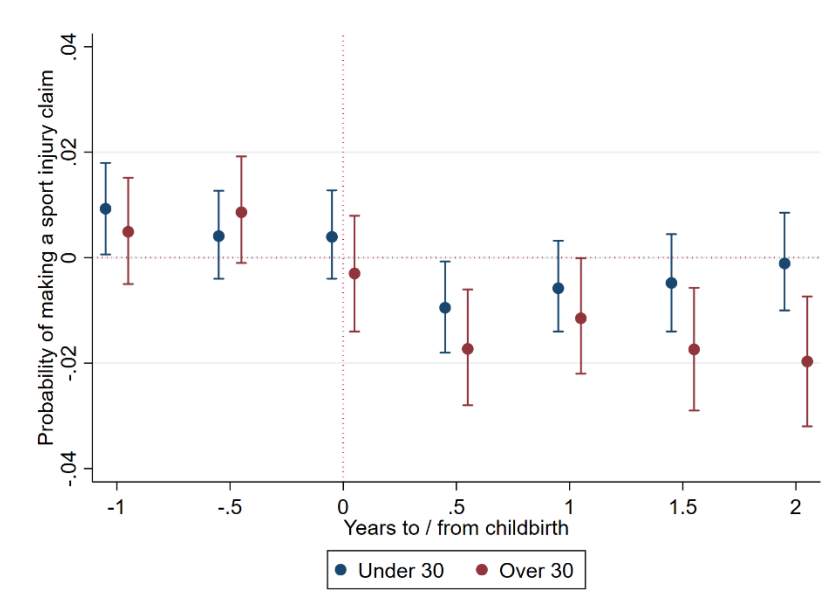


# Heterogeneity

## Sport Injury Claims

European

Non-European



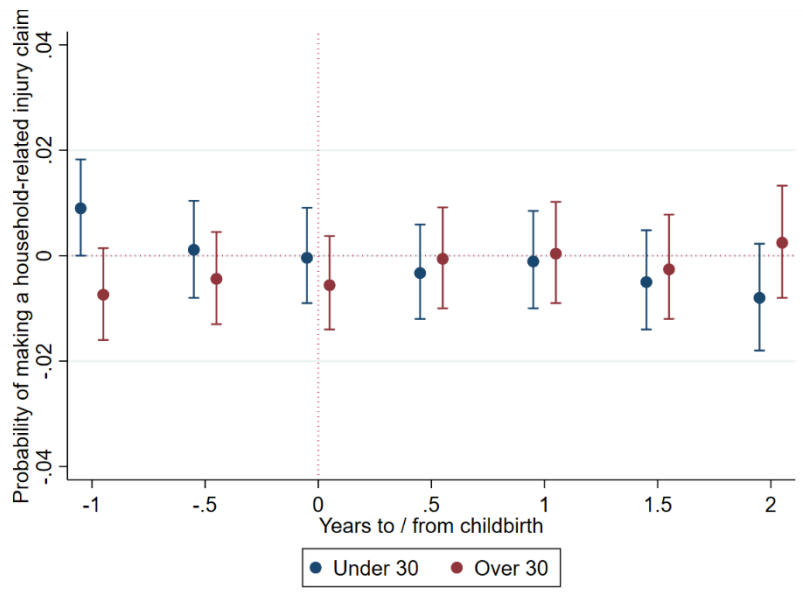
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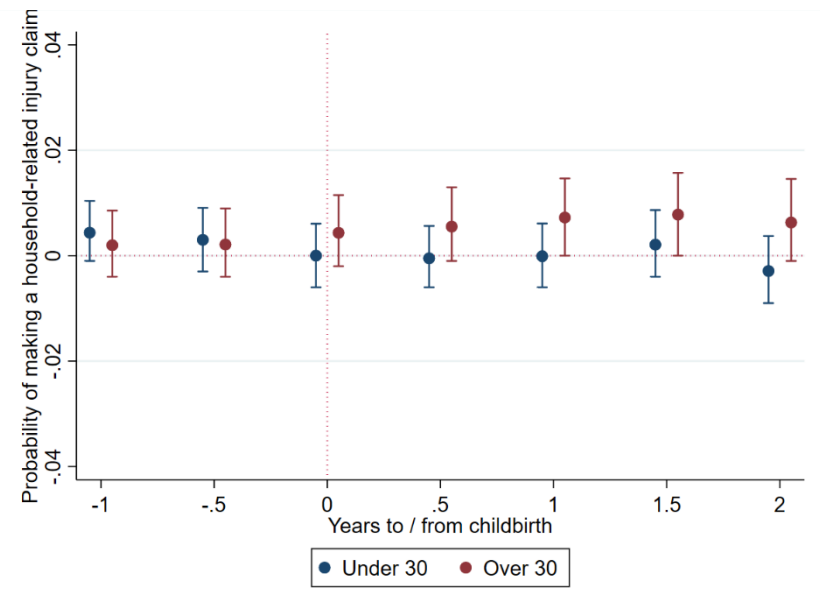
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## Household Injury Claims

European



Non-European



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# Summary

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- Fatherhood is an important part of many men's lives.
- Fathers' role model behaviour may explain how he adjusts his risk behaviour.
- Older first-time-fathers and younger non-European fathers reduce their sport-injury incidence for up to two-years post-childbirth.
- Younger European fathers reduce their sport-injury incidence in the first six-months of childbirth.
- There is no convincing evidence to suggest a change in fathers' household injury incidence after childbirth.

Thank you for your attention

# References

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- Allender, S., Hutchinson, L., & Foster, C. (2008). Life-change events and participation in physical activity: a systematic review. *Health promotion international*, 23(2), 160-172.
- Einiö, E., Goisis, A., & Myrskylä, M. (2019). Is the relationship between men's age at first birth and midlife health changing? Evidence from two British cohorts. *SSM-Population Health*, 8, 100458.
- Reeves, J. (2006). Recklessness, rescue and responsibility: Young men tell their stories of the transition to fatherhood. *Practice*, 18(2), 79-90.
- Schytt, E., & Bergström, M. (2014). First-time fathers' expectations and experiences of childbirth in relation to age. *Midwifery*, 30(1), 82-88.
- Taubman-Ben-Ari, O., & Noy, A. (2011). Does the transition to parenthood influence driving?. *Accident Analysis & Prevention*, 43(3), 1022-1035.
- Tichenor, V., McQuillan, J., Greil, A. L., Contreras, R., & Shreffler, K. M. (2011). The importance of fatherhood to US married and cohabiting men.

# Appendix

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- [F-test results](#)
- [Institutional Background](#)
- [Heterogeneity analysis \(fathers with a pre-conception injury\)](#)
- [Event timeline of non-work-related injury incidence for the population of interest](#)

# F-test results

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<b>Outcome variable</b>	<b>F-statistic</b>	<b>p-value</b>
<b>Non-work-related injury claim</b>	1.54	0.2028
<b>Sport-related injury claim</b>	1.38	0.2477
<b>Household-related injury claim</b>	0.77	0.5089

[Back to regression results](#)



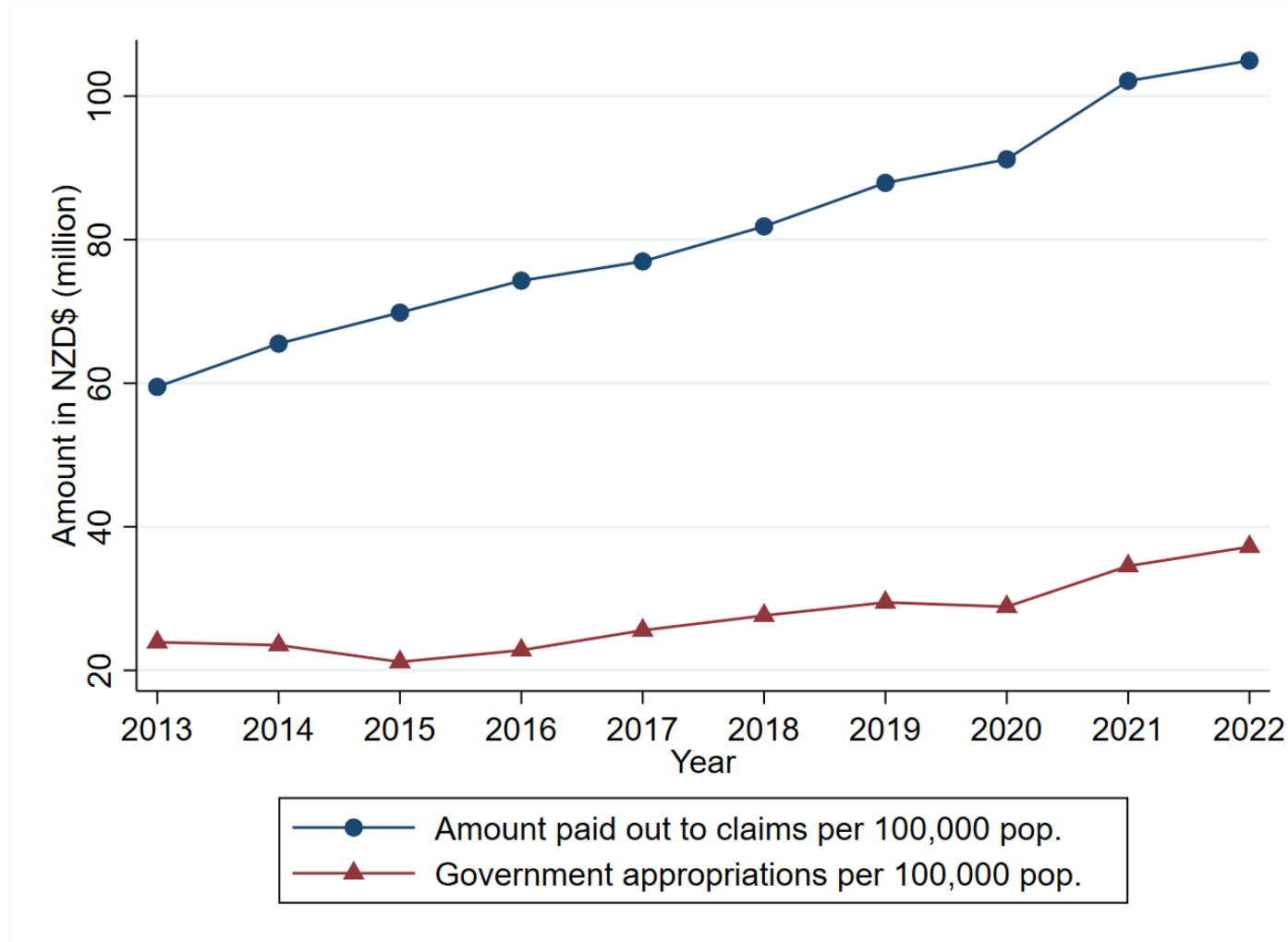
# Institutional Background

# Accident Compensation Corporation (ACC)

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- Every individual is covered by ACC's "no-fault" scheme in the event of an injury.
- ACC funded by numerous accounts.
- This helps minimise the prevalence of injuries on individuals' health and financial wellbeing.
- In 2021, the ACC paid out:
  - **NZD\$1.5 billion** in new injury claims (196,600 claims)
  - **NZD\$3 billion** in pre-existing injury claims (287,756 claims)

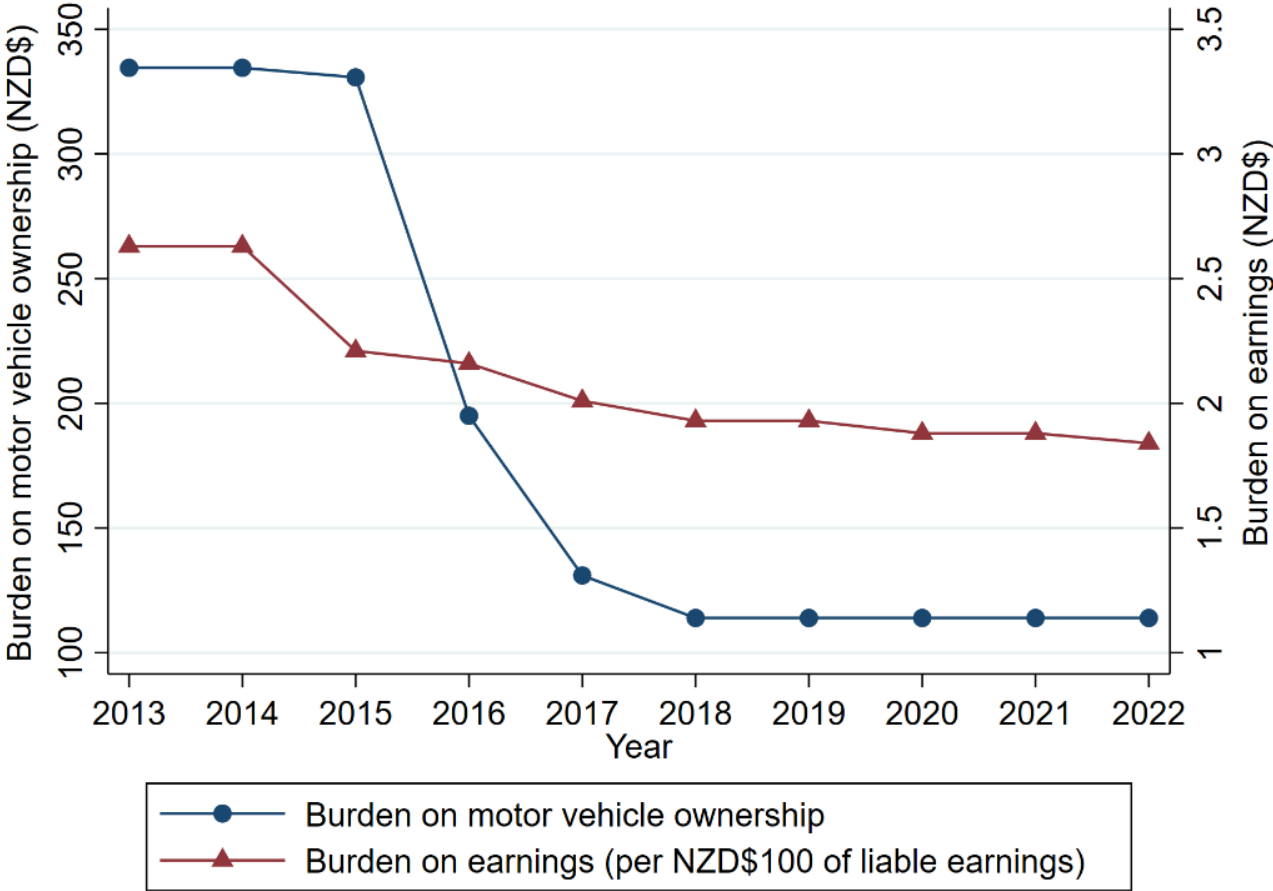
# ACC funding from govt. appropriations and ACC claims paid from 2013 to 2022



Note: The horizontal axis plots the financial years ending in June.

Source: own calculations based on data from ACC (2023) retrieved from [acc.co.nz](https://acc.co.nz) and population data from Stats NZ (2023) retrieved from [stats.govt.nz](https://stats.govt.nz)

# Direct burden on individuals for ACC accounts from 2013 to 2022



Notes: The burden on motor vehicle ownership is the average ACC levy paid per motor vehicle owned, measured in dollars on the left-hand vertical axis. The burden on earnings is the ACC levy payable on earnings, measured in dollars per \$100 of liable earnings on the right-hand vertical axis. The horizontal axis plots the financial period ending in June.

Source: own calculations based on data from ACC (2023) retrieved from [acc.co.nz](https://www.acc.co.nz)

# The long-term effects of injuries

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- Crichton et al. (2005) with ACC data: Those who sustain more serious injuries have lower rates of future employment and earnings, and higher rates of benefit dependence.
- There are also long-term effects on the community and direct and indirect economy-wide losses (e.g., Tompa et al. 2021; Leigh et al., 1997).

# The relationship between risk-behaviour and injury incidence

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- A number of studies show a direct relationship between risk-seeking behaviour and injury incidence for adolescents:
  - Pickett et al. (2002)
  - Denny et al. (2016)
  - Demmler et al. (2017); de Looze et al. (2012); Shore and Janssen (2020)
- Studies that examine the same relationship for older men?

# The relationship between risk-behaviour and injury incidence

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- **Sport injuries:**

- Athletes more likely to demonstrate risky health behaviours (Nattiv et al., 1997).
  - Athletes more likely to become injured (Powell and Barber-Foss, 1999)
- Sport participation in itself is a risky behaviour (Patel and Luckstead, 2000).

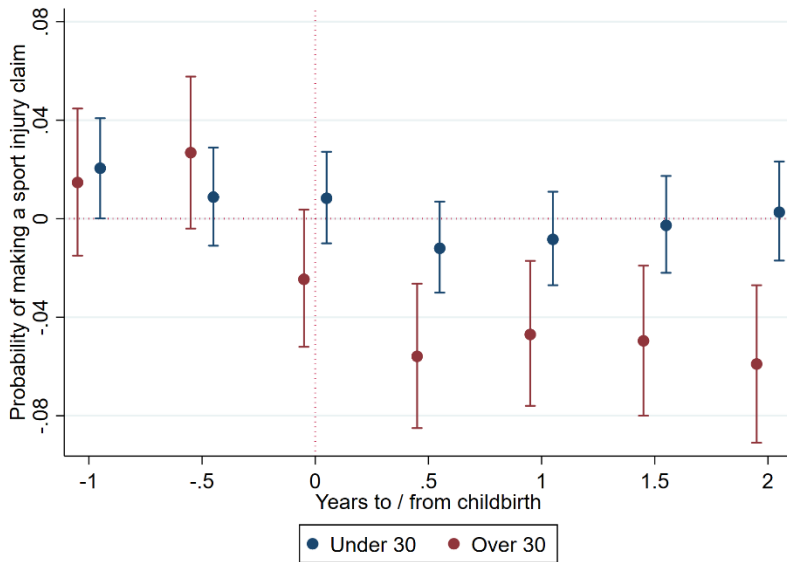
- **Road injuries:**

- Risky driving factors can explain more than half of the variation in road accidents (Ferreira et al., 2009).
- Risky drivers more likely to disobey road rules (Zamani-Alavijeh et al., 2009).
- Young drivers overrepresent risky drivers, and road accidents (Fergusson et al., 2003; Scott-Parker et al., 2009; Begg and Langely, 1999).

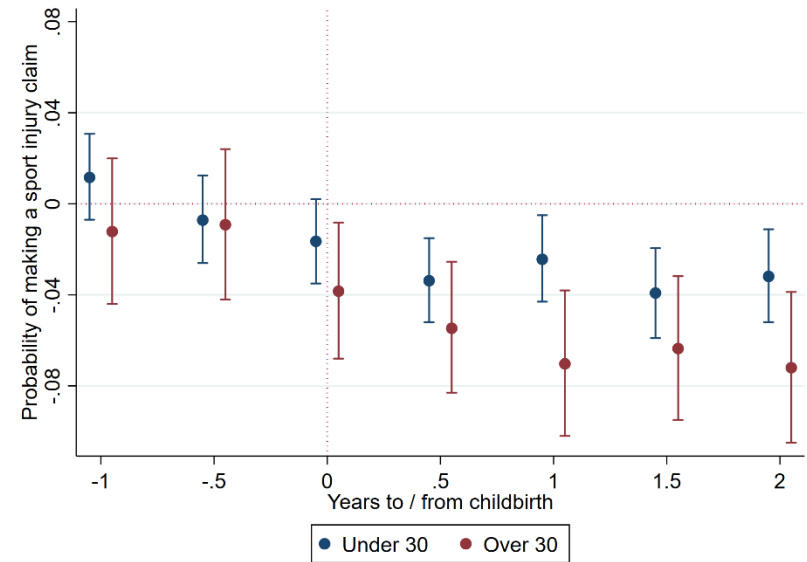
# Heterogeneity

## Sport Injury Claims (pre-conception injury)

### European



### Non-European



Notes: The estimated coefficients measure  $\delta_r$ , which is the period  $r$  ATT. The x-axis measures the observation window from 6 months prior, where  $r = 0$  is the six-month period ending at childbirth. The y-axis is the proportion of fathers who were involved in a non-work-related accident and reported this to the ACC. The reference period is the observation window from 1.5 years to 1 year prior to childbirth.

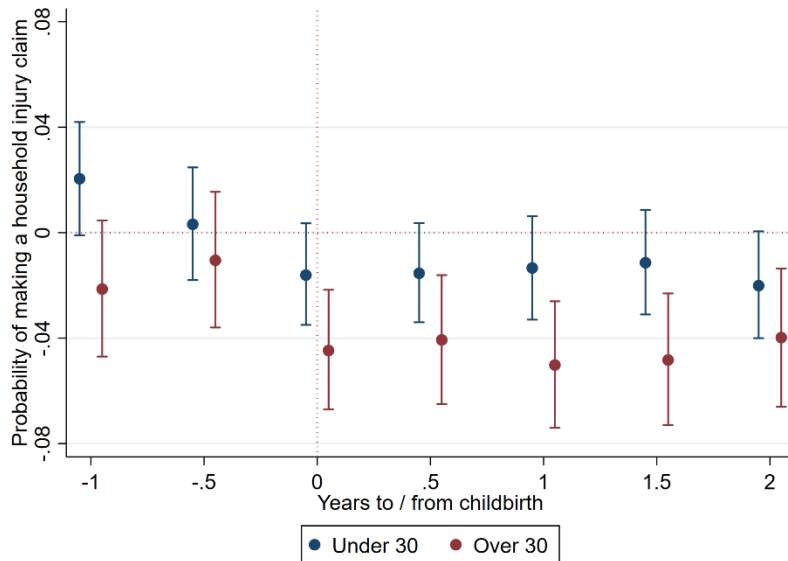
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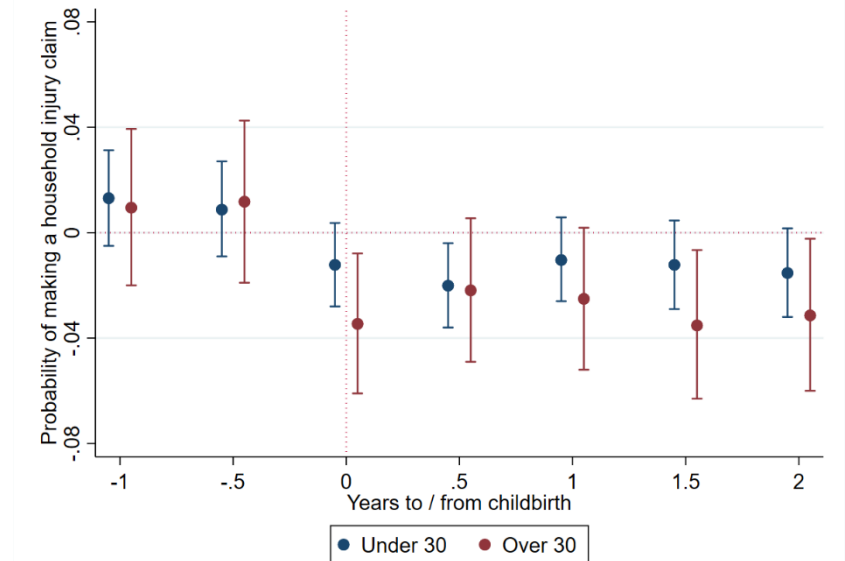
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## Household Injury Claims (pre-conception injury)

### European



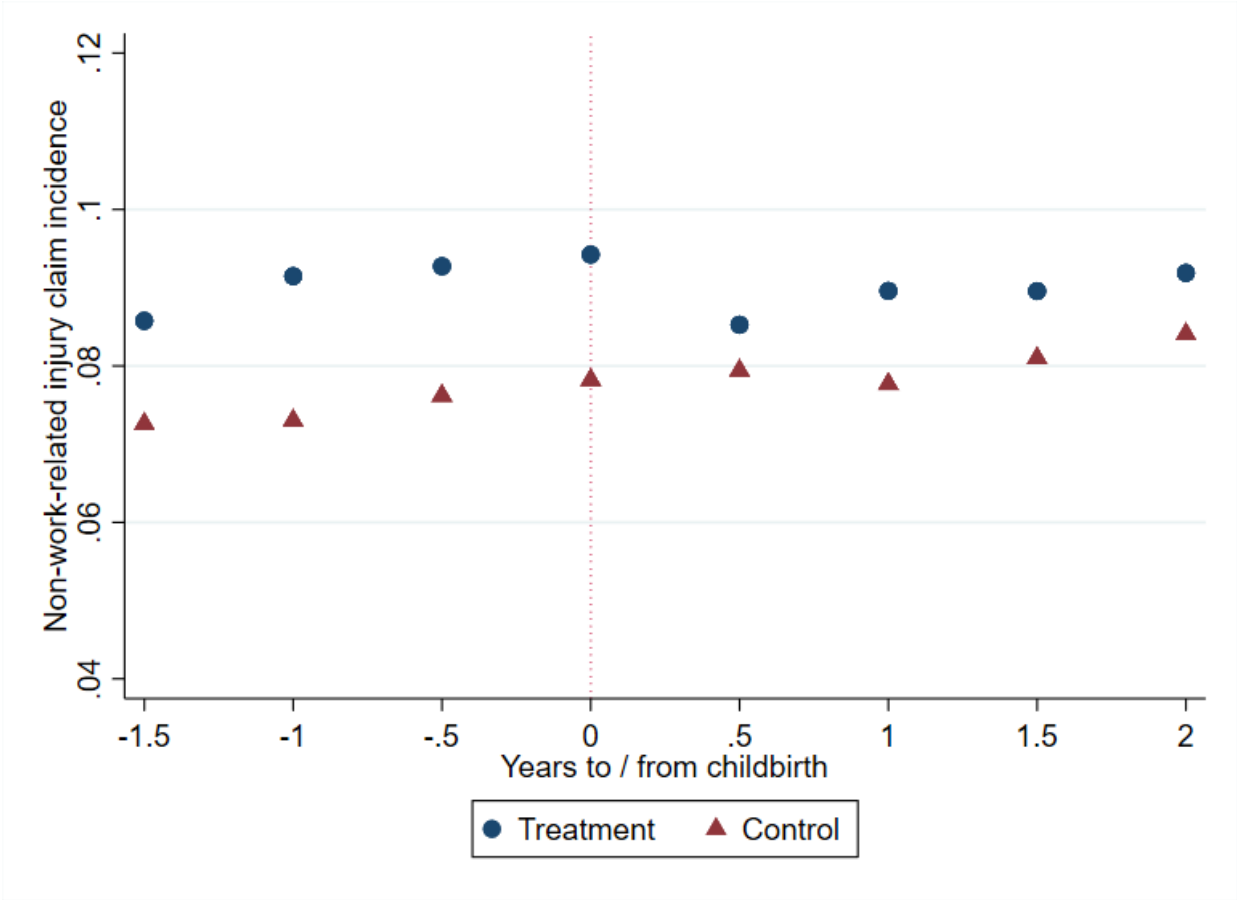
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