

Drink Driving and Labor Market Repercussions: Evidence from New Zealand Administrative Data

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Disclaimer

The results in this paper are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI) managed by Statistics New Zealand (NZ). The opinions, findings, recommendations and conclusions expressed in this paper are those of the author(s) not Statistics NZ.

Access to the anonymized data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorized by the Statistics Act 1975 are allowed to see data about a particular person, household, business or organization and the results in this [report, paper] have been confidentialized to protect these groups from identification.

Careful consideration has been given to the privacy, security and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff or the Board of Governors.

Outline

Background

Data & Analysis

Conclusion

Background

Introduction

- Previously convicted individuals (PCI) often encounter high entry barriers when they try to reintegrate into mainstream society (Uggen et al., 2013; Landerso, 2015):
 - PCIs frequently experience stigmatized behavior and public reluctance to interact with them.
 - Having a criminal background have a scarring effect on employment prospects (Grogger, 1992).
- This analysis focuses on labor market implications of those who are convicted for minor offenses—violation of New Zealand (NZ) drunk-driving regulations.
- We utilize detailed New Zealand administrative data on crime, employment, and earnings.
 - Empirical analysis reveals alcohol-related traffic convictions are followed by a significant decline in labor earnings and the likelihood of being employed in a salaried job.
 - Furthermore, the post-conviction labor market recovery varies by ethnicity.

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 - Furthermore, the post-conviction labor market recovery varies by ethnicity.

The New Zealand Context

- The NZ Transport Agency (NZTA) estimates that alcohol or drug was a contributing factor for 34% of all fatal traffic crashes as of 2022.
- First regulation on blood alcohol limit was adopted in 1969.
- For individuals aged 20 and above: The first traffic violation of the legal breath/blood alcohol limit typically involves a monetary penalty:
 - Offences with a breath-alcohol level under $400\mu\text{g}/\text{liter}$ ($\sim 80\text{mg}/100\text{ml}$ for blood-alcohol level) involve an infringement notice, minimum fine amount, and demerit points on driving records.
 - More serious violations or repeated offenses can result in automatic disqualification from driving ($\approx 6\text{-}12$ months), jail term ($\approx 3\text{-}24$ months), and/or fines ($\approx \$400$ to $\$6\,000$), depending on the severity of the offense.

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Research Design

- We employ a staggered treatment setting in which individuals receive their first conviction at different times. The sample is restricted to people violating the **legal blood/breath alcohol limit**.
- Treatment is defined by the date of the first conviction. As such, we estimate labor market outcomes before and after an individual receives their first conviction in a dynamic framework.
- Identification strategy relies on variation in the timing of the treatment.
- **Spine sample:** NZ-born males aged 21-55 who received their first drunk-driving conviction between 2008 and 2013.

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Data & Analysis

Use a rich population-level administrative database known as the Integrated Data Infrastructure (IDI):

1 NZ Ministry of Justice:

- Census of all court charges processed in NZ criminal courts. Data includes detail on the offense date, processing date, conviction date, offense type, sentence type, etc.
- Individuals are identified by a unique identifier that can be linked to other microdata.

2 Inland Revenue:

- Monthly population-level tax records, including information on employment, earnings, and benefit payments.

3 Personal Detail:

- Demographic information on birthdate, sex, and ethnicity (for covariates).

4 Person overseas spell:

- A summary of all border movements by individuals traveling outside NZ.

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Methodology

- Callaway and Sant'Anna's (2021) staggered difference-in-differences (CS-DID)
- Average treatment effects (ATT) by comparing individuals who received a conviction to those who are “not-yet-convicted”.
- Conditional on the covariate-adjusted parallel trends assumption, the group-time ATT can be denoted as:

$$ATT(g, t) = E[Y_t - Y_{g-1} | G = g] - E[Y_t - Y_{g-1} | D_t = 0, G \neq g] \quad \forall t \geq g$$

- Group (g): Individuals who receive their first conviction in the same month g .
- D_t : Indicator an individual was convicted at time t .
- Y_t : Labor market outcome. Binary indicator for employment and log values of wages and salaries for earnings.

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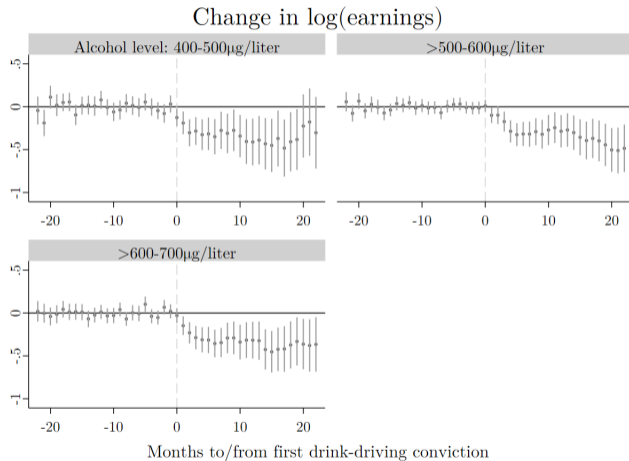
- Time window of ± 24 months around offence date (unbalanced panel)
- Separate regressions by alcohol level:
 - 400-500 $\mu\text{g/liter}$
 - >500-600 $\mu\text{g/liter}$
 - >600-700 $\mu\text{g/liter}$
- For the group with the lowest alcohol level: separate regressions by ethnicity
 - NZ European
 - Māori and Pacifica

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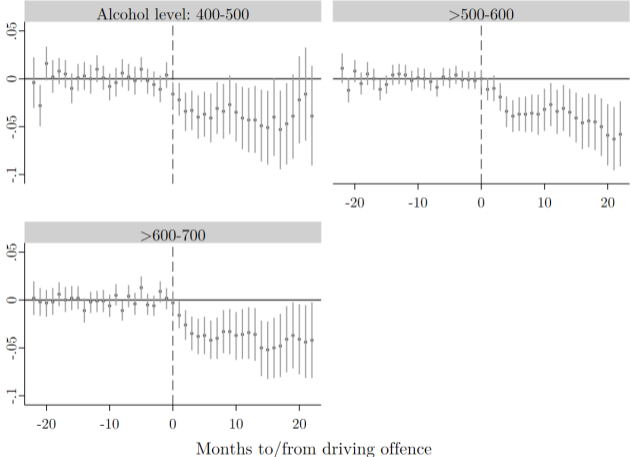
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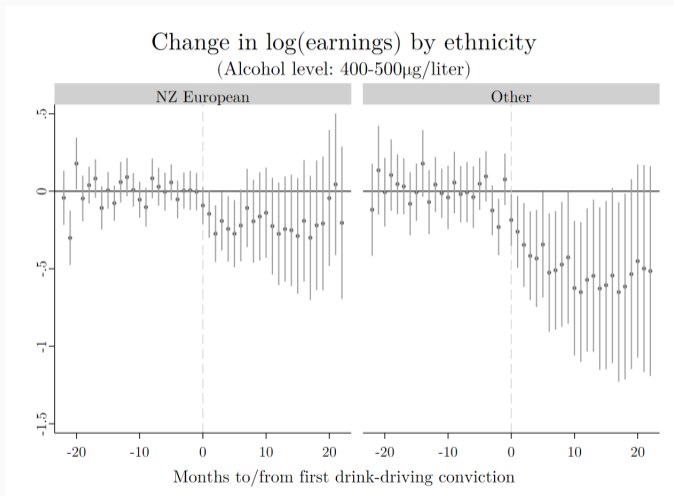
Effect on log(earnings)



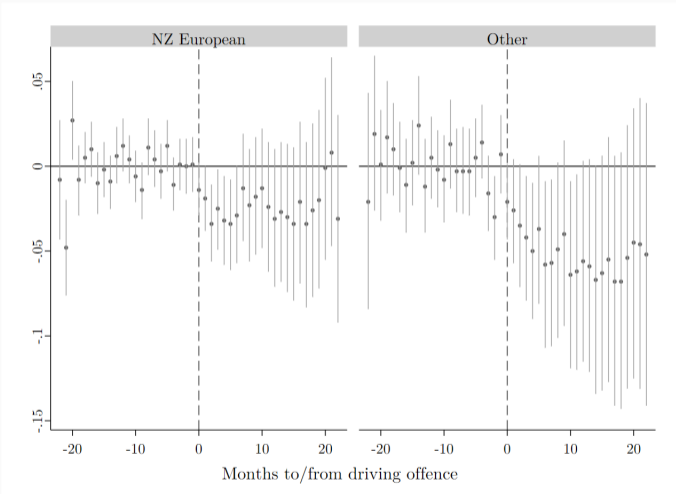
Effect on Employment



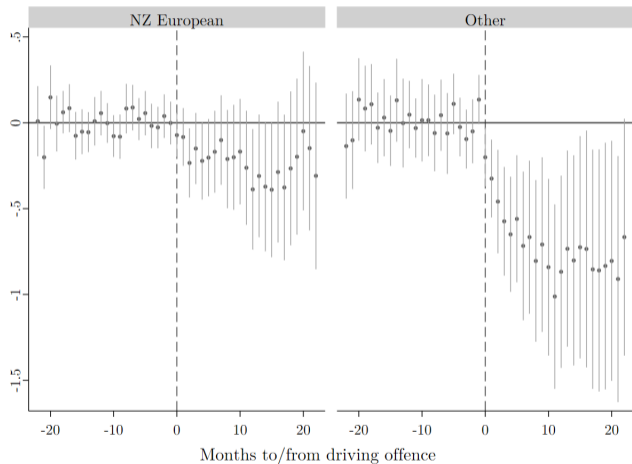
Effect on log(earnings) by Ethnicity



Effect on Employment by Ethnicity



Effect on log(earnings) by Ethnicity (highest sentence=fine)



Conclusion

- Negative labor market repercussions of first drink-driving convictions
- Intensity of the violation (here: the actual alcohol level) seems to play a minor role.
- “Bounce-back effect” observed for NZ European
- Next step: employer characteristics

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Thank You

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