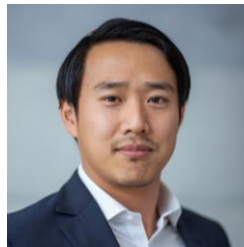


The effect of acquiring disability on employment outcomes in Australia

2026 HILDA Survey Research Conference



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Disclaimer

This research was conducted as part of the authors' postgraduate studies at the Barcelona School of Economics and was undertaken in a private capacity.

Views expressed in this paper are those of the authors and not those of the Australian Government.

Research question: What is the effect of disability onset on employment outcomes in Australia?

- **Major policy significance:** Around 4.4 million individuals in Australia, or 1 in 6 people, have a disability (AIHW, 2022).
- Working-age people (aged 15 to 64) with disability are over twice as likely to be unemployed (10%) as those without (4.6%).
- **This paper:** Uses a rich longitudinal household dataset (HILDA) and a staggered difference-in-differences (DiD) methodology to quantify the extent to which the onset of disability impacts employment status and hours worked by individuals post-disability.
- This is a quantitative causal estimation study with no policy recommendations.

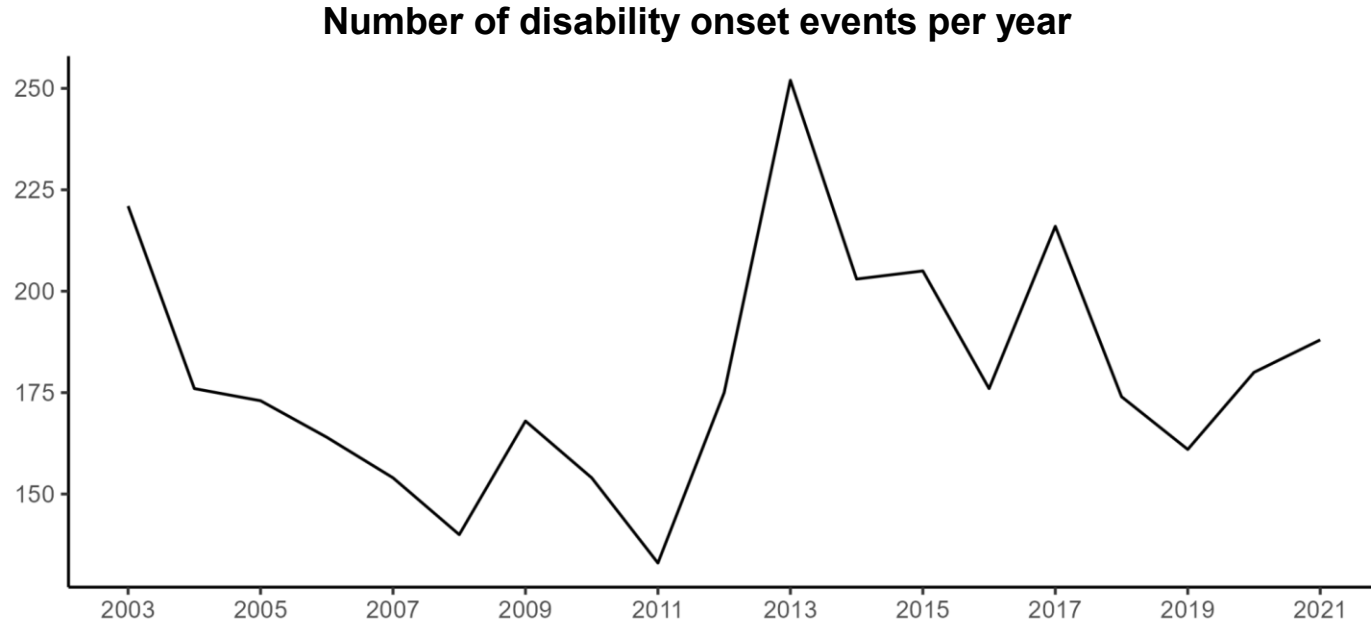
Australian and international literature finds onset of disability has negative, long-term effects on labour market outcomes.

- Australian studies:
 - Wilkins (2004): Using a 1998 disability survey, disability had strong negative effect on probability of labour force participation in both men and women.
 - Akyol and Nolan (2023): From admin data, evidence individuals work less in the lead up to disability and do not re-enter work upon receiving support payments.
 - Polidano and Vu (2015): Using HILDA and a DiD model, lasting negative impact of disability onset on employment (9 ppt in year of onset).
- **Our contribution:** Extending Polidano and Vu (2015) with modern DiD techniques, updated HILDA data, and a longer time horizon.
 - Extensions: Effects by **type of disability** and the effects on **transfer income**

Sample: Working age (15–64) individuals in Wave 1–24 of HILDA

- **Treated group:** Those who experience a “disability onset event” in HILDA.
- **Control group:** Those who do not experience disability onset in HILDA.
- In line with Polidano and Vu (2015), **disability onset** defined as:
 - Employed 2 periods before reporting disability
 - Self-reports having disability for at least 2 periods after initial report
 - *‘Do you have any long-term health condition, impairment or disability... that restricts you in your everyday activities, and has lasted or is likely to last for 6 months or more?’*
- Treatment is first onset. Limit treated sample to those with 4+ post-onset observations.

Descriptive statistics: We observe 3,413 unique disability onset events (limited to 1 per individual) over 2003–2021.



Descriptive statistics – treated group

Economic indicators

Year prior to onset

Hours worked (mean)	27.5
Annual earnings (mean)	\$55,758
Government transfers (mean)	\$5,796

Demographics

Year of disability onset

Female (%)	54.6%
Age (mean)	44.1
<i>Age – male</i>	44.7
<i>Age – female</i>	43.7

Descriptive statistics – control group

In 2021, the control group was:

- Slightly younger (43.0 years) than treated
- Slightly lower percentage of females (52.3%) than treated
- Earned more (\$61,403) and worked slightly less (24.6 hours) than treated in year before onset
- Occupation and industry: Similar compositions to treated in year before onset.

Similar results in other years for control group.

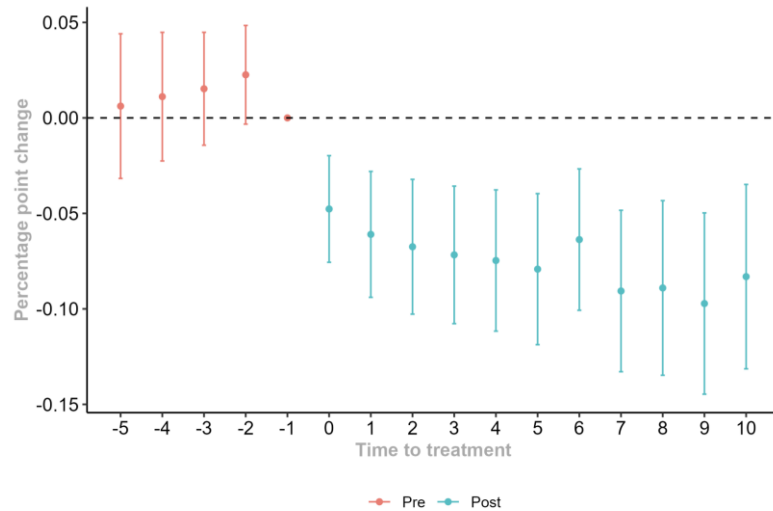
Estimation strategy – staggered difference-in-differences

- **Outcomes of interest:** Employment, hours worked and earnings.
- Callaway & Sant'Anna's (2021) DiD estimator. Estimates **group-time average treatment effect** for each cohort (year in which onset occurs), which is averaged across all exposure lengths.
 - Can observe how treatment effects vary with length of exposure.
 - Condition on age to avoid comparing trajectories of those with potentially different employment or earnings trajectories.
- **Assumptions:**
 - Conditional Parallel Trends Assumption and no treatment anticipation.
 - Disability onset is plausibly an exogenous shock and this is suggested by results.

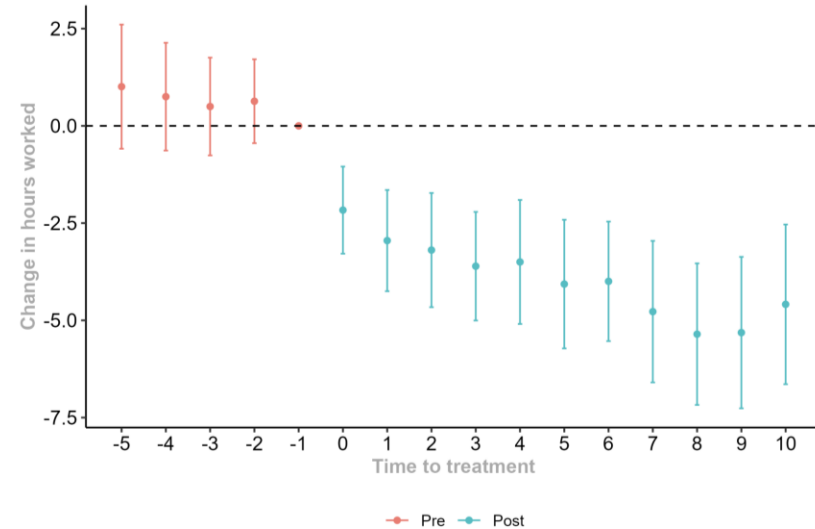
Headline finding: Sharp and persistent negative impacts of disability onset on labour supply and earnings

Disability onset results in sharp and persistent falls in employment and weekly hours worked

Employment probability: falls **5 ppts** in year of onset, **8 ppts** by 10 years post-onset.

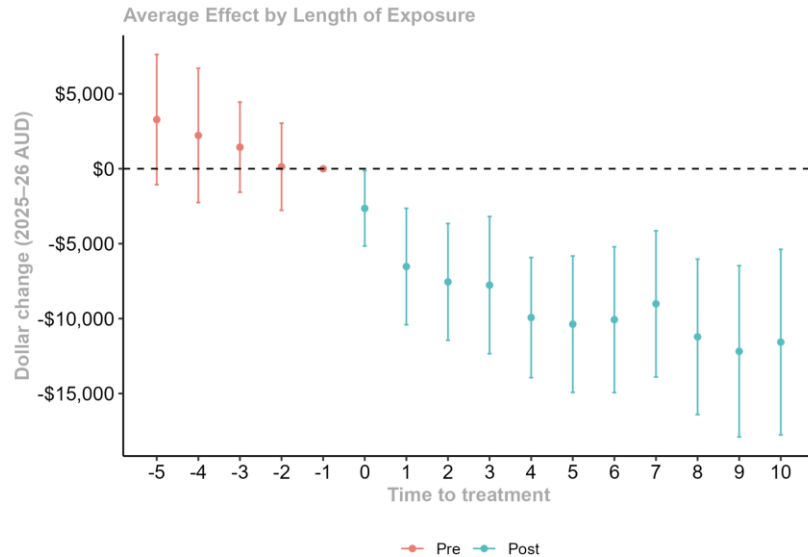


Weekly hours worked: falls **2.2 hours** (8%) in year of onset, more than doubles 10 years post-onset.

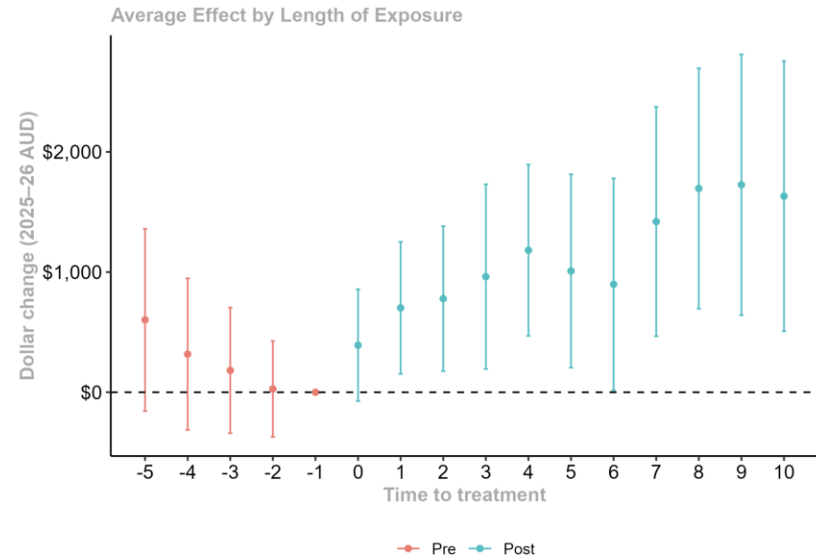


Disability onset results in **persistent economic effects** that are **only marginally offset** by transfers

Annual wage and salary income: falls by **\$11,568** by 10 years post-onset (21% decline on pre-disability incomes).

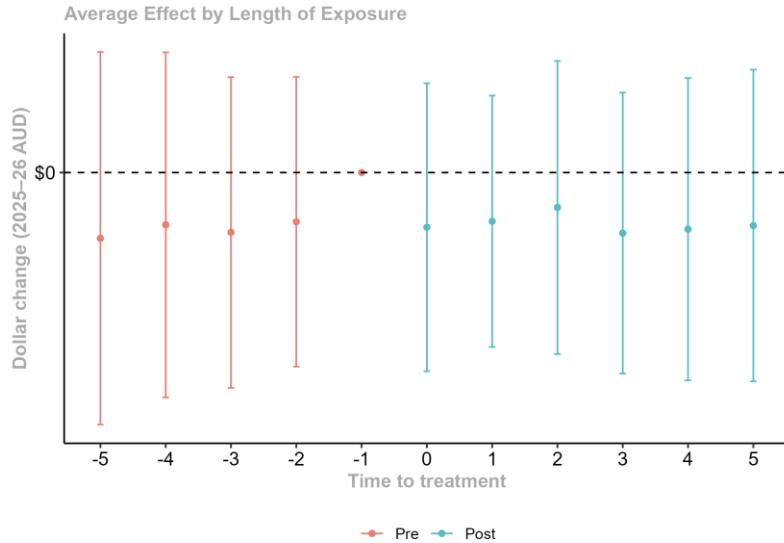


Annual income from transfers: only rises **\$1,700** over this period

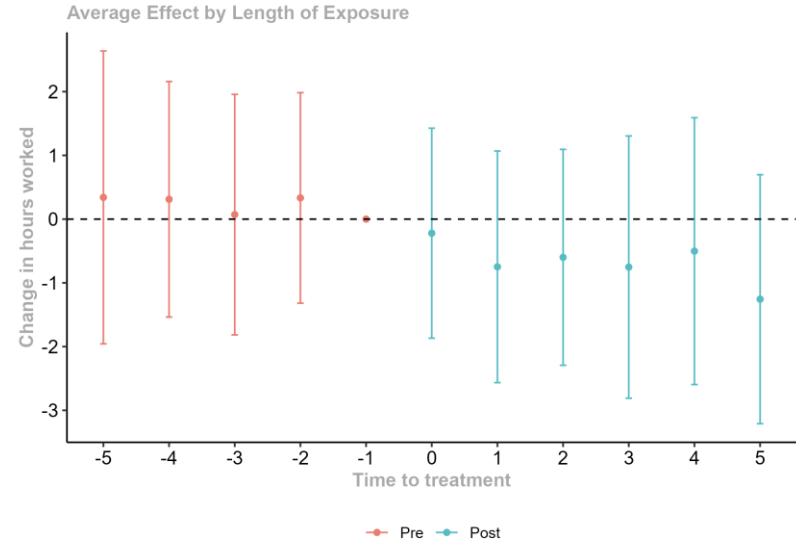


Conditioning on employment suggests economic impacts are due to loss of employment, not the margin of adjustment for workers

Hourly wage, conditional on employment:
No statistically significant effect

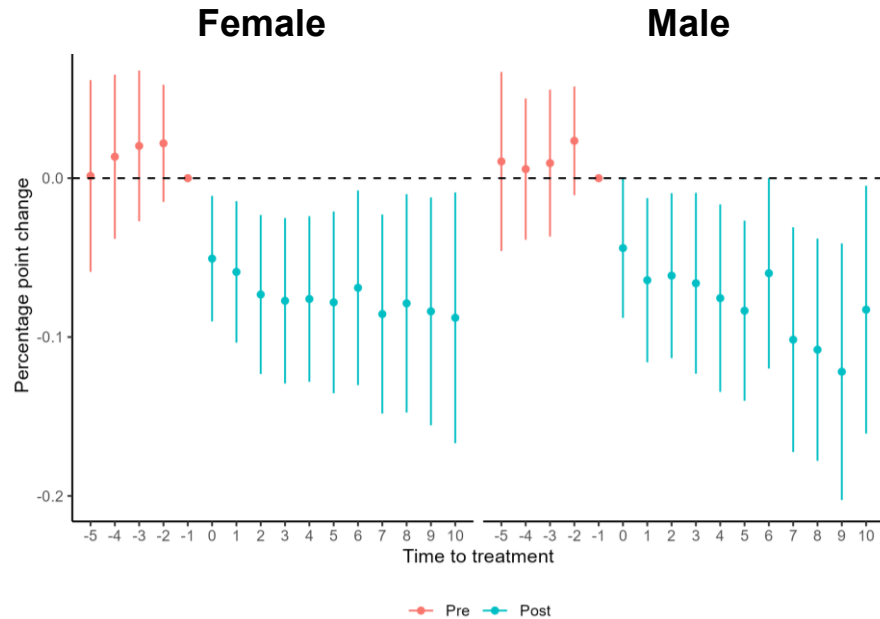


Weekly hours worked, conditional on employment: No statistically significant effect

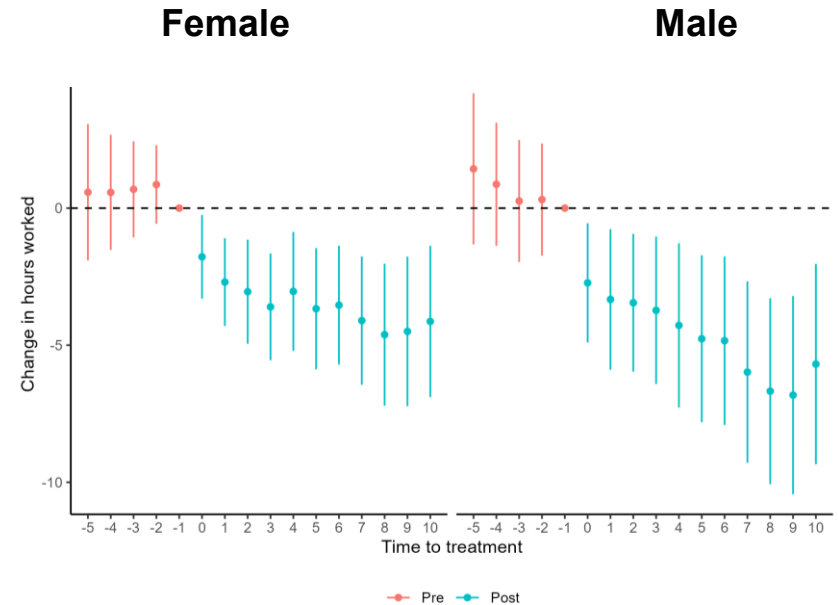


Effects of disability onset on labour supply are more pronounced in males than females

Employment probability

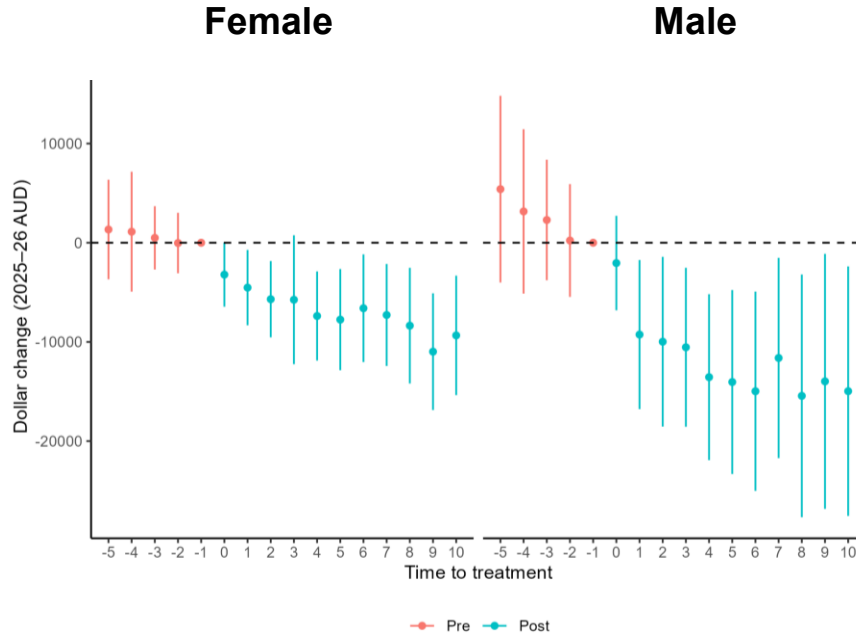


Weekly hours worked

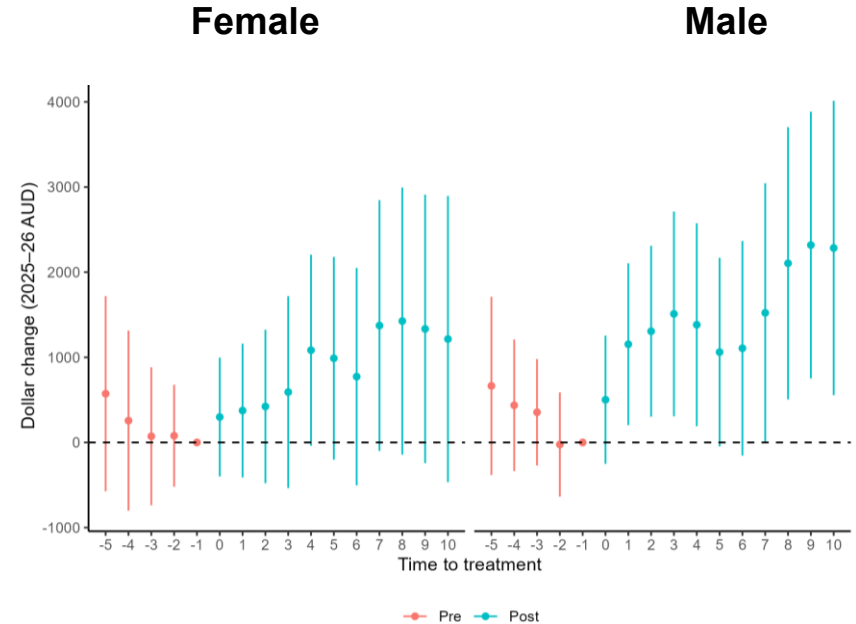


Income effects of disability onset are even more pronounced for males

Annual wage and salary income



Income from transfers



One possibility: Men are more concentrated in physical roles, making return to work harder after disability

Top 3 industries, year prior to onset

Male (employed)		Female (employed)	
Construction	13.7%	Health Care & Social Assistance	26.0%
Manufacturing	12.6%	Education & Training	14.5%
Public Admin & Safety	8.1%	Retail Trade	10.3%

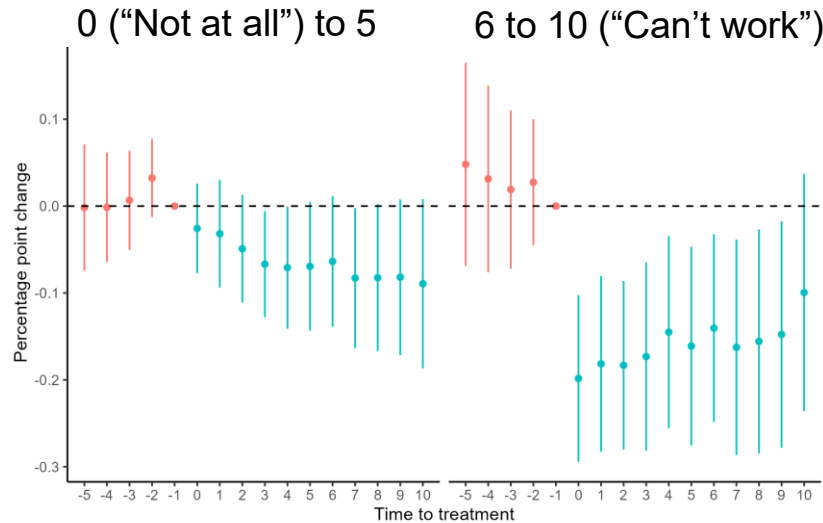
Top 5 occupations, year prior to onset

Male (employed)		Female (employed)	
Technicians & trade workers	22.0%	Professionals	25.3%
Managers	16.3%	Clerical & Admin Workers	20.8%
Professionals	15.8%	Community & Personal Workers	18.3%
Machinery Operators and Drivers	13.6%	Sales Workers	11.1%
Labourers	12.7%	Managers	10.1%

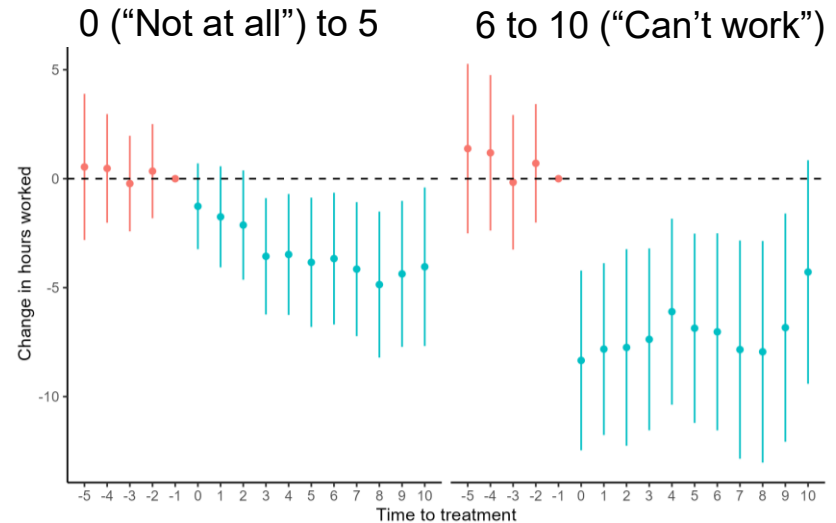
Extension 1: Differentiating labour market outcomes by self-reported severity of health condition

HILDA Question: "How much condition limits the amount of work you can do"

Employment probability

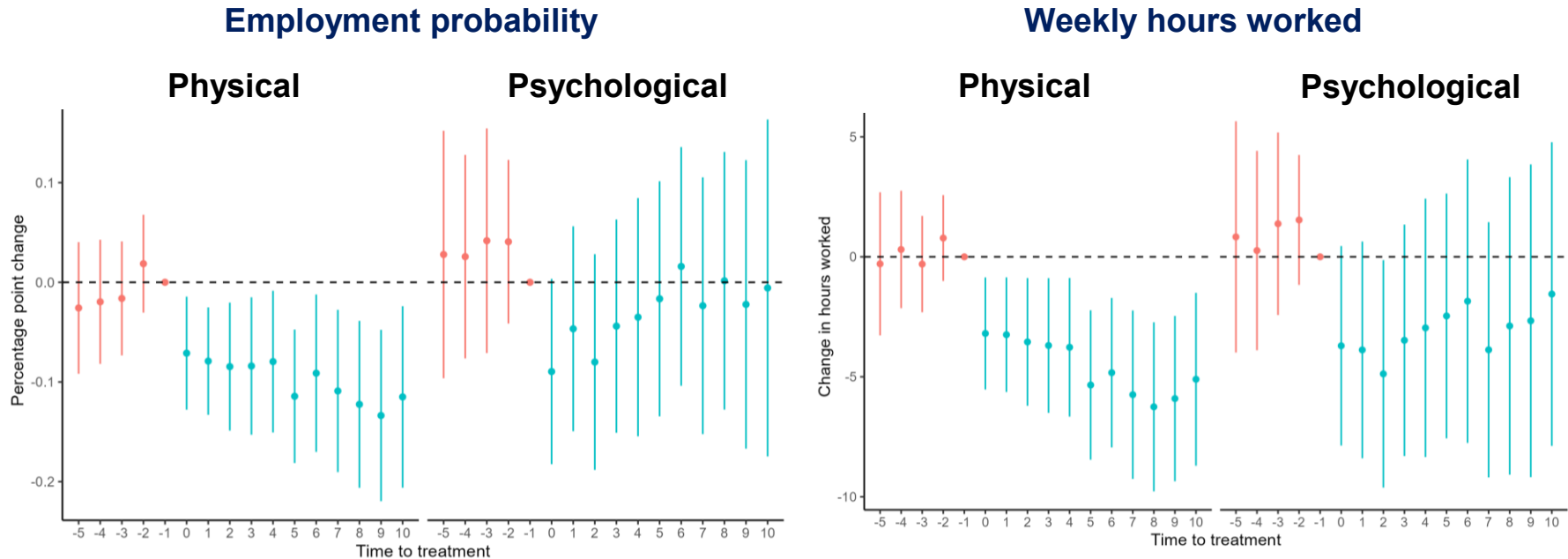


Weekly hours worked



Note: We observe 1,161 unique onsets in '0 to 5' group and 624 onsets in '6 to 10' group

Extension 2: Different outcomes for those with physical restriction and psychological conditions



Note: We observe 1,058 unique physical disability onsets and 686 unique psychological disability onsets

Summary of findings and future direction

Compared to counterfactual not experiencing disability:

- Disability onset severely contracts labour supply (employment and hours worked)
- Onset leads to major falls in employment income that are barely compensated by transfers
- Effects seem largely driven by loss of employment
- Effects are more pronounced in males, likely due to industry and occupation differences
- Effects are also concentrated in higher disability severity and in physical restrictions

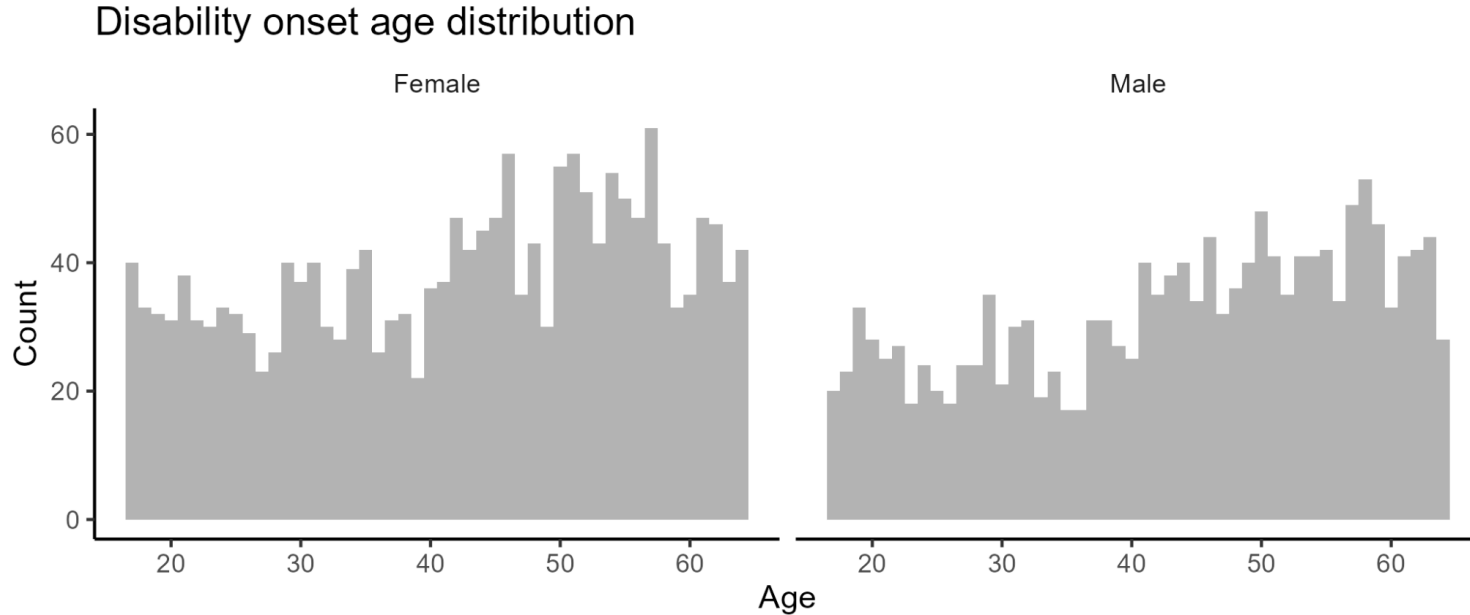
Future direction:

- Looking at people who recover from disability. Is there still persistence?
- Intra-household labour supply and impact on household wealth and consumption
- Transitions onto and off various payments after disability

HILDA Disclaimer

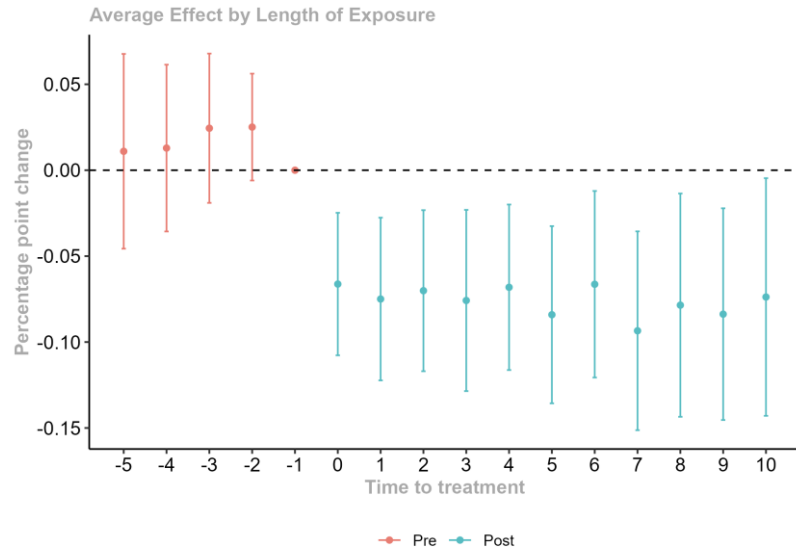
This document uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The unit record data from the HILDA Survey was obtained from the Australian Data Archive, which is hosted by The Australian National University. The HILDA Survey was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views based on the data, however, are those of the authors and should not be attributed to the Australian Government, DSS, the Melbourne Institute, the Australian Data Archive or The Australian National University and none of those entities bear any responsibility for the analysis or interpretation of the unit record data from the HILDA Survey provided by the authors.

Appendix: Disability onset age distribution, by sex (descriptive statistics)

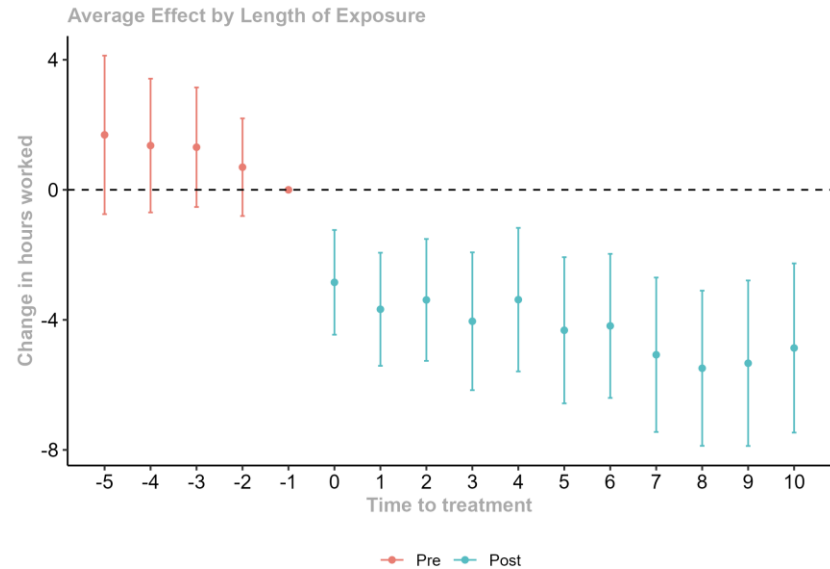


Appendix: Labour market outcomes – no pre-onset health conditions (robustness check)

Employment probability



Weekly hours worked



Note: We observe 1,903 unique onsets with no pre-onset health conditions