IDSS 2025
Ecosystem of Support:
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16-18 November, Brisbane

Actuaries Institute.

The long(itudinal) road to recovery – Using survey data to understand broader outcomes and vulnerabilities of injured workers

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Presented to the
Injury and Disability Schemes Seminar
16-18 November 2025

This paper uses unit record data from Household, Income and Labour Dynamics in Australia Survey, HILDA. HILDA is conducted by the Australian Government Department of Social Services (DSS). The findings and views reported in this paper, however, are those of the author[s] and should not be attributed to the Australian Government, DSS, or any of DSS' contractors or partners. DOI: 10.26193/NBTNMV.

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Abstract

While the importance of broader biopsychosocial factors in understanding injury schemes has long been recognised, there remains significant challenges in understanding the broader life context of people in injury schemes, as well as how they interact with other health and income supports.

We review the literature on broader and post-injury outcomes related to accident compensation schemes. We then use Australia's leading longitudinal research study, the Household, Income and Labour Dynamics in Australia (HILDA) survey to build the understanding of pathways and outcomes for people receiving accident compensation support. HILDA provide annual updates on the life circumstances of a cohort representative of the Australia population for over 20 years. This enables us to examine:

- Health, income and other socioeconomic characteristics before and after accident compensation receipt
- Income pathways (including changes of employment and welfare receipt) for people post-injury
- Health pathways (including both mental and physical health ratings as well as quality of life ratings) for people post-injury.

The use of both broader wellbeing and quality of life measures combined with examination of both immediate outcomes and longer-term pathways makes this study unique. We find:

- The cohort examined largely have short-duration compensation claims with payments only received in one year. However, significant negative outcomes are visible for those with claims lasting longer (3 or more years), particularly on wages, employment status and health.
- Many short-term claims see wages recover quickly and employment remains reasonably high for the first 3 years post injury. Household income remains steady, even for those with longer-duration claims.
- General health outcomes tend to be mirrored by changes in mental health (although the self-rated nature may contribute to this).
- Injuries leading to compensation tend to be significant life events – impacts are similar to other major life events.
- Care responsibilities increase for partners of claimants, and there is no evidence of partners picking up additional employment.

Keywords: HILDA, longitudinal outcomes, survey, accident compensation, mental health, physical health

1 Introduction

1.1 The broader context of accident compensation injuries

The health and welfare of people injured and covered by an accident scheme is perhaps the fundamental outcome of interest to policymakers and the general community. While there has been significant research, an integrated picture that can be embedded into claim management has remained elusive.

Figure 1 – Map of factors influencing return to work outcomes, 2015

Source: Playford and Moore, 2015

Managers have long acknowledged that the outcomes for a person supported by injury schemes following an accident are heavily impacted by the broader context around that person. This is sometimes referred to as 'psychosocial' or 'biopsychosocial' factors. Figure 1 shows one attempt to list out these broader factors, taken from a presentation at the 2015 Injury Schemes Seminar (Playford and Moore, 2015).[1] While many aspects are visible to an injury schemes provider (the nature of the injury and care provided, plus demographic characteristics), much is not (for example personal attitudes, employer attitudes as well as psychological and social characteristics). A person's recovery and broader welfare and will be heavily impacted by these broader factors in the periods both prior to, and during injury. For example:

- Krause et al. (2001) showed for injured people with lower back pain in America, psychosocial job factors, including high physical and psychological job demands and low supervisory support, are associated with lower return to work rates
- Brookes & Evans (2023) showed, using linked NZ data, that people with pre-existing mental health issues had longer duration claims related to their physical injuries.

Conversely, an injury will have impacts more broadly across a person's life, with work outcomes only a single viewpoint of outcomes that span physical health, mental health, financial wellbeing, social participation and broader support needs. This holistic picture has been increasingly recognised in research. Injuries can have lasting impacts on these measures, for example:

- Brookes & Evans (2023) also showed that people recently injured are much more likely to start mental health treatment, and this predicts much longer duration claims as well as that long-term claimants have high mental health service use rates.
- Meaghan et al. (2013) studied a cohort of 700 injured people, with follow-up at 12 months. A disability assessment scale was applied with a disability rate four times the general population, with psychiatric symptoms the largest point of variance.
- Giummarra et al. (2020) compared health outcomes via survey (physical and mental) across NSW and Victoria and found better outcomes for no-fault Victorian CTP claims compared to NSW workers' compensation claims and fault-based CTP claims.

[1] Case management is the most notable omission from the diagram.

- Mouatt et al. (2022) show that screening for depression among pain patients increases the rate of observed depressive symptoms six months later, indicating that even the claims process (rather than the injury) can influence broader outcomes.

The challenge of understanding the health and wellbeing of injured people is compounded when it comes to understanding outcomes that extend beyond the life of a claim within a scheme. Follow-up studies are relatively rare, and insights using administrative data are costly and give only a partial view based on service use (and not self-reported measures).

One important recent example is Griffiths et al. (2022) who used linked data to examine health service use after the cessation of benefits for long duration workers' compensation claims. It found that hospital use remained high (but did not get higher) for a group of people subject to new 260-week support limits in the NSW workers' compensation scheme.

Weir et al. (2025a) have recently undertaken qualitative research of outcomes following finalisation for workers' compensation claimants in Western Australia (average claim length 23 months). They found people have significant ongoing needs, stigma associated with being a claimant, the need to adjust to new circumstances (health and employment), and the need for better information and resources. A survey by Weir et al. (2025b) also found psychological distress was a better predictor for ongoing wellbeing than other claim characteristics.

Weir et al. (2024) have also conducted a recent systematic scoping review of academic literature focusing on the health and wellbeing of claimants after finalisation of workers compensation claims. They found:

- There is evidence of ongoing burdens for individuals, employers and society following a workers' compensation claim. For instance, Canadian studies (Ballantyne et al., 2016, Casey & Ballantyne, 2017) show elevated rates of poverty and chronic health conditions for people following claim finalisation.
- There are significant evidence gaps on wellbeing (that is, issues broader than just health recovery). Focus has tended to be on specific measures such as employment, health status, symptoms and mental health.
- Notably, of the 32 papers found exploring post-finalisation claim outcomes, just three were from Australia. Given the importance of the broader income support system, and international differences, this represents limited evidence of the Australian context.
  - Even among the Australian literature, findings are mixed. For example, Greenough & Fraser (1989) exampled an Adelaide cohort with lower back pain and found incidence of pain and psychological disturbance was largely unchanged before and after claim settlement. Whereas Harris et al. (2008), for major trauma, observed significant improvements in mental health scores following claim settlement.

1.2 Policy implications

The existing literature already points to some important, interrelated implications:

- There can be an over-emphasis on claim finalisation, without consideration of outcomes beyond finalisation. Griffiths et al. (2023) show that legislative changes that impact claim duration (specifically the introduction of 260-week limits on some long-duration claim types in 2012) can lead to a direct movement of many people from an injury scheme to welfare benefits (mainly unemployment benefits).
- Scheme sustainability will tend to ignore post-claim outcomes. Relatedly, high rates of financial stress and health conditions following claims will mean demands on the welfare, health and disability systems.
- The presence of other support systems is relevant to understanding outcomes. While unnecessary cost-shift is undesirable, in other cases movement between different income support systems can be appropriate. Collie et al. (2018) estimated the size of different income support systems, but noted the paucity of data related to movements between them.

Evidence also points to the role of schemes themselves as a stressor that can contribute to poor outcomes. For example, Kilgour et al. (2015) reviewed qualitative research in workers' compensation and found mainly negative interactions between people and insurers, raising concerns about the potential contribution to secondary psychological injuries.

1.3 Some limitations of existing research

A key issue is that the vast majority of research is observational. While poorer long-term outcomes for injured people are undesirable, it is unsurprising that they would be worse when compared to a non-injured cohort drawn from the general population.

International research will have some but not total relevance to local contexts. This is particularly true of post-claim outcomes, where the support systems in place across health, welfare and disability will be crucial for those that do not make a full recovery from an injury.

For drawing evidence across schemes, adjusting for the definition and severity of injury, as well as defining treatments, can be very challenging – see the broader discussion in Appendix J of Productivity Commission (2011).

Some quasi-experimental designs are reasonable at collecting some causative evidence. For example Miller (2021) explored the impact of legal representation on claim costs through the use of instrumental variables.

1.4 Longitudinal data and the contribution of this paper

The preceding discussion highlights the need for good longitudinal studies that can measure a range of health and wellbeing outcomes during and following a claims process.

There have been some studies designed to address this need. A good Australian example is the Victorian Transport Accident Commissions Longitudinal Client Outcome Study (Ellis & Gifford, 2015), which included a systematic survey as a standard part of claims assistance, tracking standardised measures across 12 domains.

Longitudinal data studies are long and expensive. One opportunity is to leverage existing longitudinal work. We take Australia's leading longitudinal survey explore:

- Income, employment, health and mental health indicators for people both **before** an accident (often invisible to claims processes) as well as after. This includes a significant amount of self-reported information, such as self-rated health outcomes.
- Impacts beyond the individual claimant by examining these outcomes at the household level and for partners as well as the claimants.
- Outcomes in subsequent years for those receiving compensation payments compared to other kinds of events.

While the dataset carries limitations (see Section 2.2 below), the breadth of information captured over time for thousands of people gives a unique opportunity to see holistic outcomes before, during and following an accident compensation claim. This provides insight into a broad cohort using available data. Beyond the insights this gives, it may be helpful for those designing a specific longitudinal study,

The remainder of the paper is structured as follows:

- Section 2 describes the HILDA data used in greater detail
- Section 3 provides the main results and discussion
- The Appendix provides supplementary results and information, to reduce the length of the paper's main sections.

2 Data used

For this paper we used the data from the Household, Income and Labour Dynamics in Australia (HILDA) survey. The HILDA Survey is a household-based panel study that collects information about economic and personal wellbeing, labour market dynamics and family life. HILDA started in 2001 and tracks the economic and personal wellbeing (and related factors) of around 17,000 Australians each year. The sample structure and various weights provided mean results are representative of the Australian population.[2]

For this paper we used release 23 as this was latest available. In the analysis we used the time series spanning collections over 2001 to 2023. Information is available for people who responded to the survey (responding persons) as well as members of a household who did not respond (enumerated persons) based on other household member responses. We restricted our analysis to responding persons. This means the analysis dataset contained responses from around 15,000 people aged 15 and over per year, or 353,633 records in total. We report population weighted results, these results relate to the Australia population aged 15 and over, based on the weights this is 21.4m in 2023.

A unique aspect of the HILDA survey data is that it surveys everyone in a selected household. This means we can track outcomes for both individuals, and for their partners, enabling a broader look at impacts of events leading to compensation payments.

All monetary amounts have been inflated to 2025 values using the ABS Wage Price Index (series A2713851R – Quarterly Index; Total hourly rates of pay excluding bonuses; Australia; Private and Public; All industries).

2.1 Definitions

There are a few alternative indicators of injury of claim on the survey, for example we considered:

1. **Financial payments from an accident scheme or insurance** – *During the last financial year did you receive payments from workers' compensation/ Accident or Sickness insurance [question code* oifwkc]*?*
2. **Time off for workers compensation** – *During last 12 months, did you spend any time on workers' compensation?* [question code wcany]?
3. **Variations based on days off work** – *During last 12 months, did you spend at least 20 days on workers' compensation?* [combining question codes wcany and wcapd]
4. **Payment of a lump sum** – *During last 12 months, did you receive a workers' compensation lump sum?* [using the oiflsw variable]

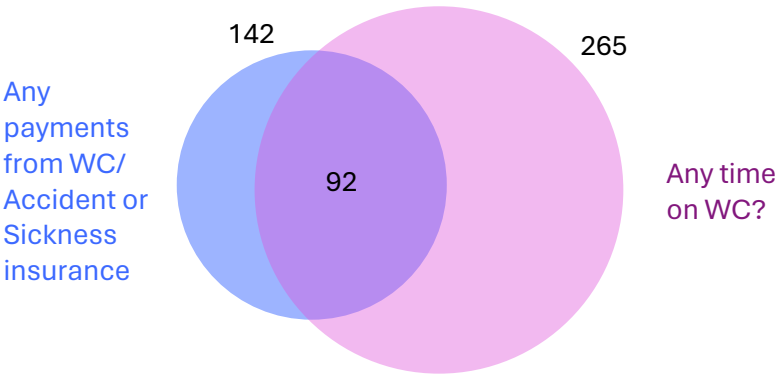
Additionally, there are questions related to broader compensation, compensation amounts, and other types of leave (including sick leave).

We have used the first measure as our primary measure throughout. While the second measure has more observations, about half of these are short-term (less than 20 days off work), and the intersection with the first measure is moderate rather than strong (see Figure 2). Measure 1 is also broader than 2 in the sense that money could come from other sources. Additionally, the second and third measures are not available prior to 2005, meaning there is a shorter time series. Lump sum volumes are about 5% of the volumes of the first measure and so numbers are too small for meaningful statistical analysis.

Across all 23 waves about 1,961 people responded yes to this first indicator.

[2] Detailed information on HILDA and the data construction are in the regular user manuals, with the 2023 release available at https://melbourneinstitute.unimelb.edu.au/__data/assets/pdf_file/0006/5166807/HILDA-User-Manual-Release-23.0.pdf

Figure 2 – Overlap between different HILDA measures, average number of people responding yes to questions per year, average across 2006-2016



The overlaps across measures are still of interest. Table 1 explores the overlap of the different cohorts. Notably:

- Only 64% of our cohort with compensation payments have had time off work related to workers compensation, this likely reflects the broader scope of our cohort (other types of accident compensation and insurances). It may also represent people recognising medical and rehabilitation services as compensation and answering yes, even if they take little time off work.
- Conversely only 34% of people with paid time off for workers compensation have received a compensation payment in the same year.

Table 1 – Overlap of different potential compensation cohort indicators, average over 2005 to 2023

Cohort	Proportion of cohort who are also in the following cohort:			
	Compensation payment	Paid time off for WC	20+ days of paid time off for WC	Lump sum WC payment
Compensation payment	100%	64%	38%	0%
Paid time off for WC	34%	100%	53%	0%
20+ days of paid time off for WC	38%	100%	100%	1%
Lump sum WC payment	0%	21%	15%	100%

Note: WC = workers compensation

The HILDA dataset collection includes over 10,000 different variables. The table below provides details on key variables used in our analysis.

Table 2– Key variable definitions

HILDA Variable ID	Short descriptor	Description
hhiage	Age	Age last birthday at date of interview
hgsex	Sex	Sex of respondent
hhstate	State/ Territory	Resident location of the household
hhs3add	SEIFA decile (location)	SEIFA relative socioeconomic advantage/ disadvantage decile 2021
edhigh1	Education level	Highest level of education attained
jbmo61	ANZSCO major occupation group	Occupation 1-digit ANZSCO 2006
hhtype	Household type	Household type combines information about the structure of the family and whether other related or unrelated individuals are present
oifwkc	Broader compensation payment	Sources of payments received in the last financial year: Workers compensation/Accident or Sickness insurance
oifwkca	Broader compensation payment amount	Financial year regular workers' compensation/accident/sickness insurance
wcany	Any time off for workers compensation	During last 12 months spent some time on workers compensation
wcapd	Days time off for workers compensation	Days absent from work on paid workers compensation in last 12 months
oiflsw	Lump sum workers compensation payment	Sources of payments received in the last financial year: Lump sum workers' compensation
helth	Disability flag	Long-term health condition, disability or impairment
ghgh	General health score	SF-36 general health - transformed
ghmh	Mental health score	SF-36 mental health - transformed
tifeftp tifeftn	Total annual income	Total gross income in the last financial year, including transfers/welfare
wsfei	Annual wages and salary, imputed	Financial year gross wages & salary
hifeftp, hifeftn	Household total annual income	Total regular gross income in the last financial year, including transfers/welfare
hiwsfei	Household annual wages and salary, imputed	Household financial year gross wages & salary
lscar	Time spent caring for adults	Time per week spent caring for a disabled spouse or relative
es	Employment status	Respondent’s current employment status
esbrd	Labour force status	Respondent’s current labour force status
ledhm	Home destroyed by disaster	Life events in past year: A weather-related disaster (flood, bushfire, cyclone) damaged or destroyed your home
lefnw	Major worsening of finances	Life events in past year: Major worsening in finances
lefrd	Serious illness	Life events in past year: Fired or made redundant
leins	Made redundant or fired	Life events in past year: Serious personal injury/illness
lesep	Separated from spouse	Life events in past year: Separated from spouse

2.2 Data limitations

HILDA provides a unique and useful view but does carry some important limitations:

- **Small sample sizes** – While the overall HILDA survey size is significant, the relatively low incidence of accident compensation claims means that the dataset size most relevant to the analysis is small, at around 140 observations per year. This limits some of the subcohorts that can be analysed.
- **Lack of information on claim characteristics** – HILDA contains a variety of health outcomes, but these are general to the person rather than specific to a claim. This means the specific nature of injury is unknown. For example, we cannot distinguish poor mental health that occurs post-claim to that involved in the claim itself.
- **Coarseness in the data due to the nature of annual surveys** – The survey is annual, whereas many accident compensation injuries change significantly over months. For example, we do not know how poor a person's health and wellbeing was at the time of injury – only at the point of survey. Further, we cannot distinguish one claim that lasts two years versus two separate claims in consecutive years.
- **Limited ability to compare jurisdictional differences** – The design of schemes across different jurisdictions will impact outcomes. We do not know exactly what schemes and benefits people are eligible for, making comparisons challenging
- **General survey issues** – Like most longitudinal surveys, interpretation can be affected by issues such as non-response, recall issues and selection bias. We do not attempt to quantify these risks.

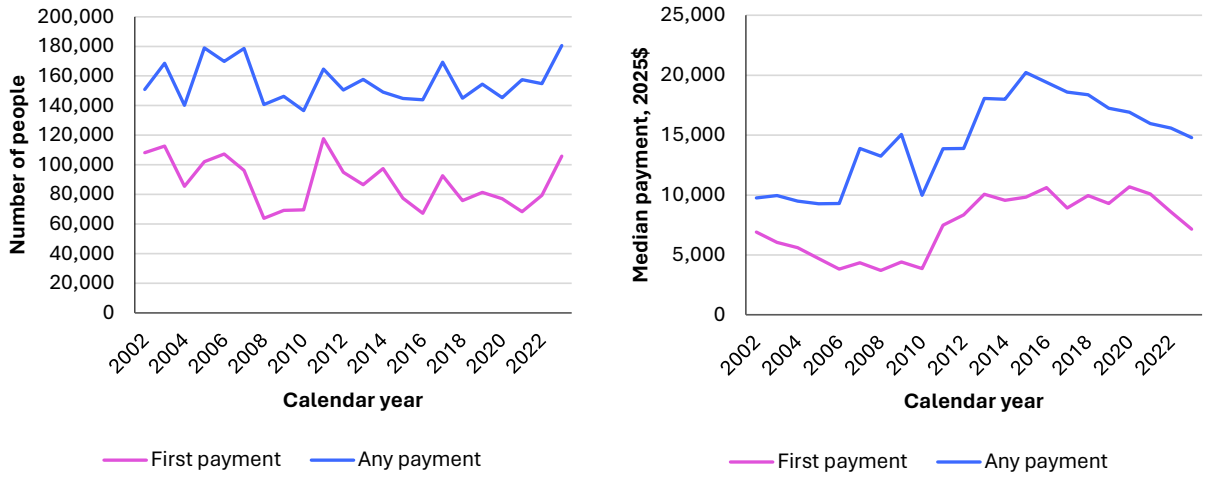
3 HILDA results

3.1 Understanding the cohort receiving compensation payments

Numbers over time

Figure 3 shows the number of people receiving compensation payments by year, split by whether this relates to the first payment year, or not.

Figure 3 – Number of people (weighted to full population) receiving compensation payments and median payment amounts by year



Note: Median payment amounts are smoothed by averaging over three years

From Figure 3 around 150,000 people receive a compensation payment, and around 100,000 people per year receive their first compensation payment. Median payment amounts have varied time, they were around $10k over the early 2000s before reaching a high of $20k around 2015 and decreasing to around

$15k since. First payments follow a similar trend but are around $5-10k lower. The distribution is skew, with the mean varying from $15k to $50k over the same period. We report payment amounts for completeness but note the underlying number of survey respondents is small and payment amounts are not a focus of this work.

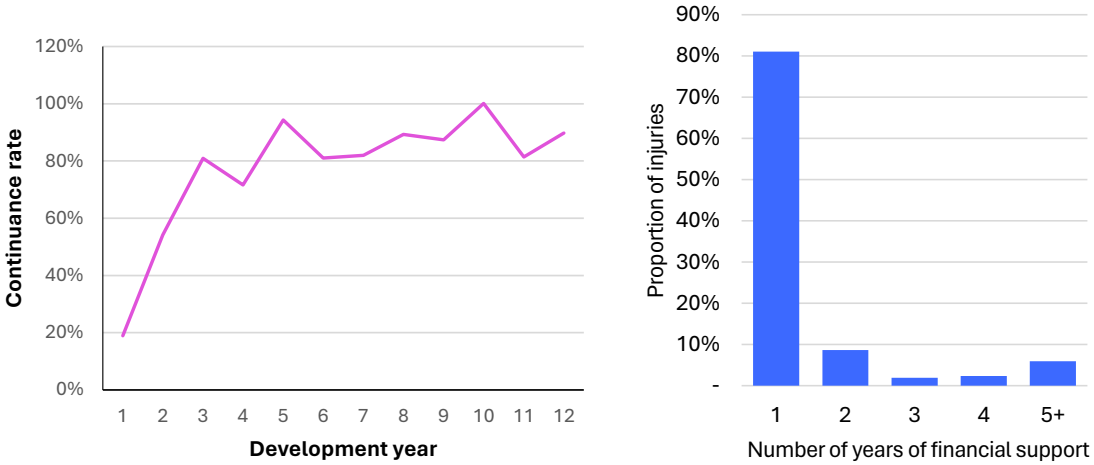
These numbers roughly align with expected values. For example:

- Collie et al. (2018) estimated that in 2015-16 there were 156,000 recipients on workers compensation benefits, and 95,000 TPD and income protection recipients – 251,000 in total. This figure to be somewhat larger than our 150,000 – double counting in the older paper may contribute to this, as well as the possibility that short-tailed injuries (where a person has recovered and the accident was several months previous) may be underreported in the HILDA survey.
- Safe Work Australia reports 147,000 serious claims (requiring at least a week off work) in 2022-23[3], which has increased from about 106,000 in 2015-16. While not all these claimants necessarily received compensation (and so would not be in our cohort) and our cohort would include people receiving motor vehicle accident compensation payments the magnitude is consistent.

Duration of payments

Most people do not receive payments for an extended period. Figure 4 shows the continuance rate for annual payments – around 20% receive payments beyond the first year, and after than the continuance rate rapidly increases to around 90%. The year 1 continuance rate has remained fairly steady over the HILDA window, but is unlikely to detect finer-grained evolution in jurisdictions over time. This will reflect a mixture of different injury types, different compensation types and schemes, and the timing of the annual snapshot is not tied to the payments. However it usefully indicates our cohort of people receiving compensation payments likely differ by whether they received payments for 1, 2, or 3+ years following injury.

Figure 4 – Continuance rate for annual payments, 10-year average (left) and distribution by number of years of financial support (right)

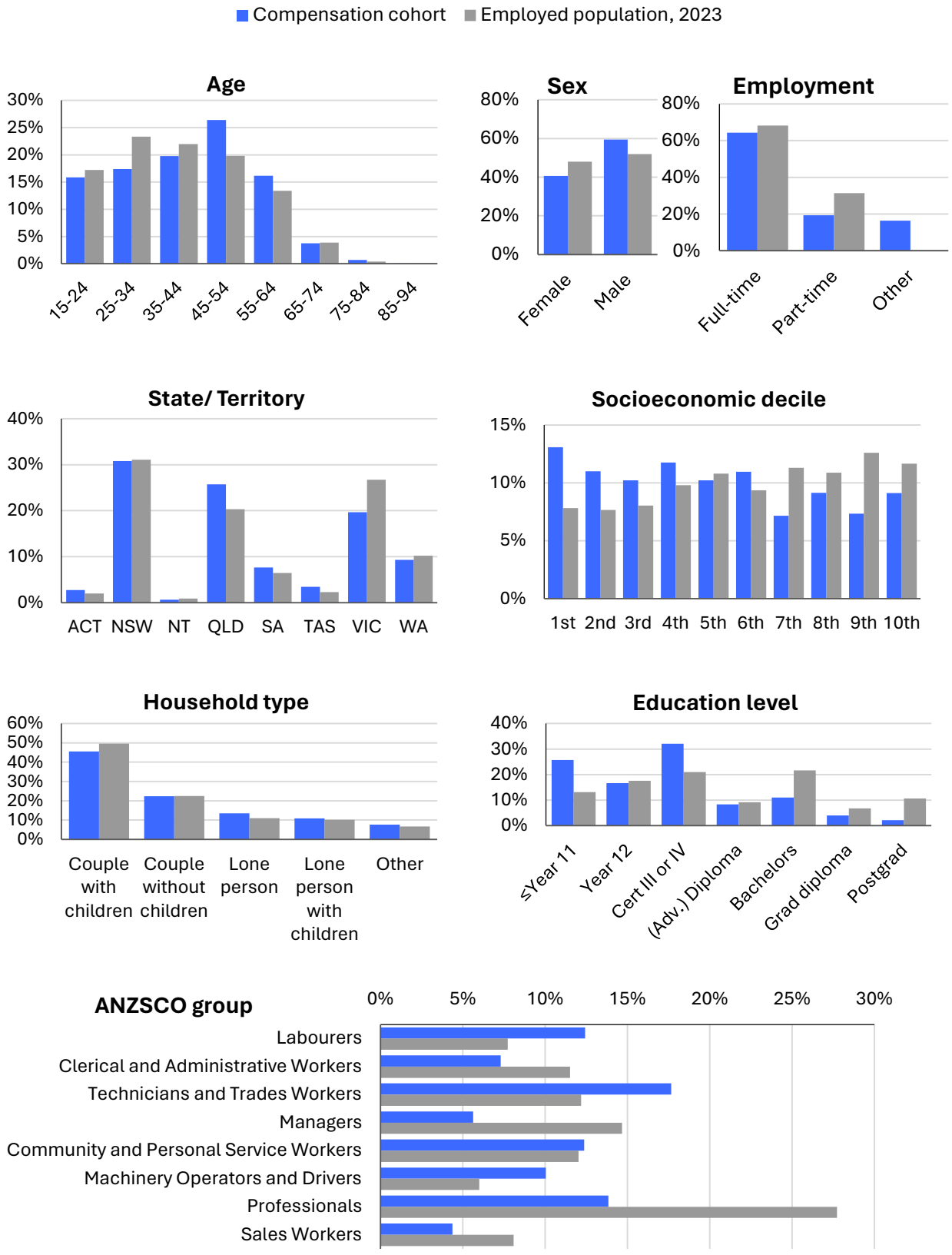


Demographics

Figure 5**Error! Reference source not found.** compares the demographics of our cohort with compensation payments to the employed population in 2025. For the compensation cohort, people receiving payments are represented exactly once, and the demographics relate to the year prior to their first year receiving a payment. This attempts to capture the information before the injury, however for some people this may still be post-injury (depending on the timing of the survey snapshot and delays between injury and receiving compensation).

[3] https://data.safeworkaustralia.gov.au/interactive-data/topic/workers-compensation

Figure 5 – Demographic breakdowns of our compensation cohort and the employed population in 2023



Comparing the compensation cohort and the employed population, we see a relative over-representation in the compensation cohort of:

- Older age groups (47% of the compensation cohort over age 45 compared to 37% of the employed population)
- Males (59% compared to 52%)
- Queensland (26% compared to 20%) and an under-representation of Victoria (20% compared to 27%)
- Lower socioeconomic deciles (46% in deciles 1 to 4 compared to 33% for people employed and 40% for the overall population).
- Labourers (12% compared to 8%), Technicians and Trades Workers (18% compared to 12%), Machinery Operators and Drivers (10% compared to 6%) and an under-representation of Professionals (14% compared to 28%)
- Lower education levels (26% not beyond Year 11 compared to 13%) and vocational education and training (40% Cert III or IV, Advanced diploma or diploma, compared to 30%).

These trends are generally observed in compensation schemes more broadly (for example, Safe Work Australia statistics show similar age and gender distributions[4]). They reflect the raft of factors relating to likelihood of injury (e.g. occupation, industry or hours worked), severity of injury (e.g. age) and likelihood to claim (e.g. availability of a compensation scheme and understanding of rights).

3.2 A population level view of outcomes

In the remaining parts of Section 3 paper we explore outcomes including:

- Income and household income
- Employment for people and their partners
- Health and mental health, for people and their partners.

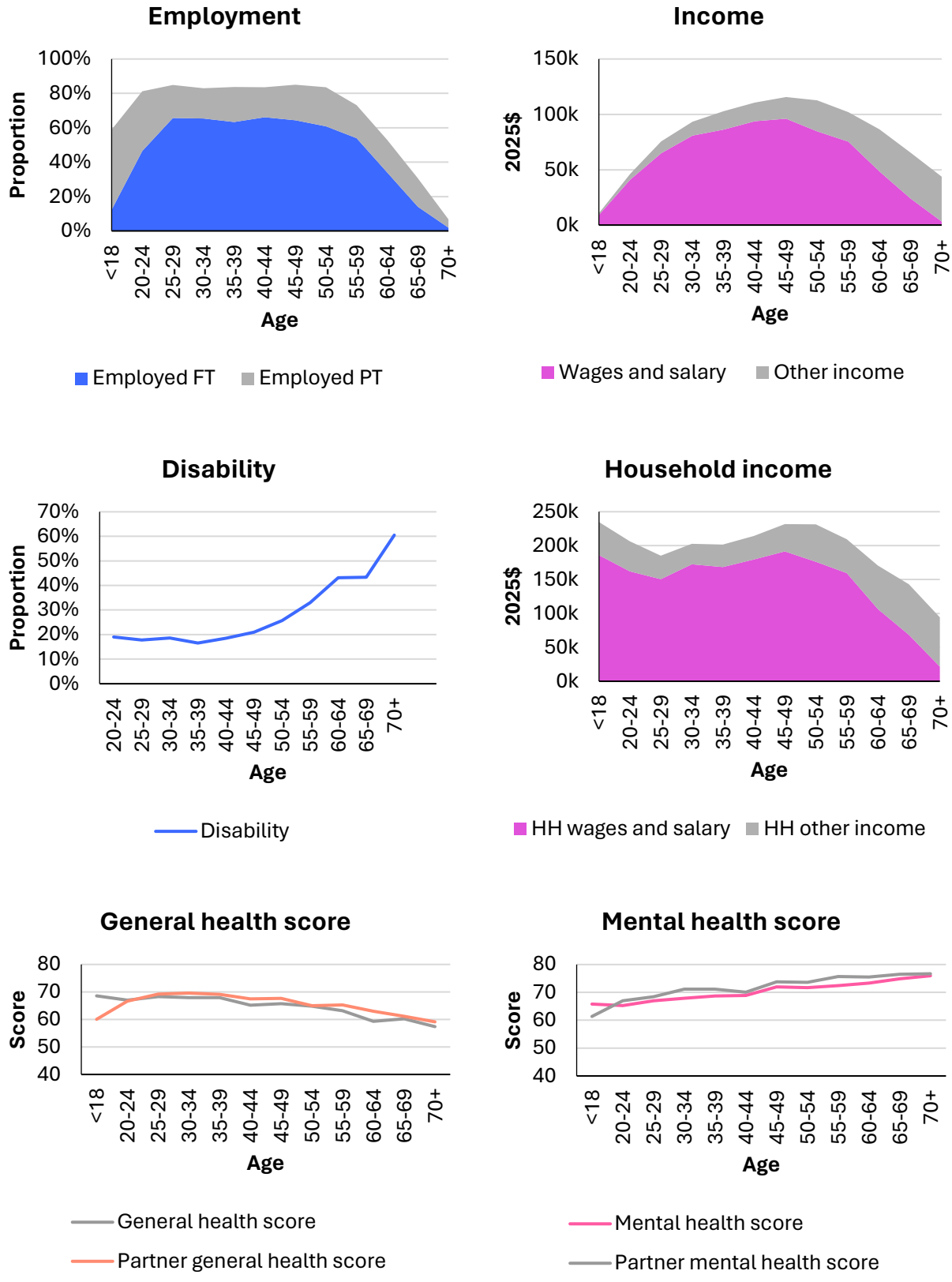
Income and employment have strong trends by age and life stage. Figure 6 shows the breakdown of these key outcome variables by age for the 2023 year. The strong variation by age, particularly for income and employment is evident. Throughout the rest of this section, and report, we report age-standardised results. This is important – our cohort of injured workers show significant decreases in employment over time, but much of this is due to aging effects, which would occur irrespective of the injury.

Some trends are interesting in their own right:

- While disability increases and general health decreases by age, we see the opposite trend for mental health scores, which improve with age. This is consistent with research on happiness more generally, although some studies have found a decreasing trend through to middle age and increases beyond age 45 (Frijters & Beatton, 2012).
- Employment rates, including part-time work, are uniformly high across age groups from 20 to 60. Employment rates are still material in the 65-69 age group, and this has been growing over time.
- The increase in ‘other’ income (including pension and investments) grows steadily with age, compared to the humped shape of employment income.

[4] https://data.safeworkaustralia.gov.au/sites/default/files/2024-09/Final%20-%20Key%20WHS%20Stats%202024_18SEP.pdf

Figure 6 – Key outcome variables for the full Australian population by age, 2023 year



3.3 Outcomes for cohort with compensation payments

To examine what happens to outcomes following compensation receipt we have defined the first year of payments at t=1. We then track outcomes for both individuals receiving compensation, and their households/partners for up to ten years prior (t=-9 to t=0) and up to ten years after (t=1 to t=10). Because there are strong relationships between the outcomes and age, and we are looking over a twenty-year period, we have used age-standardised rates[5]. This means changes over the time window are not due to the cohort ageing, however note the absolute value does not represent the average for the cohort.

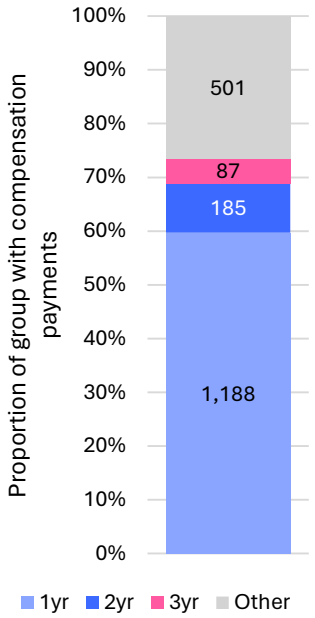
We split the group receiving workers compensation into three cohorts, which are intended to proxy accident severity. In the absence of claim data these are based on patterns of payment receipt in the three years from first payment (inclusive):

- **1yr cohort** – Received a payment in years 1, but not year 2 or year 3
- **2yr cohort** – Received payments in both years 1 and 2 but not year 3
- **3yr cohort** – Received payments in all of years 1, 2 and 3 (and potentially continued to receive payments).

These cohorts are restricted to people with their first recorded payment over 2003 to 2021. This means they have not received payments in at least 2 years prior, and we have three years to observe payments for all people to correctly allocate to the cohorts. This, and people receiving payments in years 1 and 3 makes up the 'Other' group in Figure 7.

Figure 7 shows the relative size of these cohorts. The 1 yr cohort is by far the largest, accounting for 78% of all people receiving payments. The figure also shows the number of unique individuals in the survey. While on a population weighted basis this group represents 2 million Australians, it's important to recognise the underlying numbers of survey responses are modest, and some volatility due to statistical noise is expected.

Figure 7 – Distribution of group with compensation payments across cohorts, and number of unique individuals making survey responses in each cohort



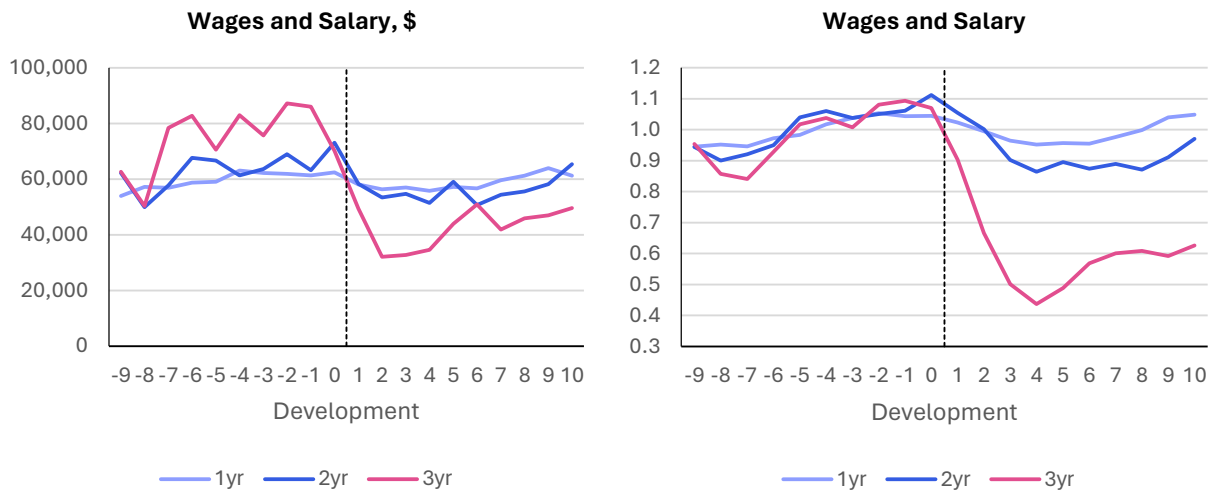
To enable comparisons between cohorts we have then further transformed the outcome rates by using the average over the years -10 to -1 as a benchmark and then applying 3-year averaging to smooth the results. Figure 8 below demonstrates the transformation for average wages and salary. Considering the cohort who received payments for at least three years (3yr cohort, pink line):

- The left panel shows the average age-standardised value of wages and salary decreases from about $80k p.a. before compensation to around $40k p.a in later years (a decrease of ~$40k, or ~50%).
- The right panel transforms the results to enable better comparison, and shows this as a decrease from around 1.0 to 0.5, or 50%.

The indexation to the average over years -10 to -1 is done at the cohort level to enable comparisons. For example, the pre-injury wages are much lower for those in the 1-year group; people with shorter injuries tend to be younger, which in part will explain the lower salary. After the transformation, this 1-year cohort starts at similar point to the 2-year and 3-year cohorts.

[5] We have used the age-profile of HILDA population ever receiving compensation payments as at 2010 as the standard population.

Figure 8 – Average wages and salary by development year, raw age-standardised results (left panel) and transformed age-standardised results (right panel)



As expected, outcomes for the 3-year group are worse overall, with bigger drops from the point of injury and falls tending to be sustained for long periods of time.

- The 2-year and 3-year groups both see a material drop in wages that appear sustained (for at least 7-8 years) – about 10% and 40% respectively. This contrasts to the 1-year group where wages income only dips slightly.
- In contrast, total (individual) income is much more stable in the medium-term, even increasing short-term for the 2-yr cohort. This suggests compensation income is doing a substantial job in filling the gap in wages, across all groups. After 5 years decreases in total incomes are seen for the 3-year cohort – many will still be on benefits.
- Employment rates fall sharply (and stay low) for the 3-year group. There is evidence that 1 and 2-year groups also see some reduction in employment rates, compared to the age standardised average – more on the order of 10%. There is an increasing trend in employment prior to injury, which would be consistent with increasing eligibility for workers compensation; people must have been employed to make a workers compensation payment.
- Household wages and income are consistent with the patterns seen for the individuals.
- One interesting and testable question is if there is any change to the injured partner's employment and income – for instance, does employment increase to fill an income gap. The evidence suggests not – partner employment stays flat across the 1-year and 2-year groups and decreases for the 3-year group; they do not appear to contribute more to household income.

Figure 9 shows the results for our key income and employment outcomes. The non-transformed results can be found in Appendix A. From As expected, outcomes for the 3-year group are worse overall, with bigger drops from the point of injury and falls tending to be sustained for long periods of time.

- The 2-year and 3-year groups both see a material drop in wages that appear sustained (for at least 7-8 years) – about 10% and 40% respectively. This contrasts to the 1-year group where wages income only dips slightly.
- In contrast, total (individual) income is much more stable in the medium-term, even increasing short-term for the 2-yr cohort. This suggests compensation income is doing a substantial job in filling the gap in wages, across all groups. After 5 years decreases in total incomes are seen for the 3-year cohort – many will still be on benefits.
- Employment rates fall sharply (and stay low) for the 3-year group. There is evidence that 1 and 2-year groups also see some reduction in employment rates, compared to the age standardised average – more on the order of 10%. There is an increasing trend in employment prior to injury, which would be

consistent with increasing eligibility for workers compensation; people must have been employed to make a workers compensation payment.

- Household wages and income are consistent with the patterns seen for the individuals.
- One interesting and testable question is if there is any change to the injured partner's employment and income – for instance, does employment increase to fill an income gap. The evidence suggests not – partner employment stays flat across the 1-year and 2-year groups and decreases for the 3-year group; they do not appear to contribute more to household income.

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Figure 9 – Income and employment by time since compensation receipt (first payment in year t=1)

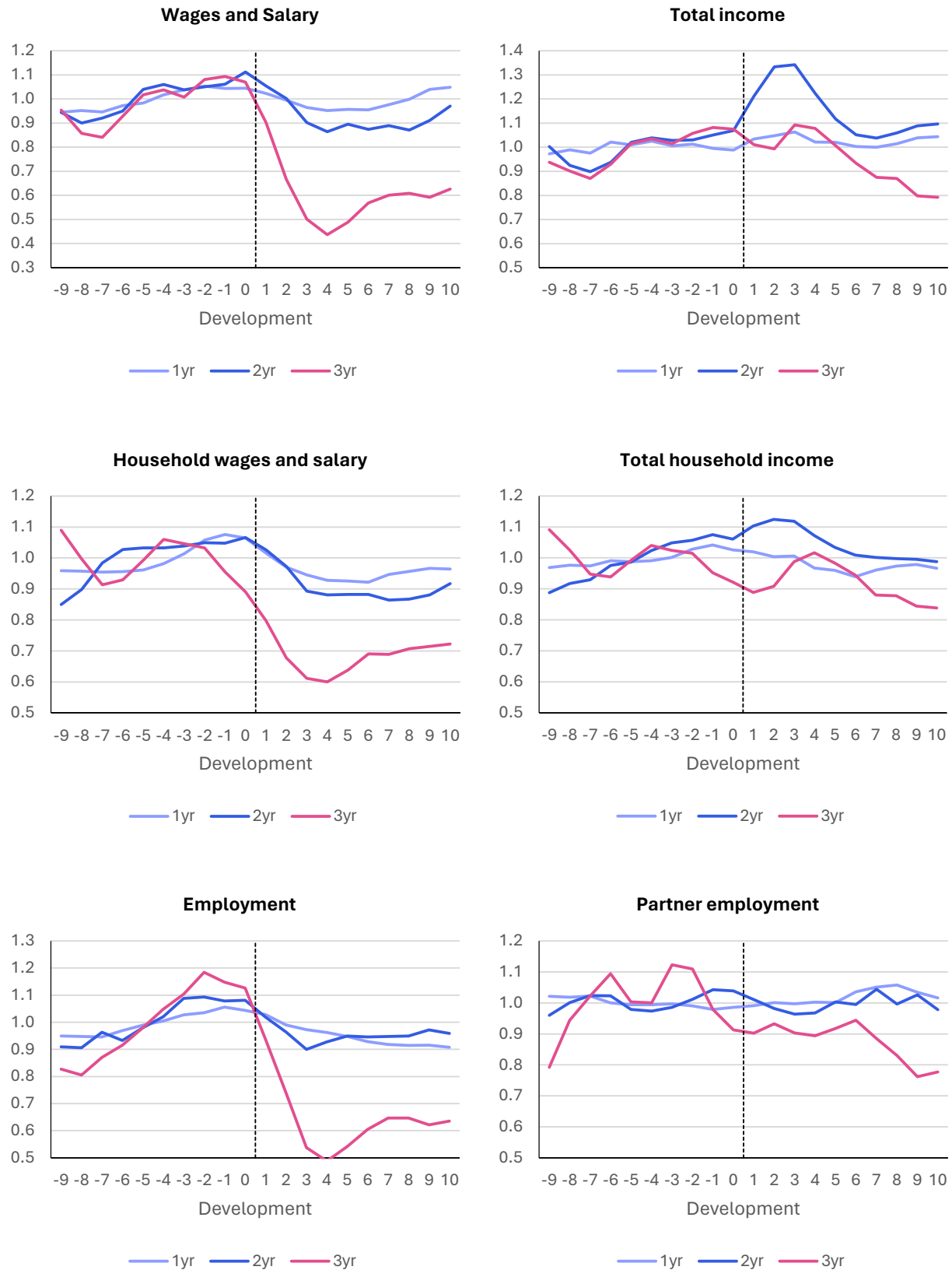
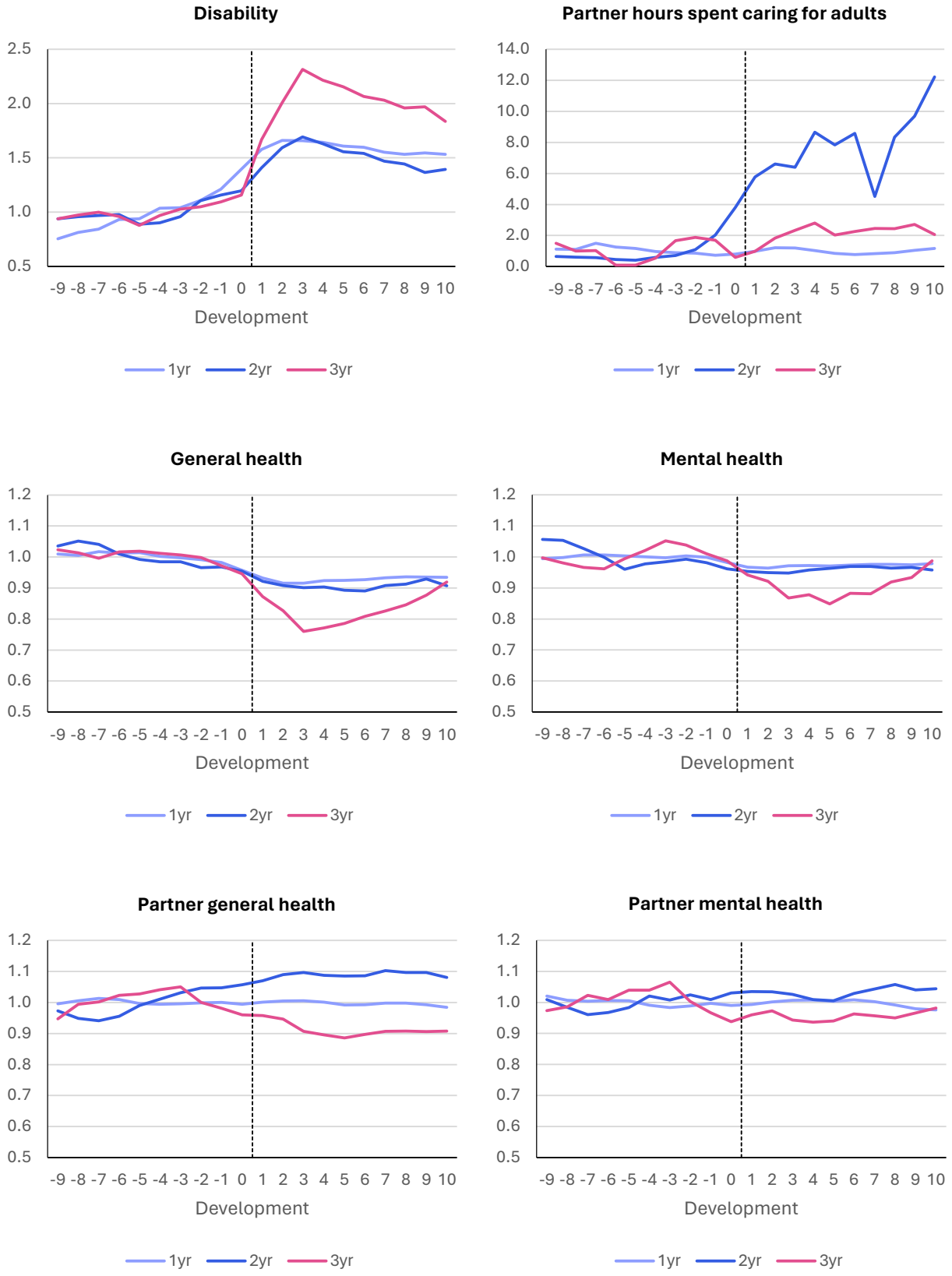


Figure 10 shows the results for a range of health outcomes. The non-transformed results can be found in Appendix A.

Figure 10 – Health outcome variables by time since compensation receipt (first payment in year t=1)



From Figure 10 :

- We observe a very large relative increase in reported rates of disability (or other long-term health conditions). For the 3-year group the rate doubles, but importantly we see at least 50% increases for the 1-year and 2-year groups too. This strongly suggests ongoing health issues tied to the claim, even when no payments are ongoing.
- A similar pattern (albeit less dramatic) is seen in self-rated general health. Decreases are visible across all the groups, with the largest drop for the 3-year group.
- General health and disability actually start to deviate at time zero. In some cases this could be an injury for which compensation has not yet started, but it is suggestive of worsening health prior to claim.
- Overall self-rated mental health is relatively stable for the 1-year and 2-year groups, and continues to sink over several years for the 3-year group. The difference in patterns is striking, but overall impacts for most claims (the 1 and 2-year groups) appear mild.
- Time partners spend caring increase substantially for 2-year and 3-year cohorts (off a relatively low base), showing the impact of the injury extends beyond the individual. This may also relate to the observation of limited evidence of increased employment for this group.
- For the 1-year and 2-year groups partner general health and mental health are stable, or even improving. There is a material decrease in both measures for the 3-year group, which to the authors' knowledge is a new finding.

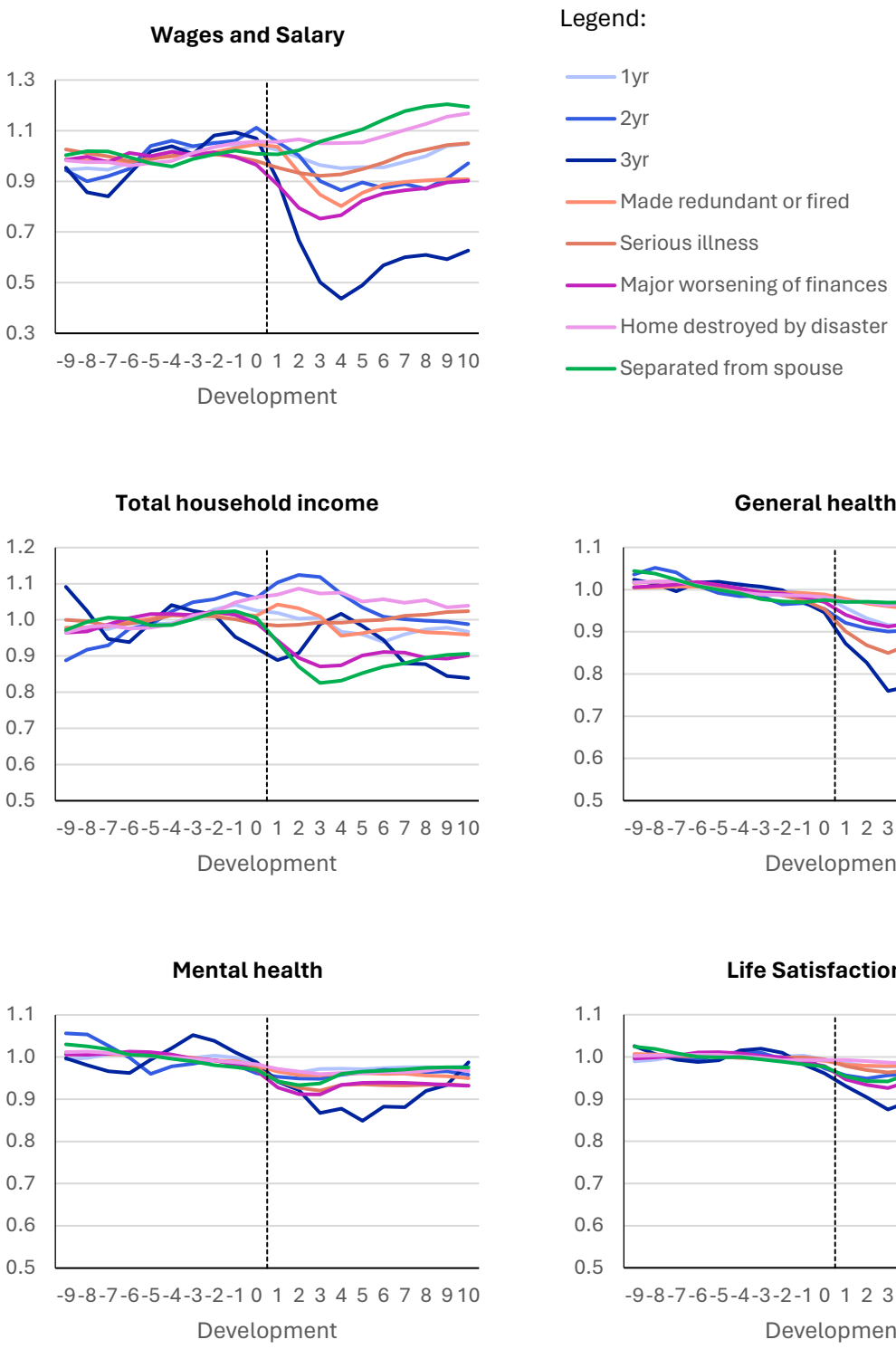
Comparison to other significant life events

One thing that is hard to judge from the results is the relative size of the movements – how major are the deterioration in outcomes? HILDA also allows us to compare the compensation cohorts to other cohorts with significant life events. Figure 11 shows selected outcome comparisons with cohorts affected by:

- A redundancy or being fired
- A serious illness (self-rated as serious)
- A major worsening of finances (self-rated as major)
- A home being destroyed by a disaster
- A separation from their spouse.

For each cohort we report on the development basis where the event was first reported at t=1.

Figure 11 – Outcome variables by time since event for various cohorts



From Figure 11 we see:

- Being in the 3-year compensation group has the worst impact on general health, wages and mental health of all the categories considered, although this only fully develops after a few years. Overall, the adverse changes for compensation cohorts are significant.
- Separation from spouse sees the largest drop in household income, perhaps unsurprisingly. Interestingly this does have an offsetting pattern where individual wages go up following separation, perhaps single income households splitting into two with two single incomes.
- Life satisfaction changes are more even. Averaged over three years (the three years following event compared to the three years prior), the 3-year compensation cohort see a decrease of 9%. This is the largest decrease observed. Life satisfaction falls for 1-year and 2-year cohorts are around 2%, larger than being made redundant or fired, about the same as a serious illness, but less severe than a major worsening of finances or separating from a spouse.

4 Discussion

The HILDA survey data represents a reasonable way to access broader characteristics and outcomes for people injured and supported by accident compensation schemes. Overall numbers and demographics appear to line up with other sources, so it appears representative at a high level.

Our main findings from the analysis of HILDA survey data are:

- The heavy majority of claims involving compensation payments are of short duration (payments do not extend into a second survey). However, significant negative outcomes are visible for people with claims that are longer lasting, particularly on wages, employment status and health.
- Some aspects appear relatively positive; many short-term claims see wages recover quickly and employment remains reasonably high for the first 3 years post injury. And household income remains steady in the medium term, even for those with longer-duration claims.
- General health outcomes tend to be mirrored by changes in mental health (although the self-rated nature may contribute to this).
- Injuries leading to compensation tend to be significant life events – impacts are similar to other major life events.
- Care responsibilities increase for partners of claimants, and there is no evidence of partners picking up additional employment.

There remain many further questions that could be tested with the data, as well as some other questions that will not be feasible with the HILDA survey data. Our analysis examines duration effects and time since injury, but there will be other potential trends by calendar time and jurisdiction. Some further detail could be explored for those that also receive lump sums, or with specific types of health conditions, but small sample sizes will take their toll on robustness. And numbers of very long claims or very severe injuries will be hard to identify and exist in very small numbers.

More broadly, there remain opportunities to better understand the linkages across different government services. The interaction between schemes and private insurance, as well as the emerging role of the National Disability Insurance Scheme (NDIS), are of particular interest.

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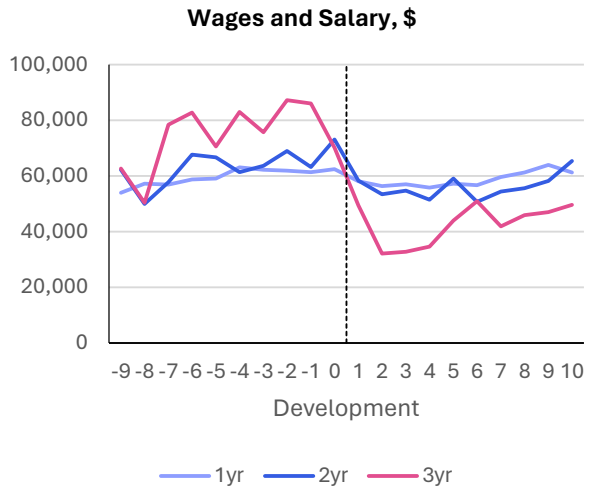
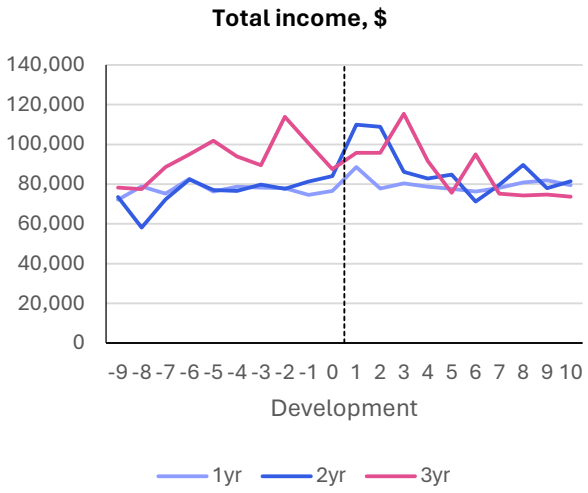
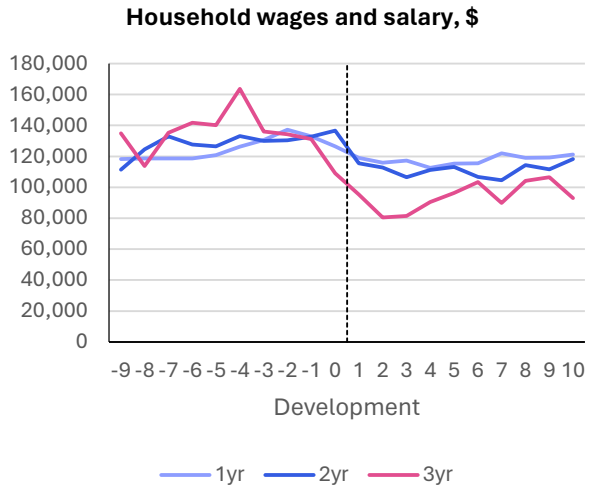
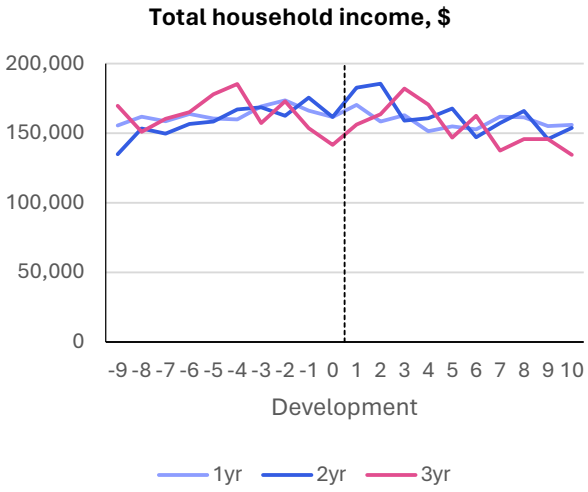
Appendix A Additional charts

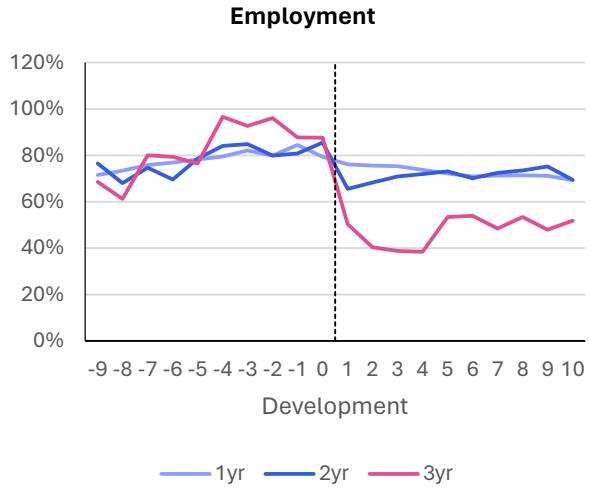
Figure A.1 – Non-transformed age-standardised results: Income and employment by time since compensation receipt (first payment in year t=1)











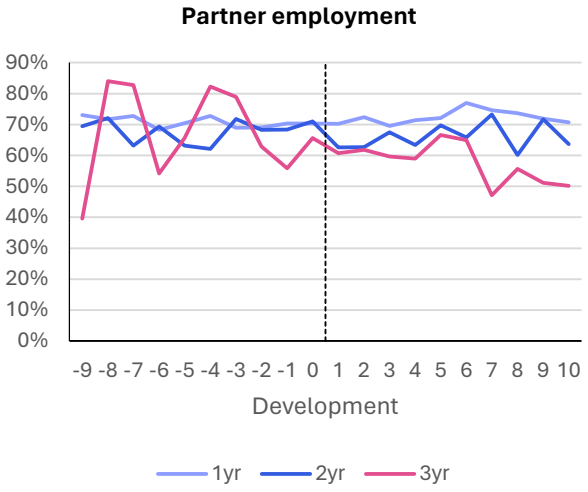


Figure A.2 – Non-transformed age-standardised results: Health outcome variables by time since compensation receipt (first payment in year t=1)