# What’s up with Mondays? An investigation into the “Monday Effect” for on- and off-the-job injury claims

**27 April 2018**


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This research has been completed as part of a PhD in Economics. It has been undertaken with funding from the Macandrew-Stout Postgraduate Scholarship in Economics; WorkSafe New Zealand; and Marsden Grant 12-UOO-067, "Mind the gap? Worker productivity and pay gaps between similar workers in New Zealand". 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. The opinions, findings, recommendations, and conclusions expressed in this paper are those of the authors, not Statistics NZ, the Accident Compensation Corporation or WorkSafe New Zealand. Access to the anonymised data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation, and the results in this paper have been confidentialised 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.

## Abstract

Research consistently finds a higher number of injuries on a Monday. One theory is that workers claim off-the-job weekend injuries as occurring on the Monday at work to receive workers' compensation ('moral hazard'). We test this using data from New Zealand, where compensation is identical for both types of injuries. We find excess work claims on a Monday, although smaller in magnitude than that found elsewhere. There are also excess off-the-job claims on a Monday compared to other weekdays. These results indicate that moral hazard in other countries is only part of the explanation for excess Monday claims.

# 1 Introduction

It has been observed in several countries that there are more workers' compensation claims for injuries on a Monday than any other day of the week (Brogmus, 2007; Butler, Durbin, & Helvacian, 1996; B. Hansen, 2016; Smith, 1990; Wigglesworth, 2006). This is referred to as the "Monday Effect" (Campolieti & Hyatt, 2006; Card & McCall, 1996; Martin-Roman & Moral, 2016). There are three main hypotheses for this in the literature: moral hazard, Monday aversion, and ergonomics.

The moral hazard hypothesis is that excess Monday claims are the result of people injured off-the-job in the weekend claiming that their injuries occurred on-the-job on the Monday to receive workers' compensation benefits that they would otherwise not receive. The worker knows where, when and how the injury occurred, but this is not observed by the insurer. The Monday aversion hypothesis is that dissatisfaction with work is higher on a Monday, so people are more likely to claim that they've had an injury in order to avoid working. The ergonomics theory is that it takes time to warm up properly after a weekend break, so people are more susceptible to injuries on a Monday.

One of the early studies into the moral hazard hypothesis was by Smith (1990). He theorised that if moral hazard applied then: (1) injuries that are easy to conceal and for which treatment can be easily delayed would be overrepresented on a Monday; (2) the injuries would be recorded as occurring earlier in the day on a Monday because people would seek to be treated as soon as they could reasonably do so without arousing suspicion; and (3) that the effect would be stronger on a Tuesday after a public holiday Monday because there had been a longer length of time possible for off-the-job injuries to occur. Using workers' compensation data for several states in the United States of America (USA) he finds broad support for these theories, although the size of misreporting is quite small – 4% of strains and sprains and 1% of fractures equating to 2% of total compensation costs.

These results have been replicated in other jurisdictions (Card & McCall, 1996; Choi, Levitsky, Lloyd, & Stones, 1996).

Card and McCall (1996) test the moral hazard theory further by looking at whether employees likely to be uninsured are more likely to make claims on a Monday and whether employers are more likely to dispute Monday claims. They find no support for either of these propositions. Like Smith (1990), they find that back injuries and strains are more prevalent on Mondays than other weekdays. They conclude there may be physiological reasons for higher claims on a Monday. Campolieti and Hyatt (2006) also reach this conclusion after comparing the Monday effect in Canada to the US. Unlike the US, medical fees for injuries in Canada are fully funded irrespective of whether they are work-related, reducing moral hazard. They find that the Monday effect persists and is of a similar magnitude to that found in the US. Although these studies are not conclusive, they cast doubt on the moral hazard theory.

Butler, Kleinman, and Gardner (2014) take a completely different approach. They use data from a single large multi-location national employer. One of the key differences between this study and earlier work is that they have data on all employees, not just those who make a claim. This allows them to look at the likelihood of having an injury on a Monday, relative to other days of the week; rather than relying on comparisons of the distribution of different types of injuries. While they find support for higher likelihood of claims for sprains and strains on a Monday; when they interact the Monday dummy variable with other characteristics thought to be associated with moral hazard (such as whether they have health insurance with the employer, the wage replacement rate, and tenure), none of the interactions are statistically significant. To investigate this further, they obtain descriptive statistics for fatalities, medical insurance claims for sprains and strains (not just work injury) and sick leave data by day of the week. They find fewer fatalities on a Monday, but more strains and sprains and sick leave. This leads the authors to conclude that workers may have an aversion to working on Mondays.

Since then, there have been other studies that claim to find support for the moral hazard theory; however, it is questionable whether they are able to distinguish between fraudulent claims involving off-the-job injuries and fraudulent claims resulting from an aversion to working on a Monday. One such study uses a policy change in the state of California that makes it harder to make fraudulent claims (B. Hansen, 2016). Using a difference-in-differences approach the author finds that sprains and strains on a Monday decreased by seven percentage points in California following the policy change, with no change in other states. The paper does not discuss whether the reforms might be expected to affect legitimate work claims. If the reform also increased the costs of claiming for legitimate work claims (e.g., by increasing the costs associated with proving that the injury was work-related), then the decrease does not necessarily represent a decrease in fraudulent claims.

In a similar study, Martin-Roman and Moral (2016) exploit differences in loss of earnings compensation coverage for on-the-job versus off-the-job injury in Spain. In Spain, work injuries receive higher compensation than off-the-job injury for the first few weeks off work; however, once the person has had more than 20 days off work, both on-the-job and off-the-job injuries receive the same compensation entitlements. They find the Monday effect decreases with time off work, but there is an effect that persists after the 20-day mark. The authors conclude that both fraudulent claiming and a physiological explanation are at play.

Almost all the studies reviewed here assume the distribution of work hours is constant across weekdays. Only two of the studies tested this assumption. Card and McCall (1996) use the work sample from the United States Current Population Survey to look at patterns of work by medical coverage. They find that the probability of being at work on any given weekday is generally constant, apart from low-wage retail workers who have a high probability of being uninsured and a low probability of working on a Monday. Subsequently they exclude retail employees from the analysis but still find a Monday Effect. Brogmus (2007) calculates day of the week rates per number of work hours using Time Use Survey data. The author finds that the rate of Monday lost-time occupational injuries is statistically significantly higher than the injury rate on other weekdays.

Other studies tend to assume that the incidence of injury types less susceptible to moral hazard, such as fractures, is a good control for hours of work. They look at the excess size of sprains and strains relative to fractures; however, injury hazards associated with fractures are different to the hazards associated with sprains and strains so the number of fractures on a Monday may not be a good control for the expected number of strains and sprains.

Although not directly investigating the Monday effect, Vegso et al. (2007) conduct a case-crossover study looking at the role of hours worked in cases where in an injury occurred, compared to the same day several weeks earlier where an injury did not occur. The data comes from a single large multi-site manufacturing company and the injury data are sourced from its incident management system. Using a conditional logit model, the authors find no statistically significant difference between the control group and the injured group in terms of time off work in the previous day(s). They find that those who worked over 64 hours in the previous seven days were at higher risk of injury than those who worked up to 40 hours. This implies that working long hours is more likely to be associated with injuries than is a rest period, providing some evidence against the ergonomic theory.

The countries in which these studies have been done either require private health insurance to receive cover for off-the-job injuries (e.g., the United States of America) or they have a public health care system that covers medical fees for off-the-job injury but do not provide benefits for loss of income (e.g., Canada, Australia). This creates incentives to claim off-the-job as occurring on-the-job to receive workers' compensation entitlements. New Zealand has a universal accident compensation scheme in which injuries receive the same compensation cover (both medical costs and loss of income benefits) whether the injury occurs on-the-job or not. This reduces the potential role of moral hazard in workers' compensation compared with other countries.

# 2 Economic Theory

## 2.1 Moral Hazard hypothesis

This section outlines the economic theory behind the moral hazard theory for the Monday Effect.

<u>Stage 1: Injury risk</u>

The probability of an injury on a given day of the week depends on the risk profile of activities undertaken and the exposure to those risks. For example, when a public holiday falls on a Monday, the average worker will have a longer period of 'weekend' exposure to off-the-job injury risk. Tuesdays after a public holiday Monday can be thought to be similar to Mondays in this sense.

$$\text{Pr(injury)} = \text{Risk x Exposure} \tag{7.1}$$

<u>Stage 2: Whether to falsely claim that an injury happened at work</u>

Given that an off-the-job injury has occurred in the weekend, an injured worker has three options: 1) do nothing; 2) seek treatment and truthfully state that it was not a work injury; or 3) seek treatment and falsely state that it was a work injury. In the following discussion we assume that workers maximise expected utility.

If the worker does nothing then they continue to work, which requires effort $e$, they receive wages of $W$, and they may face costs associated with not receiving treatment $n$.

$$u(\text{do not seek treatment}) = u(W - n) - e \qquad (7.2)$$

If the worker seeks treatment and truthfully states that it was not a work injury, they receive a disability benefit $D$ and do not have to work while they recover from the injury.

$$u(\text{seek treatment, truthfully state that it was not a work injury}) = u(D) \qquad (7.3)$$

If the worker seeks treatment and falsely states that it was a work injury, they receive workers' compensation benefits $B$ and they do not have to work; however, there may be costs associated with delayed treatment, $d$. If a worker makes a false claim there is a probability, $p$, that they will get caught and be fined, $F$.

$$EU(\text{seek treatment, falsely state it was a work injury}) = (1 - p)u(B) - pu(F) - u(d) \qquad (7.4)$$

We assume that $W \geq B \geq D$ and that the worker is indifferent as to the source of the income so that when $W = B = D$, then $u(W) = u(B) = u(D)$.

When a person seeks treatment for their injury, they will make a false claim when expression 7.5 holds.

$$(1 - p)u(B) > u(D) + pu(F) + u(d) \qquad (7.5)$$

The probability of getting caught ($p$) and the cost of delaying treatment ($d$) will vary by injury type. For example, it would be difficult to delay treatment for an amputated arm and it would be difficult to conceal the injury from colleagues at the start of the work day on the Monday. Alternatively, it would be much easier to delay treatment for a sprain and colleagues are less likely to observe the injury. If the moral hazard theory holds then we would expect to see a larger Monday Effect for injuries that are easier to conceal (lower $p$) and less costly to delay treatment for (lower $d$), such as strains and sprains.

Equation 7.5 is also more likely to hold when $B$ is much greater than $D$. Consider three scenarios. In the first scenario, the costs of off-the-job injury are private, such that $\mathrm{D} = 0$. In the second, there is a fully funded public healthcare system but there is no coverage for lost wages ($0 < \mathrm{D} < \mathrm{B}$). In the third, there is a universal injury compensation environment where all costs are fully covered for off-the-job injury ($0 < \mathrm{D} = \mathrm{B}$). We assume that each scenario has a fully funded workers' compensation scheme and for simplicity we assume that there is no private health insurance. Broadly speaking, the US is comparable to scenario one, Canada to scenario 2 and New Zealand to scenario three (see section 2.6). If the moral hazard theory explains the Monday Effect, one would expect the size to be largest in scenario one and smallest in scenario three.[1]

*Proposition 1: If the Moral Hazard theory explains the Monday Effect, there will be no Monday Effect in the New Zealand work claims or the off-the-job claims.*

Card and McCall (1996) produce an estimate of the Monday Effect for the US. They observe that those with private health insurance will face weaker incentives (scenario two or three relative to scenario one). They compare these scenarios by interacting the Monday Effect with a variable indicating whether the person is likely to have private health insurance. They fail to find any difference.

Campolieti and Hyatt (2006) produce a comparison between scenario one and scenario two by estimating the Monday Effect in Canada and comparing it to the overall estimate produced by Card and McCall (1996) for the US. They find a Monday Effect that is of a similar magnitude to the US suggesting that if moral hazard is driving the Monday Effect it is through the wage replacement rather than the treatment costs. We extend this analysis

[1] Although in the presence of perfect information there would be no Monday Effect in the third scenario, people are not always aware of their eligibility, so a small Monday Effect may remain.

by using the same method as these two papers to compare an estimate of scenario three using data from New Zealand.

## 2.2 Monday aversion hypothesis

The Monday aversion hypothesis may have a physiological explanation since job dissatisfaction has been linked to pain (Hoogendoorn, van Poppel, Bongers, Koes, & Bouter, 2000) or a moral hazard explanation in that people fraudulently claim that they have had an injury to avoid being at work (Butler et al., 2014). This explanation could also apply to off-the-job injury in a universal claims environment, with people claiming to have injured themselves before work (or on the weekend) to avoid going in on the Monday. Since the injury is prompted by job dissatisfaction we would expect the injury to be of a type that is harder to diagnose, such as sprains and strains and back injuries (Butler et al., 1996; Dionne & St-Michel, 1991; Smith, 1990) and to involve fewer days off work because it seems it would be easier to fake a minor injury than a major injury.

In this case the disutility from working, $e$, varies by day of the week, $\gamma_d$, where $0 < \gamma \leq 1$ and $\gamma$ on a Monday is greater than $\gamma$ on other days of the week. This decreases the utility from doing nothing on a Monday relative to other days of the week.

$$U(do\ nothing) = U(W) - \gamma_d * e \tag{7.6}$$

*Proposition 2: If the Monday aversion explanation applies, there will be a Monday Effect for injury in New Zealand for work injury and off-the-job injury. Monday injuries will have a higher proportion of strains and sprains and back injuries and be less serious than injuries on other days of the week. People injured on a Monday will also have lower average self-reported job satisfaction.*

## 2.3 Ergonomic hypothesis

The ergonomic hypothesis is that after a weekend off work people are more susceptible to strains and sprains and back injuries because they need time to warm up at work. In this case, the risk variable in equation 7.1 varies by day of the week, $d$, and the type of injury, $j$, where $\gamma$ is larger for strains on a Monday. A higher number of strains on a Monday will lead to a higher number of work injury claims for strains on a Monday, everything else held constant. The value of $\gamma$ is constant for off-the-job injury.

$$P(injury_j) = \gamma_{dj} Risk * Exposure \tag{7.7}$$

*Proposition 3: If the ergonomic explanation is correct then there will be a Monday Effect in New Zealand for work injury with more sprains and strains and back injuries but no Monday Effect for off-the-job injury. The Monday Effect will be larger in industries with more physical job requirements, such as Agriculture, Forestry and Fishing, Construction and Healthcare.*

## 2.4 Higher risk of injury at work on a Monday

Another alternative theory is that people are exposed to higher levels of work injury risk on a Monday. For example, there may be less supervision owing to management team meetings on a Monday; a backload of work from the weekend contributing to higher stress; or a tendency to tackle more difficult tasks earlier in the week. In this case the value of $\gamma$ varies by the day of the week but not the injury type for work injury and it takes a constant value for off-the-job injury.

$$P(injury_j) = \gamma_d Risk * Exposure \tag{7.8}$$

*Proposition 4: If there is higher work injury risk on a Monday, there will be a Monday Effect in New Zealand for work injury but not for off-the-job injury. There is not necessarily any pattern in the type of injury or in the seriousness of the injury.*

## 2.5 Higher risk of injury overall on a Monday

The final alternative theory discussed here is that people are generally exposed to higher levels of injury risk on a Monday than other weekdays. For example, this may be caused by impairment owing to drugs, alcohol or fatigue following a weekend of parties or late nights. In this case $\gamma$ is higher on a Monday for both work and off-the-job injury.

$$P(injury_j) = \gamma_d Risk * Exposure \tag{7.9}$$

*Proposition 5: If there is higher injury risk on a Monday, there will be a Monday Effect for work injury, off-the-job injury and non-earners' injury. There is not necessarily any pattern to the type of injury or the seriousness of the injury. There will also be increased risk the day after days of celebration such as St Patrick Day and the Melbourne Cup Day.*

# 3 Data

We use New Zealand injury claims data from the IDI to look at whether there is a Monday Effect in the work account (work injury), earners' account (off-the-job injury for workers) and non-earners' account (nonearners' injury) to evaluate the five propositions described in the previous section. The data cover the calendar years January 2002 to June 2016. We exclude gradual process injury because, by definition, these types of injuries do not have an accident date.

We supplement this with data on publicly funded hospital discharges and 2014 General Social Survey data on job satisfaction and life satisfaction.

## 3.1 Variables

*Day of the week*

The day of the week is based on the accident date (as distinct from the treatment date or the claim acceptance date). This information is usually recorded by the doctor following a discussion with the patient about when the injury happened and how it happened (lost-time injury, which is the focus here, requires a doctor visit). To be eligible for compensation, an injury needs to be caused by a specific incident, so all accepted injury claims will have an accident date.[2]

*Injury type*

Injuries are grouped into seven injury type categories: sprains and strains; cuts and lacerations; contusions; fractures; burns; dislocations; and other. Claims are assigned to injury type based on the first two digits of the read code of the primary diagnosis (read codes are a standard injury classification system). See Table 1 for details.

*Back injuries*

The indicator for back injuries is derived from the body part of the primary injury. Unlike the rest of the data, information on the body part injured is available only for injuries from 2015 onwards.

*Age and ethnicity*

Age is estimated to the nearest year. Ethnicity is recorded using single and combined response as described in section 4.6. For example, if a person reports that he is Māori and NZ European he is coded to a 'Māori and New Zealand European' category. Where the number of observations with an ethnicity combination is fewer than 100, the individuals are coded to an 'Other' category.

*Number of compensated days off work*

This is the number of days for which ACC have paid weekly compensation for time off work. Here, as in Campolieti and Hyatt (2006), it is used as a proxy for the seriousness of the injury.

[2] The IDI does not include data on the time the injury occurred although this information is collected by ACC and may be added to the IDI in future.

*Average weekly benefits*

Consistent with Campolieti and Hyatt (2006), we include a measure of average weekly benefits. This is derived by dividing the total loss of earnings compensation received by the number of compensation days and multiplying it by five for a five-day working week. Since loss of earnings compensation is 80% of wages, this acts as a rough proxy for weekly wages, although the amount will be much smaller for part-time workers than full-time workers.

Using this method, some people have weekly gross benefits that seem implausibly high. There is a maximum on the amount of weekly compensation earnings that can be received, and some people appear to have weekly gross benefits higher than the maximum. In some instances, this could be because they only receive compensation for a few days per week (partly returned-to-work) so the actual amount received per week is lower than this derived amount. Even allowing for this though, some of the amounts still appear to be unreasonably high. To address this, we assume that if the average daily gross benefit for a claim is higher than the weekly maximum then it is an error, so it is coded to missing. If the daily gross benefit amount is lower than the weekly cap, but the weekly gross benefit amount is higher than the weekly cap, we cap weekly earnings at the $1,908.50.[3] This resulted in 729 claims being capped and 31 coded to missing.

## 3.2 Descriptive statistics

Figure 1 displays the distribution of lost-time injuries by the day of the work week for workers for both work injury and off-the-job injury. As found elsewhere, the highest proportion of on-the-job injuries occur on a Monday (21.0%), with the lowest proportion

[3] This is the 2016 cap. Information on the cap for the all the years in the data are not available, so we apply this maximum to all years. https://www.acc.co.nz/about-us/news-media/latest-news/client-payments-changes/

happening on a Friday (18.1%) (Campolieti & Hyatt, 2006; Card & McCall, 1996). This is equivalent to an excess of 283 lost-time work claims per year.

For off-the-job injury, the highest proportion of injuries occurred on a Friday (28.1%), possibly alcohol-induced, with the second-highest number occurring on a Monday (20.5%).

Figure 2 displays the same information but for all days of the week for comparison. As expected, most off-the-job injuries occur on the weekend. Figure 3 displays the weekday patterns for all injury claims, not just the lost-time injury subsample, while Figure 4 displays the full day of the week pattern for all injury claims. Including all claims does not change the pattern for work injury.

Table 2 displays the mean lost-time injury claim characteristics by whether the injury occurred on-the-job or off-the-job for: the full sample of workers; Monday injuries; and Tuesday to Friday injuries.

The average number of compensated days for work injury (99.5) is higher than that found in other countries because injuries with less than a week off work are excluded here.[4] The average number of compensated days for a work injury is 98.8 on a Monday and 99.7 on other weekdays. The values are slightly lower for off-the-job injury – 81.4 on a Monday and 83.5 on other weekdays.

Sprains and strains made up 38.7% of on-the-job injuries on a Monday compared to 37.3% on other weekdays. There is a similar day-of-the-week difference for off-the-job injuries with 37.5% of these being strains and sprains on a Monday compared to 35.2% on other weekdays. Data on the body part injured was only available for injuries from 2015 onwards so there are fewer observations for this injury type. The proportion of back

[4] ACC starts paying weekly compensation one week from the day of the first doctor visit for treatment. There is no information available in the claims data for time off work if the person requires less than a week off.

injuries, both on- and off-the-job, were higher on Mondays than other weekdays (33.2% on a Monday compared to 29.3% on other weekdays for work injury; 16.4% on a Monday compared to 13.2% on other weekday for off-the-job injury).

# 4 Empirical Strategy

We start by using the same approach as Campolieti and Hyatt (2006) and Card and McCall (1996), in order to compare our results from a universal claims environment (scenario three) to their results from a workers' compensation claims environment (scenario one and two).

There is not good data on hours worked by day of the week in New Zealand, so we are unable to analyse injury rates by day of the week. It is known that about 63 percent of workers in New Zealand usually work all hours at standard times (between 7am and 7pm Monday to Friday) (Statistics New Zealand, 2008) and that Retail Trade and Agriculture, Forestry and Fishing industries have a higher proportion of people working in the weekend (Callister & Dixon, 2001).

Consistent with the previous studies (Campolieti & Hyatt, 2006; Card & McCall, 1996), we exclude claims for injuries that occur on the weekend, restricting analysis to the typical Monday to Friday working week. We use one-sided *t*-tests to assess whether there is a higher than expected proportion of work injuries on a Monday (greater than 20 percent) and whether this varies by type of injury (proposition one and two). This assumes that people work the same number of hours per day on average, Monday to Friday. New Zealand Time Use Survey data indicate that the highest number of hours worked on average occurs on a Tuesday (7.9 hours) and the lowest on a Friday (7.5 hours), with 19.1 percent of all paid weekday work time occurring on a Monday (Callister & Dixon, 2001). The implication is that any estimate of injury above 20 percent on a Monday will be a lower bound estimate of the Monday Effect.

For the comparison with the US and Canada we restrict the claims data to lost-time injury for two reasons: (1) to improve comparison of results; and (2) because the claims information for lost-time injuries is more accurate. Where only medical fees are paid out, ACC verifies only the most relevant information (Statistics New Zealand, 2015).

We then conduct a series of linear regressions to test whether particular types of injuries are overrepresented on a Monday after controlling for other characteristics. For this part of the analysis, Tuesdays after a public holiday Monday are included in the Monday variable because they are the first day back at work after several days off. We run the regression separately for each injury type, and separately for work and off-the-job injury. We report the coefficient on the Monday variable for each injury type regression.

$$InjuryType_{it} = \alpha + \gamma Monday_{it} + \beta X_{it} + \alpha_t + \epsilon_{it} \quad (7.6)$$

*Injury_Type* is a binary variable for the type of injury, *Monday* is a binary variable that equals one if the injury occurred on a Monday or the Tuesday after a Monday public holiday and zero otherwise, and *X* is a matrix of variables associated with the claim.

# 5 Results

## 5.1 *t*-tests for excess injuries on a Monday

If lost-time injuries were evenly distributed across the working week (Monday to Friday) we would see 20 percent of injuries on each day of the week. The one-sided *t*-tests in Table 3 indicate that the proportion of lost-time injuries on a Monday in New Zealand is statistically significantly higher than 20 percent. This is similarly the case for back injuries and sprains and strains.

Although the Monday Effect is not zero in New Zealand (as suggested in proposition one), it is statistically significantly smaller than that found in other jurisdictions, with

21.0% of injuries occurring on a Monday in New Zealand, 23.0% in Minnesota (Card & McCall, 1996) and 24.7% in Ontario (Campolieti & Hyatt, 2006) (see Table 4).

When we compare work injuries to off-the-job injuries in Table 5 we find that 20.5% of off-the-job injuries occur on a Monday. While this is statistically significantly higher than 20% it is a small effect. Like work injury, there are also statistically significantly more sprains and strains and back injuries on a Monday for off-the-job injury. Table 6 displays excess Monday claims tests for when the sample is extended to include all claims. The results are broadly consistent with that for the subsample of lost-time injury.

## 5.2 Regression results – Number of injuries

Table 7 displays the results of the linear regressions for on-the-job lost-time injury. Each row represents a separate regression with a dummy variable for the type of injury as the dependent variable. Model 1 contains only a Monday dummy variable; model 2 adds controls for number of compensation days, weekly gross benefits, age and gender; model 3 adds industry dummies; model 4 adds occupation dummies; model 5 adds year fixed effects; and model 6 adds ethnicity dummies. The number of observations is reported at the bottom of the table - the total number of observations refers to the injury diagnosis regressions while the total number of body part observations refers to the back injury regressions (information on body part injured is available only from 2015 onwards).

The results are consistent with previous studies (Campolieti & Hyatt, 2006; Card & McCall, 1996). Sprains and strains and back injuries make up a greater proportion of injuries on a Monday than on other weekdays after controlling for other characteristics. The magnitude of the estimate for back injuries is the same as that found by Campolieti and Hyatt (2006) with an excess of 2.7 percentage points. The magnitude of the estimate for sprains and strains is smaller at 1.6 percentage points compared to 2.6 percentage points in the Ontario study.

Table 8 displays the regression results for off-the-job injuries. Most of the Monday coefficients are in the same direction as on-the-job injuries and are slightly larger. Back injuries are 3.2 percentage points higher on a Monday than other weekdays and strains and sprains are 2.3 percentage points higher. This indicates that there may be something about Mondays that increases the risk of sprains and strains and back injuries more generally (proposition 5) rather than being caused by something specific to work (proposition 3 and 4).

## 5.3 Regression results – Duration of time off work

We look at the duration of time off work to see whether Monday claims differ from claims on other days. We run a linear regression with the log of the number of days of loss of earnings compensation paid (CompDays) and report the results of the Monday coefficient.

$$\log(CompDays) = \alpha + \gamma Monday + \beta X + \varepsilon \tag{7.7}$$

Table 9 displays the results for work injury. All of the coefficients on the Monday variable are negative, implying that Monday lost-time injuries involve fewer days away from work on average compared to injuries on other days of the week. The overall duration of time off work for Monday injuries was four percentage points shorter than other weekdays. The duration was seven percentage points shorter for sprains and strains on a Monday. The coefficient for back injuries was not statistically significantly different from zero because of the small sample size, though the magnitude of the estimate was similar to strains and sprains.

Table 10 displays the duration results for off-the-job injuries. The results are similar to work injuries with negative coefficients on the Monday variable in all the regressions. The duration of injuries overall are six percentage points shorter if they happened on a Monday, while the duration of sprains and strains are eight percentage points shorter. The coefficient for back injuries is statistically significant for the off-the-job injuries; the duration of Monday back injuries is 10 percentage points shorter.

Table 11 contains robustness checks. It shows the Monday Effect persists when weekends and weeks with a public holiday are excluded from the sample (column 1) and when all claims are considered, including weekends and public holidays (column 3). Column 2 contains the results from the main tables for comparison. See Table 12 for the full regression results when weekends are added to the sample.

# 6 Discussion

We make a unique contribution to the literature by looking at whether the Monday Effect in workers' compensation persists within a broader accident compensation scheme and whether off-the-job injuries also exhibit a Monday Effect. We find that not only is the Monday Effect present in the work claims data; it is also present for off-the-job injuries. Both sets of injuries exhibit a higher proportion of strains and sprains and back injuries and Monday injuries involve fewer average days off work, consistent with the workers' compensation literature (Campolieti & Hyatt, 2006; Card & McCall, 1996).

Unlike the US and Canada, New Zealand is less likely to be susceptible to people claiming an off-the-job injury from the weekend as happening at work on the Monday. This means the Monday Effect found here is unlikely to be a result of moral hazard. The magnitude of the results for New Zealand are smaller than that found elsewhere (Campolieti & Hyatt, 2006; Card & McCall, 1996), lending support to the conclusion of Martin-Roman and Moral (2016) that in countries with an incentive to claim weekend injuries as Monday work injuries, the moral hazard theory is part of the explanation but it is not the full story.

The finding that there is a Monday Effect for off-the-job strains and sprains and back injuries indicates that the reason is unlikely to be due to work-specific hazards such as less supervision or more difficult tasks. Instead it is most consistent with the hypothesis that job dissatisfaction prompts people to claim an injury to avoid work. This is the same conclusion that Butler et al. (2014) arrived at after finding that sick leave and health insurance claims were also more likely to occur on a Monday.

One concern about the analysis approach might be that while injuries of one and two days duration are counted if they occur early in the week, if they happen on a Friday the person has the weekend to recover and therefore Friday claims are less likely to become lost-time injury claims than Monday claims (Wigglesworth, 2006). This is not a problem in the analysis here because we include only injuries that involve more than a week off work.

Another explanation is that people who experience strains and sprains during the week wait to see if resting over the weekend will fix the problem. If it does not, then they see the doctor on the Monday and the date of the accident is recorded as the day of treatment; however, this seems unlikely because to be eligible for accident compensation requires a reasonably detailed description about how the injury occurred and when it occurred, particularly for injuries involving more than a week off work as used in this thesis. Although they may not receive treatment on the same day as the injury the accident date it likely to be correct.

The main limitation of this thesis is that we do not have data on the hours that people work by the day of the week. It is possible (but unlikely) that workers exposed to sprain and strain hazards, such as office workers and manual labourers, work more hours on Mondays resulting in higher numbers of injuries (although this would not explain the higher number of off-the-job injuries observed on Mondays). It is also possible that people are more likely to undertake activities such as heavy lifting at the start of the week, leading to higher prevalence of these types of injuries. Time use survey data may be a promising avenue for future research.

# 7 Appendix: Tables and Figures

Table 1: The read codes used to assign claims to injury type categories

| **Injury type** | **ACC Read code** |
|---|---|
| Strains and Sprains | S5 |
| Cuts and lacerations; | S8, S9 & SA |
| Contusions; | SE |
| Fractures; | S0, S1, S2 & S3 |
| Burns; | SH |
| Dislocations | S4 (excluding S4A) |
| Other | All other including S4A |

Figure 1: Distribution of lost-time injuries by weekday for workers

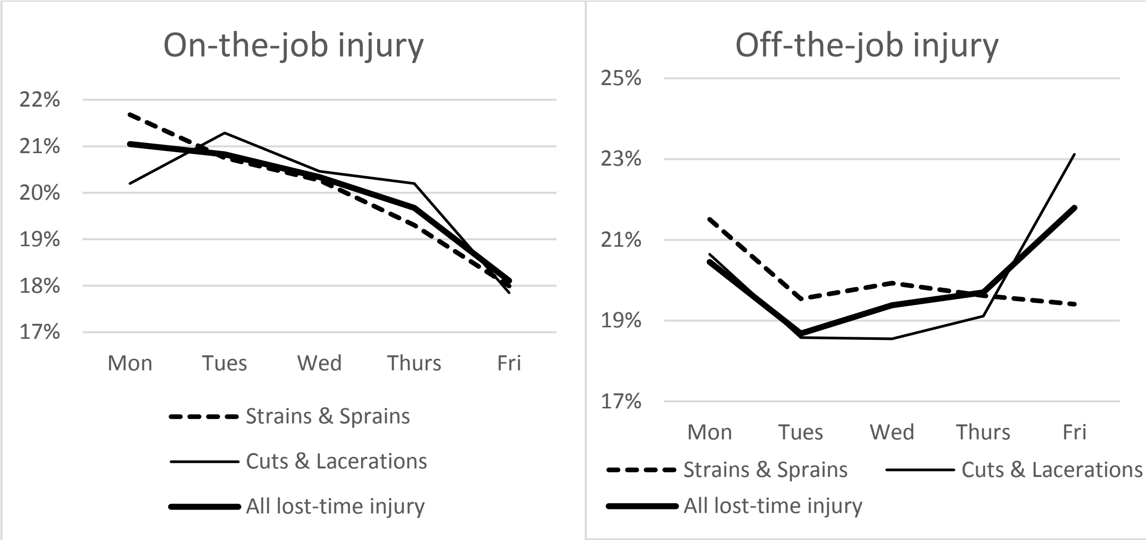


Figure 2: Distribution of lost-time injuries by day of the week for workers

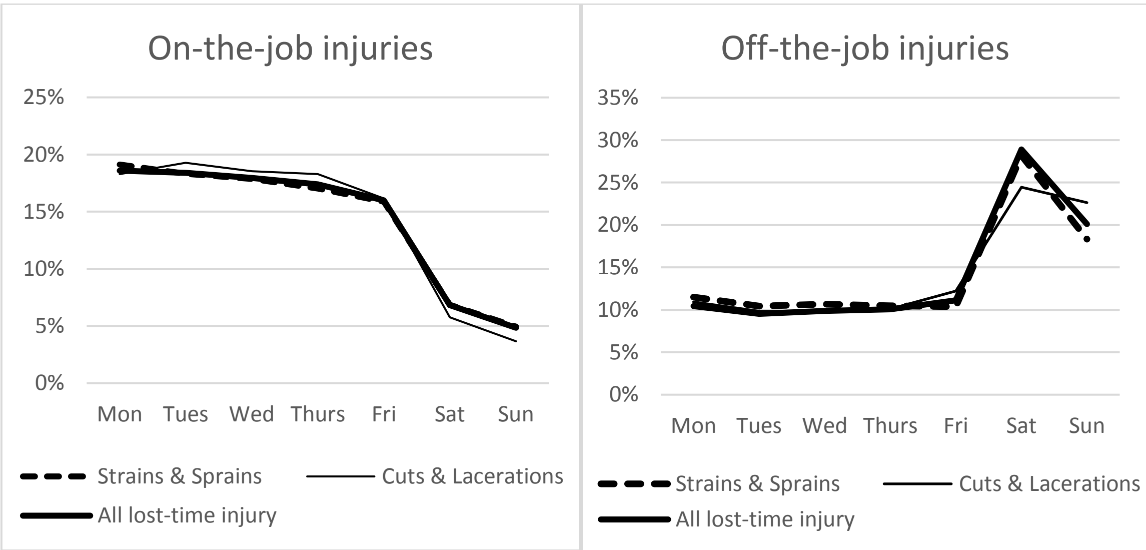

Figure 3: Distribution of all injury claims (includes treatment only claims) by weekday for workers

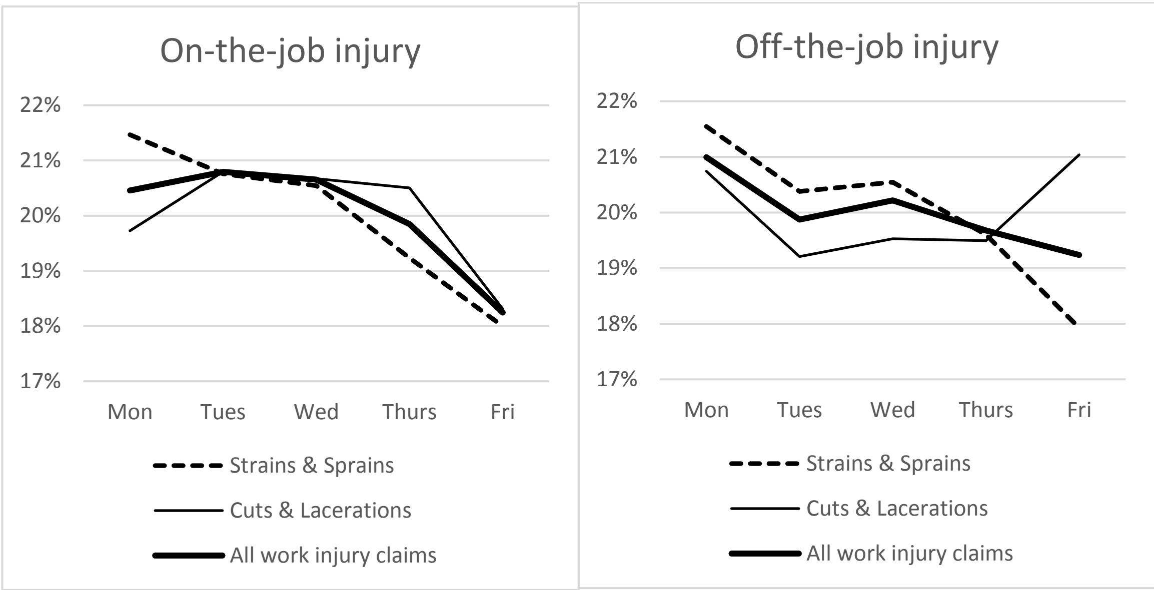


Figure 4: Distribution of all injury claims (includes treatment only claims) by day of the week for workers

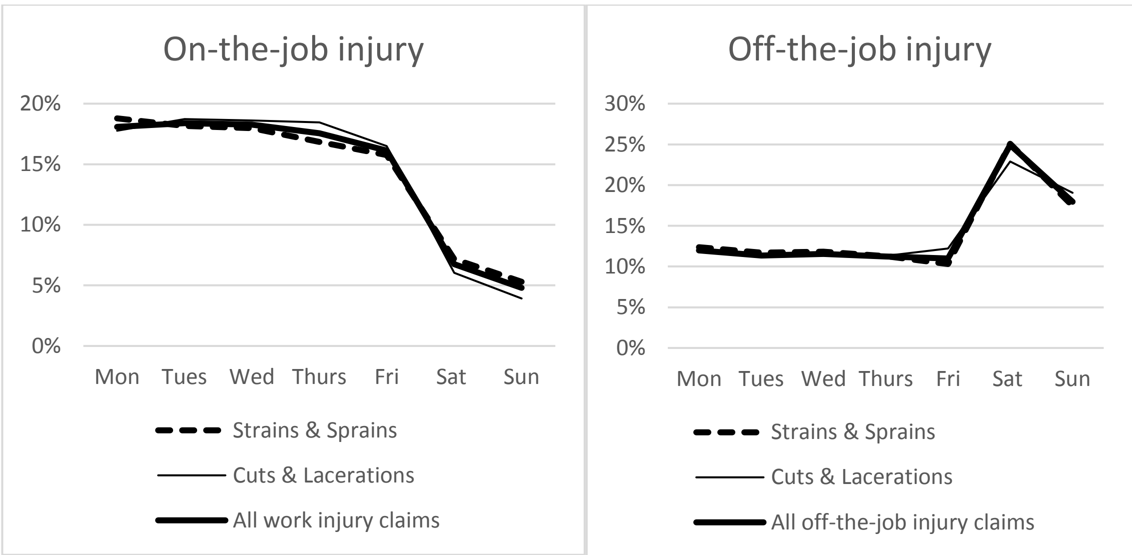

Table 2: Mean lost-time worker claim characteristics by weekday and whether the injury occurred at work

| | Work injury claims* | | | Off-the-job injury claims* | | |
|---|---|---|---|---|---|---|
| | ***Full Weekday Sample*** | ***Monday Claims*** | ***Other Weekday Claims*** | ***Full Weekday Sample*** | ***Monday Claims*** | ***Other Weekday Claims*** |
| ***Day of the Week*** | | | | | | |
| Monday | 0.210 | | | 0.205 | | |
| | (0.407) | | | (0.403) | | |
| Tuesday | 0.208 | | | 0.187 | | |
| | (0.406) | | | (0.390) | | |
| Wednesday | 0.203 | | | 0.194 | | |
| | (0.402) | | | (0.395) | | |
| Thursday | 0.197 | | | 0.197 | | |
| | (0.398) | | | (0.398) | | |
| Friday | 0.181 | | | 0.218 | | |
| | (0.385) | | | (0.413) | | |
| ***Part of the body affected*** | | | | | | |
| Back | 0.301 | 0.332 | 0.293 | 0.139 | 0.164 | 0.132 |
| | (0.459) | (0.471) | (0.455) | (0.346) | (0.370) | (0.339) |
| ***Weekly compensation days paid*** | 99.500 | 98.764 | 99.697 (258.596) | 83.105 | 81.416 | 83.539 |
| | (259.032) | (260.659) | | (212.479) | (212.794) | (212.396) |
| ***Nature of Injury*** | | | | | | |
| Strains & Sprains | 0.376 | 0.387 | 0.373 | 0.357 | 0.375 | 0.352 |
| | (0.484) | (0.487) | (0.484) | (0.479) | (0.484) | (0.478) |
| Contusions | 0.057 | 0.055 | 0.058 | 0.054 | 0.056 | 0.054 |
| | (0.232) | (0.228) | (0.234) | (0.227) | (0.229) | (0.226) |
| Cuts & Lacerations | 0.107 | 0.103 | 0.108 | 0.067 | 0.067 | 0.067 |
| | (0.309) | (0.304) | (0.310) | (0.250) | (0.251) | (0.249) |
| Fractures | 0.116 | 0.113 | 0.117 | 0.249 | 0.233 | 0.253 |
| | (0.320) | (0.317) | (0.321) | (0.432) | (0.423) | (0.435) |
| Burns | 0.010 | 0.009 | 0.011 | 0.010 | 0.009 | 0.010 |
| | (0.099) | (0.094) | (0.104) | (0.098) | (0.096) | (0.099) |
| Dislocations | 0.036 | 0.034 | 0.036 | 0.066 | 0.061 | 0.067 |
| | (0.186) | (0.181) | (0.186) | (0.248) | (0.239) | (0.2507) |
| Other | 0.297 | 0.298 | 0.297 | 0.198 | 0.199 | 0.198 |
| | (0.457) | (0.457) | (0.457) | (0.399) | (0.399) | (0.398) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ***Weekly Gross Benefits*** | $359.28 | $365.30 | $357.68 | $400.93 | $409.15 | $398.82 |
| | ($230.01) | ($228.61) | ($230.35) | ($236.54) | ($237.88) | ($236.14) |
| ***Demographic characteristics*** | | | | | | |
| Age | 41.175 | 41.053 | 41.208 | 39.391 | 39.847 | 39.274 |
| | (13.481) | (13.437) | (13.493) | (14.439) | (14.281) | (14.477) |
| Male | 0.759 | 0.767 | 0.757 | 0.611 | 0.603 | 0.613 |
| | (0.428) | (0.423) | (0.429) | (0.487) | (0.489) | (0.487) |
| ***Number of Observations*** | ***335,493*** | ***70,611*** | ***264,882*** | ***272,658*** | ***55,761*** | ***216,897*** |

*Note: Standard deviations in parentheses*

Table 3: Fraction of Monday injuries across different jurisdictions along with tests of excess

| Type of injury | *New Zealand data Used in this paper* N | Mean | Test Statistic | *Ontario Data Used in Campoleti & Hyatt* N | Mean | Test Statistic | *Minnesota Data Used in Card & McCall* N | Mean | Test Statistic |
|---|---|---|---|---|---|---|---|---|---|
| All | 335,493 | 0.210 | 14.874 | 10,702 | 0.247 | 11.297 | 21,314 | 0.230 | 10.77 |
| Back | 5,793 | 0.214 | 2.695 | 3,564 | 0.262 | 8.391 | - | - | - |
| Sprains & Strains | 126,108 | 0.217 | 14.469 | 5,282 | 0.258 | 9.633 | 9,560 | 0.237 | 9.12 |
| Cuts & Lacerations | 35,967 | 0.202 | 0.943 | 1,008 | 0.219 | 1.473 | 2,375 | 0.212 | 1.44 |
| Dislocations | 12,015 | 0.201 | 0.419 | 49 | 0.286 | 1.314 | 602 | 0.248 | 2.91 |
| Burns | 3,504 | 0.176 | -3.661 | 174 | 0.195 | -0.153 | 443 | 0.192 | 0.43 |
| Contusions | 19,146 | 0.204 | 1.342 | 1,411 | 0.240 | 3.475 | 1,453 | 0.233 | 3.17 |
| Fractures | 39,063 | 0.205 | 2.200 | 623 | 0.238 | 2.204 | 1,274 | 0.199 | 0.12 |

*Note: One-sided t-tests for whether the proportion of injuries on a Monday is statistically significantly different to 20%.*

Table 4: Comparison of the Monday Effect for work injury across different jurisdictions

| Jurisdiction | Proportion of work claims on a Monday | Standard Error | 95% confidence interval | |
|---|---|---|---|---|
| Minnesota | 0.230 | 0.003 | 0.225 | 0.235 |
| Ontario | 0.247 | 0.004 | 0.239 | 0.255 |
| New Zealand | 0.210 | 0.001 | 0.209 | 0.211 |

*Note: Claims restricted to weekdays. The estimates for Minnesota come from Card and McCall (1996) and those for Ontario come from Campolieti and Hyatt (2006)*

Table 5: Fraction of Monday lost-time injuries across different injury categories with tests of excess

| Type of injury | *Work Injuries* (workers)* | | | *Off-The-Job Injuries* (workers)* | | |
|---|---|---|---|---|---|---|
| | **N** | **Mean** | **Test Statistic** | **N** | **Mean** | **Test Statistic** |
| All | 335,493 | 0.210 | 14.874 | 272,658 | 0.205 | 5.845 |
| Back | 5,793 | 0.214 | 2.695 | 4,224 | 0.252 | 7.754 |
| Sprains & Strains | 126,108 | 0.217 | 14.469 | 97,254 | 0.215 | 11.446 |
| Cuts & Lacerations | 35,967 | 0.202 | 0.943 | 18,195 | 0.206 | 2.132 |
| Dislocations | 12,015 | 0.201 | 0.419 | 17,898 | 0.190 | -3.360 |
| Burns | 3,504 | 0.176 | -3.661 | 2,649 | 0.197 | -0.440 |
| Contusions | 19,146 | 0.204 | 1.342 | 14,817 | 0.209 | 2.687 |
| Fractures | 39,063 | 0.205 | 2.200 | 67,818 | 0.191 | -5.621 |

** Excludes motor vehicle injuries (these are funded from a different account)*
*Note: Excludes weekend injuries*

Table 6: Fraction of Monday injury claims (all claims including treatment only claims) across different injury categories with tests of excess

| Type of injury | *Work Injuries* (workers)* | | | *Off-the-job Injuries* (workers)* | | | *Non-Earners' Injuries** | | |
|---|---|---|---|---|---|---|---|---|---|
| | **N** | **Mean** | **Test Statistic** | **N** | **Mean** | **Test Statistic** | **N** | **Mean** | **Test Statistic** |
| All | 3,132,795 | 0.205 | 20.058 | 4,983,969 | 0.210 | 54.475 | 8,612,664 | 0.199 | -9.7 |
| Back | 52,320 | 0.218 | 10.213 | 112,380 | 0.229 | 23.212 | 98,010 | 0.210 | 7.5 |
| Sprains & Strains | 1,299,501 | 0.215 | 40.705 | 2,798,574 | 0.215 | 62.958 | 2,922,219 | 0.202 | 7.2 |
| Cuts & Lacerations | 498,801 | 0.197 | -4.898 | 505,338 | 0.207 | 12.956 | 1,647,747 | 0.202 | 5.7 |
| Dislocations | 41,673 | 0.198 | -0.887 | 99,006 | 0.197 | -2.502 | 119,220 | 0.189 | -10.1 |
| Burns | 54,543 | 0.180 | -12.022 | 57,246 | 0.204 | 2.476 | 146,820 | 0.206 | 5.6 |
| Contusions | 286,842 | 0.199 | -1.114 | 476,757 | 0.199 | -2.462 | 1,351,521 | 0.195 | -14.9 |
| Fractures | 91,200 | 0.200 | -0.351 | 227,805 | 0.192 | -9.232 | 654,300 | 0.187 | -26.0 |

** Excludes motor vehicle injuries (these are funded from a different account)*
*Note: Excludes weekend injuries*

Table 7: Lost-Time Work Injuries OLS Estimates of the "Monday Effect" from Linear Probability Models by Type of Injuries

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Type of Injury* | Model 1 | Model 2 | Model 3 | Model 4 | Model5 | Model 6 |
| Sprains & Strains | 0.0152*** | 0.0158*** | 0.0159*** | 0.0158*** | 0.0157*** | 0.0156*** |
| | (0.00201) | (0.00200) | (0.00200) | (0.00200) | (0.00199) | (0.00200) |
| Cuts and Lacerations | -0.00572*** | -0.00653*** | -0.00679*** | -0.00691*** | -0.00710*** | -0.00723*** |
| | (0.00126) | (0.00125) | (0.00124) | (0.00124) | (0.00124) | (0.00125) |
| Contusions | -0.00225** | -0.00208** | -0.00211** | -0.00217** | -0.00219** | -0.00234** |
| | (0.000949) | (0.000948) | (0.000948) | (0.000948) | (0.000948) | (0.000953) |
| Fractures | -0.00405*** | -0.00463*** | -0.00437*** | -0.00422*** | -0.00437*** | -0.00422*** |
| | (0.00131) | (0.00131) | (0.00131) | (0.00131) | (0.00131) | (0.00132) |
| Dislocations | -0.00182** | -0.00207*** | -0.00193** | -0.00187** | -0.00197*** | -0.00188** |
| | (0.000757) | (0.000757) | (0.000756) | (0.000756) | (0.000756) | (0.000762) |
| Burns | -0.00237*** | -0.00239*** | -0.00222*** | -0.00220*** | -0.00222*** | -0.00220*** |
| | (0.000393) | (0.000393) | (0.000392) | (0.000392) | (0.000392) | (0.000396) |
| Back Injury | 0.0272*** | 0.0277*** | 0.0271*** | 0.0269*** | 0.0269*** | 0.0266*** |
| | (0.00650) | (0.00650) | (0.00646) | (0.00646) | (0.00646) | (0.00646) |
| Control for observable characteristics | | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | | | Yes | Yes | Yes | Yes |
| Occupation Dummies | | | | Yes | Yes | Yes |
| Year Dummies | | | | | Yes | Yes |
| Ethnicity | | | | | | Yes |
| Number of Observations | 335,493 | 335,451 | 335,451 | 335,451 | 335,451 | 332,343 |
| Number of Observations (body part) | 25,062 | 25,062 | 25,062 | 25,062 | 25,062 | 25,059 |

*Notes: The dependent variable in each regression is a dummy variable for the type of injury. The table reports coefficient estimates for the Monday/first Tuesday back from a public holiday dummy variable from several different linear probability regressions that estimate the incidence of each type of injury. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and gross weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO.*

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Off-the-Job Lost-Time Injuries to Workers OLS Estimates of the "Monday Effect" from Linear Probability Models by Type of Injury

| *Type of Injury* | (1)<br>Model 1 | (2)<br>Model 2 | (3)<br>Model 3 | (4)<br>Model 4 | (5)<br>Model 5 | (6)<br>Model 6 |
|---|---|---|---|---|---|---|
| Sprains & Strains | 0.0248*** | 0.0228*** | 0.0224*** | 0.0223*** | 0.0223*** | 0.0223*** |
| | (0.00224) | (0.00223) | (0.00223) | (0.00223) | (0.00223) | (0.00223) |
| Cuts and Lacerations | 0.000182 | 0.000733 | 0.000794 | 0.000647 | 0.000575 | 0.000321 |
| | (0.00116) | (0.00115) | (0.00115) | (0.00115) | (0.00115) | (0.00115) |
| Contusions | 0.00137 | 0.00121 | 0.00116 | 0.00105 | 0.000948 | 0.000875 |
| | (0.00106) | (0.00106) | (0.00106) | (0.00106) | (0.00106) | (0.00106) |
| Fractures | -0.0204*** | -0.0190*** | -0.0187*** | -0.0186*** | -0.0185*** | -0.0184*** |
| | (0.00197) | (0.00196) | (0.00196) | (0.00196) | (0.00196) | (0.00196) |
| Dislocations | -0.00569*** | -0.00518*** | -0.00497*** | -0.00491*** | -0.00490*** | -0.00487*** |
| | (0.00112) | (0.00112) | (0.00112) | (0.00112) | (0.00112) | (0.00112) |
| Burns | -0.000585 | -0.000462 | -0.000447 | -0.000470 | -0.000487 | -0.000533 |
| | (0.000446) | (0.000446) | (0.000447) | (0.000447) | (0.000447) | (0.000446) |
| Back injuries | 0.0330*** | 0.0319*** | 0.0316*** | 0.0316*** | 0.0316*** | 0.0319*** |
| | (0.00488) | (0.00488) | (0.00487) | (0.00487) | (0.00487) | (0.00488) |
| Control for observable characteristics | | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | | | Yes | Yes | Yes | Yes |
| Occupation Dummies | | | | Yes | Yes | Yes |
| Year Dummies | | | | | Yes | Yes |
| Ethnicity | | | | | | Yes |
| Number of Observations | 272,658 | 272,643 | 272,643 | 272,643 | 272,643 | 272,562 |
| Number of Observations (body part) | 30,351 | 30,351 | 30,351 | 30,351 | 30,351 | 30,348 |

*Notes: The dependent variable in each regression is a dummy variable for the type of injury. The table reports coefficient estimates for the Monday/ first Tuesday back from a public holiday dummy variable from several different linear probability regressions that estimate the incidence of each type of injury. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO.*

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Log Duration of On-the-Job Injuries OLS Estimates of the "Monday Effect" by Type of Injury

| *Type of Injury* | (1)<br>Model 1 | (2)<br>Model 2 | (3)<br>Model 3 | (4)<br>Model 4 | (5)<br>Model 5 | (6)<br>Model 6 |
|---|---|---|---|---|---|---|
| **All injuries** | -0.0407*** | -0.0378*** | -0.0386*** | -0.0385*** | -0.0379*** | -0.0375*** |
| Standard Error | (0.00547) | (0.00541) | (0.00537) | (0.00537) | (0.00537) | (0.00540) |
| Number of observations | 335,493 | 335451 | 335451 | 335451 | 335451 | 332343 |
| **Sprains & Strains** | -0.0693*** | -0.0667*** | -0.0670*** | -0.0665*** | -0.0652*** | -0.0645*** |
| Standard Error | (0.00901) | (0.00891) | (0.00886) | (0.00886) | (0.00883) | (0.00885) |
| Number of observations | 126,108 | 126,090 | 126,090 | 126,090 | 126,090 | 125,556 |
| **Cuts and Lacerations** | -0.0568*** | -0.0445*** | -0.0461*** | -0.0455*** | -0.0445*** | -0.0429*** |
| Standard Error | (0.0150) | (0.0148) | (0.0146) | (0.0146) | (0.0146) | (0.0146) |
| Number of observations | 35,973 | 35,967 | 35,967 | 35,967 | 35,967 | 35,865 |
| **Contusions** | -0.0531** | -0.0372* | -0.0352 | -0.0342 | -0.0342 | -0.0332 |
| Standard Error | (0.0223) | (0.0219) | (0.0218) | (0.0218) | (0.0217) | (0.0219) |
| Number of observations | 19,146 | 19,146 | 19,146 | 19,146 | 19,146 | 19,035 |
| **Fractures** | -0.0517*** | -0.0480*** | -0.0523*** | -0.0525*** | -0.0519*** | -0.0521*** |
| Standard Error | (0.0144) | (0.0142) | (0.0141) | (0.0141) | (0.0140) | (0.0140) |
| Number of observations | 39,063 | 39,063 | 39,063 | 39,063 | 39,063 | 38,994 |
| **Dislocations** | -0.0155 | -0.0179 | -0.0154 | -0.0198 | -0.0208 | -0.0238 |
| Standard Error | (0.0269) | (0.0268) | (0.0267) | (0.0267) | (0.0267) | (0.0268) |
| Number of observations | 12,012 | 12,012 | 12,012 | 12,012 | 12,012 | 11,985 |
| **Burns** | -0.0437 | -0.0129 | -0.000393 | 0.00155 | 0.00160 | -0.00107 |
| Standard Error | (0.0484) | (0.0467) | (0.0458) | (0.0458) | (0.0460) | (0.0463) |
| Number of observations | 3,504 | 3,504 | 3,504 | 3,504 | 3,504 | 3,492 |
| **Back injuries** | -0.0712* | -0.0706* | -0.0663 | -0.0583 | -0.0556 | -0.0500 |
| Standard Error | (0.0415) | (0.0414) | (0.0410) | (0.0410) | (0.0408) | (0.0408) |
| Number of observations | 5,796 | 5,796 | 5,796 | 5,796 | 5,796 | 5,790 |
| Control for observable characteristics | | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | | | Yes | Yes | Yes | Yes |
| Occupation Dummies | | | | Yes | Yes | Yes |
| Year Dummies | | | | | Yes | Yes |
| Ethnicity | | | | | | Yes |

*Notes: The dependent variable in each regression is the log of the total number of compensated days for each type of injury. The table reports coefficient estimates for the Monday/ first Tuesday back from a public holiday dummy variable from several different log duration regressions. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO.*

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 10: Log Duration of Off-the-Job injuries OLS Estimates of the "Monday Effect" by Type of Injury *(t-statistics in parentheses).*

| *Type of Injury* | (1) Model 1 | (2) Model 2 | (3) Model 3 | (4) Model 4 | (5) Model 5 | (6) Model 6 |
|---|---|---|---|---|---|---|
| **All injuries** | -0.0551*** | -0.0594*** | -0.0598*** | -0.0600*** | -0.0591*** | -0.0580*** |
| Standard Error | (0.00592) | (0.00586) | (0.00586) | (0.00584) | (0.00584) | (0.00583) |
| Number of observations | 272,658 | 272,643 | 272,643 | 272,643 | 272,643 | 272,562 |
| **Sprains & Strains** | -0.0794*** | -0.0823*** | -0.0823*** | -0.0838*** | -0.0842*** | -0.0828*** |
| Standard Error | (0.00995) | (0.00985) | (0.00984) | (0.00981) | (0.00977) | (0.00976) |
| Number of observations | 97,257 | 97,257 | 97,257 | 97,257 | 97,257 | 97,227 |
| **Cuts and Lacerations** | -0.0631*** | -0.0600*** | -0.0615*** | -0.0623*** | -0.0613*** | -0.0628*** |
| Standard Error | (0.0213) | (0.0211) | (0.0211) | (0.0211) | (0.0211) | (0.0211) |
| Number of observations | 18,198 | 18,198 | 18,198 | 18,198 | 18,198 | 18,192 |
| **Contusions** | -0.0208 | -0.0242 | -0.0261 | -0.0257 | -0.0217 | -0.0193 |
| Standard Error | (0.0251) | (0.0249) | (0.0249) | (0.0248) | (0.0248) | (0.0248) |
| Number of observations | 14,820 | 14,820 | 14,820 | 14,820 | 14,820 | 14,814 |
| **Fractures** | -0.0178* | -0.0263*** | -0.0282*** | -0.0270*** | -0.0258** | -0.0256** |
| Standard Error | (0.0103) | (0.0101) | (0.0101) | (0.0101) | (0.0100) | (0.0100) |
| Number of observations | 67,815 | 67,812 | 67,812 | 67,812 | 67,812 | 67,785 |
| **Dislocations** | -0.0341 | -0.0312 | -0.0303 | -0.0251 | -0.0244 | -0.0230 |
| Standard Error | (0.0222) | (0.0220) | (0.0220) | (0.0218) | (0.0218) | (0.0219) |
| Number of observations | 17,904 | 17,904 | 17,904 | 17,904 | 17,904 | 17,892 |
| **Burns** | -0.0302 | -0.0129 | -0.00382 | 0.00386 | -0.00121 | 0.00679 |
| Standard Error | (0.0525) | (0.0518) | (0.0521) | (0.0518) | (0.0517) | (0.0520) |
| Number of observations | 2,643 | 2,643 | 2,643 | 2,643 | 2,643 | 2,643 |
| **Back injuries** | -0.114*** | -0.110** | -0.117*** | -0.115*** | -0.110** | -0.104** |
| Standard Error | (0.0439) | (0.0439) | (0.0437) | (0.0438) | (0.0437) | (0.0437) |
| Number of observations | 4,227 | 4,227 | 4,227 | 4,227 | 4,227 | 4,227 |
| Control for observable characteristics | | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | | | Yes | Yes | Yes | Yes |
| Occupation Dummies | | | | Yes | Yes | Yes |
| Year Dummies | | | | | Yes | Yes |
| Ethnicity | | | | | | Yes |

*Notes: The dependent variable in each regression is the log of the total number of days of compensation paid for each type of injury. The table reports coefficient estimates for the Monday/first Tuesday back from a public holiday dummy variable from several different log duration regressions. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO.*

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Robustness check of lost-time injuries OLS estimates of the "Monday Effect" from linear probability models by type of injuries

| *Type of Injury* | (1) | (2) | (3) |
|---|---|---|---|
| Work Sprains & Strains | 0.0154*** | 0.0156*** | 0.0188*** |
| | (0.00226) | (0.00200) | (0.00261) |
| Off-the-Job Sprains & Strains | 0.0218*** | 0.0223*** | 0.0170*** |
| | (0.00261) | (0.00223) | (0.00290) |
| Work Contusions | -0.00247** | -0.00234** | -0.00259** |
| | (0.00108) | (0.000953) | (0.00126) |
| Off-the-Job Contusions | 0.00157 | 0.000875 | 0.00217 |
| | (0.00124) | (0.00106) | (0.00137) |
| Work Fractures | -0.00521*** | -0.00422*** | -0.00467*** |
| | (0.00149) | (0.00132) | (0.00173) |
| Off-the-Job Fractures | -0.0210*** | -0.0184*** | -0.0137*** |
| | (0.00229) | (0.00196) | (0.00257) |
| **Sample restrictions** | | | |
| Includes weeks with public holidays | | Yes | Yes |
| Includes public holidays | | Yes | Yes |
| Includes weekends | | | Yes |
| **Independent variables** | | | |
| Includes dummy variables for other days of the week | | | Yes |
| **Number of Observations** | | | |
| Work claims | 267,936 | 332,346 | 376,242 |
| Off-the-Job claims | 214,035 | 272,562 | 534,381 |

*Notes: Each model has a different sample restriction applied. Column 1 excludes weekends and weeks with a public holiday, column 2 excludes weekends (the approach used in the main results), and column 3 includes all claims including weekends and public holidays. It shows the Monday Effect is robust to these different specifications. The dependent variable in each regression is a dummy variable for the type of injury. The table reports coefficient estimates for the Monday/ first Tuesday back from a public holiday dummy variable from several different linear probability regressions that estimate the incidence of each type of injury. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO. Models 1-3 include a dummy variable for whether the injury occurred on a Monday or not. Model 4 includes dummy variables for each day of the week with Thursday as the reference.*

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Full regression results of lost-time injuries OLS estimates of the “Monday Effect” from linear probability models by type of injuries

| VARIABLES | Work Strain & Sprain | Off-the-Job Strain & Sprain | Work Fractures | Off-the-Job Fractures | Work Contusions | Off-the-Job Contusions |
|---|---|---|---|---|---|---|
| **Day of week** (ref: Thursday) | | | | | | |
| Sunday | 0.00346 | -0.0431*** | 0.00400 | 0.0334*** | 0.000897 | 0.00325*** |
| | (0.00406) | (0.00250) | (0.00276) | (0.00231) | (0.00202) | (0.00119) |
| Monday | 0.0188*** | 0.0170*** | -0.00467*** | -0.0137*** | -0.00259** | 0.00217 |
| | (0.00261) | (0.00290) | (0.00173) | (0.00257) | (0.00126) | (0.00137) |
| Tuesday | 0.00640** | 0.0161*** | -0.00203 | -0.0133*** | 0.000673 | 0.000594 |
| | (0.00261) | (0.00297) | (0.00174) | (0.00264) | (0.00128) | (0.00139) |
| Wednesday | 0.00558** | 0.0109*** | 0.000523 | -0.00684*** | 0.00123 | 0.00161 |
| | (0.00263) | (0.00293) | (0.00176) | (0.00262) | (0.00129) | (0.00138) |
| Friday | 0.00366 | -0.0373*** | 0.00149 | 0.0327*** | -0.00326** | 0.00181 |
| | (0.00270) | (0.00280) | (0.00182) | (0.00261) | (0.00130) | (0.00134) |
| Saturday | 0.000574 | -0.0178*** | 0.00909*** | 0.0326*** | -0.000364 | 0.00156 |
| | (0.00355) | (0.00239) | (0.00245) | (0.00219) | (0.00175) | (0.00113) |
| **Year** (ref: 2001) | | | | | | |
| 2002 | 0.00426 | -0.00446 | -0.00965*** | -0.00474 | 0.00412* | 0.00536*** |
| | (0.00426) | (0.00393) | (0.00299) | (0.00379) | (0.00210) | (0.00194) |
| 2003 | -0.00135 | -0.0295*** | -0.00453 | 0.000879 | -0.00180 | -0.00388** |
| | (0.00421) | (0.00383) | (0.00298) | (0.00375) | (0.00203) | (0.00184) |
| 2004 | 0.0126*** | -0.0223*** | -0.00288 | 0.00642* | -0.00359* | -0.00635*** |
| | (0.00420) | (0.00382) | (0.00297) | (0.00372) | (0.00200) | (0.00181) |
| 2005 | 0.0415*** | 0.00194 | -0.00800*** | 0.00327 | 0.00663*** | 0.00512*** |
| | (0.00423) | (0.00382) | (0.00294) | (0.00368) | (0.00208) | (0.00188) |
| 2006 | 0.0497*** | 0.00814** | -0.0160*** | -0.0130*** | 0.00799*** | 0.00599*** |
| | (0.00423) | (0.00377) | (0.00290) | (0.00359) | (0.00209) | (0.00185) |
| 2007 | 0.0588*** | 0.0178*** | -0.0217*** | -0.0301*** | 0.00854*** | 0.00716*** |
| | (0.00425) | (0.00371) | (0.00288) | (0.00350) | (0.00211) | (0.00182) |
| 2008 | 0.0739*** | 0.0122*** | -0.0170*** | -0.0195*** | 0.00465** | 0.000501 |
| | (0.00432) | (0.00370) | (0.00295) | (0.00351) | (0.00210) | (0.00178) |
| 2009 | 0.0774*** | 0.00990*** | -0.0138*** | 0.00125 | 0.00309 | -0.00658*** |
| | (0.00449) | (0.00380) | (0.00308) | (0.00363) | (0.00217) | (0.00178) |
| 2010 | 0.0696*** | -0.000669 | -0.00715** | 0.00430 | 0.00830*** | -0.00680*** |
| | (0.00461) | (0.00386) | (0.00321) | (0.00370) | (0.00228) | (0.00180) |
| 2011 | 0.0666*** | -0.00250 | -0.00504 | 0.00287 | 0.0115*** | -0.00382** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.00467) | (0.00391) | (0.00327) | (0.00374) | (0.00235) | (0.00185) |
| 2012 | -0.0194*** | 0.0123*** | -0.0199*** | -0.00884** | -0.00615*** | -0.00174 |
| | (0.00457) | (0.00390) | (0.00318) | (0.00369) | (0.00217) | (0.00185) |
| 2013 | -0.0368*** | 0.0177*** | -0.0285*** | -0.0187*** | -0.00603*** | 0.00175 |
| | (0.00450) | (0.00388) | (0.00308) | (0.00364) | (0.00215) | (0.00186) |
| 2014 | -0.0165*** | 0.0142*** | -0.0339*** | -0.0242*** | -0.00767*** | 0.00107 |
| | (0.00444) | (0.00384) | (0.00299) | (0.00360) | (0.00209) | (0.00184) |
| 2015 | 0.000636 | 0.0281*** | -0.0368*** | -0.0184*** | -0.00816*** | 0.00266 |
| | (0.00441) | (0.00492) | (0.00294) | (0.00445) | (0.00206) | (0.00237) |
| 2016 | 0.0211*** | 0.0177*** | -0.0390*** | -0.0134*** | -0.00249 | 0.0101*** |
| | (0.00541) | (0.00542) | (0.00348) | (0.00489) | (0.00256) | (0.00266) |
| | | | | | | |
| **Observable characteristics** | | | | | | |
| Male | -0.0585*** | -0.0413*** | 0.00341** | -0.0103*** | -0.0104*** | -0.00839*** |
| | (0.00215) | (0.00165) | (0.00138) | (0.00150) | (0.00108) | (0.000791) |
| Age (to nearest year) | 0.000488*** | 0.00102*** | -0.000221*** | -0.00165*** | 0.000270*** | 0.000374*** |
| | (5.95e-05) | (4.87e-05) | (4.25e-05) | (4.60e-05) | (3.00e-05) | (2.45e-05) |
| Weekly benefits (hundreds) | 0.00417*** | 0.00907*** | 0.00396*** | -0.00998*** | -0.000173 | -0.000191 |
| | (0.000366) | (0.000320) | (0.000227) | (0.000288) | (0.000174) | (0.000149) |
| | | | | | | |
| Industry (ref: Healthcare & Social Assistance) | | | | | | |
| Agriculture, Forestry & Fishing | -0.0540*** | -0.0135 | 0.0611*** | 0.0116 | 0.00918*** | -0.0114** |
| | (0.00526) | (0.0106) | (0.00350) | (0.00939) | (0.00258) | (0.00524) |
| Mining | -0.0462*** | 0.0234 | 0.0410*** | -0.00155 | 0.0241*** | -0.00956 |
| | (0.0133) | (0.0354) | (0.00946) | (0.0281) | (0.00730) | (0.0167) |
| Manufacturing | -0.0726*** | 0.0108 | 0.000196 | -0.0132* | -0.00259 | -0.00421 |
| | (0.00450) | (0.00888) | (0.00269) | (0.00755) | (0.00215) | (0.00448) |
| Electricity, Gas, Water & Waste Supply | 0.00158 | 0.0207 | 0.0177*** | -0.00399 | 0.00961** | 0.00652 |
| | (0.00929) | (0.0222) | (0.00574) | (0.0183) | (0.00455) | (0.0118) |
| Construction | -0.0101** | 0.0157* | 0.0347*** | -0.0151** | -0.00131 | -0.0121*** |
| | (0.00478) | (0.00884) | (0.00294) | (0.00757) | (0.00225) | (0.00434) |
| Wholesale Trade | 0.00176 | 0.00734 | 0.0183*** | 0.00910 | 0.00344 | -0.00866 |
| | (0.00607) | (0.0130) | (0.00372) | (0.0113) | (0.00289) | (0.00624) |
| Retail Trade | -0.00444 | 0.00828 | 0.0125*** | -0.000188 | 0.00100 | -0.00744 |
| | (0.00488) | (0.0102) | (0.00287) | (0.00891) | (0.00233) | (0.00502) |
| Accommodation & Food Services | -0.0749*** | -0.0395*** | 0.0343*** | 0.0111 | -0.000741 | -0.00803 |
| | (0.00579) | (0.0114) | (0.00360) | (0.0104) | (0.00277) | (0.00572) |
| Transport, Postal & Warehousing | 0.0129** | 0.0232* | 0.0417*** | -0.0236** | 0.0177*** | -7.43e-05 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.00520) | (0.0124) | (0.00322) | (0.0101) | (0.00257) | (0.00637) |
| Information Media & Telecommunications | 0.0676*** | -0.0164 | -4.16e-05 | 0.0537* | 0.0233*** | -0.0229* |
| | (0.0111) | (0.0301) | (0.00626) | (0.0280) | (0.00592) | (0.0121) |
| Financial & Insurance Services | -0.0759*** | -0.0421** | 0.0387*** | 0.0122 | 0.00303 | -0.0182** |
| | (0.0162) | (0.0166) | (0.0112) | (0.0147) | (0.00795) | (0.00739) |
| Rental, Hiring & Real Estate Services | -0.0202*** | -0.0309* | 0.0403*** | 0.0338** | 0.0118*** | -0.0154** |
| | (0.00604) | (0.0159) | (0.00394) | (0.0146) | (0.00299) | (0.00732) |
| Professional, Scientific & Technical Services | -0.0290*** | -0.0341*** | 0.0506*** | 0.0276*** | 0.00191 | -0.0186*** |
| | (0.00853) | (0.0119) | (0.00596) | (0.0107) | (0.00399) | (0.00540) |
| Administrative & Support Services | -0.00737 | -0.00705 | 0.0609*** | 0.0185 | -0.000246 | -0.00286 |
| | (0.00735) | (0.0159) | (0.00502) | (0.0142) | (0.00348) | (0.00814) |
| Public Administration & Safety | -0.0101 | -0.00417 | 0.0314*** | 0.0185*** | 0.0151*** | -0.00507 |
| | (0.00618) | (0.00802) | (0.00399) | (0.00687) | (0.00308) | (0.00404) |
| Education & Training | 0.0334*** | 0.0374*** | -0.0145*** | -0.0269** | -0.000137 | -0.00637 |
| | (0.00533) | (0.0136) | (0.00289) | (0.0111) | (0.00253) | (0.00655) |
| Arts & Recreation Services | 0.00627 | -0.0241* | 0.0908*** | 0.0223* | 0.00707** | -0.0145** |
| | (0.00660) | (0.0129) | (0.00478) | (0.0115) | (0.00320) | (0.00597) |
| Other Services | -0.00658 | 0.0375** | 0.0707*** | -0.0292** | 0.00579 | -0.00920 |
| | (0.00806) | (0.0161) | (0.00580) | (0.0136) | (0.00386) | (0.00742) |
| Industry Not Applicable | -0.0105 | -0.0169 | 0.0428*** | -0.00443 | 0.00460 | -0.0135** |
| | (0.00809) | (0.0129) | (0.00538) | (0.0112) | (0.00377) | (0.00613) |
| | | | | | | |
| **Occupation (**ref: Plant and machine operators & assemblers) | | | | | | |
| Agriculture & fishery workers | -0.0306*** | -0.0138*** | 0.0417*** | 0.00959*** | 0.00623*** | -0.00382*** |
| | (0.00365) | (0.00294) | (0.00267) | (0.00278) | (0.00183) | (0.00148) |
| Clerks | 0.0484*** | 0.00605* | -0.00651** | 0.0188*** | -0.00246 | -0.0103*** |
| | (0.00502) | (0.00323) | (0.00307) | (0.00300) | (0.00245) | (0.00157) |
| Elementary occupations | 0.0220*** | -0.0103*** | -2.63e-06 | 0.00499** | 0.00125 | 0.00122 |
| | (0.00267) | (0.00265) | (0.00168) | (0.00247) | (0.00129) | (0.00136) |
| Legislators, administrators & manager | 0.0143*** | 0.000629 | 0.0254*** | 0.0273*** | -0.00417* | -0.0195*** |
| | (0.00518) | (0.00327) | (0.00360) | (0.00300) | (0.00245) | (0.00148) |
| None & missing | -0.0723*** | -0.0577*** | -0.00693** | -0.0407*** | -0.00514** | -0.0101*** |
| | (0.00425) | (0.00287) | (0.00280) | (0.00267) | (0.00207) | (0.00142) |
| Professionals | -0.0157*** | -0.00658** | 0.0197*** | 0.0255*** | -0.00735*** | -0.0183*** |
| | (0.00446) | (0.00287) | (0.00305) | (0.00263) | (0.00211) | (0.00135) |
| Service & sales workers | 0.0445*** | 0.00458* | -0.00862*** | 0.0117*** | -0.00198 | -0.00617*** |
| | (0.00380) | (0.00259) | (0.00235) | (0.00240) | (0.00184) | (0.00128) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Technicians & associate professionals | 0.00469 | 0.0146*** | 0.0125*** | 0.0101*** | -0.00245 | -0.0148*** |
| | (0.00427) | (0.00287) | (0.00290) | (0.00261) | (0.00208) | (0.00136) |
| Trades workers | -0.0112*** | 0.0109*** | 0.00260 | 0.0127*** | -0.00600*** | -0.00503*** |
| | (0.00267) | (0.00240) | (0.00174) | (0.00221) | (0.00122) | (0.00117) |
| | | | | | | |
| **Ethnicity** (ref: European only) | | | | | | |
| Māori only | 0.00751*** | 0.0302*** | -0.0206*** | -0.0425*** | 0.0107*** | 0.0145*** |
| | (0.00251) | (0.00234) | (0.00158) | (0.00210) | (0.00128) | (0.00122) |
| Pacific only | -0.00750** | 0.0262*** | -0.0124*** | -0.0436*** | 0.00882*** | 0.00934*** |
| | (0.00373) | (0.00321) | (0.00233) | (0.00289) | (0.00187) | (0.00162) |
| Asian only | 0.0112*** | 0.0280*** | -0.00235 | -0.0372*** | 0.0162*** | 0.0189*** |
| | (0.00377) | (0.00364) | (0.00246) | (0.00322) | (0.00196) | (0.00191) |
| Middle Eastern, Latin American or African (MELAA) only | 0.0319*** | 0.0212** | -0.00751 | -0.0424*** | 0.00533 | 0.000272 |
| | (0.00889) | (0.00841) | (0.00572) | (0.00751) | (0.00424) | (0.00385) |
| Other (single ethnicity) | 0.0226*** | 0.0232*** | -0.0112*** | -0.0267*** | -0.00202 | -0.000919 |
| | (0.00610) | (0.00499) | (0.00400) | (0.00445) | (0.00282) | (0.00228) |
| European & Māori | 0.0164*** | 0.0276*** | -0.0153*** | -0.0313*** | 0.00581*** | 0.00363*** |
| | (0.00310) | (0.00248) | (0.00200) | (0.00228) | (0.00151) | (0.00118) |
| European & Pacific | 0.0347*** | 0.0461*** | -0.0217*** | -0.0441*** | 0.00462 | -0.00399 |
| | (0.00972) | (0.00680) | (0.00590) | (0.00610) | (0.00457) | (0.00296) |
| European & Asian | 0.00782 | -0.00820 | -0.00816 | -0.0307** | 0.00556 | 0.00301 |
| | (0.0199) | (0.0139) | (0.0129) | (0.0131) | (0.00963) | (0.00660) |
| European & MELAA | 0.0121 | -0.0111* | -0.00918* | -0.00504 | -0.00239 | 0.00298 |
| | (0.00752) | (0.00581) | (0.00495) | (0.00563) | (0.00342) | (0.00282) |
| European & Other | 0.00117 | 0.00815 | -0.0132 | -0.00883 | 0.0227** | 0.00349 |
| | (0.0166) | (0.0136) | (0.0111) | (0.0126) | (0.00922) | (0.00661) |
| Māori & Pacific | -0.0146 | 0.0361*** | -0.0141* | -0.0426*** | 0.000512 | 0.00586 |
| | (0.0120) | (0.00932) | (0.00754) | (0.00850) | (0.00561) | (0.00454) |
| Māori & Asian | 0.0412 | 0.0689** | -0.0385** | -0.0322 | -0.00414 | -0.0198* |
| | (0.0368) | (0.0322) | (0.0192) | (0.0290) | (0.0165) | (0.0116) |
| Māori & MELAA | -0.00617 | 0.0231 | -0.00639 | -0.0195 | 0.00435 | -0.00371 |
| | (0.0227) | (0.0208) | (0.0152) | (0.0194) | (0.0113) | (0.00952) |
| Māori & Other | -0.0259 | 0.0746 | 0.0235 | 0.0240 | 0.0244 | 0.00479 |
| | (0.0454) | (0.0487) | (0.0343) | (0.0446) | (0.0261) | (0.0226) |
| Pacific & Asian | 0.0358** | 0.0708*** | -0.0231** | -0.0663*** | 0.0261*** | 0.0229*** |
| | (0.0178) | (0.0166) | (0.0103) | (0.0140) | (0.00966) | (0.00886) |
| Pacific & MELAA | 0.0756** | 0.0462 | -0.0228 | -0.0529** | 0.0143 | 0.00808 |
| | (0.0351) | (0.0297) | (0.0212) | (0.0263) | (0.0179) | (0.0147) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pacific & Other | -0.0995 | -0.0337 | 0.0842 | -0.0355 | -0.0511*** | -0.0277 |
| | (0.103) | (0.0652) | (0.0965) | (0.0625) | (0.00258) | (0.0204) |
| Asian & MELAA | -0.0312 | 0.0125 | -0.0368** | -0.0230 | 0.0405** | 0.00736 |
| | (0.0284) | (0.0298) | (0.0160) | (0.0274) | (0.0175) | (0.0144) |
| Asian & Other | 0.133* | 0.00666 | -0.0978*** | -0.0840* | -0.00821 | 0.0406 |
| | (0.0744) | (0.0541) | (0.0235) | (0.0458) | (0.0318) | (0.0329) |
| MELAA & Other | 0.151*** | 0.0397 | -0.0766*** | 0.0865* | -0.000200 | -0.00396 |
| | (0.0535) | (0.0514) | (0.0234) | (0.0520) | (0.0235) | (0.0220) |
| European, Māori & Pacific | 0.0454 | 0.0931** | -0.0172 | -0.0717** | 0.0344 | -0.0110 |
| | (0.0470) | (0.0375) | (0.0278) | (0.0306) | (0.0270) | (0.0147) |
| European, Māori & Asian | 0.0213 | 0.0280*** | -0.00870 | -0.0427*** | 0.0184*** | 0.000140 |
| | (0.0134) | (0.0100) | (0.00868) | (0.00918) | (0.00706) | (0.00461) |
| European, Māori & MELAA | 0.0327 | 0.0940*** | -0.0290 | -0.0394* | 0.0152 | 0.00602 |
| | (0.0321) | (0.0233) | (0.0187) | (0.0205) | (0.0166) | (0.0110) |
| European, Māori & Other | 0.0264 | -0.0188 | -0.0100 | -0.0172 | 0.0181** | 0.00970 |
| | (0.0165) | (0.0134) | (0.0107) | (0.0131) | (0.00879) | (0.00703) |
| European, Pacific & Asian | 0.0725** | 0.0148 | -0.0167 | -0.0704*** | -0.00327 | 0.0221 |
| | (0.0364) | (0.0298) | (0.0229) | (0.0256) | (0.0159) | (0.0166) |
| European, Pacific & MELAA | -0.0256 | 0.0507 | -0.0173 | -0.0873*** | 0.0318 | 0.00623 |
| | (0.0432) | (0.0355) | (0.0274) | (0.0295) | (0.0252) | (0.0168) |
| European, Pacific & Other | 0.0233 | 0.0529 | -0.00351 | -0.0813*** | -0.00495 | 0.0165 |
| | (0.0437) | (0.0333) | (0.0284) | (0.0278) | (0.0191) | (0.0171) |
| European, MELAA & Other | -0.000958 | 0.0789** | 0.00225 | -0.0797** | 0.0289 | 0.0490** |
| | (0.0492) | (0.0379) | (0.0331) | (0.0311) | (0.0277) | (0.0231) |
| Māori, Pacific & Asian | -0.0295 | -0.0568 | -0.0201 | 0.0496 | 0.0570 | -0.0149 |
| | (0.0774) | (0.0614) | (0.0510) | (0.0651) | (0.0522) | (0.0259) |
| Māori, Pacific & MELAA | 0.121 | -0.0426 | 0.00660 | -0.0380 | 0.0422 | -0.0489*** |
| | (0.0867) | (0.0562) | (0.0556) | (0.0553) | (0.0501) | (0.00120) |
| Pacific, MELAA & Other | 0.107* | 0.0346 | -0.0950*** | -0.0413 | 0.00679 | -0.0143 |
| | (0.0587) | (0.0522) | (0.0216) | (0.0481) | (0.0284) | (0.0214) |
| European, Māori, Pacific & Asian | 0.141* | -0.0183 | 0.0121 | -0.0333 | 0.0197 | -0.0108 |
| | (0.0767) | (0.0692) | (0.0493) | (0.0632) | (0.0408) | (0.0311) |
| European, Māori, Pacific & MELAA | -0.0383 | 0.00412 | -0.0315 | 0.00219 | 0.0308 | -0.00781 |
| | (0.0559) | (0.0424) | (0.0328) | (0.0414) | (0.0321) | (0.0188) |
| Other ethnic combinations | -0.0454 | 0.0615 | 0.0223 | -0.105*** | -0.00315 | 0.0310 |
| | (0.0625) | (0.0452) | (0.0458) | (0.0368) | (0.0286) | (0.0252) |
| **Constant** | 0.00751*** | 0.0302*** | -0.0206*** | -0.0425*** | 0.0107*** | 0.0145*** |
| | (0.00251) | (0.00234) | (0.00158) | (0.00210) | (0.00128) | (0.00122) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Observations | 376,242 | 534,381 | 376,242 | 534,381 | 376,242 | 534,381 |
| R-squared | 0.021 | 0.012 | 0.016 | 0.012 | 0.003 | 0.003 |

*Notes: The dependent variable in each regression is a dummy variable for the type of injury. The table reports coefficient estimates for the Monday/first Tuesday back from a public holiday dummy variable from several different linear probability regressions that estimate the incidence of each type of injury. Robust-cluster standard errors are in parentheses. Controls for observable characteristics include gender (male=1), age at time of accident, and gross weekly benefits. Industry dummies are level 1 ANZSIC. Occupation dummies are level 1 ANZSCO.*

*** p<0.01, ** p<0.05, * p<0.1