DEPARTMENT OF ECONOMICS

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INCENTIVES AND THE CHANGING STRUCTURE OF PENALTIES IN NEW ZEALAND'S HEALTH AND SAFETY IN EMPLOYMENT ACT

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WORKING PAPER

No. 03/2006

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by Paul Gordon† and Alan Woodfield‡ [1]

June 2006

ABSTRACT. This article argues that it is doubtful that the fivefold increase in maximum fines under New Zealand's Health and Safety in Employment Amendment Act 2002 will be successful in providing suitable precautionary incentives. Expected penalties remain at relatively low levels, with the continued use of capped fines along with substantial margins for deterrence of the most serious cases. On average, fines were initially substantially lower in response to the introduction of the Sentencing Act 2002 for which uncapped (but insurable) reparations take precedence over fines, and must be accounted for in setting fines. The combined effects of the legislation led to average total financial penalties approximately doubling through 2004 rather than increasing at anything like the rate signalled for fines by the amendments. Subsequently, while fines have grown in absolute terms, even more rapid growth in reparations has caused relative crowding-out while total penalties remain well below those signalled by the amendments alone. The case for low caps on fines appears weak, while 'asset-testing' fines is unlikely to be an efficient practice. Absent further significant changes in workplace safety incentives, New Zealand is likely to face an ongoing (if possibly somewhat abated) stream of prosecutions for serious breaches of relatively onerous statutory health and safety duties.

Keywords: health and safety incentives; expected penalties; capped fines; reparations.

JEL Classification:

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1 The authors thank the Department of Labour, in particular Nicolaas Francken and Rex Moir for providing some unpublished data used in this study, and Rex Moir and Bob White for very helpful suggestions and comments. The views expressed, and any errors, are ours. Thanks also to Nick McNabb who provided valuable research assistance.

Introduction

New Zealand's Health and Safety in Employment Act 1992 ("the Act") established general principles and statutory duties for both employers and employees to regulate workplace risks, with sanctions following from detection of substandard levels of care. The Act emphasizes the onus on employers to identify workplace hazards and deal with them. Employers have a general duty to take all practicable steps to ensure the safety of their employees at work, and are subject to particular duties in relation to the working environment. Penalties for offences committed under the Act as specified in sections 49 and 50 involve separate maximum levels of fines and/or imprisonment depending on the degree of severity of the breach and the culpability of the offender. Amendments to the Act in December 2002 (effective from May 2003) included increased maximum levels of fines. Further, from 1 July 2002, the Courts were required to apply the provisions of the Sentencing Act 2002 in determining sentences for convicted offenders, and which include reparation orders in conjunction with other penalties.

In this article, we examine whether the changing structure of penalties and their imposition by the Courts is likely to provide suitable incentives for employers to adopt appropriate safety precautions for their employees. The motivation for the amended penalties is examined, and some early evidence is addressed. The likelihood that the amended penalties as implemented by the Courts will be successful deterrents is discussed. Further, and building on some earlier work,[1] we discuss whether there exists a justifiable economic rationale either for the continued caps on fines or the practice of relating the level of fines to a convicted defendant's capacity to pay.

1. See Gordon and Woodfield (2001).

Safety Incentives and the HSEA Act

We have examined elsewhere the safety incentives for employers embodied in the Act (and related Regulations) prior to its amendments, and summarize as follows.[2] Although it is difficult to be conclusive, our view is that safety incentives were most likely inadequate. A major reason for this conclusion lies in inadequate penalty levels. With compensation of accident victims the province of accident compensation legislation, fines (as deterrents) were typically set well below the values of harms suffered, and were capped by legislation at relatively low levels. Along with imperfect enforcement of liability, expected liability payments typically fell well short of expected accident losses, diluting incentives to take suitable levels of health and safety precautions.[3]

With imperfect enforcement, the resulting distortion to incentives can in principle be removed by a suitable increase in penalties above accident losses, yet the fines typically imposed fell substantially short of such losses. Between 1 April 1993 – 30 June 2002, the average fine across the 1217 cases prosecuted was only $6,678, with the largest fine of $60,000 imposed in 1995. The largest fine of $50,000 for a single charge was imposed in 2002.[4] Average fines for the most common breaches approximately doubled in nominal terms over the period, in part representing the end of a so-called "honeymoon" period associated with the introduction of the new legislation. Even so, both maximum and average penalties imposed seem extraordinarily low as far as meeting the requirements for optimal deterrence is concerned.[5]

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2. See Gordon and Woodfield (2001, 2006).

3. An additional reason is that some small employers may have asset values bounded below the value of accident losses and are judgment-proof against losses in excess of their assets.

4. While fines in the higher range are usually reserved for cases involving serious harms including fatal injuries, these fines might be compared with a fine of $50,000 imposed on a firm in 1996 under the Resource Management Act 1991 for polluting a stream with contaminants from oil drilling (but without harm resulting to humans), and a fine of $25,000 imposed on a firm in 1994 for discharging timber treatment chemicals into a stream, killing 100 nesting wild ducks and for which some medical treatment was required by persons assisting the ducks.

5. Mears and Chapple (1996, p.45) argue that fines were nevertheless significantly higher than under the pre-Act statutes that governed health and safety.

Against this is the stringent standard of care required of employers, viz, that all reasonably practicable steps are to be taken to ensure workplace safety. Although there is some similarity with the duty of care in the common law of negligence, it seems generally agreed that the statutory test is more demanding, in part because of the Courts' clear willingness to interpret the Act to require employers to protect their employees against apparently seriously deficient standards of employee care. A problem with the adoption of a stringent standard in conjunction with weak penalties and low accident probabilities, however, is that it may be cost-effective for some employers to take fewer safety precautions than under negligence. We further suggest that the care standard is considerably less precise than under a negligence rule, and consequently has the potential to dilute rather than strengthen safety incentives even if appropriate penalty levels were imposed. The intuition behind this result is that if there is a great deal of uncertainty as to the standard of care required by the Courts, then, if a high level of costly precaution is taken but it is nevertheless deemed inadequate, the combined costs of precaution and liability can be very high. If liability would be much the same at lower and much less costly levels of precaution, stringent but highly uncertain standards may be a double-edged sword and induce under-precaution.

In these circumstances, Kolstad et al. (1990) argue that under-precaution may be overcome by the introduction of safety regulations that serve to induce employers to revise upwards their perceptions of the strictest legal standard of care.[6] Further, these regulations should be no more stringent that those required under a negligence rule. This argument, however, requires that employers never take a lower level of care than implied by such regulations. This would be reasonable if regulations were enforced with certainty, but

6. In addition to *ex post* employer liability in the event of accidents, the Act includes an *ex ante* liability rule that encompasses formal safety regulations, approved codes of practice, and OSH-approved guidelines, along with the historical development of judgments that penalize offenders for failing to take all practicable steps to ensure safety even when accidents do not occur.

seems far-fetched given the limited enforcement by the (then) Occupational Safety and Health ("OSH") division of the Department of Labour ("DOL"), lower penalties than those imposed when similar under-precaution led to accidents, and the fact of ongoing prosecutions for non-compliance. Instead, we argue that relatively strong safety regulations may be required to signal the serious intent of legislators where inspection probabilities are relatively low, as is observed in the enforcement of the Act.[7]

On balance, we take as a maintained hypothesis the proposition that safety incentives prior to the amendments of the Act had been inadequate.

Workplace Injuries

Increased penalties (among other amendments) appear to have been largely motivated by the perceived limited impact of the Act on workplace accidents.[8] The absence of a comprehensive relevant long-term database on workplace injuries in New Zealand prohibits any attempt to systematically evaluate the impact of the HSE Act and its amendments on changes in workplace injury rates and their composition.[9] Instead, in Table 1 we present some aggregated employment and incidence of workplace injury data that relate closely to the issues surrounding the amendments to the Act.

TABLE 1 ABOUT HERE

The first row of Table 1 presents annual full-time equivalent ("FTE") employment (estimates in millions from the Household Labour Force Survey over the period 1991-2005). The second row of Table 1 reports workplace fatality incidence over the same

7. For analyses of OSH workplace inspection data, see Gordon and Woodfield (2006) and Gunby and Wilkinson (2005).
8. See Office of the Minister of Labour (2000). Gunby and Wilkinson (2005) argue that the amendments were heavily influenced by the results of Feyer et al. (2001) who examined the characteristics (if not the causes) of fatal injuries in New Zealand for a period including only the first two years of application of the Act. Further, they argue that the policy changes largely predated the only formal empirical analysis to date, viz, Maré and Papps (2000-02), which, using dynamic panel data methods, did not find significant impacts of OSH interventions on the likelihood of subsequent workplace accidents in their preferred specifications.
9. Many investigators, including Feyer et al., Maré and Papps, and Wren (1997) have bemoaned the state of New Zealand's long run injury data.

period, defined as the number of fatal injuries arising from workplace accidents that are reported to DOL (and subsequently investigated under the Act) per million FTE employees. There is little evidence of a structural shift in fatality incidence following the introduction of the Act (and prior to its amendments). Annual variability is quite large, and fatality incidence peaked in 2002, the year of the introduction of the Sentencing Act. The average annual fatality incidence in the period 1994-2002 is 31.7, compared to an average of 33.4 in the period 1991-93. Significant numbers of prosecutions began in 1994. In the year ending 30 June 2002, fatalities were at historically high levels (73), nearly 50 percent higher than in the indicated period prior to the passage of the Act, some 60 percent higher than in the entire period 1994-2002, and 87 percent above fatalities in the previous year. The provisions of the Sentencing Act then applied, and in 2003 the number of fatalities was identical to that of 2002, this figure, however, being inflated somewhat by a modified classification of bystanders such that 16 were classified as fatalities in 2003 but only 6 in 2002 (and 5 in 2001). The data for 2004 (for which the combined effects of the Sentencing Act and HSE Act amendments first applied) show 61 fatalities (including 13 bystanders) and a fatality incidence of 34.6, a reduction over an incidence of 42.8 for 2003, but still in excess of historical average levels.[10] Fatalities declined dramatically to 46 (including 8 bystanders) in 2005, with a corresponding incidence of 25.0, but this was not sustained and 51 fatalities (including 2 bystanders) were recorded in the first nine months of the year ending 30 June 2006. If this rate were sustained over the whole year, the corresponding incidence for 2006 would be 36.3 (if FTE employment is approximated by the December 2005 quarter value), and, using this estimate, the incidence of fatalities average 34.7 per annum over 2003-06, somewhat greater than before the HSE Act was introduced, and greater still than during the first decade of the Act’s implementation. Admittedly, the data

10. If fatalities had been adjusted so that the same number of bystanders had been included in 2004 as in 2002, the adjusted incidence figure would have been 31.6, similar to the earlier period.

periods are far too short to permit satisfactory inferences, and fatalities in a small workforce are sufficiently rare so that random events, multiple fatality accidents, and the treatment of bystanders cause considerable year to year variations in recorded fatalities. In addition, no account has been taken of changing safety incentives under accident compensation legislation and ACC partnership arrangements with firms, or in respect of the changing industrial risk structure of New Zealand's workforce. Nevertheless, the stylized facts are hardly suggestive of a significant reduction in the incidence of the most serious workplace accidents, and which might have been expected in response to the changed penalty structure.

Similar comments also apply to the more frequent accidents involving serious, if less than fatal, harms. The third row of Table 1 reports the incidence of serious harms notified to DOL over 1996–2005, with no suggestion of a significant decline in notifications since the new legislation was enacted. Not all notifiable serious harms, however, are reported. Informal estimates suggest a reporting rate of 25–35 percent, and it is considered that the notification rate has been increasing in recent years.[11] Row 4 of Table 1 also shows the incidence of new ACC claims for workforce injuries over 1995-2005. Analysis of this series is complicated by the ability of employers to purchase private insurance against liability for workplace injuries in 1999, along with the emergence of evolving partnership agreements with accredited employers that currently permit a significant degree of self-insurance in exchange for substantial reductions in ACC levies. Prior to the amendments to the HSE Act, total ACC new workplace claims per FTE employee had been increasing steadily following a period of declining claims in the mid 1990's, and continued to increase following the passage of the Sentencing Act. This trend was arrested in 2004 following the amendments to the HSE Act, and workforce claims per

11. These estimates were provided in a personal communication from Rex Moir, an officer of DOL.

employee also remained lower in 2005 than in 2003. Further inspection of ACC injury statistics produces similar comments for per employee claims for medical treatment, hospital treatment, and weekly compensation but their sustainability is also yet to be revealed.[12]

Finally, row 5 of Table 1 reports the incidence of HSE Act prosecuted charges from 1994-2005, with rows 6-9 reporting the incidences of the respective components of these prosecutions, viz, accidents, complaints, incidents and inspections. Some decrease in prosecution incidence is evident. If prosecutions were proportional to accidents, or to the number of serious accidents since deterrence may affect both the accident rate and the average seriousness of accidents, some support for a hypothesis of a declining incidence of serious accidents could be found. The prosecution rate, however, is endogenous and likely to depend on a number of factors, including the total resources available for enforcement purposes and the allocation of these resources among their competing uses, of which prosecutions are only one claimant.

Overall, the limited evidence in respect of a hypothesis that increased penalties have been associated with a reduction in the incidence of workplace accidents in New Zealand is conflicting at best, and if there have been significantly increased deterrent effects resulting from the changed penalty structure, they have hardly leapt off the canvas to date.

Implementing the Changed Structure of Penalties

The interaction of the Sentencing Act 2002 and the HSE Amendment Act 2002 has an important bearing on the apparently disappointing incentive effects of the increased penalties now available.

12. ACC injury statistics also include a series on serious injury claims, but these are limited to a very small number of intensively-managed claims frequently requiring 24-hour care, and include a substantial number of non-work-related injuries.

The Sentencing Act 2002

The Sentencing Act 2002 (implemented from 30 June 2002) repealed s 28 of the Criminal Justice Act 1985, which had permitted the payment of all or part of any fine to a victim of an offence.[13] This right was replaced by a new sentence of reparation. Given the reintroduction of lump-sum compensation under the IPR&C Act, reparation for physical harms is not permitted. Instead, reparation can be awarded when a victim suffers loss or damage to property, emotional harm, or loss or damage consequential on any emotional or physical harm, or loss or damage to property.[14] Further, if entitled to do so, the Courts are generally required to impose a sentence of reparation.

Reparation may be imposed on its own or in conjunction with other sentences such as a fine. Unlike offences under the HSE Act for which maximum fines are imposed, reparation awards are not capped.[15] If an offender can meet reparation but not fine payments, reparation takes precedence, while, under s 35, the Courts can discount losses or provide time to pay where the offender is impecunious. Further, under s 40, if reparation is ordered, the Court must take its magnitude into account in assessing the level of any fine imposed.[16]

The HSE Amendment Act 2002

The December 2002 amendments to the HSE Act (implemented from 5 May 2003) introduced two potentially important changes in the present context, but which appear to be tempered by the application of the Sentencing Act. First, the amendments provide for (i) a maximum fine of $500,000 (previously $100,000) where the offender knew the relevant act

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13. The Courts, however, had previously been required to set fines according to standard sentencing principles and only when set was the issue of possible distribution to victims to be considered.

14. For a detailed analysis, see Hughes (2002).

15. As Hughes (2002) notes, where courts had previously awarded fine revenue to victims, these awards typically represented more than demonstrable emotional harms. Unlike reparations, however, the imposed levels of fines represented an effective cap on any award.

16. Regarding consequential losses, courts may not award reparation if entitlements under the IPR&C Act 2001 are believed to exist. This precludes reparations for earnings loss covered by normal ACC payments. Hughes (2002) argues that it is unclear whether courts will use reparations to top-up shortfalls on ACC compensation payments.

or omission relevant to the offence was reasonably likely to cause serious harm (s 49), and (ii) a maximum fine of $250,000 (previously $50,000) for other offences involving non-compliance with various provisions of the Act (s 50).[17] For the relatively rare s 49 offences, with respect to maximum fines, the amended Act continues not to distinguish offences that cause harm from those that do not, while, for the much more common s 50 offences, the amended Act no longer distinguishes offences on this basis. Previously, for offences where serious harm did not eventuate, the maximum fine of $25,000 was exactly half the maximum when s 50 offences caused serious harm.

While the required care standard remained largely unchanged, the expected penalty associated with failures to meet the standard of care even when accidents do not eventuate might have been expected to increase sharply. A fivefold increase in the maximum fine appears to be a strong signal to the Courts to increase penalties very significantly while still leaving a considerable margin for those "worst possible" cases.[18] Section 51(A) of the amended Act, however, also requires the Courts to pay particular regard to sections 7–10 of the Sentencing Act dealing with the purposes and principles of sentencing, and to the aforementioned requirements of s 35 and s 40.

Penalty Levels Under the Changing Penalty Structure

A major thrust of this article is that the level of penalties was set inordinately low during the first decade of operation of the HSE Act, with no minimum penalties and sufficiently low caps on penalties that the resulting expected penalty levels were likely to be too low for the purposes of optimal deterrence. While it is much too early to be in a position to fully evaluate the effects of the subsequent changes on precautionary decisions,

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17. A term of imprisonment not exceeding two years, either as a substitute for a fine or in addition to a fine, is also a penalty under s 49. Notably, imprisonment has never been used as a penalty for any HSE Act offence to date.
18. Hughes (2002, p. 125) notes that the new clause 51(A) in the amended Act largely repeats certain sentencing criteria in the Sentencing Act (including references to the ability to pay reparation) and otherwise recites established guidelines from *Department of Labour v de Spa and Co Ltd*. [1994] 1 ERNZ 339.

accident rates, or prosecution rates, evidence suggests that the Courts seemed initially reluctant to increase financial penalties anything like a multiple of five, let alone increase fines by this order of magnitude. The most recent evidence, however, suggests that penalty levels are increasing markedly, although the composition of penalties remains a contentious issue.

For example, consider *Department of Labour v Ferrier Woolscours* (*Canterbury*) *Ltd*,[19] which involved a fatal accident and what might be termed a serious near-miss. Two employees of the defendant company entered a mobile effluent tanker, the first to take action to remedy a leak and the second out of concern for the welfare of the first when observing him lying face-down in hot effluent emitting potentially fatal hydrogen sulphide fumes. The defendant company was convicted for offences under s 6 and s 7(1)(a) of the Act, Abbott J noting that the Sentencing Act created reparation as the initial step in determining sentence, with any subsequent fine taking into account the reparation award.[20] The employee's death, and resulting emotional impacts on his surviving family, were clearly viewed as extremely serious, as was the near miss of the other employee.

In respect to penalties, *Ferrier* post-dated the introduction of the Sentencing Act and pre-dated the implementation of the HSE Amendment Act. In determining the sentence, reference was made to *Department of Labour v Aquatech New Zealand Limited* [21] where two Aquatech employees died after becoming overcome by hydrogen sulphide following their entry into a sewer. The subsequent decision in *Nelson Dive Centre Ltd v Department of Labour* [22] established that there should only have been one s 6 charge in *Aquatech*, on which the defendant company could have been fined $30,000 (the sum of the

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19. [2005] DCR 536.
20. It was also noted that reparations plus fines could exceed pre-Sentencing Act fines in terms of quantum, and that the increase in maximum fines could render the earlier fines as being of limited relevance in terms of the magnitude of imposed penalties for offences committed .
21. Unreported, DC Auckland, 16 March 2000, CRN 900405315-17.
22. Unreported, HC Nelson, 4 March 2002, AP 17/01.

fines imposed on two separate s 6 charges in this case). Abbott J then argued that while consistency in sentencing is desirable, *Aquatech* was decided prior to the enactment of the Sentencing Act. Defence counsel in *Ferrier* argued that a total penalty of approximately half the maximum was affordable, but, in the event, the defendant company was fined a total of $15,000 on the charges, the fines reflecting total reparation sentences of $27,500 (determined prior to the quantum of the fine) along with a credit of $2,500 for a late guilty plea. Notably, the company's remedial actions included a posted warning on the tank and a written job specification for the position of effluent tanker driver with a provision that the employee must never enter the effluent tank. These, and other subsequent actions appear to have been sufficient to excuse the company from a specific deterrence component to the fine imposed, and the expected private rate of return to these *ex post* actions would also have been greater by the company being proof against similar charges if they had been inspected at some future stage.

Ferrier is indicative of how the Courts may substitute reparations for fines in determining the total financial penalty faced by convicted offenders. A later example is *Department of Labour v , Richmond Limited* [23] where a freezing works employee suffered fatal strangulation when a cleaning cloth around her neck became entangled in a chain that was inadequately guarded due to undetected wear and tear. The defendant company was fined $39,000 on the sole s 6 charge, and reparation of $50,000 was also awarded. The sentencing notes of Ross J emphasized the necessity for the sentence to reflect general deterrence, while acknowledging that the risk was not known to the company (although it should have been), and that the sentence should reflect these aspects. The Judge made reference to *Department of Labour v Orthotic Centre (NZ) Ltd* [24], also a case involving death by strangulation and for which the sentence post-dated the Sentencing Act but

23. Unreported, DC Dannevirke, 29 October 2004, CRN 04010500050.
24. Unreported, DC Auckland, 10 April 2003, CRN 3004031477.

predated the amendments to the HSE Act. A fine of $14,000 was imposed, but no reparations were awarded, although the whole amount of the fine was paid to the victim's spouse. In part because the Judge found assessment of culpability difficult, but encompassing the medium to low range, the starting point for the fine was a relatively modest $17,500 (representing 35 percent of the maximum fine), and was discounted to $14,000 (28 percent of the maximum fine) on account of mitigating circumstances.

By way of comparison, in *Richmond*, recognizing that the case post-dated both the Sentencing Act and the HSE Act amendments, the Judge began the assessment of the total financial penalty by considering its appropriate fine-equivalent in the absence of reparations. Given previous convictions, the seriousness of the accident, and an assessment of culpability as being "medium-high", an initial figure at least as great as 50 percent of the maximum fine (i.e., $125,000) was contemplated, but was reduced to $115,000 (46 percent of the maximum fine) "on reflection", but without explanation. This amount was then discounted by another $6,000 to reflect atonement and steps taken in respect of victims of the accident. Further discounting to reflect the remedial steps taken by the company (the chain guard was replaced within hours, presumably at low cost) and a guilty plea amounted to $25,000, and $50,000 was awarded as reparation to the partner of the victim. The result was a total penalty of $89,000 (35.6 percent of the maximum fine), with a fine of $39,000 (15.6 percent of the maximum fine), the notional fine in the absence of reparations being discounted on a dollar for dollar basis with the reparation awarded.

More general insight is provided by an examination (from the DOL Health and Safety Prosecutions Database) of total financial penalties imposed during the following four periods: (1) 1 April 1993 – 30 June 2002, (2) 1 July 2002 – 4 May 2003 (following imposition of the Sentencing Act 2002), (3) 5 May 2003 – 31 December 2004 (following imposition of both the Sentencing Act 2002 and the 2002 Amendments to the HSE Act), and (4) 1 January 2005 – 27 April 2006 (involving interim data only).

Prior to 31 December 2004, only one case was recorded where reparation was awarded for an offence not involving an accident; viz, an incident in 2003 where reparation of $5,000 (in addition to the imposition of a $25,000 fine) was awarded. Reparation, therefore, was maintained almost exclusively for cases (some of which might have involved multiple charges) involving accidents. Although the second period is very short, some 54 prosecuted cases involving accidents resulted in convictions with positive financial penalties, of which 46 attracted fines and 38 involved reparations. The Courts therefore accepted that the vast majority of serious accidents involving convictions also generate non-physical harms.

The average reparation award during period 2 was $7,823, a figure similar to the average fine imposed in the entire period prior to 1 July 2002, and in excess of eighty percent of the average fine imposed during the year ending 30 June 2002. Further, the average fine imposed in the second period was only $4,841, representing less than two-thirds of the average fine for period 1, and only slightly above one half of the average fine imposed for the immediately preceding year. The overall effect was that average total financial penalty of $9,629 in period 2 was only one percent higher than the average fine imposed for the immediately preceding year. While issues of small sample bias are readily apparent, there appears to be a strong *prima facie* case in favour of the hypothesis that the Courts largely substituted reparations for fines of similar magnitude and largely maintained penalties at the previous levels. The passage of the Sentencing Act appeared to have clouded the sentencing principles laid down in *de Spa*, and even affected the Informant's submissions on penalties in each case. If legislators had hoped that the Sentencing Act provisions would have led to significant increases in penalties with respect to prosecutions under the HSE Act, they would appear to have been disappointed by this evidence.

While the introduction of reparation orders may have been supported by some as a means of compensating victims without changing penalties for HSE Act offenders, legislators quickly swung into action and also considerably increased penalties for offences under the Act. In period 3, the situation changed somewhat following the introduction of the increased penalty structure. Some 91 prosecuted cases attracted financial penalties, 81 of which involved fines and 77 involved reparations. The maximum financial penalty of $90,000 imposed in period 3 was more than twice as large as the maximum imposed in period 2, and was 50 percent greater than the maximum fine (equals penalty) imposed in period 1. The maximum fine of $39,000 imposed in period 3 was nearly twice as large as the maximum fine imposed in period 2; nevertheless, it was only 65 percent of the maximum fine imposed in period 1, although this particular comparison mainly serves to illustrate the difficulties in making comparisons among cases involving different numbers of charges. In the period 1 case, fines of $20,000 on each of three separate charges (including the common s 6 charge) were imposed in relation to an accident which ultimately led to an employee's leg being amputated.[25] The period 3 case (*Richmond*) involved a single s 6 charge in relation to a fatal accident. Further, the maximum financial penalty in period 3 also involved the maximum reparation payment in this period, and reparation amounted to 94 percent of the penalty. The average fine in period 3 was $8,686, some 80 percent higher than in period 2, but amounting to only 91 percent of the average fine for the year preceding the introduction of the Sentencing Act. Average reparation payments, however, increased by some 37 percent over those awarded in period 2, and the average reparation exceeded the average fine by 24 percent in period 3. The resulting

25. See *Department of Labour v Ansett New Zealand Air Freight Limited*, unreported, DC Otahuhu, 2 February 1996, CRN 5048031426.

average financial penalty of $16,812 was more than three-quarters larger than the average fine (equals penalty) in 2002.

It is clear that comparisons of this nature can be misleading. For example, since the passage of the amendments to the Act, the period 3 cases involving convictions may have been relatively straightforward and involved accidents which were, on average, less serious than those for which decisions had yet to be reached. Consequently, the post-amendment average fines and average financial penalties in period 3 may be biased downward estimates of their long-run values. Two cases involving fatal accidents not included in the summary data above illustrate this point. The first is the aforementioned *Richmond*, where the penalties included a fine of $39,000 and reparation of $50,000. In *Richmond*, Ross J made reference to *Orthotic Centre* where the sentence was based on criteria that preceded both the Sentencing Act and the amendments to the HSE Act. In comparison to *Orthotic Centre*, the financial penalty of $89,000 in *Richmond* was over five times as large. This represents one instance where the total penalty increased in rough proportion to the change in the maximum fines. Culpability, however, was seen to be considerably higher in *Richmond* than in *Orthotic Centre*. Second, in *Department of Labour v Downer Construction (New Zealand) Ltd* [26], in relation to a fatal crane accident in the construction sector, the defendant company was fined $55,000 for the sole s 6 offence and reparation of $30,000 was also awarded, a total penalty of $85,000. This might be compared with an earlier fatality also involving a single s 6 charge, viz, *Ministry of Commerce v Downer Construction Ltd* [27] where an employee suffered a fatal injury when crushed during an excavation operation, and the defendant company was fined $30,000. A comparison reveals that the fine was 1.8 times greater, and the total penalty 2.8 times greater, in the more recent case. Although suggestive both of increasing fines and increasing total penalties for

26. Unreported, DC North Shore, 13 April 2005, CRN 4044500757.
27. Unreported, DC Auckland, 7 October 1998, CRN 8004037118.

the most serious accidents, the magnitude of the total penalties involved are no greater than 36 percent of the maximum available fine. These seem unlikely to satisfy the targets envisaged by legislators, and make only a small step forward in the direction of setting penalties that properly reflect very serious harms.[28] Further, the Courts appeared to interpret the requirement of accounting for reparations in setting fines by substituting reparations for fines on a dollar for dollar basis.[29]

This factor also has bearing on cases where no accident occurred. Reparation is likely to be rare in these cases, since emotional harm associated with physical harm is not suffered, although emotional harm may well be present for "near misses". Instead, reparation is more likely where property only is damaged.[30] If, however, the Courts largely substitute reparation for fines in cases of accidents, do not award reparation in almost all cases where no accident occurs, and set similar fines for similar offences whether or not

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28. Another complicating feature concerns the distinction between sentences involving reparation orders and agreements to pay reparations. For example, in *Department of Labour v Clutha Chain Mesh Products Ltd*, unreported, DC Gore, 26 May 2004, CRN 4017306017, the defendant company was ordered to pay reparations of $50,000 to the surviving immediate family of a worker suffering a fatal accident. Although the amount was paid (by insurers), the order was reversed on appeal on the grounds that it constituted an amount settled among the affected parties' agreement under s 34(2) of the Sentencing Act. As such, it did not constitute part of the sentence, and if the amount had been paid by the defendant, would not properly be recorded as a financial penalty as we have used the term. Nevertheless, the offender's liability would remain unchanged by this distinction, and it is liability that is mainly expected to influence precautionary incentives. The ability and willingness to shift liability for reparations but not fines, and the caution by the trial judge that the magnitude of the initial reparation order should not be taken as a precedent in cases where insurance against reparation was not present, both create seriously distorted incentives, and which deserves detailed investigation. Notably, the position of the trial judge in this case failed to impress the Full Court. Notably, insurance against fines is prohibited by s 56I of the amended HSE Act.

29. As an example of the relegated role of fines, consider *Department of Labour v Areva T & D Ltd*, unreported, HC Rotorua, 9 November 2005, CRI-2005-463-42, which involved a fatal accident to an Areva employee. Two other defendants had previously been convicted and fined, whereas Areva were convicted and discharged so that no financial penalty was imposed by the court. The Judge set a starting point of $75,000 for a fine, and discounted this by $40,000 on mitigation grounds. He then noted the company had already voluntarily paid $38,000 to the victim's family (i.e., more than the $35,000 that he would otherwise have fined them) and also had an insurance policy that meant the family would receive another $100,000. Cases such as this illustrate the difficulty of drawing any meaningful conclusions from fine statistics. A very interesting issue would have been the judicial position as to a fine if the voluntary "reparation" had not been paid, but the family had been compensated via Areva's insurance policy to a level approximately three times that of the potential (discounted) fine.

30. In the sole case to 31 December 2004 involving reparations but no injury, a company was fined $15,000 in respect of an s 15 offence when an inadequately restrained scaffold fell 63 metres on to a major thoroughfare and struck a parked vehicle. Reparation of $678.75 was awarded on account of the damage to the vehicle. See *Department of Labour v Instant Access NZ Ltd*, unreported, DC Wellington, 7 July 2004, CRN 4085500998.

accidents occur, the incentive effects of *ex ante* standards will be diluted as a result of the Court's fining practices.

For example, in period 1 where the maximum fine for the common s 50 offences where no accident occurred was only half that for offences involving accidents, the weighted average fine across complaints, incidents, and inspections was $2,821, which represented only 37 percent of the average fine when offences involved accidents. In period 2, the weighted average fine for non-accident offences fell to $2,010, and it should be recalled that during period 1 there was a positive upward trend in average fines. Although only 14 prosecutions led to convictions involving fines, there is some weak evidence that application of the Sentencing Act appears to have diluted fines (which remained the only effective financial penalty for offences not involving accidents) during period 2. While the ratio of average fines for non-accident cases to average fines for cases involving accidents increased somewhat to 42 percent, the ratio of average fines for non-accident cases to average financial penalties for cases involving accidents plummeted to 21 percent.

In period 3, this trend was clearly reversed. The weighted average fine for non-accident cases increased to $6,665. This represents some 40 percent of the average financial penalty for accidents, and there was one case where reparation of $5,000 was awarded in the case of one of the 14 incidents that were prosecuted and for which penalties were imposed. The average fine for non-accident cases also increased dramatically to 76 percent of the average fine for accident cases, very substantially above historical levels. In sum, even if reparations effectively substituted for fines in cases involving accidents, the limited data examined here suggests that although fines for non-accident cases appeared to have been eroded following the introduction of the Sentencing Act, they appeared to have been more than restored following the amendments to the HSE Act.

Overall, there is limited evidence by the end of 2004 in support of a view that increasing maximum fines fivefold and permitting the award of (uncapped) reparations would similar quantitative impacts on penalties. As a rough rule of thumb, the combined effects of the two pieces of legislation had been, on average, an approximate doubling of financial penalties, presumably well below what legislators had in mind. Examination of interim data involving cases with post-2004 decision dates, however, suggests that this particular honeymoon may have run somewhat more of its course. Of the sixty-two recorded decisions in period 4 where a financial penalty was imposed, the average fine was \$11,087, less than half of the average reparation award of \$21,838, while the average total financial penalty was \$27,278. In these decisions, reparations alone were awarded in only 7 percent of the cases. Complete crowding-out of fines was, therefore, relatively rare. In two of these cases, the reparations award was less than 20 percent of the average reparation, and in only one case was the award in excess of the average. Fines alone were imposed in 23 percent of the cases, although the vast majority of these decisions admittedly involved relatively minor penalties. In only one of these cases did the fine exceed the average, and by less than \$1,000. Thus, while reparations were awarded in the clear majority of cases, they were not awarded purely routinely (and neither would they be expected to be) and appeared to be largely confined to 'serious total penalty level' cases.

Since reparation awards take precedence over fines, however, high average reparation awards tend to lower average fines for a given total penalty. Some forty-four decisions involved both fines and reparations. Of the sixteen decisions where reparation awards were above average, ten also imposed above average fines. In the remaining six cases, the average reparation award was \$31,667 (rising to \$35,833 if the single case where the reparation was above average and no fine was imposed is included). The average fine, however, was only \$7,500, amounting to less than one-quarter of average reparations. For the cases where both fines and reparations were above their respective averages, however, the average fine of $27,200 was approximately half the average reparation of $54,300. Thus, in the significant majority of cases where total penalties tended to be relatively high, the reparation component was not so large as to totally dominate fines. This observation, however, should be noted in conjunction with *Maritime Safety Authority v Sealord Group Ltd*,[31] where an employee was fatally injured following entrapment in the blades of the auger of a fish-oil cooking machine. The company was fined a total of $10,000 on two charges (each carrying a maximum fine of $250,000), and total reparations of $195,000 were awarded. This example, which is not part of the DOL Health and Safety Prosecutions Database, is the most dramatic to date of the near-complete crowding out of fines by very substantial reparations. In this case, the harm suffered was described by Zohrab J as "as bad as it gets", and aggravating factors were present. Further, it must be remembered that average reparations far exceeded average fines during period 4. For the forty-eight cases where reparations were awarded, reparations exceeded fines in all but ten.

The upshot is that while period 4 exhibited a 28 percent increase in average fines over period 3, the average period 4 fine (per case) still represented less than 5 percent of the new cap (per charge) of $250,000. By comparison, average reparation awards more than doubled, with average reparations nearly twice as large as average fines. Overall, for cases where some penalty was imposed, the average total financial penalty increased 62 percent compared to period 3, and was nearly three times as large as the average fine (equals total penalty) for the year immediately preceding the introduction of the Sentencing Act. For the cases involving joint sentencing, the average total financial penalty was $35,811 (representing a mere 14 percent of the maximum permitted fine per charge). The average fine per case of $13,102 represented some 37 percent of the average total penalty,

31. Unreported, DC Nelson, 24 June 2005, CRI-2005-042-732.

but only slightly over 5 percent of the maximum permitted fine per charge. Thus, the most recent evidence to date is that total penalties have continued to increase in the presence of the amendments to the HSE Act, with fines growing in absolute terms but continuing to decline in relative terms.[32] Excluding maritime cases, the maximum total penalty brought to date has been $130,000 on a single charge (somewhat more than half the cap on fines), comprising $100,000 reparation and a fine of $30,000 (12 percent of the cap on fines).[33] In our view, there is clearly a good way to go before the signal sent by the HSE Act amendments (which post-dated the Sentencing Act) is properly picked up by the Courts.

The continued rapid growth of reparations has attracted some debate. Nicholson and Mrkusich (2006), for example, point to the rapid growth in reparations at the expense of fines in spite of DOL's alleged view that fines for fatalities should be at six-figure levels. Further, a sample of reported views from a variety of commentators appeared in Safeguard: Health & Safety News (2006b). Included were the following. First, reparations were seen as reflecting highly selective compensation for victims (since prosecutions are rare, much too rare for some commentators, and are necessary for reparation to be awarded) and hence incompatible with the no-fault basis of (an eroded) accident compensation system. Reparation awards were considered excessive in some (but not all) quarters and hence should be capped at low levels, with strict limits on their application, and too highly variable, reflecting inconsistent or ill-defined sentencing principles. Thus, employment lawyer Tim Rainey was reported as claiming that reparation awards were far in excess of anything that could be justified except for physical harm (to which reparations are not to apply), and that only nominal payments (not exceeding $2,000 - $3,000) were intended by the legislation. No justification of this reasoning was provided, however, and, unlike the

32. See also Safeguard: Health & Safety News (2006a) for recent evidence.

33. *Health & Safety Inspector v Carter Holt Harvey Limited*, Unreported, DC Tokoroa, 17 February 2006, CRI-2005-077-879.

HSE Act and the amendments that post-dated the Sentencing Act, Parliament elected not to impose caps on reparations.

Further, the statutory liability product manager for QBE Insurance, Steve Jacques, reportedly argued to the effect that since companies can insure against reparation awards but not fines, financial penalties will reflect fines that would be lower in the event of a conviction than if the provisions of the Sentencing Act did not apply, thwarting the intention of the HSE Act amendments. Such employers, however, inflict upon themselves the financial penalty of an insurance premium paid in each year that cover applies. In the long run, it might be thought that for each dollar-for-dollar substitution of fines by reparations, the impact on a company would be much the same since insurance premiums largely reflect actuarial risk and the presence of insurance would serve mainly to smooth out their net income stream. Risk-averse companies, however, would prefer less variable income so that insurance serves a useful social function here. A problem of moral hazard arises, however, in that unless insurers can fully monitor the health and safety procedures of insured companies and set premiums that are contingent on all their precautionary investments, companies have an incentive to reduce their investment compared to where they face fines as the sole financial penalty. This apparently unintended by-product of legislation creates unfortunate adverse incentive effects for companies, and would seem to support a call for a low cap on reparations. This is not straightforward, however. Although the present insurance treatment of reparations and fines appears anomalous, economising on monitoring costs is an important issue as it is with costs from any source. Instead, we now turn our attention to the related issue of caps on fines.

Caps on Fines

The common law of negligence does not typically impose upper bounds on the range of compensatory damages available. The above analysis suggests that fines under the Act should be set significantly above expected compensatory damages, in which case fines bounded at low levels appear inappropriate on efficiency grounds, particularly for accidents where the consequences are severe. A different perspective, however, may have some merit. A cap on fines is one method by which the legislature may influence an employer's subjective probability distribution on the range of fines the Courts will impose upon *ex ante* detection of deficient care. The legislature may use caps to signal to the Courts information about what is perceived to be the appropriate distribution of fines. Uncapped fines may not necessarily be justified for offences involving breaches of duty to take care, however severe the consequences.

To investigate this argument, consider an employer's subjective probability distribution over the value of harms resulting from accidents, and, in the absence of caps on fines, suppose this density function is also applied to the distribution of fines. The effective truncation of the distribution of fines when caps are imposed and where the probability mass previously lying above the cap is now distributed below the cap lowers the mean of the distribution. If so, the incentive effects from expected fines will be inefficiently weak, particularly so if fines are capped at relatively low levels. The truncation leads to the expected fine being discounted by employers, rather than improving efficiency by raising it above expected harms. Incentive effects would appear to be desirably strengthened by the imposition of a *lower* bound on fines, rather than an upper bound.[34] There is little comfort for protagonists of fines capped by an upper bound according to this argument.

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34. Note that this policy would conflict with the case law practice of asset-testing fines.

The Court's fining practices, however, must be expected to affect the shape of the truncated distribution. If, for example, fines are frequently set close to the maximum, the distribution over fines will be skewed to the right, relative to the distribution over harms. The evidence prior to the amendment of the HSE Act, however, suggests that fines were never set close to the maximum, even for very serious accidents, so this does not appear to be a very promising approach. Further, the cap might be justified if the mean of the employer's distribution over fines was sufficiently great to induce employers into taking excessive levels of care, given uncertainty surrounding the Court's interpretation of the required standard of care. It seems unlikely, however, that the employer's distribution over fines for non-accident cases would lie predominantly to the right of the distribution over harms resulting from accidents. In addition, the initial caps appear far too small to be interpreted as being typically required to induce employers into significantly reducing their estimates of expected fines in order for them to reduce their levels of care from excessively high levels. On the face of it, the cap on fines initially imposed in the legislation and as applied by the Courts would seem to generate adverse incentives for safety. The principle of caps on fines, however, is not necessarily denied by this conclusion. Although fines were initially capped at a relatively low levels and the largest fines imposed made it difficult to imagine what circumstances would attract a fine close to the maximum, a higher maximum fine and requiring the imposition of fines closer to the maximum than during the first decade of the Act would have permitted legislators to better signal the relative gravity of offences. The 2002 amendments, however, satisfied only the first of these conditions, and most subsequent sentencing saw a marked reduction in the ratio of total financial penalty to maximum fine.

Another possible rationale for caps might be based on the relative tightness of the subjective probability distributions with either the uncapped value of harms or capped fines as the operative penalty. With a cap on liability, *ceteris paribus*, the employer's probability distribution over expected fines is necessarily tighter around its mean than the subjective probability distribution over uncapped harms. Kolstad et al. established that as the subjective probability distribution over the legal liability rule becomes increasingly spread, the likelihood of deficient care decisions increases. A similar argument can be used here. The care decision is based in part on the expected magnitude of fines. With relatively little uncertainty, care decisions are more likely to be based on levels of fines above the expected fine. With a tight distribution, the employer can eliminate a significant portion of the probability assigned to relatively high fines by taking additional care. This pushes care decisions in the opposite direction to the discount in the expected fine due to the introduction of caps. Hence, although caps may motivate a discount in the expected fine due to a reduction in the mean of the distribution, caps may also motivate more precaution because of the tightening of the distribution around its mean. This reasoning at least provides some rationale for maintaining caps on fines while significantly raising the maximum fine, although the effects are likely to be of second-order magnitude.

Asset-tested Fines

In *de Spa*, the Court listed criteria in determining the level of the fine to be imposed. These included the financial circumstances of the offender. Thus (at 3), a fine "at a particular level will obviously bear differently upon a small impecunious employer as opposed to a large financially strong employer". We argue that this consideration may lead to inefficient incentives for levels of care for firms independently of their level of wealth.

With asset-testing, consider the problem of an employer wishing to minimize the sum of the cost of taking safety precautions and expected liability payments for deficient care. Expected liability payments increase in the asset level reported to the Courts, and while the employer's private costs depend on its asset levels, the employer's asset level is irrelevant for incentives to take care as far as society as a whole is concerned.[35] If expected fines are positively related to reported asset levels, under-precaution will occur for 'small-asset' firms, and over-precaution will occur for 'large-asset' firms. Firms with high asset levels now face higher expected liability costs while the converse is true for low-asset firms. The incentive effects are adverse, encouraging firms to hold relative low asset levels to avoid liability by adopting excessively labour-intensive technologies and splitting their operations in a manner that deters the optimal exploitation of economies of scale and scope that might exist.[36]

There is no discussion of the rationale behind the apparent 'asset-testing' in *de Spa*. It is possible that the Court was conjecturing that firms with limited assets face smaller marginal costs of care compared to large asset firms, around the optimal standard. The explanation that marginal costs may be positively correlated with asset levels appears weak. It may be the case that an increase in the level of care is more costly for production line manufacturing, say, than for automobile paint shops since in the former case an improvement in safety might apply across an entire production line of workers. But if so, fines could be correlated explicitly with estimates of marginal costs. Alternatively, a small reduction in precaution by a large-scale asset-rich firm may raise expected accident costs much more than for a small-scale asset-poor firm since many more workers may be exposed to additional risks in the former case. This issue, however, has more to do with scale rather than asset levels *per se*, and, again, fines would be better being tied to expected

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35. The only additional incentives created by asset-testing appears to be to conceal true asset levels.
36. The overwhelming majority of New Zealand's production enterprises are very small, and entry and exit rates are also hugely dominated by such enterprises. As of February 2003, some 86 percent of enterprises employed no more than 5 full-time equivalent (FTE) workers, while nearly 97 percent had fewer than 20 FTE employees. The latter enterprises, however, accounted for only 42.3 percent of the entire FTE workforce, and only 38.1 percent of valued added. For details, see http://www.med.govt.nz/irdev/ind_dev/smes/2004/2004.html. An interesting exercise would be the examination of the relation between industry structure, firm size, and injury rates in New Zealand.

harms arising from deficient care levels. If there are penalties to being asset-rich *per se*, this is akin to a tax on capital discouraging an optimal capital intensity of production processes.

It may be also be the case that in *de Spa*, the Court was concerned about its coming into disrepute with the very people the Act attempts mainly to protect, namely, the workforce. An injured worker may be aggrieved if, after a period of rehabilitation, the worker cannot return to the original workplace because the employer has been put out of business by a finding of breach of statutory duty. This, however, might be compared with the potential reactions of an uninjured workforce in a given establishment suddenly being advised that they are out of work because of a crippling fine imposed on their employer in response to an unsolicited inspection by an official of the Department of Labour (or, with even more irony, a solicited inspection arising from a complaint from the workforce)! Nevertheless, the threat of such possibilities may be socially optimal in order to deter small establishments from electing to be too small when costs from all sources are considered, and under-protect their workers accordingly.

Concluding Remarks

The changing structure of penalties for breaches of statutory duties by employers under the HSE Act along with their imposition by the Courts seems unlikely to provide suitable incentives for employers to adopt appropriate safety precautions for their employees. The motivation for significantly increased financial penalties in the amended Act appears well-founded in that the (admittedly weak) evidence suggests no strong impact of the Act on serious accident rates during its first decade of operation. Some early (and similarly weak) evidence suggests that the 2002 amendments to the Act may have induced some behavioural changes by employers that are attenuating the incidence of workplace accidents. The likelihood that the amended penalties as implemented by the Courts will be highly successful, however, appears doubtful. The very low level of maximum penalties prior to 2003 imply that expected penalties continue at low (albeit increased) levels relative to harms suffered by injured employees. The continued use of maximum fines along with a justifiable wish by the Courts to leave some margin for deterrence in respect of very serious accidents are compounding influences.

On average, fines were initially lower in response to the combined effects of the Sentencing Act and the HSE Amendment Act, in spite of a five-fold increase in the maximum fines permitted. Under the Sentencing Act, reparation takes precedence over fines, and reparation must be accounted for in setting the levels of a fine. We find that the combined effects of reduced fines along with a significant substitution of reparations for fines led to average total financial penalties approximately doubling in the post-amendment period through 2004 rather than increasing at anything like the rate signalled by the increase in maximum fines. This outcome occurs in spite of the fact that reparation awards, unlike fines, are not capped. Post 2004, however, fines have increased in absolute terms but continued to fall relative to reparation payments, which, unlike fines, can be insured against. This growth in reparations and fines, however, has not been nearly sufficient to date to make financial penalties properly reflective of the HSE Act amendments. The magnitude of uncapped but insurable, reparation awards has been criticized in some quarters, whereas we argue that the case for caps on fines appears weak. A similar conclusion holds for the practice of accounting for reparations in determining fines by substituting them on a dollar-for-dollar basis. On balance, implementation of the provisions of the Sentencing Act appears to have thwarted some important intentions of the HSE Act amendments so that effective penalties, and fines in particular, have taken a seat rather too far back in the carriage. Further, the Courts' proclivity to 'asset-test' fines is unlikely to be an efficient practice. As a consequence, unless we are still at very early days of the adjustment process in sentencing, New Zealand is likely to face an ongoing (if perhaps somewhat abated) stream of prosecutions for breaches of relatively onerous statutory health and safety duties.

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TABLE 1: EMPLOYMENT, AND INCIDENCE OF INJURIES, NOTIFICATIONS, NEW WORK CLAIMS AND PROSECUTIONS, 1991-2005

Year Ending 30 June	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Full Time Equivalent Employment	1.3755	1.3534	1.3694	1.4157	1.4834	1.5405	1.5625	1.5565	1.5522	1.5854	1.6277	1.668	1.7061	1.7607	1.8366
Fatal Injuries	36.4	30.3	33.6	27.5	30.3	34.4	26.2	36	27.7	35.3	24	43.8	42.8	34.6	25
Serious Harm Notifications						2213.6	2056.3	3647.3	3052.4	2912.2	3245.1	3432.3	3298.2	3608.2	3595.2
New Work Claims					25915.2	24464.1	22468.5	19227.1	15961.9	6462.7	16508.6	19476.6	21015.2	20337.9	20604.9
HSE Act Prosecuted Charges				121.5	281.8	291.5	182.4	125.9	178.5	162.1	109.4	165.5	114.9	85.2	117.6
Prosecuted Accidents				87.6	211.7	236.9	133.1	100.2	117.3	128.7	86.0	124.1	95.5	64.7	100.7
Prosecuted Complaints				9.2	16.9	5.8	1.3	7.1	18	2.5	3.7	15	6.4	9.7	0.5
Prosecuted Incidents				13.4	15.5	7.8	18.6	3.9	1.9	13.2	3.7	15	6.4	9.7	10.9
Prosecuted Inspections				11.3	37.8	40.9	29.4	14.8	40.4	17.7	16	12	11.7	5.7	5.4

Sources: FTE Employment is full-time plus half of part-time employment in millions; annualized means of quarterly data (HLFQ.SIG3 and HLFQ.SIH3) from the Household Labour Force Survey of the Department of Statistics. Incidence data are per million FTE employees. Fatal Injuries are from Department of Labour (Health and Safety Section) Statistics, available at www.osh.govt.nz/resources/stats/fatals/fatals.shtml. Serious Harm Notifications are from Department of Labour, Health and Safety Accident Recording Database (unpublished). Prosecution data are from Department of Labour Health and Safety Prosecutions Database (unpublished). New Work Claims are from ACC Injury Statistics 2005 (First Edition), section 2, All Entitlement Claims.