

Changing Guidelines and Health and Safety in Employment Sentences in New Zealand: An Empirical Analysis

by

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Abstract

Sentences for employers convicted of offences under NZ health and safety law have been subject to constraints from two main sources (i) legislation; and (ii) guideline judgment appeal cases. The effect of these is to divide sentencing into three distinct time periods. This paper builds on previous work by two of the authors that analyses the various factors relevant to sentencing in different periods. This article examines the latest period. We find a difference in the factors that matter at the single charge versus the case level and also find that these factors differ from earlier periods. We forecast the latest period penalties using second period factors and find, not surprisingly, that fines would have been lower, often substantially so, than those that occurred but reparations are largely unaffected.

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This paper is a preliminary draft for the purposes of presentation at the NZAE Conference 2012. The authors are seeking feedback on the work to date. The analysis is far from complete and all commentary and results should be seen as work in progress. This paper follows two previous papers by Menclova and Woodfield based on earlier versions of the dataset used here.

Introduction

Sentences for employers convicted of offences under the Health and Safety in Employment (“HSE”) Act 1992 in New Zealand (“NZ”) have been subject to constraints from two main sources. The first are those imposed by the legislature, viz, the HSE Act and its amendments, and the Sentencing Act 2002. The second are the guideline judgments in two Full Bench High Court appeal cases; viz, *de Spa*¹ and *Hanham & Philp*², both of which involved successful appeals against sentences by the NZ Department of Labour. In *de Spa*, the convicted employer’s fine was raised by 130 percent, and nine sentencing criteria to which frequent reference has been made in subsequent sentencing decisions were specified (see appendix 1). The *de Spa* Guidelines were later codified with only minor changes in s 51(A) of the HSE Act following its amendments in 2002. *Hanham & Philp* involved appeals in three cases considered together, and both fines and reparations were generally increased significantly, in part a belated response to a five-fold increase in the maximum fine introduced in the HSE Amendment Act 2002. In addition, several ranges of substantial sentencing starting points for fines were established.

In previous papers, Menclova and Woodfield examined empirically the NZ District Courts’ sentencing criteria and the associated financial liability in terms of fines and reparation awards for employers convicted of offences under the HSE Act between March 1994 and December 2008. Those papers focused on s 6 offences that were by far the most common, and also examined the aggregation of sentences to the case level in order to be able to investigate all multiple-charge and/or multiple-victim cases. In the previous papers the data were also stratified into two time periods. The first we refer to as “period 1” and applies before the implementation of the Sentencing Act (i.e., prior to 30 June 2002). The second period (which we refer to as “period 2”) is from 5 May 2003 to 18 December 2008 and covers cases after the date from which both the Sentencing Act and HSE Act amendments jointly applied through to the decision date for *Hanham & Philp*.

A number of statistically significant results appear in the previous work. For example, financial liability for employers increased with the degrees of culpability and harm, and with the need for particular deterrence. The most significant mitigating factors seemed to be the defendant’s financial limitations and small employer size. Other variables, such as a ‘guilty’ plea, cooperation, the employer’s safety record, or the need for general deterrence did not seem to play a significant role. For the case-level estimations, the number of charges was a significant predictor of financial liability imposed for the entire period and for the earlier period considered separately. Regarding the period 1 vs. period 2 estimates, the most obvious pattern was that the (absolute) sizes of the significant coefficients were much larger in the more recent period indicating that the monetary penalties/discounts associated with various case characteristics have

¹ *Department of Labour v de Spa and Co Ltd*. [1994] 1 ERNZ 339.

² *Department of Labour v Hanham & Philp Contractors Limited Anors* [2008] 6 NZLR 79.

increased substantially over time. Notably, the estimated models exhibited quite high explanatory power.

The current paper compares period 2 with “period 3” where period 3 includes cases post the decision date for *Hanham & Philp* through April 2012.

During period 2, the *de Spa* Guidelines largely continued to apply except that fines could no longer be awarded to victims. Instead, the Sentencing Act 2002 introduced a requirement for (uncapped) reparations to be routinely awarded where applicable and that reparation awards should be determined prior to setting other aspects of sentences such as fines.³ In *Ferrier Woolscours* [2005], Judge Abbott outlined a “two-step” approach to sentencing whereby the amount of reparation was fixed on a stand-alone basis and then any other aspect of sentence such as a fine would be determined, taking into consideration the need for the total penalty to be proportionate to the offending. Clark (2008) argued that DC judges initially applied the Sentencing Act and this two-step approach in a manner consistent with the Criminal Justice Act 1985. Section 28 of CJA had permitted all or part of a fine to be awarded as compensation to victims at the discretion of the court, but this section was repealed following the introduction of the Sentencing Act. Under the CJA, Clark argued that “the court set what it considered to be an appropriate total penalty, and then divided the total penalty between reparation and fine,” the effect of which had led to a dollar-for-dollar discount in fines being given for reparation awards. Mason (2008) was very critical of this procedure, and emphasized that the intent of reparations, unlike fines, is not penal in nature. It appeared that fines had become a residual, of limited quantitative importance in many major cases where employers were financially capable of meeting significant levels of liability, in some cases because they carried reparation insurance.⁴

The High Court judgment in *Hanham & Philp* on 18 December 2008 changed the above situation dramatically. As appellant, the main submission of the Department of Labour (“DoL”) was that the fines imposed at District Court level in three cases were manifestly inadequate and failed to reflect the five-fold increase in the maximum fine for s 50 offences enacted in the amended HSE Act. Evidence showing that 90 percent of total financial liabilities since May 2003

³ Note that it was not uncommon during period 2 to include accident compensation ‘top-ups’ in reparation awards. An early post Sentencing Act example is *Department of Labour v University of Otago*, DC Dunedin, CRN 3012510001, 24 November 2003.

⁴ In *Department of Labour v Street Smart Ltd* (2008) 5 NZELR 587 (BC200862161), the Department of Labour appealed to the High Court arguing that a full deduction from the fine for the amount paid as reparation should not have been given. DoL’s position was that the fine was manifestly inadequate and that a discount for reparation should only be given when the defendant would be unable to meet the reparation obligations unless the fine was reduced. On appeal, in her judgment delivered on 8 August 2008, Duffy J agreed that a dollar-for-dollar discount should not automatically be applied, and that it was “enough if a judge gives consideration to any reparation payment that has been made.” (at [40]). Further, the judge reasoned that the presence of reparation insurance would have the effect of reducing the financial impact of the reparation order on the offender, and, as a consequence, must also affect the size of the fine.

had not exceeded \$50,000 (just 20 percent of the maximum fine alone) was accepted by the Court. It was also argued that it was timely to review the sentencing principles embodied in *de Spa*. The Court was easily persuaded to conduct such a review, and the respondents offered no serious objections. According to (Hughes) *ELB casenote 2009.1*, for some five years, “District Court Judges have been resisting invitations to substantially increase the level of fines in line with the 2002 amendment until structured guidance was available from the High Court.”

The Court emphasized the distinct statutory purposes of reparations and fines in line with DoL’s submissions, arguing that each required independent attention in the sentencing process. The previous two-step approach to sentencing involved the prior assessment of reparation followed by the determination of the level of fine. The Court preferred an approach involving a third step along with a more systematic and transparent approach to setting the level of fines, and considered that in order to meet the prime object of the HSE Act, viz, the prevention of workplace harms, sentencing would generally require sufficient weight being given to the purposes of denunciation, deterrence, and accountability for harms done in terms of s 7 Sentencing Act.

In its discussion of sentencing methodology, the Court considered that the logical first step would continue to fix the amount of reparation taking into account any amends offered or made. If made, reparation orders should be discounted dollar-for-dollar by the amount of payments made, whereas if unpaid offers had been made, the amounts should be included in the reparation award or sentencing adjourned until payment was made. Further, where employers were impecunious, the level of reparation should reflect the limited capacity to make payments. Absent from this discussion, however, was any mention of the criteria that might be used to fix the quantum of reparation. The second step would continue to fix the amount of the fine with the proviso that the approach in *R v Taueki* [2005] 3 NZLR 372 be followed, requiring a starting point to be adopted based on the circumstances of the offending and adjusted for the offender’s financial circumstances, any amends made, and relevant aggravating or mitigating factors considered. Prior to *Hanham & Philp*, starting points had not been mandatory.⁵ Notably, and in contrast with prior practice, the process of determining the amount of fine should be carried out independently of any reparation order made. The Court, however, rejected an 18 category hierarchy of starting points proposed by DoL, and opted instead for three broad categories based on the level of the offender’s culpability (but not the level of harm, or risks of harm of different magnitudes, in spite of the fact that unlike the degree of harm, the degree of culpability is not specifically mentioned in s 51 A of the amended HSE Act although it is implicitly included by the reference to s 8 Sentencing Act that requires that the court must take into account the gravity of offending and the degree of culpability of the offender). The Court identified (at [54]) a set of criteria for assessing culpability (blameworthiness) and set starting points according to the following scale: for low culpability, a fine not exceeding \$50,000; for medium culpability, a fine

⁵ Starting points, however, were not uncommon in the period 5 May 2003 – 18 December 2008. For example, we identified starting points in 25 percent of successfully prosecuted s 6 offences during this period, and there may have been others that we could not identify due to lack of reporting, especially where judicial decisions or sentencing notes were unavailable.

between \$50,000 and \$100,000; for high culpability, a fine between \$100,000 and \$175,000 (although higher starting points might be required in cases of “extremely high” culpability).⁶ Finally, the Court included a third step, suggesting that judges should consider whether the resulting total financial liability – composed of reparation and fine set at steps 1 and 2, respectively - is proportionate to the circumstances of the offending and the offender.

The Court clearly supported a substantial increase in the level of fines and explicitly rejected the seemingly common District Court practice of dollar-for-dollar discounting fines that would have been imposed in the absence of reparation awards except in the case where offenders had a demonstrably limited financial capacity.⁷ It was argued that an increase in the level of fines was necessary in order to reflect the five-fold increase in the maximum fine to account for inflation and the need for deterrence in light of the ongoing costs and the serious nature of workplace accidents. In general, s 8(c) and (d) Sentencing Act required penalties to be set at or close to the maximum for the most serious offending and District Court Judges had typically failed to come close to meeting this statutory requirement. The Court, however, continued to encourage the exercise of judicial discretion in that “Tailoring to the individual circumstances of the case remains essential, as is the need to avoid undue hardship.” [at 60]. This left the issue of precisely what “taking into account” the amount of reparation ordered (or amends made) when setting fines somewhat unclear. At [69], however, and without wishing to set a precise range, the Court suggested that “a discount of up to 10 to 15 percent in the level of the fine is reasonable to recognize the order for reparation in the case of an offender of adequate means.” If such an offender was insured against reparation orders, the Court argued (at [74]) that “some modest allowance may be justified to recognize the employer’s responsible approach in securing insurance cover to provide for injured employees but we would see this as sufficiently allowed for in the discount of 10 to 15 percent already discussed at [69].”

Regarding the three cases appealed, the Court (at [81]) noted a reluctance to increase rather than reduce sentences and would only increase a sentence if it were convinced that it had been manifestly inadequate. The sentence would also be increased by the minimum necessary to prevent it being continued to be so considered. In its conclusions (at [164]), the Court noted that while their approach should generate greater consistency of starting points for fines, endpoints could easily show considerable variation since final results may be affected by financial capacity and/or reparation amounts (and also variations in mitigating and aggravating factors for that matter). The decisions were as follows.

⁶ These three broad categories contrast sharply with the much finer approach adopted in 1987 in the United States’ criminal Federal Sentencing Guidelines, and consequently permit much greater latitude for judicial sentencing variation.

⁷ This discounting would presumably have had little impact on the fines that would otherwise have been set if reparation awards had been relatively small in magnitude. For example, among a sample of reported views appearing in *Safeguard: Health & Safety News* (2006), 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 do not apply) and that only nominal payments (not exceeding \$2000-\$3000) were intended by the legislation. No justification of this reasoning was given, however, and, unlike the amended HSE Act, reparation awards are uncapped. As it transpired, reparation awards were not trivial. Between 5 May 2003 and 18 December 2008, reparation awards were made in 93 percent of successfully prosecuted cases and averaged \$15,065 in amount.

Hanham & Philp. A fine of \$5,000 was quashed and a fine of \$50,000 (an increase by a factor) was substituted once a starting point of \$125,000 was reduced by 55 percent reflecting a number of substantial mitigating factors. An original reparation order of \$12,000 was unchallenged.

Cookie Time. A fine of \$15,000 was quashed and substituted by a fine of \$40,000 (i.e., an increase of 167%), which together with the initial unchallenged reparation of \$5,000 was held to be not disproportionate. The company was financially capable of meeting the revised liability. The amount of the reparation, however, was described as “barely adequate.”

Black Reef Mine. The defendant’s liability for \$30,000 reparation to the widow of a deceased worker was increased to \$55,000 (i.e., nearly doubled), while the fine of \$10,000 was doubled to \$20,000. The Court noted that the fine would have been substantially higher had the company not faced difficult financial circumstances.

The present article empirically examines the extent to which the determinants of HSE sentencing apply to total financial liability and to the following divisions thereof; viz., fines and reparation awards to victims post HSE Amendment Act 2002 to *Hanham & Philp* (period 2) and post *Hanham & Philp* through April 2012 (period 3).

We estimate various specifications of a single-equation linear OLS model, including a ‘baseline’ model incorporating proxies for most of the case characteristics listed in *de Spa* together with the Consumer Price Index and annual time dummies, and a ‘full’ model that includes several “facts of the particular cases” (the presence of voluntary employer payments to victims, attendance at a restorative justice conference, employee breach of duty, and employer size). Variables used in the previous work to capture interactive effects of the explanatory variables, an industry relevant accident rate using ACC data, and dummy variables for District Courts and their judges have been removed from the specification as they provided almost no explanatory power and our degrees of freedom were limited for period 3. The number of charges is included as an explanatory variable for the case-level analysis.

HSE Offence Data⁸

Our main dataset consists of coded charge-level information. The major source, provided by the Department of Labour, contains a largely comprehensive list of successful prosecutions for HSE offences since inception of the HSE Act.⁹ This database includes, *inter alia*, the amounts of any fines imposed and reparations awarded, along with case decisions and sentencing notes where available. Cases by judge were also identified.¹⁰ The Department was also particularly helpful in tracking down and supplying copies of summaries of facts, judicial decisions, sentencing notes, and returns on prosecutions that were otherwise unavailable to us. In addition, the Safeguard CourtBase provided succinct summaries of each accident and returns on prosecutions for post-2002 cases (however, only since 2004/5 did the returns on prosecutions begin to include information on the sentencing factors). Returns on prosecutions were very useful where no decision/sentencing note was available for a particular case.

As in Menclova and Woodfield (2011, 2012), we measure an employer's total financial liability by the sum of all fines imposed and reparations awarded in each charge/case.¹¹

Our master dataset (beginning in 1993) includes 2,438 charges. Out of those, we initially focus on s 6 offences that are by far the most common. Section 6 of the HSE Act states that "Every employer shall take all practicable steps to ensure the safety of employees while at work" and section 2A of the HSE Amendment Act qualifies "all practicable steps" as "all reasonably practicable steps". As such, a s 6 offence is a relatively general offence (unlike most criminal offences in New Zealand). We examine s 6 offences in order to limit ourselves to a reasonably coherent set of charges for which similar sentencing criteria might be expected. We only examine charges for an injury, limit ourselves to District Court cases, and study convictions without a discharge. The above restrictions leave us with 242 s 6 charge-level observations in period 2 and 123 in period 3.

To examine how our model performs in multiple-charge and/or multiple-victim cases (including those without a s 6 offence), we also examine the aggregation of sentences to the case level. This analysis can address the concern that sentencing variability regarding s 6 charges arises in part because judges may attach the whole sentence to a single (often s 6) charge. Our inclusion criteria in the case-level analysis are similar to the charge-level analysis. Namely, we investigate cases which involved at least one injury, were handled by a District Court, and involved convictions without discharge (for each case, we aggregate all charges on which the defendant was convicted). The resulting case-level sample contains 318 observations for period 2 and 178 for period 3.

⁸ Our discussion in this section closely follows section 5 in Menclova and Woodfield (2011) which frequently elaborates many points to which the reader is referred for details.

⁹ Department of Labour, *HSE.xls* (unpublished), Wellington.

¹⁰ Department of Labour, *Cases by Judge.xls* (unpublished), Wellington.

¹¹ We do not include court costs in our measure of total financial liability for two reasons. Although we have comprehensive data on fines and reparations, there are many cases with missing information on cost awards. Also, there is no indication in the *de Spa* Guidelines that court costs should in a systematic manner depend on the characteristics of the case or the defendant.

Estimation Results

To examine the effect of various sentencing criteria and other case characteristics on HSE sentencing variability, we estimate OLS versions of a ‘baseline’ linear model where total financial liability and its two components are separately regressed on a vector of specific sentencing factors from the *de Spa* Guidelines as interpreted by District Court judges, year binary variables, the Consumer Price Index, the number of employee accident victims, and include a normally distributed error term. In a second model, called the ‘full’ model, we add several other ‘facts of the particular cases’ (the presence of a voluntary payment, employer attendance at a restorative justice conference, employee breach of duty, employer size, and, for case-level analysis, the number of charges laid)

Estimated OLS coefficients for s 6 sentences are reported in Tables 1-3 while those for case level sentences are reported in Tables 5-7. The notation ***, **, and * denote statistical significance at the 99%, 95%, and 90% confidence levels, respectively, while p-values derived from standard errors corrected for heteroskedasticity are reported in parentheses. Previous work suggested that Tobit regressions and log-linear specifications added little additional information hence OLS estimates, which are easier to interpret, are used here.

Fines not awarded to victims (s 6)

In period 2 “high” culpability (compared to medium) attracted a premium (see table 1) while other levels of culpability were not significant in explaining sentencing variation. In period 3, all levels of culpability are now significant at some level and the signs of the coefficients are as we would expect with discounts for low and low-medium. This result accords with the emphasis given to culpability in *Hanham & Philp* in assessing relatively high starting points for fines within specific guideline ranges.

“Fatal” degree of harm continues to have the expected sign in both the full and base models but is now only significant in the base model and then only at the 90% level. This is unsurprising given the shift to setting starting points for fines on the basis of levels of culpability without reference to levels of harm, although harm remains as a sentencing factor in the codification of the *de Spa* Guidelines. The emphasis given to culpability in *Hanham & Philp* appears to be consistent with the amendment to the HSE Act making for a uniform maximum fine independently of whether harm was suffered or not.

The defendant’s financial limitations continue to attract a sentencing discount in period 3 as it did in period 2.

“Guilty plea” and “guilty plea discount” must be seen together (“guilty plea discount” is equal to 1 if there is both a guilty plea at the outset and the time period is post the *Hessell* decision). Neither of these appear to make any systematic difference in the setting of fines in period 3. The absence of any systematic effect for the presence of guilty pleas when setting fines appears unexpected given the *Hessell* CA and SC appeal decisions. Two points, however, should be noted. First, the early HSE decisions following *Hessell* CA tended to adopt the 33 percent

maximum discount for an early guilty plea, which mistakenly included an allowance for remorse. The *Hessell* SC decision unbundled discounts for a guilty plea and for remorse, with a maximum discount of 25 percent for an early plea. Secondly, and of likely importance, the *Hessell* plea discounts are applied as percentages of sentencing endpoints, i.e., after adjustments are made for any aggravating and mitigating factors. Further, the bundling of mitigating factors when calculating endpoints has come under challenge, in particular following the HC appeal decision in *Ballard v Department of Labour*, (2010) 7 NZELR 301 where percentage reductions in the fine (from the starting point) for each of a range of mitigating factors listed in *Hanham & Philp* were made. Percentage discounting implies that the absolute values of plea discounts can differ markedly across cases depending on starting points chosen for fines as well as the treatment of aggravating and mitigating factors, and it may well be that different results would emerge if, say, a log-linear specification was used instead. We plan to investigate specification issues of this nature in future work.

The Courts also now appear to take little systematic notice of a defendant's safety record with no discount on fine for a good safety record but no additional penalty for a poor one either. Interestingly, in some recent cases, the presence of previous convictions is considered to be consistent with a good safety record if the convictions are distant in time or the employer has a large workforce, the rationale being that the probability of serious-harm accidents is greater than for smaller employers in spite of the strict liability nature of HSE provisions.¹²

[TABLE 1 APPROXIMATELY HERE]

Awards to victims (s 6)

Level of culpability appears to explain little of the variation in the reparation awards paid to victims although there is some weak evidence in the base model that high culpability attracts a sentencing premium. This contrasts with the setting of fines where culpability now plays a much larger role. Degree of harm is highly significant in both periods 2 and 3 and the coefficient is relatively large which is what would be expected with awards to victims.

Remedial action is not significant in period 2 but is in period 3. Remedial action is cold comfort for accident victims and their dependants, and recent judgments may reflect a view that easily avoidable accidents should have been avoided and that victims should be compensated accordingly.¹³

¹² Examples include *Department of Labour v Transfield Services (New Zealand) Limited*, CRI- 2010-03203227, Lower Hutt DC, 16 December 2010, where no uplift was applied to a large employer with two previous convictions, and *Department of Labour v Graham Harris (2000) Limited*, CRI-2011-043-003018, New Plymouth DC, 25 November 2011, where a 5 percent discount was given for a good safety record in spite of a previous conviction.

¹³ Interestingly, in two recent cases, the same judge refused to give a discount for remedial action when assessing the fine on the grounds that the measures should have been already been taken. See *Department of Labour v Goodman Fielder New Zealand Limited*, CRN 10009503489, Christchurch DC, 10 August 2011, and *Department of Labour v Tegel Foods Limited*, CRN 110095000749, Rangiora DC, 27 September 2011.

The positive and significant coefficient for a guilty plea must be taken in conjunction with the guilty plea discount dummy that applies after *Hessell*. The guilty plea discount coefficient is significant in both the base and full model and the sign is negative. The combined effect is that courts appear to recognize the presence of an early plea with a discount in reparations. Interestingly we do not find evidence of this discount for fines not paid to the victim which is where it would be expected. See the s 6 section for comments on this result.

The number of victims continues to be significant but the sign has changed to positive. This is much more in accord with expectations.

The existence of voluntary payments made continues to attract a discount and in fact the discount is larger for period 3 than period 2.

Employer presence at a restorative justice conference is now highly significant and attracts a sentencing premium. This is difficult to explain but could be similar to remedial action and guilty pleas. These conferences, however, are rare and we have little confidence in these particular estimates.

Overall, given the paucity of guidelines for setting reparation amounts, it is interesting that a number of factors other than harm appear to significantly influence reparation awards in any period. For assessing compensation for emotional harm, it is common for judges to quote Hammond J in *Sargent v Police* (1997) 15 CRNZ 454, 458, whereby “The quantification of loss of this kind is inherently intractable,” or make similar caveats themselves.

[TABLE 2 APPROXIMATELY HERE]

Total Liability (s 6)

Total liability is defined as the sum of the two components discussed above. What is important in awards to victims and fines will likely be important here. Hence there are sentencing discounts for low culpability, financial limitations and premiums for higher levels of culpability and degree of harm as well as the number of victims, the presence of remedial action and a restorative justice conference. Compared to period 2, the defendant’s safety record does not appear to contribute much to the explanation of the variation in sentencing at all.

[TABLE 3 APPROXIMATELY HERE]

Predicting period 3 using period 2 estimations (s 6)

Table 4 below shows a comparison of the mean of actual sentencing levels that occurred in period 3 with what we would have expected had period 2 continued on (i.e., applying the period 2 estimated full model coefficients to period 3 s6 charges). There is a clear shift upwards in the level of sentencing post *Hanham & Philp* which meets expectations in respect of fines. The very small difference between actual and forecast mean awards to victims (in excess of the corresponding amount for fines) comes as no surprise given that the main motivation behind *Hanham & Philp* was to induce courts to impose fines that had a much closer bearing to the five-fold increase in maximum fines introduced in the HSE Amendment Act.

TABLE 4: Actual Period 3 Sentences vs. Forecast Sentences.

	Period 3 actual mean	Period 3 forecast mean	Difference	Period 2 actual mean
Fines not to victims	\$34716	\$23818	\$10898	\$13312
Awards to victims	\$23168	\$21989	\$1179	\$13276
Total liability	\$61402	\$47932	\$13470	\$26588

Fines not awarded to victims (case level)

Compared to period 2, the various levels of degree of culpability have more systematic influence on the level of fines (see table 5). Low (compared to “medium”) culpability attracts a substantial discount on the level of fines while medium-high and high culpability attract penalties. In period 2, only high culpability was significant. However, the level of harm now appears to play no systematic role in explaining the variation of fines which is in accordance with the emphasis given to culpability in *Hanham & Philp*.

The defendant’s financial limitations continue to attract a significant discount to the level of fines with the courts continuing to systematically take this factor into account. However, the presence of co-operation drops out of the list of variables that influence the level of fines.

As above “guilty plea” and “guilty plea discount” must be seen together. Again neither of these appear to make a systematic difference to fines whereas the presence of a guilty plea did in period 2. See the comments above in the discussion on s 6 results.

The need for general deterrence continues to be significant and attracts a substantial penalty.

Of the safety record categories only “poor” (compared to “no previous convictions”) has any systematic effect which is the same as period 2. A poor safety record attracts a substantial penalty.

Compared to period 2, the number of victims no longer appears to have any systematic explanatory power but the number of charges does. In period 2 the existence of voluntary payments was highly significant and, somewhat surprisingly, attracted a substantial penalty. In period 3 voluntary payments are no longer significant.

Overall there are fewer variables in period 3 that systematically explain the variation in fines compared to period 2. There is a clear shift towards considering the degree of culpability and a shift away from the degree of harm. Somewhat surprisingly the existence of an early guilty plea appears to make little difference to fines although this may be due to our use of a linear model.

[TABLE 5 APPROXIMATELY HERE]

Awards to victims (case level)

Contrary to the level of fines, it appears that more factors are significant in period 3 compared to period 2. In the base model for period 2 only 3 factors appear as significant (medium-high culpability, fatal harm and remorse). In period 3 there are seven (high culpability, low-medium harm, fatal harm, co-operation, remedial action, guilty plea and number of victims). Given the alleged absence of guidelines for setting reparation levels, this number of significant determinants of awards to victims comes as a surprise.

Medium-high culpability no longer explains any systematic increase in reparations but a high degree of culpability now does. This perhaps reflects the Court's tougher stance on the role of the employer.

Low-medium harm now attracts a systematic discount on reparations whereas in period 2 the coefficient was negative but not significant. Fatal harm continues to attract a substantial penalty.

The presence of co-operation by the defendant attracts a discount. The coefficient is negative in both the base and full models but only significant in the base model. Remedial action is also now significant but the coefficient is positive implying a penalty. However, as mentioned in the s 6 discussion, remedial action is often perceived as being of little compensation to victims. Further, remedial action may also be a signal for other factors. For example, where remedial action is present, 27.3 percent of the cases in period 3 are either high or medium-high culpability compared to where no remedial action is present where the percentage is 16.7 percent. Counter to that example though is that in 26 percent of cases where there is remedial action the degree of harm is the lowest category compared to 13 percent of cases where there is no remedial action.

The positive and significant coefficient for a guilty plea must be taken in conjunction with the guilty plea discount dummy that applies after *Hessell*. The guilty plea discount coefficient is significant in both the base and full model and the sign is negative. The combined effect is that courts appear to recognize the presence of an early plea with a discount in reparations. Interestingly we do not find evidence of this discount for fines not paid to the victim which is where it would be expected. See the s 6 section for comments on this result.

The number of victims now becomes significant and the sign is positive, as would be expected. With the shift to determining reparations and fines separately we would expect that a greater number of victims would attract a greater level of total reparations.

Voluntary payments continue to be weakly significant and attract a discount on total reparations. The number of related defendants is significant in period 3 but not period 2. The reason for the inclusion of this variable is that when there is at least one related defendant, the courts share the reparation orders among the various parties, either equally or weighted by their relative culpability levels. The presence of multiple defendants attracts a discount which would seem to reflect the joint responsibility nature of shared charges and hence joint responsibility for reparations without an increase in the amount awarded to the victim.

Again, as with individual s 6 charges, a range of factors other than harm appear to influence reparation amounts.

[TABLE 6 APPROXIMATELY HERE]

Total Liability (case level)

Recall that in period 3, total liability is not determined first. Rather total liability is the sum of fines not paid to victims and awards made to victims each of which are set somewhat independently. Reparations are determined first and are much less prone to being adjusted downwards to account for a defendant’s financial limitations compared to fines. The following table shows the explanatory variables that are (at least weakly) significant in both the base and full models in periods 2 and 3 and how these appear for each of the three dependent variables (fines, reparations and total).

Explanatory variable	Fines not to victims		Reparations (awards to victims)		Total liabilities	
	<i>P2</i>	<i>P3</i>	<i>P2</i>	<i>P3</i>	<i>P2</i>	<i>P3</i>
high culpability	Y	Y		Y	Y	Y
defendant’s financial limitations	Y	Y			Y	Y
fatal harm	Y		Y	Y	Y	Y
guilty plea (or discount)	Y			Y	Y	Y
number of charges		Y				Y
low-medium harm				Y		Y
remedial action				Y		Y
number of victims	Y			Y		Y
low culpability		Y				
medium-high culpability		Y	Y		Y	
poor safety record	Y	Y			Y	
remorse			Y			
co-operation	Y				Y	

Note that all of the factors that appear as significant in reparations are also significant for total liability in period 3 but the same is not true of the factors that are significant in setting fines. Compared to period 2, some factors that help explain total liability have remained the same but some are different.

[TABLE 7 APPROXIMATELY HERE]

Predicting period 3 using period 2 estimations (case)

Table 8 below shows a comparison of the mean of actual sentencing levels that occurred in period 3 with what we would have expected had period 2 continued on (i.e. applying the period 2 estimated full model coefficients to period 3 cases). In line with the individual s 6 charges (table 4) there is a clear shift upwards in the level of fines post *Hanham & Philp*. The higher forecast value for awards to victims compared to the actual value is interesting. If the difference is significant (and we are not confident that it is) then this might imply some discounting of awards to victims in light of the increase in fines which may or may not be intentional on the part of the sentencing judge. This may reflect a carry-over from the earlier periods where the Courts set total liability first.

TABLE 8: Actual Period 3 Sentences vs. Forecast Sentences (case level).

	Period 3 actual mean	Period 3 forecast mean	Difference	Period 2 actual mean
Fines not to victims	\$32932	\$22717	\$10215	\$13997
Awards to victims	\$20500	\$23143	-\$2643	\$14763
Total liability	\$54795	\$45938	\$8858	\$28760

Some Brief Concluding Remarks

From period 2 to 3 there has been some notable shifts in HSE sentencing. In particular:

1. The average level of fines is substantially higher but there is little impact on reparations and in fact some possibility that reparations may have declined.
2. Level of culpability has far more explanatory power in the latter period when explaining variation in levels of fines.
3. Degree of harm (particularly fatal harm) is not nearly so significant when determining the level of fines but continues to be very significant when determining reparations.
4. The penalty applied for a defendant's poor safety record was significant in setting the level of fines in period 2 but much less so in period 3 and the coefficient is smaller.
5. The number of victims is strongly significant in determining the level of reparations to victims. The coefficient in period 3 is larger and the sign is positive whereas it was negative in period 2.
6. Voluntary payments made attract a substantial discount for reparations to victims.

Overall, HSE sentencing appears to have shifted in the direction that the guideline judgment in *Hanham & Philp* indicated was necessary to meet the intentions of the legislative changes made in 2002-03.

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Appendix 1

While a major purpose of sentencing guidelines is the promotion of sentencing consistency for similar offending,¹⁴ it has been argued that little attempt is made in NZ guideline judgments to analyze, categorize, and weigh the various factors deemed to be relevant to sentencing.¹⁵ In this respect, the *de Spa* Guidelines are typical in that they merely constitute the following (non-exhaustive) list of identified relevant sentencing factors: (1) the degree of culpability; (2) the degree of harm resulting; (3) the financial circumstances of the offender; (4) the attitude of the offender, including remorse, co-operation, and taking remedial action; (5) any guilty plea; (6) the need for deterrence, both particular and general; (7) compensation to the victim under s 28 Criminal Justice Act 1985; (8) the employer's safety record; and (9) the facts of the particular case. No direct indication was given as to whether these factors were listed in any particular order of importance, nor whether different weights should have been applied to the various criteria. Not even the signs of the effects of the various criteria on penalties were provided, although these may be implicit in general NZ sentencing principles.¹⁶ Further, while guideline judgments typically establish sentencing ranges for particular offences, the judgment in *de Spa* did not do so (although an indication of what was considered a likely appeal-proof upper bound for the penalty was provided).¹⁷

In contrast, the *Hanham & Philp* guidelines give clear primacy to the assessment and role of employer blameworthiness in determining starting points for fines within specific ranges that exhibit considerable bite. The full bench in *de Spa* considered it to be “important to remember that sentencing is not a mathematical exercise. While the underlying philosophy behind the increases must be carefully borne in mind, the circumstances of the individual case are all important.” Although a number of judges continue to express similar sentiments in sentencing for HSE offences, others, for example Judge Blackie in *Department of Labour v George Grant Engineering Limited*, DC Papakura, CRI-2009-055-003473, 28 April 2010, argue (at [27]) that “the starting point for the fine has become in recent times a mathematical exercise.” Further “mathematical exercises” have been encouraged by the recent appeal judgments in *Raymond Everest Hessell v R*, SC 102/2009 [2010] NZSC 135 (relating to the discount for an early plea of guilty and the separation of discounts for such a plea and for demonstrated remorse) and in *Ballard v Department of Labour* (2010) 7 NZELR 301 in respect of assessing detailed percentage discounts for the full range of mitigating factors. The preliminary results in the present paper suggest that whatever their feelings regarding “mathematical exercises,” at least in respect of

¹⁴ Cf., Sentencing – Courts of New Zealand, <http://www.courtsofnz.govt.nz/about/system/role/sentencing.html>, accessed 18_02_2009, and s 8 Sentencing Act 2002.

¹⁵ Cf., Hall (2009 at I.2.2(c)).

¹⁶ Cf., Hall (2009, section I).

¹⁷ Since *de Spa* was a relatively early case in terms of administration of the HSE Act, the High Court judges may have had few similar cases to which reference might have been made in order to establish sentencing ranges. Starting points in health and safety sentencing, however, were considered to be potentially misleading. In their view, the sole merit of a starting point was to indicate the magnitude of any discount for a plea of guilty.

assessing starting points for fines on the basis of levels of employer culpability, judges have shown a considerable degree of compliance during period 3.

With respect to sentencing criteria, the data we code contains detailed information on the characteristics of each charge/case (such as the degrees of harm and culpability, employee breach of duty, and the presence of remedial action) and the defendant (such as the employer's safety record, need for particular deterrence, and financial limitations and size).¹⁸ Using this information (where available), we create proxies for the case characteristics specified in the *de Spa* and *Hanham & Philp* Guidelines that most closely resemble the categories typically used in case decisions and/or sentencing notes as follows.

1. The degree of culpability: we assign each charge/case into one of the following six culpability categories: 'low', 'low-medium', 'medium', 'medium-high', 'high', and 'unknown';
2. The degree of harm resulting: we use four mutually-exclusive categories of harm: 'low or medium', 'high', 'fatal', and 'unknown';
3. The financial circumstances of the offender: we use a binary variable to indicate the presence of a defendant's financial limitations;
4. The attitude of the offender, including remorse, co-operation, and taking remedial action: the presence of remorse, cooperation, and remedial action is indicated by three separate binary variables – one for each of the expressions of the offender's attitude;
5. Any guilty plea: indicated by a binary variable;
6. The need for deterrence: the need for deterrence is expressed by two binary variables indicating separately the 'need for particular deterrence' and the 'need for general deterrence';
7. Compensation to the victim under s 28 Criminal Justice Act 1985: not applicable to periods 2-3;
8. The employer's safety record: we use six categories of the defendant's safety record: 'poor', 'previous convictions', 'no previous convictions', 'good', 'great', and 'unknown';
9. The facts of the particular case: in our full models we include additional characteristics of each case. Namely, we create separate binary variables for the presence of a voluntary payment, employer attendance at a restorative justice conference, and an employee breach of duty. We also express the size of the employer as: 'small', 'medium', 'large', or 'unknown'.¹⁹ The number of physically harmed employees is also included. We also indicate in which year the offence took place in order to account for a national trend in HSE sentencing.

¹⁸ The detail of information available to us varies somewhat, being more detailed for judicial decisions and sentencing notes than for the summary information prepared in DoL's returns on prosecutions.

¹⁹ As expected, smaller employers are more likely to be subject to financial limitations but the correlation is far from perfect. While only one of the employers identified as 'large' is recorded as having financial limitations, 36% of 'small' and 'medium' employers have financial limitations recorded. Data on employer size, however, is limited.

In addition, we include additional dummy variables that attempt to capture the effects of several recent appeal decisions relevant to HSE sentencing as follows.

1. ACC Top up dummy: Indicated by a binary variable, and which relates to a clear majority decision of the Supreme Court to disallow a loss of earnings consequential on physical harm (“ACC Top ups”) from being the subject of reparation under s 32(1) of the Sentencing Act. See *Peter Miles Davies v New Zealand Police*, 25 May 2009, SC 83/2007 - [2009] NZSC 47. Applicable to period 3 only.

2. Post Street Smart dummy: Indicated by a binary variable, and relates to an appeal allowed by the High Court - *Department of Labour v Street Smart Ltd*, 8 August 2008, (2008) 5 NZELR 587 (BC200862161); see the discussion in footnote 4, *supra*. Applicable to period 2 only (since all period 3 observations are subject to *Street Smart*).

3. Guilty plea discount dummy: Indicated by a binary variable that interacts the presence of an early guilty plea with a time dummy for a Court of Appeal case - *R v Hessell*, 2 October 2009, [2009] NZCA 450, and which also relates to a dismissed appeal to the Supreme Court - *Raymond Everest Hessell v R*, SC 102/2009 [2010] NZSC 135. Here, the decision in the CA was upheld but the SC considered that the CA had departed from the requirements of the Sentencing Act when setting a sliding scale of percentage discounts for a plea of guilty, depending on timing. For an earliest possible plea, the CA guideline indicated a 33 percent discount, but the SC disagreed, instead settling for a maximum 25 percent reduction given that the mitigating factor of remorse should properly be dealt with independently. Applicable to period 3 only.

TABLES

TABLE 1: Fine not awarded to victims - S6 charges					
		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability (compared to medium)	Low	5838 (0.5987)	-5848 (0.5935)	-22464*** (0.0003)	-22628*** (0.0004)
	Low-medium	-4614 (0.176)	-3402 (0.3066)	-8737** (0.0362)	-7881* (0.0729)
	Medium-High	841 (0.8121)	770 (0.8244)	8667* (0.0514)	9936** (0.0334)
	High	24649*** (0.0000)	27413*** (0.0000)	15173** (0.0122)	19237*** (0.0036)
Degree of harm (compared to high)	Low/Medium	-1019 (0.7818)	-566 (0.8736)	-854 (0.8198)	-2490 (0.5301)
	Fatal	17469*** (0.0000)	9019** (0.0114)	7321* (0.0893)	6716 (0.1525)
Defendants Financial Limitations		-8211*** (0.0073)	-9136*** (0.0035)	-13290*** (0.0001)	-10920*** (0.0032)
Remorse		7014** (0.0218)	5075* (0.0899)	-2489 (0.5072)	-1174 (0.7826)
Co-operation		-6168* (0.0711)	-5439 (0.1123)	2294 (0.6417)	3660 (0.5317)
Remedial Action		2315 (0.5432)	2358 (0.5259)	3825 (0.3285)	2413 (0.5774)
Guilty plea		-12166*** (0.0034)	-11852*** (0.0032)	-3446 (0.5117)	-4180 (0.4493)
Need for particular deterrence		539 (0.8387)	1059 (0.6944)	-4456 (0.3644)	-1360 (0.7979)
Need for general deterrence		-2381 (0.4073)	-3946 (0.1582)	-2041 (0.6807)	-5338 (0.3142)
Safety record (compared to no previous convictions)	Poor	68764*** (0.0000)	62284*** (0.0000)	3412 (0.7985)	11176 (0.4475)
	Previous convictions	10075*** (0.0003)	10944*** (0.0001)	6673 (0.1104)	8667* (0.0525)
	Good	-622 (0.8339)	-1015 (0.7272)	3517 (0.3663)	4608 (0.2572)
	Great	1623 (0.7415)	1683 (0.7253)	-9595 (0.2954)	-9631 (0.3242)
Number of victims		2018 (0.1708)	3138** (0.0316)	-2004* (0.0668)	-1712 (0.166)
Voluntary payment made			10396*** (0.0005)		5580 (0.1471)
Restorative justice conference			17341*** (0.0011)		-440 (0.9531)

Employee breach of duty		-459 (0.8922)		1211 (0.7451)
Size of employer Small (compared to large)		-1797 (0.6044)		-2921 (0.5979)
Medium		-1125 (0.8742)		-6769 (0.2581)
Consumer Price Index	40 (0.7397)	9 (0.9429)	-129 (0.4356)	-129 (0.4497)
Reparation Insurance		-1374 (0.8807)		6451 (0.4284)
ACC Top up			9102* (0.0691)	7145 (0.1761)
Post StreetSmart	5202 (0.4019)	3392 (0.5949)		
Guilty plea discount			-4433 (0.4685)	-2818 (0.6656)
Number of related defendants		-3621 (0.5727)		-1287 (0.7536)
Constant	-31735 (0.777)	2029 (0.9854)	175396 (0.3208)	163934 (0.3704)
R-squared	0.51	0.57	0.56	0.59

TABLE 2: Award to victims - S6 charges

		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability (compared to medium)	Low	-4908 (0.6287)	-3039 (0.7698)	1038 (0.9388)	4221 (0.7286)
	Low-medium	-4519 (0.1476)	-5244* (0.0972)	-7649 (0.4119)	-6980 (0.4212)
	Medium-High	12591*** (0.0001)	12132*** (0.0003)	-4624 (0.6413)	-8292 (0.3707)
	High	4087 (0.3306)	3670 (0.3986)	22414* (0.0974)	18760 (0.1478)
Degree of harm (compared to high)	Low/Medium	-5259 (0.1192)	-4718 (0.1628)	-11359 (0.1811)	-15117* (0.0583)
	Fatal	27932*** (0.0000)	30669*** (0.0000)	27228*** (0.0057)	30130*** (0.0017)
Defendants Financial Limitations		84 (0.9759)	1467 (0.6176)	-2458 (0.7374)	-3594 (0.6078)
Remorse		5454* (0.0508)	5394* (0.0575)	-4487 (0.5973)	-6198 (0.4675)
Co-operation		-1047 (0.7369)	-119 (0.9706)	-16139 (0.1422)	-8066 (0.4867)
Remedial Action		680 (0.8451)	777 (0.8254)	23088*** (0.0081)	18837** (0.0281)

Guilty plea		1885 (0.616)	1352 (0.7196)	28681** (0.0171)	19037* (0.0861)
Need for particular deterrence		4207* (0.0836)	4383* (0.0874)	5592 (0.6145)	-5297 (0.6182)
Need for general deterrence		722 (0.7835)	1471 (0.5781)	-9377 (0.4037)	-3167 (0.7641)
Safety record (compared to no previous convictions)	Poor	7002 (0.4984)	9098 (0.3868)	-21836 (0.4712)	8078 (0.7838)
	Previous convictions	-1262 (0.6184)	-1762 (0.4888)	-1392 (0.8823)	-7404 (0.4027)
	Good	-1398 (0.6067)	-847 (0.7588)	3041 (0.7269)	-822 (0.9177)
	Great	849 (0.8505)	2418 (0.5944)	-11487 (0.5795)	-13866 (0.4785)
Number of victims		-2544* (0.0597)	-2701* (0.0508)	18933*** (0.0000)	14484*** (0.0000)
Voluntary payment made			-5524* (0.0501)		-16128** (0.0341)
Restorative justice conference			-2532 (0.6119)		51864*** (0.0008)
Employee breach of duty			-2721 (0.3965)		8026 (0.2772)
Size of employer (compared to large)	Small		-4117 (0.2112)		-6325 (0.5688)
	Medium		-975 (0.8849)		-16536 (0.1684)
Consumer Price Index		-117 (0.2923)	-102 (0.371)	-726* (0.0538)	-676** (0.0489)
Reparation Insurance			-17833** (0.041)		28240* (0.0687)
ACC Top up				3584 (0.7491)	1899 (0.8552)
Post StreetSmart		18588*** (0.0012)	18029*** (0.0032)		
Guilty plea discount				-52060*** (0.0003)	-34670*** (0.0092)
Number of related defendants			-2798 (0.6457)		-2922 (0.7119)
Constant		104916 (0.3067)	106811 (0.3088)	768496* (0.0555)	730821** (0.0464)
R-squared		0.52	0.55	0.61	0.72

		TABLE 3: Total Liability - S6 charges			
		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability (compared to medium)	Low	931 (0.9492)	-8887 (0.5519)	-22582 (0.1125)	-19685 (0.1313)
	Low-medium	-9134** (0.0426)	-8645* (0.0575)	-17352* (0.0772)	-15742* (0.091)
	Medium-High	13432*** (0.0043)	12902*** (0.0069)	2915 (0.7794)	1600 (0.8701)
	High	28736*** (0.0000)	31083*** (0.0000)	35784** (0.0123)	38075*** (0.0064)
Degree of harm (compared to high)	Low/Medium	-6277 (0.196)	-5283 (0.2767)	-12946 (0.1458)	-18086** (0.0337)
	Fatal	45401*** (0.0000)	39688*** (0.0000)	34257*** (0.001)	36063*** (0.0005)
Defendants Financial Limitations		-8127** (0.043)	-7669* (0.0706)	-15334* (0.0504)	-13591* (0.0788)
Remorse		12468*** (0.0021)	10469** (0.0106)	-6858 (0.4393)	-7064 (0.4345)
Co-operation		-7215 (0.1087)	-5558 (0.2333)	-15142 (0.1953)	-4698 (0.705)
Remedial Action		2995 (0.5503)	3134 (0.5362)	28377*** (0.0027)	21841** (0.0193)
Guilty plea		-10281* (0.0584)	-10500* (0.0536)	24536* (0.05)	14080 (0.2309)
Need for particular deterrence		4746 (0.1746)	5442 (0.1397)	913 (0.9372)	-6759 (0.5489)
Need for general deterrence		-1659 (0.661)	-2474 (0.5155)	-12181 (0.2995)	-9111 (0.4178)
Safety record (compared to no previous convictions)	Poor	75766*** (0.0000)	71382*** (0.0000)	-18975 (0.5481)	19681 (0.5282)
	Previous convictions	8814** (0.0163)	9182** (0.0128)	5465 (0.5777)	1862 (0.8427)
	Good	-2021 (0.6054)	-1861 (0.6389)	8029 (0.3825)	5396 (0.5307)
	Great	2472 (0.703)	4101 (0.5301)	-20746 (0.3379)	-23025 (0.2671)
Number of victims		-525 (0.7863)	437 (0.8254)	17167*** (0.0000)	12949*** (0.0000)
Voluntary payment made			4873 (0.2282)		-9589 (0.2394)
Restorative justice conference			14809** (0.04)		51857*** (0.0015)
Employee breach of duty			-3180 (0.4908)		10348 (0.1925)
Size of employer Small			-5914 (0.2118)		-9513 (0.4188)

(compared to Medium large)

Consumer Price Index

Reparation Insurance

ACC Top up

Post StreetSmart

Guilty plea discount

Number of related defendants

Constant

R-squared

		-2100 (0.8284)		-23037* (0.0713)
	-76 (0.6312)	-93 (0.5688)	-823** (0.0373)	-781** (0.0334)
		-19208 (0.125)		38925** (0.0262)
			11830 (0.3142)	8088 (0.4689)
	23790*** (0.0039)	21421** (0.0145)		
			-57352*** (0.0001)	-37653*** (0.0077)
		-6420 (0.4635)		-2262 (0.7949)
	73182 (0.6202)	108841 (0.4705)	910864** (0.0307)	864052** (0.0279)
	0.63	0.65	0.66	0.75

TABLE 5: Fine not awarded to victims - Case charges

Degree of culpability Low

(compared to medium)

Low-medium

Medium-High

High

Degree of harm (compared to high)

Low/Medium

Fatal

Defendants Financial Limitations

Remorse

Co-operation

Remedial Action

Guilty plea

		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability Low (compared to medium)		-3359 (0.5285)	-3104 (0.5458)	-16537*** (0.0047)	-14357** (0.0144)
Low-medium		-4922* (0.0752)	-4217 (0.1172)	-5269 (0.1898)	-3270 (0.4173)
Medium-High		177 (0.9519)	-406 (0.8881)	11849*** (0.0064)	12992*** (0.0031)
High		20810*** (0.0000)	21881*** (0.0000)	21239*** (0.0002)	22782*** (0.0001)
Degree of harm (compared to high)					
Low/Medium		-2715 (0.3655)	-2651 (0.3605)	-3452 (0.348)	-4393 (0.2376)
Fatal		11739*** (0.0000)	6617** (0.0153)	2974 (0.451)	1735 (0.6733)
Defendants Financial Limitations		-9899*** (0.0000)	-8615*** (0.0002)	-12788*** (0.0001)	-11240*** (0.0005)
Remorse		1907 (0.4563)	1333 (0.5928)	-5907* (0.0955)	-5819 (0.1165)
Co-operation		-6799** (0.0207)	-6108** (0.0333)	1674 (0.6891)	4353 (0.3394)
Remedial Action		3314 (0.2084)	2824 (0.268)	7842** (0.0199)	6162* (0.0852)
Guilty plea		-15472*** (0.0000)	-16773*** (0.0000)	-2830 (0.5762)	-3588 (0.4909)

Need for particular deterrence		2581 (0.2544)	2742 (0.2298)	-2484 (0.615)	-1450 (0.7817)
Need for general deterrence		1231 (0.5993)	571 (0.8029)	-1962 (0.6851)	-3708 (0.4684)
Safety record (compared to no previous convictions)	Poor	33194*** (0.0003)	28797*** (0.0011)	31701** (0.0134)	33550** (0.0136)
	Previous convictions	4325 (0.101)	4380* (0.0893)	4657 (0.2502)	4544 (0.2853)
	Good	-948 (0.6937)	-2137 (0.3597)	672 (0.8612)	-322 (0.9343)
	Great	-4064 (0.2657)	-4943 (0.162)	-12766 (0.123)	-13626 (0.1009)
Number of Victims		3359*** (0.0044)	3976*** (0.0006)	-1815 (0.1148)	-1459 (0.2344)
Number of charges		1572 (0.2251)	1238 (0.3302)	7281* (0.0686)	7849* (0.0504)
Voluntary payment made			11691*** (0.0000)		4289 (0.2262)
Restorative justice conference			4353 (0.2021)		5961 (0.3689)
Employee breach of duty			881 (0.7365)		-3831 (0.2595)
Size of employer (compared to large)	Small		-3684 (0.1563)		-4437 (0.346)
	Medium		-3571 (0.5232)		-3357 (0.5504)
Consumer Price Index		3 (0.9718)	-17 (0.8594)	-216 (0.1953)	-214 (0.2049)
ACC Top up				6472 (0.2064)	5822 (0.2646)
Post StreetSmart		-554 (0.9172)	-4030 (0.4532)		
Guilty plea discount				5610 (0.3113)	6405 (0.267)
Number of related defendants			-377 (0.9272)		-3058 (0.189)
Constant		8418 (0.9266)	27601 (0.7593)	263007 (0.1428)	254080 (0.1626)
R-squared		0.5	0.55	0.5	0.53

TABLE 6: Award to victims - Case charges					
		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability Low (compared to medium)		-8897 (0.1495)	-7767 (0.2094)	-1618 (0.8723)	2434 (0.7973)
	Low-medium	1466 (0.646)	368 (0.9092)	-3771 (0.5895)	-2676 (0.6838)
	Medium-High	15387*** (0.0000)	13938*** (0.0001)	-2360 (0.7527)	-3196 (0.6505)
	High	-1268 (0.7778)	-2262 (0.627)	30707*** (0.0022)	29626*** (0.0022)
Degree of harm (compared to high)	Low/Medium	-4475 (0.1977)	-3890 (0.2648)	-13137** (0.0416)	-14759** (0.0159)
	Fatal	27475*** (0.0000)	30416*** (0.0000)	21007*** (0.0026)	21619*** (0.0016)
Defendants Financial Limitations		-2475 (0.3443)	-2154 (0.4255)	-5545 (0.3044)	-6023 (0.2411)
Remorse		5048* (0.0889)	5071* (0.0915)	428 (0.9445)	928 (0.8775)
Co-operation		-2930 (0.3871)	-2021 (0.5565)	-15739** (0.0322)	-9304 (0.2112)
Remedial Action		2170 (0.4759)	2236 (0.4655)	20620*** (0.0005)	13984** (0.0172)
Guilty plea		-1241 (0.758)	-930 (0.8193)	21095** (0.0179)	12082 (0.1562)
Need for particular deterrence		2996 (0.2529)	4441 (0.1062)	9386 (0.2765)	-155 (0.9855)
Need for general deterrence		-234 (0.9313)	-540 (0.8443)	-13533 (0.1101)	-6692 (0.4226)
Safety record (compared to no previous convictions)	Poor	12036 (0.2461)	12596 (0.2318)	-20962 (0.344)	-10181 (0.6429)
	Previous convictions	-3064 (0.3146)	-3512 (0.2565)	760 (0.9141)	-7166 (0.3016)
	Good	-2202 (0.4293)	-1902 (0.4978)	5558 (0.4076)	516 (0.9354)
	Great	-5614 (0.1841)	-4545 (0.2847)	-2701 (0.851)	-6854 (0.6115)
Number of Victims		-407 (0.764)	-342 (0.805)	18739*** (0.0000)	16615*** (0.0000)
Number of charges		595 (0.6914)	434 (0.7765)	8780 (0.2066)	9350 (0.1519)
Voluntary payment made			-5461* (0.0714)		-9864* (0.0888)
Restorative justice conference			-828 (0.8398)		34550*** (0.0017)
Employee breach of duty			-3349 (0.2882)		1788 (0.7466)
Size of employer	Small		-5791* (0.0643)		-11888 (0.1228)

(compared to large) Medium

Consumer Price Index

ACC Top up

Post StreetSmart

Guilty plea discount

Number of related defendants

Constant

R-squared

		4816 (0.4741)		-5053 (0.5816)
	-36 (0.7499)	-71 (0.542)	-470 (0.1071)	-331 (0.2302)
			2324 (0.7942)	2103 (0.8045)
	15004** (0.0154)	15405** (0.0177)		
			-34569*** (0.0005)	-23689** (0.0126)
		1062 (0.8305)		-8290** (0.03)
	36573 (0.7295)	74597 (0.4913)	484073 (0.1221)	347349 (0.2415)
	0.4	0.42	0.6	0.68

TABLE 7: Total Liability - Case charges

Degree of culpability Low

(compared to medium)

Low-medium

Medium-High

High

Degree of harm (compared to high)

Low/Medium

Fatal

Defendants Financial Limitations

Remorse

Co-operation

Remedial Action

Guilty plea

Need for particular deterrence

Need for general deterrence

Safety record (compared to no previous)

Poor

Previous

		Period 2		Period 3	
		Base Model	Full Model	Base Model	Full Model
Degree of culpability Low (compared to medium)	Low-medium	-12256 (0.1314)	-10871 (0.1803)	-19934 (0.1028)	-13678 (0.2308)
	Medium-High	-3456 (0.4108)	-3848 (0.3638)	-9129 (0.2804)	-5471 (0.4888)
	High	15564*** (0.0005)	13532*** (0.0032)	9747 (0.2823)	10517 (0.2159)
Degree of harm (compared to high)	Low/Medium	-7190 (0.116)	-6542 (0.1529)	-16077** (0.0391)	-19033*** (0.0098)
	Fatal	39214*** (0.0000)	37033*** (0.0000)	21230** (0.0114)	20038** (0.014)
Defendants Financial Limitations		-12373*** (0.0004)	-10769*** (0.0026)	-16879** (0.0104)	-15527** (0.0127)
Remorse		6955* (0.0749)	6404 (0.104)	-5851 (0.4315)	-4721 (0.5146)
Co-operation		-9728** (0.0296)	-8129* (0.072)	-17021* (0.0549)	-7730 (0.3868)
Remedial Action		5484 (0.1715)	5060 (0.2082)	28280*** (0.0001)	19496*** (0.0059)
Guilty plea		-16713*** (0.0018)	-17703*** (0.001)	17718* (0.0981)	7118 (0.4858)
Need for particular deterrence		5577 (0.1062)	7183** (0.0465)	7407 (0.4768)	-1294 (0.8996)
Need for general deterrence		997 (0.7797)	31 (0.9932)	-15666 (0.1256)	-10778 (0.283)
Safety record (compared to no previous)	Poor	45230*** (0.001)	41393*** (0.0029)	6684 (0.8025)	17354 (0.511)
	Previous	1262 (0.7528)	868 (0.8305)	6031 (0.4791)	-2427 (0.7706)

convictions)	convictions				
	Good	-3150 (0.3902)	-4040 (0.2724)	6875 (0.3965)	435 (0.9546)
	Great	-9678* (0.0821)	-9488* (0.0889)	-13522 (0.4367)	-19736 (0.2246)
Number of Victims		2952* (0.0988)	3635** (0.0459)	16801*** (0.0000)	15245*** (0.0000)
Number of charges		2167 (0.2719)	1671 (0.4042)	17899** (0.034)	19340** (0.0143)
Voluntary payment made			6230 (0.1163)		-4370 (0.5286)
Restorative justice conference			3525 (0.5119)		39682*** (0.0027)
Employee breach of duty			-2467 (0.5503)		-2257 (0.7343)
Size of employer (compared to large)	Small		-9475** (0.0211)		-15667* (0.0909)
	Medium		1245 (0.8877)		-6594 (0.5497)
Consumer Price Index		-33 (0.8266)	-88 (0.5636)	-619* (0.0795)	-461 (0.1643)
ACC Top up				8379 (0.4367)	7226 (0.4795)
Post StreetSmart		14450* (0.0755)	11375 (0.1799)		
Guilty plea discount				-30883*** (0.0088)	-18990* (0.0942)
Number of related defendants			685 (0.9161)		-13213*** (0.0042)
Constant		44992 (0.7465)	102197 (0.472)	675300* (0.0746)	510896 (0.1523)
R-squared		0.53	0.55	0.61	0.68