

Trends & issues

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Foreword | *Studies of the specific deterrent effect of criminal sanctions have mostly focused on prison. This is, in some ways, unfortunate as non-custodial penalties are far more frequently imposed than custodial penalties. In this study, the authors use propensity score matching to assess whether the length of a bond or suspended sentence makes any difference to the time to first new offence. The results suggest that it does and that offenders given long bonds or suspended sentences take longer to reoffend than offenders given short bonds or suspended sentences. These findings have significant implications for sentencing policy. However, as is highlighted, although the study controlled for a wide range of factors, results may have been affected by unmeasured differences between those who received long bonds or suspended sentences and those who received short bonds or suspended sentences. Further research is necessary before it is clear whether longer bonds and suspended sentences would be effective in reducing the overall rate of reoffending.*

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Director

Bonds, suspended sentences and reoffending: Does the length of the order matter?

Suzanne Poynton and Don Weatherburn

Good behaviour bonds and suspended sentences are the most widely used alternatives to prison in Australia. In 2011, the Australian courts placed a total of 77,940 offenders on a good behaviour bond (n=56,000) or a fully suspended sentence (n=21,940). Taken together, these two types of sanction account for 15 percent of all penalties imposed by Australian adult courts (ABS unpublished data 26 July 2012).

The conditions under which suspended sentences and good behaviour bonds can be imposed vary from state to state. In New South Wales (where the current study was undertaken), the *NSW Crimes (Sentencing Procedure) Act* (1999) allows a court to impose a sentence of imprisonment if it is satisfied 'having considered all possible alternatives, that no penalty other than imprisonment is appropriate' (s 5 *NSW Crimes (Sentencing Procedure) Act* (1999)). The court must then determine the length of the custodial sentence and decide how the custodial sentence should be served. If the term of imprisonment does not exceed two years, s 12 of the Act allows the court to suspend the prison sentence and place the offender on a good behaviour bond when released from custody. In circumstances where imprisonment may not be appropriate, s 9 of the *Crimes (Sentencing Procedures) Act* (1999) permits the court to make an order directing an offender to enter into a good behaviour bond for a specified term (not exceeding 5 years).

The consequences arising from a breach of a suspended prison sentence or a good behaviour bond can be severe. If the conditions attached to a suspended prison sentence are breached, the court can revoke the bond and order the original sentence of imprisonment to be served. If an offender fails to comply with the conditions of a good behaviour bond, the court may sentence the offender for the original offences as if the bond had never been made; this can include imposing a term of imprisonment. As such, these alternatives to full-time custody have considerable potential to deter further offending.

In 2010, over a half (54%) of the suspended sentences and about a third (32%) of the good behaviour bonds imposed by NSW Local Courts required some form of supervision (NSW BOCSAR 2011). The Probation and Parole Service provides various levels of support for offenders under their supervision. Offenders who are assessed to be at serious risk of reoffending may be required to participate in rehabilitation programs designed to reduce further offending, such as drug and alcohol treatment or education and training programs. Participation in these programs may also be a condition of the bond stipulated by the court. Suspended sentences and good behaviour bonds might therefore also be expected to have a rehabilitative effect on offenders.

Despite the popularity of bonds and suspended sentences and their potential to reduce further offending, no study to date has examined the question of whether the length of the order (ie bond length or suspended sentence length) influences the risk of reoffending.

The current study was designed to address the following key research questions:

- Are long bonds more effective than short bonds in reducing reoffending?
- Does supervision make a difference to this effect?
- Are long suspended sentences more effective than short suspended sentences in reducing reoffending?
- Does supervision make a difference to this effect?
- Are long bonds more effective than long suspended sentences in reducing reoffending?
- Does supervision make a difference to this effect?

Method

Propensity score matching (PSM) was employed to match all groups being compared. In PSM, individuals who receive a treatment (eg long bond or long suspended sentence) are matched with untreated individuals who are equally likely to receive the treatment but who did not

receive it. Individuals are matched on the basis of a propensity score. A propensity score is the conditional probability of receiving the treatment given a set of observed covariates. Outcomes (eg reoffending) are then compared between matched groups (for further detail on the technique see Apel & Sweeten 2010).

Data source

Data for this study were extracted from the Bureau of Crime Statistic and Research's Reoffending Database (see Fitzgerald & Hua 2006). This database contains records of all persons appearing before the NSW local and higher courts who have been charged with a criminal offence since 1994. It includes both information about the charge (eg offence type, concurrent offences, plea, outcome and penalty) and information about the offender (eg age, gender, last postcode and race). Each court record is linked, thus allowing individual offenders to be tracked over time.

To examine the effect of suspended sentences and good behaviour bonds on reoffending, two cohorts of offenders were identified from the Reoffending Database and relevant data extracted. The first cohort consisted of all offenders who received a suspended sentence for their principal offence in the NSW Local Court between 2006 and 2008. The second cohort consisted of all offenders who received a good behaviour bond for their principal offence in the NSW Local Court between 2006 and 2008. The cut-off date for inclusion in the study was 31 December 2008. This allowed all offenders to be followed up for three years after finalisation of their index offence.

Independent variable

The key independent variable of interest in this research was the length of suspended sentence or good behaviour bond issued at the index court appearance. A long good behaviour bond was defined as a supervised or unsupervised bond that was 24 months or longer in duration. A long suspended sentence was defined as a supervised or unsupervised suspended sentence that was 12 months or longer in duration.

Outcome variables

The reoffending outcome used in this study was time to first new offence. This equated to the number of days that elapsed between the offender receiving the suspended sentence or bond (ie index appearance date) and the date of the first subsequent offence. In cases where no offences were recorded during the observation period, the time between the index court appearance and the end of the three year follow-up period was calculated. Time to first new offence was adjusted for any time spent in custody during the follow-up period.

Explanatory variables

The explanatory variables are listed and described below:

- age—age at date of index appearance (in whole years);
- gender—gender of defendant;
- Socio-Economic Indexes for Areas (SEIFA) quartile;
- remoteness—the Australian Bureau of Statistics' Area of Remoteness Index for the offender's postcode;
- year of finalisation of index offence;
- plea—plea issued by defendant for the principal offence at the index court appearance;
- concurrent offences—number of proven concurrent charges at index court appearance (excluding principal offence);
- legal representation—whether or not the defendant was legally represented at the index court appearance;
- bail—bail status of the defendant at the index court appearance;
- offence seriousness—an index of offence seriousness of the principal offence at index appearance based on the Median Sentence Ranking method developed by MacKinnell, Poletti and Holmes (2010);
- penalty type—the type of penalty at the index court appearance;
- counts—number of counts of principal offence at index court appearance;
- offence type—whether the principal offence at the index court appearance was a(n):

- homicide or related offence;
- act intended to cause injury;
- sexual assault offence;
- dangerous or negligent act endangering persons;
- abduction, harassment or other offence against the person;
- robbery or extortion offence;
- burglary or break and enter offence;
- theft offence;
- fraud, deception or related offence;
- illicit drug offence;
- prohibited or regulated weapons or explosive offence;
- property damage or environmental pollution offence;
- public order offence;
- low or special range Prescribed Concentration of Alcohol (PCA) offence;
- mid or high-range PCA offence;
- other traffic and vehicle regulatory offence;
- justice procedure offence;
- other offence.
- prior court finalisations—number of finalised court appearances for a proven offence prior to the index court appearance;
- prior juvenile record—whether the defendant had appeared before the Children’s Court or attended a Youth Justice Conference prior to the index court appearance;
- prior penalty type—whether the defendant had received any of the following court imposed penalties prior to the index court appearance;
 - full-time prison sentence;
 - good behaviour bond;
 - suspended sentence;
 - periodic detention.
- prior offence type—whether the defendant had been found guilty of any of the following offences prior to the index court appearance
 - property offence;
 - violence offence;
 - drug offence;
 - PCA offence;
 - other driving offence;
 - breach of a court order.

Propensity score methods

The psmatch2 module in STATA/IC was used to conduct PSM (Leuven & Sianesi 2003). The analysis involved one-to-one nearest neighbour matching with no replacement and a calliper of 0.05. This means that a treated offender was matched with the untreated offender if their propensity scores were within 0.05 units of each other.

Cox regression was used to compare the time to first new offence. This reoffending outcome was modelled without and with adjustment for other potential covariates.

Results

Descriptive statistics

Table 1 shows the percentage of offenders with a good behaviour bond (n=52,932) who reoffended within three years of their index court appearance by the length of the bond imposed for their principal offence. The unadjusted mean number of days from the index appearance to first new offence for the bond group is also shown in Table 1. As can be seen, there is a significant bivariate relationship between sentence length and both the likelihood of reoffending and the time to first new offence. Offenders who received long bonds were less likely to be reconvicted of an offence within three years of their index court appearance (Chi-square=115.616; $p<.001$) and on average, took longer to reoffend (mean=782.9;

Log Rank, Mantel-Cox=120.195; $p<.001$) compared with offenders who received short bonds.

Table 2 presents the number and percentage of offenders with a suspended sentence (n=15,129) who reoffended within three years of their index court appearance by the length of the suspended sentence imposed for the principal offence. The unadjusted mean number of days to first new offence for the suspended sentence group is also shown here. Again, there was a significant bivariate relationship between sentence length and the likelihood of reoffending. Offenders who received long suspended sentences (of 12 months or more) were less likely to be found guilty of a new offence within the three year follow-up period (Chi-square=49.066; $p<.001$) and on average, took longer to reoffend (mean=704.1; Log Rank, Mantel-Cox=58.439; $p<.001$) than offenders who received short suspended sentences.

Long versus short good behaviour bonds

Table 3 presents the results of the Cox regression modelling for the bond sample after matching on propensity scores (n=26,650). A hazard ratio of more than one indicates that the instantaneous risk of reoffending is higher for offenders given long bonds and a hazard ratio less than one indicates that the instantaneous risk of reoffending is less for offenders given long bonds.

Table 1 Reoffending outcomes for short and long bond groups, unmatched (n=52,932)

	0 to 23 months	24+ months	p
Reoffended within 36 months			
Percent	47.8	42.5	<.001
Number of days to first new offence			
Mean	737.4	782.9	<.001

Table 2 Reoffending outcomes for short and long suspended sentence groups, unmatched (n=15,129)

	0 to 11 months	12+ months	p
Reoffended within 36 months			
Percent	58.1	52.3	<.001
Number of days to first new offence			
Mean	646.7	704.1	<.001

The hazard ratio associated with treatment group was 0.921 (95% Confidence Interval 0.888, 0.954) and was also significant ($p < .001$). This indicates that treated offenders were eight percent less likely to reoffend at any given time compared with untreated offenders. The hazard ratio associated with the treatment group variable remained significant even after adjusting for relevant covariates in the reoffending models (Hazard Ratio=0.905, $p < .001$).

Supervised and unsupervised bonds

Table 4 presents the outcomes from the reoffending analyses for the supervised and unsupervised bond groups after matching on propensity scores. For the offender group who received a court imposed bond with supervision, there

was a significant effect of bond length on the time to first new offence (Hazard Ratio 0.900; $p < .001$). This significant difference remained even after adjusting for covariates. For matched offenders who received a court-imposed bond without supervision, there was also a significant effect of bond length on the time to first new offence (Hazard Ratio 0.930, $p = 0.003$). This difference was significant with and without covariate adjustment. These results indicate that both supervised and unsupervised offenders who received long bonds took longer, on average, to reoffend than offenders who received short bonds.

Reoffending: Long versus short suspended sentences

Table 5 presents the results of the Cox regression modelling for the suspended sentence sample ($n = 9,594$). These analyses

show that after matching offenders on their propensity scores, there was no significant effect of sentence length on the time to first new offence ($p = 0.096$). There was, however, some evidence for a significant difference in reoffending between offenders given long and short suspended sentences after adjusting for relevant covariates. Net of controls, offenders given long suspended sentences took, on average, longer to reoffend (Hazard Ratio=0.919, $p = 0.002$) compared with offenders given short suspended sentences.

Supervised and unsupervised suspended sentences

Table 6 presents the outcomes from the reoffending analyses for the supervised and unsupervised suspended sentence groups after matching on propensity scores. For the offender group who received a suspended sentence with supervision, there was no significant effect of sentence length on the time to first new offence ($p = 0.292$), with or without adjustment for covariates. For matched offenders who received a suspended sentence without supervision, there was also no significant effect of sentence length on the time to new offence ($p = 0.443$), with or without adjustment for other covariates.

Long bonds versus long suspended sentences

Given the significant effect of sentence length on reoffending for both the bond and suspended sentence groups, further analyses were undertaken to investigate whether long suspended sentences are more effective than long bonds in reducing reoffending. Only offenders given a long suspended sentence (defined as 12 months or more) or long bond (defined as 24 months or more) were included in this analysis.

Table 7 presents the outcomes from the reoffending analyses for the long suspended sentence and long bond groups after matching on propensity scores. After matching, there were no significant differences between the long suspended sentence and long bond groups in the time to first offence ($p = 0.062$), with and without adjustment for covariates.

Table 3 Reoffending for short and long bond groups, matched ($n = 26,650$)

	0 to 23 months	24+ months	<i>p</i>	95% CI ^a
Time to first new offence				
Unadjusted hazard ratio	1.00	0.921	<.001	0.888–0.954
Number of days to first new offence				
Adjusted ^b hazard ratio	1.00	0.905	<.001	0.873–0.939

a: Standard errors have been adjusted to account for matched nature of the data

b: Adjusted for demographic, offence and prior offending variables

Table 4 Reoffending for short and long bond groups by type of order, matched

	0 to 23 months	24+ months	<i>p</i>	95% CI ^a
Bond with supervision ($n = 10,150$)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.900	<.001	0.853–0.949
Adjusted ^c hazard ratio	1.00	0.883	<.001	0.836–0.933
Bond without supervision ($n = 16,438$)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.930	0.003	0.886–0.976
Adjusted ^c hazard ratio	1.00	0.919	0.001	0.876–0.965

a: Standard errors have been adjusted to account for matched nature of the data

b: 17 cases from the supervised bond sample and 5 cases from the unsupervised bond sample were dropped from the survival analysis because the time to first new offence was zero after adjusting for time spent in custody

c: Adjusted for demographic, offence and prior offending variables

Table 5 Reoffending for short and long suspended sentence groups, matched ($n = 9,594$)

	0 to 11 months	12+ months	<i>p</i>	95% CI ^a
Time to first new offence				
Unadjusted hazard ratio	1.00	0.956	0.096	0.906–1.008
Adjusted ^b hazard ratio	1.00	0.919	0.002	0.871–0.971

a: Standard errors have been adjusted to account for matched nature of the data

b: Adjusted for demographic, offence and prior offending variables

Table 8 presents the outcomes from the reoffending analyses for the supervised and unsupervised long bonds and long suspended sentence groups after matching on propensity scores. For both the supervised and unsupervised cohorts, there were no significant differences between the bond and suspended sentence groups in the time to first new offence, with and without adjustment for covariates.

Discussion

The main aim of the current study was to examine the effect of order length on reoffending among offenders placed on good behaviour bonds and suspended sentences. A secondary aim was to determine whether supervision moderated the effects of order length.

The evidence presented in this report shows that after adjustment for other factors, the time to first new offence in the three year period following imposition of a bond was lower for those on bonds 24 months and longer. Supervision made no difference to this result. After adjustment for other factors, the time to first new offence was also lower for those on long (12 month plus) suspended sentences. However, no significant effect of sentence length was observed when separate analyses were conducted for suspended sentences with supervision and suspended sentences without supervision. This is probably a result of reduced statistical power. The number of matched cases involving suspended sentences with and without supervision was substantially smaller than the number of matched cases involving bonds with and without supervision. Given that the effect of sentence length was comparatively small when supervised and unsupervised suspended sentences were combined into one analysis, it is not surprising that the effect disappeared altogether when the two types of suspended sentence were analysed separately.

The comparison of long bonds with long suspended sentences produced very weak evidence that offenders on long suspended sentences took longer to reoffend than similar offenders placed on long bonds.

The p -value did not reach the conventional level of statistical significance but the adjusted comparison was close to significant (see Table 7; Hazard Ratio=0.941, $p=0.054$). Given the sample on which these comparisons are based ($n=8,094$) was very large, it seems unlikely that further increases in sample size would render these comparisons significant.

Taken overall, these findings support the hypothesis that offenders placed on long (24 month plus) bonds or long (12 month plus) suspended sentences are less likely to reoffend than offenders placed on short bonds or short suspended sentences. It is important to note, however, that although a large number of factors known to influence bond/suspended sentence length and

Table 6 Reoffending for short and long suspended sentence groups by type of order, matched

	0 to 23 months	24+ months	p	95% CI ^a
Suspended sentence with supervision (n=5,582)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.964	0.292	0.902–1.032
Adjusted ^c hazard ratio	1.00	0.946	0.116	0.884–1.014
Suspended sentence without supervision (n=3,934)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.967	0.443	0.886–1.054
Adjusted ^c hazard ratio	1.00	0.928	0.102	0.849–1.015

a: Standard errors have been adjusted to account for matched nature of the data

b: 21 cases from the supervised suspended sentence sample and 7 cases from the unsupervised suspended sentence sample were dropped from the survival analysis because the time to first new offence was zero after adjusting for time spent in custody

Table 7 Reoffending outcomes for long bonds and long suspended sentence groups, matched (n=8,094)

Reoffending outcome	Long bonds	Long suspended sentences	p	95% CI ^a
Time to first new offence				
Unadjusted hazard ratio	1.00	0.944	0.062	0.889–1.003
Adjusted ^b hazard ratio	1.00	0.941	0.054	0.885–1.001

a: Standard errors have been adjusted to account for matched nature of the data

b: Adjusted for demographic, offence and prior offending variables

Table 8 Reoffending outcomes for long bonds and long suspended sentence groups by type of order, matched

	Long bonds	Long suspended sentences	p	95% CI ^a
With supervision (n=4,380)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.935	0.106	0.863–1.014
Adjusted ^c hazard ratio	1.00	0.948	0.204	0.872–1.030
Without supervision (n=3,556)^b				
Time to first new offence				
Unadjusted hazard ratio	1.00	0.952	0.338	0.860–1.053
Adjusted ^c hazard ratio	1.00	0.949	0.319	0.856–1.052

a: Standard errors have been adjusted to account for matched nature of the data

b: 15 cases from the supervised sample and 2 cases from the unsupervised sample were dropped from the survival analysis because the time to first new offence was zero after adjusting for time spent in custody

c: Adjusted for demographic, offence and prior offending variables

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reconviction have been controlled for, it is always possible some omitted variable is responsible for the observed relationship between length and reoffending. This model, for example, does not include controls for an offender's level of support in the community or the extent of their remorse. Either or both of these factors may influence penalty choice and/or risk of reoffending.

There are only three ways to conduct a stronger test of the effect of long bonds and long suspended sentences on risk of reoffending. The first is to conduct a randomised trial in which a large group of offenders are randomly allocated to short and long bonds/suspended sentences. Such a study would seem unlikely to gain ethical approval as it would involve subjecting offenders to different sanctions solely on the basis of chance.

The second possibility is to find a variable that influences penalty selection but has no direct effect on risk of reoffending. This would permit the use of two-stage least squares analysis and other similar techniques that control for both omitted and observable factors. The challenge here lies in finding such a variable. The one variable that might meet this requirement is magistrate/judge severity. If judicial officers differ in their proclivity to impose long bonds or suspended sentences and if that proclivity is unrelated to reoffending other than by way of its effect on the penalty received, it may be possible to conduct a more stringent test of the hypothesis that long bonds and long suspended sentences reduce the risk of reoffending.

The third possibility is to change the law so as to permit longer bonds and suspended sentences. If such a change resulted in longer bonds and suspended sentences, it would create the conditions for a natural experiment. In other words, it would make it possible to examine rates of reoffending before and after the change while controlling for any differences in the characteristics of offenders receiving bonds and suspended sentences before and after the change.

A change in sentencing law for this purpose might be considered unlikely, but there are other justifications for reform in this area. As the NSW Law Reform Commission recently pointed out (NSW LRC 2012), at present in New South Wales, a court cannot impose a short suspended sentence in conjunction with a long s 12 good behaviour bond (the bond imposed when a prison sentence is suspended). This constraint has been the subject of judicial criticism (NSW LRC 2012). Indeed, in a 2011 survey of judicial officers carried out by the NSW Sentencing Council, 62 percent of those surveyed were in favour of increasing the maximum length of a s 12 bond. Eighty-two percent were in favour of changing the law so that a s 12 bond of greater length than a suspended sentence could be imposed (NSW LRC 2012).

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References

- All URLs correct at May 2013
- Apel RJ & Sweeten G 2010. Propensity score matching in criminology and criminal justice, in Piquero AR & Weisburd D (eds), *Handbook of quantitative criminology*. New York: Springer: 543-562
- Fitzgerald J & Hua J 2006. Matching court records to measure reoffending. *Crime & Justice Bulletin* no. 95. Sydney: NSW Bureau of Crime Statistics and Research
- Leuven E & Sianesi B 2003. *PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing*. <http://ideas.repec.org/c/boc/bocode/s432001.html>
- MacKinnell I, Poletti P & Holmes M 2010. Measuring offence seriousness. *Crime & Justice Bulletin* no. 136. Sydney: NSW Bureau of Crime Statistics and Research
- NSW Bureau of Crime Statistics and Research (NSW BOCSAR) 2011. *NSW criminal court statistics 2010*. Sydney: NSW BOCSAR
- NSW Law Reform Commission (NSW LRC) 2012. *Intermediate custodial sentencing options*. Sentencing question paper 6. http://www.lawreform.lawlink.nsw.gov.au/lrc/lrc_publications/lrc_questionpapers.html