

The recidivism of offenders given suspended sentences: A comparison with full-time imprisonment

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Between 2000 and 2007, the number of suspended sentences imposed by the NSW Local Court rose 300 per cent, from 1,704 to 5,172. In 2000, suspended sentences accounted for about one per cent of all penalties imposed by the NSW Local Court. By 2007, this figure had risen to 4.6 per cent. One issue of contention is whether suspended sentences have the same deterrent effect on re-offending as prison sentences. In this study we compare rates of re-offending among offenders who received suspended sentences with rates of re-offending among a matched control group who received a full-time prison sentence. For offenders with no prior prison sentence, there was no statistically significant difference in re-offending between offenders who received a suspended sentence and those who received a prison sentence. Among offenders who had previously been to prison, however, those who received a prison sentence re-offended substantially quicker than those who received a suspended sentence. We conclude that there is no evidence full-time imprisonment exerts a greater deterrent effect than a suspended sentence of imprisonment.

Keywords: suspended sentences, deterrence, re-offending, propensity score matching, survival analysis

INTRODUCTION

Over the last few years, suspended sentences have become an increasingly popular disposition in New South Wales (NSW). Between 2000 and 2007, the number of suspended sentences imposed by the NSW Local Court rose 300 per cent, from 1,704 to 5,172. In 2000, suspended sentences accounted for about one per cent of all penalties imposed by the NSW Local Court. By 2007, this figure had risen to 4.6 per cent (NSW Bureau of Crime Statistics and Research 2001; 2008).

This study is concerned with the deterrent effectiveness of suspended sentences compared with full-time imprisonment. Our focus is on specific rather than general deterrence. In other words, the question we seek to address is whether, other things being equal, offenders who receive a suspended sentence are less likely to re-offend than offenders who receive a sentence of full-time

imprisonment. There are good reasons for pursuing such a study. Suspended sentences appear to be regarded by the media, members of the public and victims (e.g. Dawson 2002; Roberts and Roach 2005; Victorian Sentencing Advisory Council 2005a), as a 'let-off', with the offender commonly perceived as 'walking free' or having received a slap on the wrist (Freiberg 2001; Freiberg 2002; Home Office 1990; Warner 2000). The implicit suggestion is that a full time sentence of imprisonment would have had a much greater deterrent effect. It is of some interest to know, therefore, whether prison is more effective than a suspended sentence as a deterrent to further offending.

The structure of the bulletin is as follows. The next section briefly reviews the origins of suspended sentences. The section that follows reviews evidence on the deterrent effectiveness of suspended sentences and full time imprisonment. The fourth section of the bulletin describes the current study and

the methods used to conduct it. The fifth presents our findings and the final section discusses their implications for policy.

ORIGIN OF SUSPENDED SENTENCES

The modern form of the suspended sentence first appeared in France in the late 19th century, when a bill to create a suspended sentence was introduced into the French Senate by Senator Berenger. The stated purpose of the Bill was:

To mitigate the punishment sufficiently to avoid the dangers of imprisonment, while preserving the painful aspect of a penalty, which a simple fine does not generally achieve in our present moral state. (French Senate debates, 26 May 1884, excerpted in Ancel 1971, p. 17)

Although it was introduced in countries such as France and Belgium to mitigate the harmful aspects of imprisonment, the introduction of suspended sentences in England and other common law

countries during the twentieth century appears to have been prompted by different considerations. Bottoms (1981) described these as the 'avoiding imprisonment' and 'special deterrent' theories of the suspended sentence. According to the 'avoiding imprisonment' theory, suspended sentences provide a useful means by which to contain prison costs and prison overcrowding, without sacrificing the deterrent effect associated with imprisonment. According to the 'special deterrent' theory, suspended sentences are more effective in deterring offenders than community-based orders such as bonds or probation, because the consequences of re-offending during the period of a suspended sentence are 'known and certain', whereas those attending a breach of probation are not (Bottoms 1981, p. 2).

The available evidence suggests that suspended sentences generally have little impact on the rate of imprisonment and may actually increase it. Bottoms (1981, p. 5) found that the introduction of suspended sentences in England resulted in a reduction in the use of fines and probation rather than a reduction in the rate of imprisonment. He also found 'clear evidence that magistrates' courts began to impose longer sentences in those cases where they suspended the sentence than they did in cases in which they actually imposed imprisonment' (Bottoms 1981, p. 6). Brignell and Poletti (2003) reported similar findings in New South Wales. Following the introduction of suspended sentences in New Zealand, Spier (1998) found that the number of prison sentences imposed on offenders initially declined. As offenders began breaching their suspended sentences, however, the rate of imprisonment increased.

Tait's (1995) study of suspended sentences in Victoria, Australia, is the only study to date that reported a decrease in imprisonment following the introduction of suspended sentences. Tait (1995, p. 154) attributed this unusual result to the very low rate at which offenders placed on suspended sentences in Victoria were imprisoned for breaching their suspended sentence orders. This, in turn, he attributed to the short duration of

suspended sentence orders and the wide discretion enjoyed by Victorian courts in how to respond to a breach. Subsequently both of these factors were substantially amended by legislation and more recent evidence indicates significantly higher rates of breach (and imprisonment for committing a breach) of the conditions of their suspended sentence (Turner 2007; Victorian Sentencing Advisory Council 2005a).

PAST RESEARCH

Suspended sentences

The earliest cited special deterrent study on suspended sentences was by Shoham and Sandberg (1964). It involved a comparison of 3,321 offenders in receipt of a suspended sentence in 1955-56 with a randomly selected control group (of unstated size) who were 'sentenced to a corrective measure other than suspended imprisonment'. The study found no significant differences in 'the general success rate' (as measured by percent reconvicted) between the two groups, leading the authors to conclude that 'success and failure are related more to the offender's personality and the type of offense he commits than to the type and severity of sentence he receives' (Shoham & Sandberg 1964, p. 79). They found a significant difference between treatment and control groups (favouring the former) when they compared them for offenders convicted of 'white collar' crimes. The study, however, had few controls for other factors that might have influenced both the choice of penalty and the risk of recidivism (e.g. gender, number of prior convictions, types of previous penalties).

Suspended sentences were introduced in England in 1967 and have been the subject of several reconviction studies there. In 1981, Soothill undertook a study of 68 offenders who received a suspended sentence within the first year of their release from prison in 1968-69, following them up for ten years. He also conducted a five-year follow-up study on a similar cohort of 48 men released from the same prison in 1972-73 who also received a suspended sentence within

one year of release. He found that 78 per cent of the first cohort and 57 per cent of the second were reconvicted in the first year after the suspended sentence was imposed, with 84 per cent and 71 per cent, respectively, reconvicted during the operational period of the suspended sentence. By five years, 90 per cent of the first cohort and 88 per cent of the second had been reconvicted, leading Soothill to conclude that '[a]ny belief that the use of the suspended sentence will often deter the recidivist from engaging in further criminal activity can soon be dismissed' (Soothill 1981, p. 822). Soothill's study, unfortunately, had no comparison group receiving a sanction other than a suspended sentence. It is therefore impossible to say what the reconviction rate would have been if some penalty other than a suspended sentence had been imposed on offenders with the same characteristics.

In 1979, the Home Office released an extensive reconviction study of 5,000 offenders convicted in January 1971 (Philpotts & Lancucki 1979). The authors found that 'males given custodial sentences had higher reconviction rates than males given suspended sentences or probation or supervision orders' (Philpotts & Lancucki 1979, p. 16). The interpretation of this finding, however, was clouded by the fact that Philpotts and Lancucki (1979) made no allowance for any time that offenders in the sample spent in custody and made no attempt to control for pre-existing differences between the imprisonment group and those who received a suspended sentence. Walker, Farrington and Tucker (1981) reanalyzed the Philpotts-Lancucki data, adjusting for time spent in custody, and found that reconvictions after a suspended sentence were 'markedly more numerous than the calculation from offence types would lead one to expect' (Walker, Farrington & Tucker 1981, p. 359). Once again, however, the apparent effect of sanction type on offending may simply have reflected the effect of omitted variables correlated with both the choice of sanction and re-offending (e.g. prior sanctions, number of concurrent offences, gender).

Raynor and Vanstone (2001) compared 12- and 24-month reconviction rates among a sample of 107 offenders placed on a specialized probation program with the reconviction rate of a sample of 90 offenders given a suspended sentence. Lower reconviction rates were found among offenders given a suspended sentence but no statistical tests were carried out on the differences between the two groups and no attempt was made to match them on characteristics related to the choice of sentence and risk of re-offending. In a somewhat later study, conducted in the United Kingdom, Cocker (2006) examined 558 offenders on behalf of the National Probation Service in West Yorkshire and found that offenders who received a suspended sentence had the lowest overall 24-month reconviction rate (22%). This rate compared with 39 per cent for conditional discharge, 37 per cent for fines and an average of 45 per cent for various 'community penalties' such as a Community Rehabilitation Order. As Cocker herself points out, however, her groups were poorly matched in terms of characteristics relevant to re-offending (Cocker 2006, pp. 10). It is unclear, therefore, whether the differences she observed were a result of selection bias or an effect of the penalty itself.

Weatherburn and Bartels (2008) compared 1,399 offenders given a suspended sentence in 2000 with 4,957 offenders given a supervised bond. This study is notable because it controlled for offence type, offence seriousness, plea, bail status, number of concurrent offences, legal representation, number of prior conviction episodes, age, gender, Indigenous status, offender location (remote v non-remote area) and whether the offender has previously received a sentence of full-time imprisonment. After controlling for these factors, Weatherburn and Bartels (2008) found no difference between those receiving suspended sentences and those receiving supervised bonds in the time to the next proven offence.

In a separate study, Bartels (2009) followed up 588 offenders convicted in the Supreme Court of Tasmania for two years. She found that offenders who received

a wholly suspended sentence had the lowest reconviction rates (42%; n = 229), compared with 62% for offenders who received full-time imprisonment (n = 172), after controlling for offender age, gender, prior criminal record; offence type and seriousness, and sentencing judge. Interestingly for the purposes of this study, there was no statistically significant difference in reconviction rates between wholly and partly suspended sentences (44% reconvicted; n = 81).

Prison

There have been two major reviews of the evidence on the specific deterrent effect of prison: one conducted by Nagin et al. (in press) and the other conducted by Villettaz, Killias and Zoder (2006). As the former is the more recent review and reaches essentially the same conclusions as Villettaz et al. (2006), we base our summary of the evidence around Nagin et al. (2009). They summarise the evidence under four different headings: experimental and quasi-experimental studies, matching studies, regression based studies and 'other' studies. We will adopt the same framework here. Rather than recapitulate their observations in detail, however, we will illustrate each of the types of study they reviewed and then summarise their observations in relation to that type of study.

Experimental studies

Killias, Aebi and Ribeaud (2000) provide a good example of an experimental study of the specific deterrent effect of prison. They took advantage of a facility in Switzerland under which offenders sentenced to short (14 day) periods of imprisonment could opt to serve the sentence as a form of community service order. Swiss law at the time allowed for testing, on an experimental basis, of innovative forms of correctional treatment, including alternatives to imprisonment. Normally most offenders opt for community service rather than prison, although some apparently do prefer to spend their 14-day sentence in custody. The Directors of Corrections in the Swiss canton of Vaud agreed to conduct an experiment in which eligible offenders were randomly allocated to prison or

community service. The justification given for this seemingly inequitable treatment of offenders was that the resources available to manage offenders on community service orders were strictly limited.

The treatment (community service) group (n = 84) was compared with the randomised control (prison) group (n = 39) and another comparison group of 36 offenders who had been chosen for community service by correctional staff prior to the experiment. For each group, measures were taken of the prevalence and frequency of police-recorded offending (police contacts) and court convictions both before the index court appearance (i.e. the appearance at which they were allocated to groups) and after that appearance. The follow-up period was two years. The prevalence of police contact and conviction declined post-allocation for all three groups, as did the frequency of police contacts and court convictions. No difference was found between the three groups in relation to the changes in prevalence of police contact. When the frequency of police contact was examined, however, the control (custody) and comparison groups were found to have had slightly more contacts after the index court appearance whereas members of the treatment group had significantly fewer.

Nagin et al. (2009) found five experimental studies of specific deterrence. All five found at least one criminogenic effect of incarceration, most of which were statistically significant. Two of these studies (Killias et al. 2000; Schneider 1986) involved juvenile offending. Three reported at least one deterrent effect. However only one of these effects (Barton & Butts 1990) was statistically significant and that study failed to separate deterrence from incapacitation effects.

Matching studies

A number of studies have tested the specific deterrent effect of prison using variable-by-variable or propensity score (Rosenbaum & Rubin 1983; 1984) matching.

Kraus (1974) provides a good example of variable-by-variable matching although

his work is now more than 30 years old. Kraus (1974) drew the first 50 consecutive entries from each of seven categories of offence from the probation register of the NSW Department of Child Welfare. He then used the Child Welfare Department's 'Institutional Index' to match each one of the 350 probationers with a comparable offender who was committed to an institution during the same period (1962-63). The matching was done on date of birth, age at current sentence, type of current offence, age at time of first offence, number of previous offences, category of previous offences and number of previous committals to an institution. Offenders were followed up for five years. Recidivism was measured in terms of rate of offending and the number of episodes of imprisonment. Recidivism was found to be higher after detention for all but two offences: 'behaviour problems' and 'take and use motor vehicle'. There was no difference between the two groups in relation to 'behaviour problems'. Offenders who had served time in detention were less likely to commit the offence 'take and use motor vehicle', post release, than offenders who had been sentenced to probation.

The essence of propensity score matching is to match individuals in terms of their likelihood of receiving some treatment (e.g. prison). Outcomes (e.g. re-offending) are then compared among individuals who are nearly identical in their likelihood of receiving treatment but who differ in whether they actually received treatment. Overall, across both types of matching studies, Nagin et al. (2009) find that the evidence points to a criminogenic effect of incarceration, pointing out that 'although the preponderance of criminogenic point estimates are not statistically significant, there is more evidence for statistically significant effects than in the experimental studies' (Nagin et al. 2009, p. 40).

Regression studies

Most studies examining the specific deterrent effect of penalties on recidivism use regression methods.

Spohn and Holleran (2002) compared 735 convicted drug offenders given probation sentences with 301 drug

offenders sentenced to prison. The study controlled for age, sex, race, employment and type of drug offender. Rather than restrict themselves to these controls, however, Spohn and Holleran (2002) first constructed a model of the factors that influenced whether or not an offender was given a custodial sentence. This model included a number of factors likely to influence the choice of sentence but not likely to affect the risk of recidivism. The predicted probability of a prison sentence obtained in this first stage of the analysis was then added to the controls included in the second stage of the analysis. The advantage of this strategy is that it purges the penalty variable of any association with other factors correlated with both penalty choice and recidivism. The results of their study suggested that offenders who were given a prison sentence were more likely to re-offend and took less time to re-offend. Nagin et al. (2009) found 31 regression studies measuring the impact of custodial sentences on recidivism. The coefficient measuring the effect of prison was positive (suggesting a criminogenic effect) in 13 of these studies and 12 reported at least one significant positive effect. Only three reported at least one significant negative (deterrent) effect.

Other studies

Some studies do not fit neatly into the experimental, matching or regression study categories. The Drago, Galbiati and Vertova (2007) study is an example. Theirs is best thought of as a natural experiment. They examined the effect of a new bill passed by the Italian Parliament in July 2006. The Collective Clemency Bill was designed to address the overcrowding in Italian prisons and provided for a three-year reduction in detention for all inmates who had committed a crime before 2 May 2006. This resulted in the release of all those with a residual prison sentence of less than three years (some 22,000 inmates). Crucially for this study, the Bill stated that any former inmate who committed another crime within five years following their release from prison would be required to serve the residual sentence suspended by the pardon in addition to the prison time incurred as a result of the new offence.

The effect of the Bill was to create a situation where the sentence for any future offence effectively varied randomly across prisoners released from custody as a result of the pardon. An individual who entered prison one year before the pardon, for example, would have one year extra to serve for any future offence plus whatever sentence was imposed for the new offence. An individual convicted of exactly the same offence and with exactly the same case particulars that happened to enter prison two years earlier would have two years to serve on top of any prison time for the new offence. The sentence for any future offence, in other words, depended only on when an offender entered custody for the last offence. When Drago et al. (2007) analysed the effect of this natural experiment, they found that each additional month in the expected sentence reduced the propensity to re-offend by 1.24 per cent. The effect depended, however, on the time previously served in prison. The longer the time already spent in prison, the weaker the relationship between the residual sentence and recidivism.

Helland and Tabarrok (2007) examined the effect of California's 'three strikes and you're out' sentencing legislation (Proposition 184). Under this legislation, an offender with two 'strikes' (convictions from a prescribed list of serious offences) who is convicted of another felony faces a prison sentence of 25 years to life and cannot be released prior to serving 80 per cent of the 25-year term. An offender with only one conviction for a strikeable offence who commits another felony faces a doubling of the length of the last sentence and no prospect of release until 80 per cent of the sentence is served. The later penalty in practice is much less severe than the first.

Because the factors that determine whether a defendant ends up convicted of only one strikeable or two strikeable offences (strength of evidence, competence of prosecutor etc.) are effectively random in nature, Helland and Tabarrok (2007) argued that the only systematic difference between the two groups was the penalty hanging

over them for their next offence. To estimate the deterrent effect of the three-strikes sentencing legislation, then, they compared the re-offending rate of offenders released after conviction for two strikeable offences with the re-offending rate of offenders released after two trials for strikeable offences but only one conviction for a strikeable offence. They found that California’s three-strike legislation reduced felony arrests among ‘two strike’ offenders by 17-20 per cent. No such effect was found in States that did not have three-strike sentencing legislation. This pattern of results suggests a deterrent effect.

THE PRESENT STUDY

AIM

The research just reviewed provides little evidence that suspended sentences or full-time imprisonment are more effective as specific deterrents than sanctions that carry no threat of imprisonment. To date, however, no study has compared full-time imprisonment with a suspended sentence in terms of their relative efficacy in deterring further offending. The aim of the present study, then, is to see whether offenders given a prison sentence are less likely to re-offend than a comparable group of offenders given a suspended sentence of imprisonment.

DATA SOURCE

The data for the present study were drawn from the NSW Bureau of Crime Statistics and Research re-offending database (ROD). Further information about ROD can be found in Hua and Fitzgerald (2006). In essence, ROD contains the offending history record of each person who has appeared in a NSW court since 1994. For the purposes of the present study, a cohort of offenders who received a suspended prison sentence (treatment group) or a full-time custodial sentence (control group) in a NSW Local or District Court between 2002 and 2004 was drawn from ROD. All offenders had three years of potential follow-up time after their index court appearance.

OUTCOME VARIABLE

Our measure of re-offending in the present study is free time to first offence resulting in a conviction (freetime). The term ‘free’ in this context means time spent out of custody. Free time is calculated from the date of the court appearance at which the offender received the custodial or suspended sentence (index court date). The maximum follow-up period was three years. Offenders who received a custodial sentence at the index court appearance, or who were placed in custody for offences committed before the index appearance (including breaching an order related to prior offences), have a truncated follow-up period. The average follow up period was approximately one year and nine months (648 days). Survival analysis is used to make comparisons as this approach accounts for differences in follow-up time.

TREATMENT VARIABLE

The primary treatment variable is whether a defendant received a suspended prison sentence or a custodial prison sentence at their index court appearance, coded ‘1’ if the offender received a suspended sentence and ‘0’ otherwise.

DATA CLEANING

As noted earlier, variables relevant to undertaking multi-variate analysis in this study were obtained from ROD for the suspended sentence and prison sentence samples. Before undertaking the analysis the data were reviewed for each case. Table 1 details the exclusion restrictions used to clean the data and the number of affected cases in each sample.

Cases were excluded if they had missing residential postcode information, as the SEIFA disadvantage index derived from postcode information was a strong predictor of receiving a suspended sentence. We acknowledge a larger proportion of cases from the prison sample had missing postcode information and this could lead to a bias. However we found no differences in the substantive results when the disadvantage index was not used, or when we used the index and had a dummy variable for missing disadvantage index information. Cases were also excluded if they had no time in the community in which to re-offend. Not surprisingly most cases with no free time were from the prison sample and it is likely many had not yet been released from prison.

COVARIATES

Covariates are variables that are related to both receiving treatment (suspended sentence) and the outcome (re-offending). Covariates are integral to the propensity score matching method (described below) used to analyse the data. The goal of propensity score matching is to match cases so that the treatment and control groups are equivalent with regard to all known covariates. While we were limited to covariates in ROD, past research suggests that a number of variables in the database are strongly related to receiving a suspended sentence and to reoffending (Poletti & Vignaendra 2005). After considering the judicial process related to sentencing offenders and the predictors of re-offending the following covariates were used:

- Age
- Gender

Table 1: Number of cases excluded by type of sentence

		<i>Suspended Sentence</i>	<i>Prison sentence</i>	<i>Total</i>
Total number of cases before exclusions		7,163 (42.2%)	9,811 (57.8%)	16,974
Exclusions	Missing postcode information	336 (11.7%)	2,528 (88.3%)	2,864
	No free time to re-offend	3 (0.5%)	619 (99.5%)	622
	Total Excluded	338 (10.8%)	2,793 (89.2%)	3,131
Total number of cases after exclusions		6,825 (49.3%)	7,018 (50.7%)	13,843

- Indigenous (ATSI) status (Indigenous/ not Indigenous)
- Unknown Indigenous status (unknown/ known)¹
- Quartiles of disadvantage based on SEIFA index of an offender's residential postcode²
- Urban area classification based on ARIA index of offender's residential postcode³
- Court jurisdiction (local/district)
- Seriousness of principle offence (four categories based on OSI)⁴
- Plea for principal offence (guilty/ not guilty)
- Principal offence type (theft, breach, violence, driving, other)
- Number of concurrent offences
- Number of prior convictions/divided by age (offending rate)
- Whether the offender had previously been imprisoned
- Whether the offender had previously received a suspended sentence
- Whether the offender had a conviction as a juvenile
- Whether the offender had a prior violent offence

ANALYSIS TECHNIQUE

Re-offending outcomes were analysed in two stages: a matching stage and an outcome comparison stage (Krebs et al. 2007). In the first stage, suspended sentence cases were matched to prison cases using Propensity Score Matching (PSM)⁵. Logistic regression was used to estimate the propensity scores (i.e. the probability for each offender that he or she would receive a suspended sentence). We used the STATA module psmatch2 and one-to-one nearest neighbour matching without replacement to match suspended sentence cases to prison sentence cases. Suspended sentence cases were considered matched when there was a prison sentence case with a propensity score within .01 units (calliper) of the treatment case's score

Table 2: Logistic regression model used to estimate the propensity score

Number of observations = 13843

Log likelihood = -8337.00; LR $\chi^2(26) = 2513.78$; Prob > $\chi^2 = 0.00$

Dependent Variable = Treatment (Suspended sentence = 1, Prison = 0)

Variables	Categories	Coef.	Std. Err.	P>z
Gender	Male	-0.51	0.06	0.00
	Female			
Indigenous status	Indigenous	-0.10	0.06	0.07
	Not Indigenous			
Unknown indigenous status	Unknown	0.20	0.06	0.00
	Known			
Age	18-22	0.14	0.07	0.03
	23-27	0.15	0.06	0.02
	28-33	0.01	0.05	0.80
	34+			
Disadvantage areas index (quartiles)	High	-0.32	0.07	0.00
	High moderate	-0.07	0.07	0.32
	Low moderate	-0.24	0.07	0.00
	Low			
Court jurisdiction	Local	1.21	0.07	0.00
	District			
Plead guilty for index offence	Yes	0.23	0.05	0.00
	No			
Index offence type	Breach	-0.55	0.11	0.00
	Theft	-0.16	0.06	0.00
	Violence	-0.19	0.06	0.00
	Driving	-0.26	0.07	0.00
	Other			
Index offence seriousness	High	-0.18	0.07	0.01
	High moderate	-0.01	0.08	0.85
	Low moderate	0.33	0.07	0.00
	Low			
Concurrent offences	None			
	1	-0.18	0.05	0.00
	2-3	-0.55	0.05	0.00
	4 +	-1.15	0.06	0.00
Ratio of prior offences by age	Continuous variable	-0.96	0.15	0.00
Any prior offences	No	-0.15	0.07	0.02
	Yes			
Prior prison sentence	Yes	-1.00	0.05	0.00
	No			
Prior suspended sentence	Yes	-0.46	0.05	0.00
	No			
Prior juvenile offence	Yes	0.06	0.07	0.36
	No			
Prior violent offence	Yes	-0.09	0.05	0.04
	No			
Constant		0.46	0.12	0.00

(Leuven & Sianessi 2003). After matching, the equivalence of the two samples on all the relevant covariates was assessed using Rosenbaum and Rubin’s (RR) (1985) standardised bias estimate as well as comparing percentage point differences between the two samples before and after matching.

Once the two samples were matched, we used Kaplan Meier survival analysis to compare (free) time to first reconviction for suspended sentence and prison cases before and after matching. Differences in the re-offending survival functions between the suspended sentence and prison samples were tested using the log rank and Wilcoxon tests of the equivalence of the survival functions. The Wilcoxon test is also reported due to its robustness to deviations from the proportional hazards assumption (Collett 2003, p. 46-47).

For reasons that will become clear shortly, separate propensity score matching and Kaplan Meier survival analyses of the treatment effects were carried out for

cases who previously had, and had not, spent time in prison.

THE RESULTS

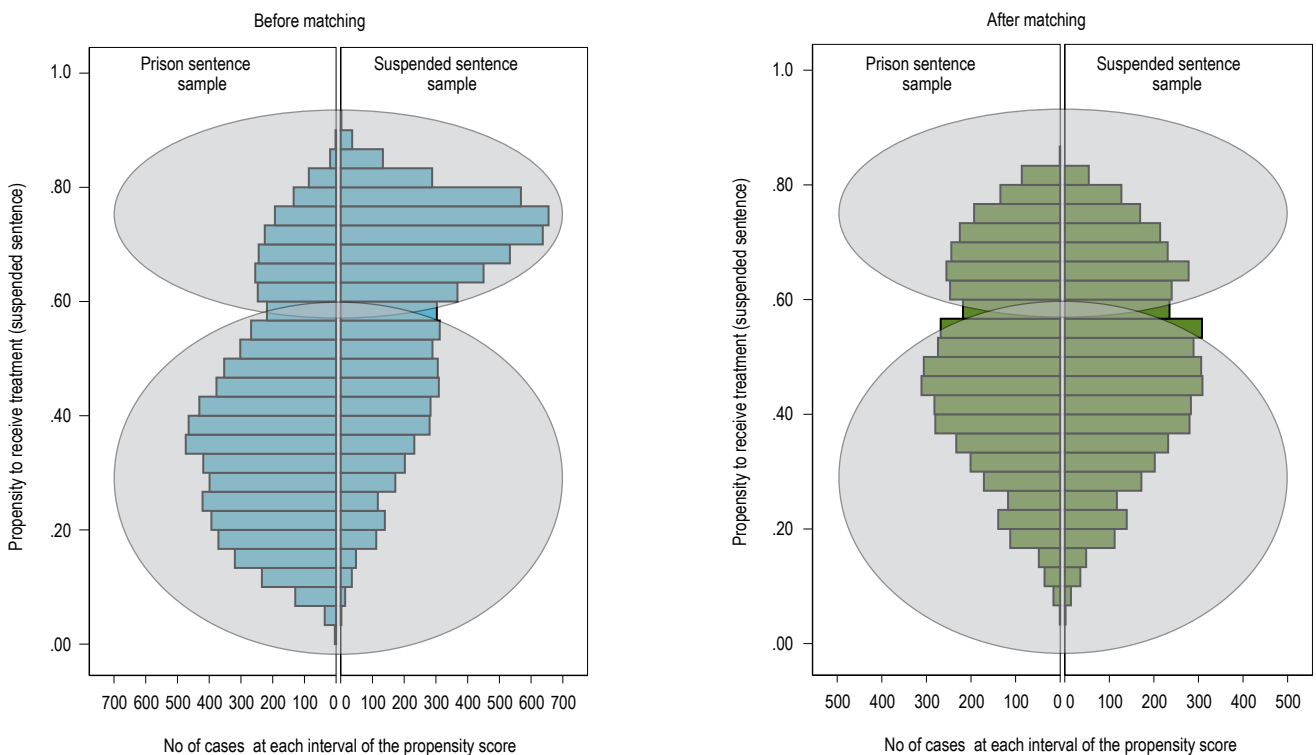
Initially we analysed the sample of offenders as one (homogeneous) group. Propensity scores were derived for each defendant using the logistic model presented in Table 2.

In Figure 1 we show the distribution of the propensity scores derived for cases in the treatment (suspended sentence) and control (prison sentence) samples before and after matching. The distribution appears bimodal, with one group of cases distributed around a propensity score of 0.7, and another distributed around a propensity score of 0.45.

We explored the two modes by comparing the characteristics of offenders with propensity scores above .57 (approximating the upper mode) and those with propensity scores below or equal to .57 (approximating the lower

mode). Offenders in the upper and lower modes varied substantially on a number of characteristics (i.e. prior offending rate, prior violence offences), but the most salient difference related to whether offenders had previously spent time in prison. Only 2.3 percent of offenders had been to prison in the upper mode, while in the lower mode 64.2 percent of offenders had been to prison (these differences were evident for both the suspended and prison sentence samples). Based on these findings we concluded that the samples are best considered as coming from two populations, differentiated by whether offenders had previously spent time in prison. As a precautionary measure, two separate comparisons of suspended sentences and prison were carried out; one for the group that had never previously been to prison, and the other for the group who had previously been to prison. Propensity score matching procedures as well as Kaplan Meier survival analysis were implemented separately with each group.

Figure 1: Distribution of cases on the propensity score in the prison and suspended sentence samples before and after matching



NO PRIOR PRISON GROUP

We begin with the results of our comparison of the suspended sentence and prison groups among those who had no prior prison sentence. As with the overall analysis reported above, a logistic regression model predicting the court outcome (suspended sentence or prison) was used to derive a propensity score for each case (see Appendix 1 for the model). Again, as previously described, one to one matching without replacement was used to match suspended sentence cases to prison sentence cases within .01 propensity score units. This method led to 2,454 suspended cases being dropped from the analysis sample, as they could not be matched to prison cases. This left a sample of 2,650 suspended sentence cases that were matched to 2,650 prison cases with similar propensity scores.

The last stage in PSM involves assessing the equivalence of the two samples on factors that may vary between the suspended sentence and prison samples and also be related to re-offending

(otherwise known as covariate balance testing). Equivalence was assessed using Rosenbaum and Rubin's (RR) (1985) standardised bias estimate as well as comparing percentage point differences between the two samples before and after matching. After matching, all individual RR standardised bias estimates were below 3.8 and, taken together, the covariates did not predict treatment (LR $\chi^2 = 16.18$; $p = 0.97$). Figure 2 shows the percentage point differences between the treatment and control groups on each of the relevant variables for the unmatched and matched samples. It is obvious from Figure 2 that, after matching, the differences between the groups are very small. This is reassuring evidence that the treatment and control groups are alike in terms of those factors that commonly influence re-offending.

Kaplan Meier survival analysis

As noted earlier, the free time to re-offence outcome is analysed by comparing the Kaplan Meier survival functions for the PSM samples. The

Kaplan Meier survival functions for the suspended sentence and prison samples before and after matching are shown in Figure 3. The X-axis shows the time since the imposition of the penalty. The Y-axis shows the proportion 'surviving', that is the proportion of offenders who have not been reconvicted of a further offence since the index court appearance. While before matching there was a significant difference in time to re-offend with the prison sample offending quicker, after matching there were no significant differences between the groups as clearly shown from the test results in Table 3.

PRIOR PRISON GROUP

We used an identical analysis method to examine the effect of court outcome (suspended or prison sentence) on time to re-offend with the group of offenders who had previously been to prison. The logistic regression model used to derive the propensity score for the prior prison group is included in Appendix 2. Using one to one matching without replacement,

Figure 2: No prior prison group - percentage point difference between suspended sentence and prison samples on relevant covariates before matching and after matching

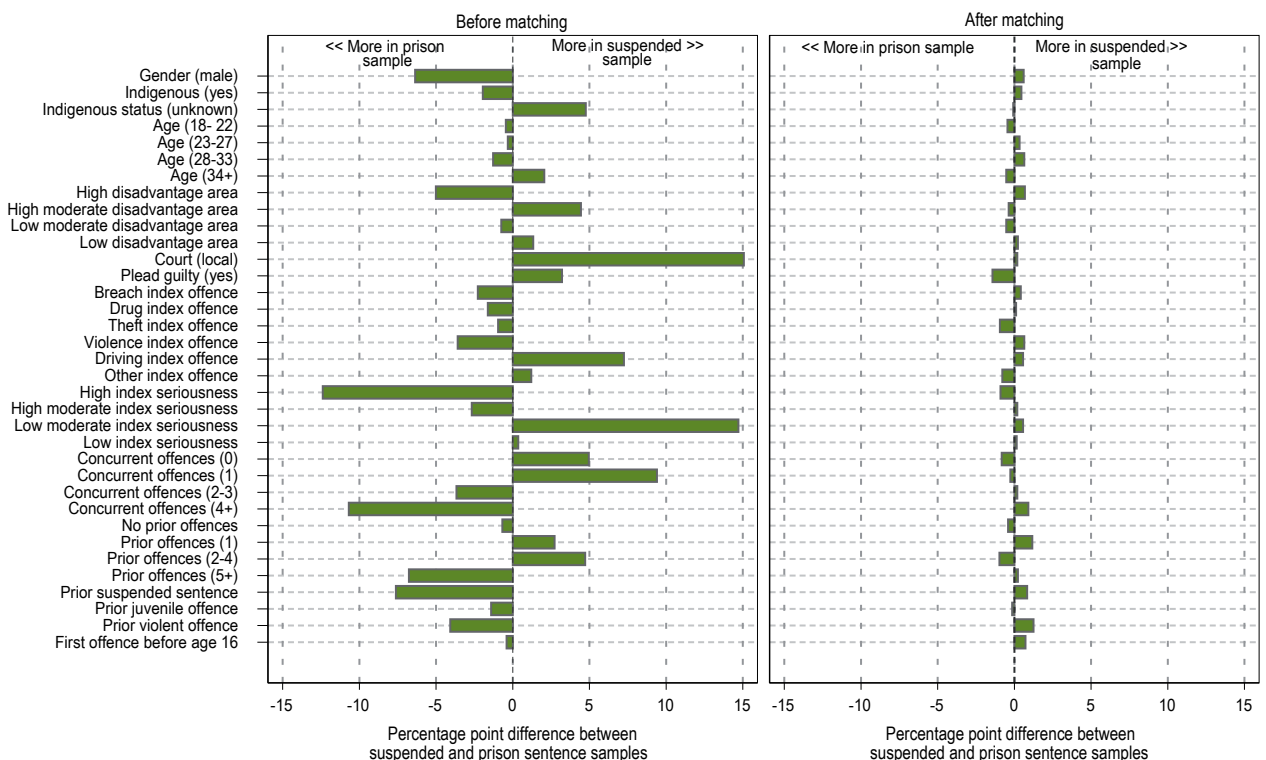


Figure 3: Among offenders with no prior prison, the estimated proportion of offenders surviving (not reconvicted) at different intervals of free time since the index court appearance – comparison of suspended sentence and prison groups before and after matching

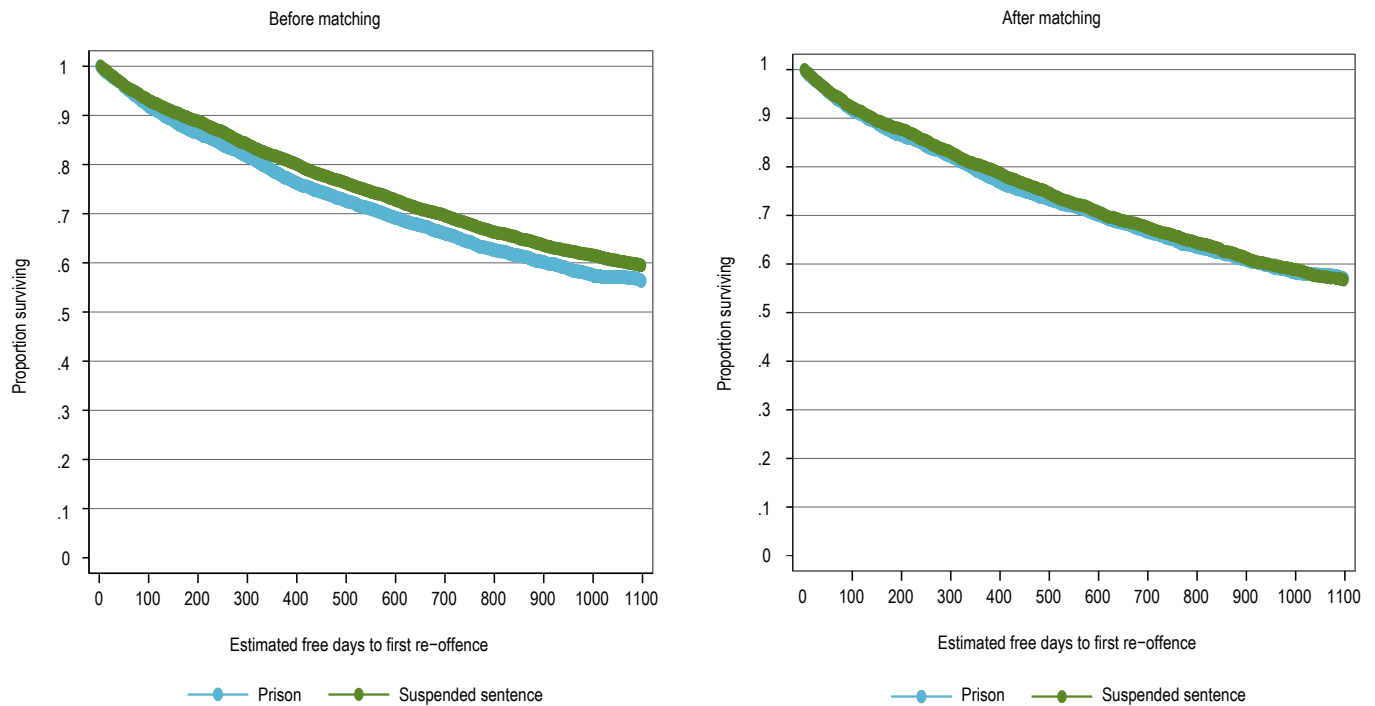


Table 3: Log-rank and Wilcoxon tests (unmatched and matched)

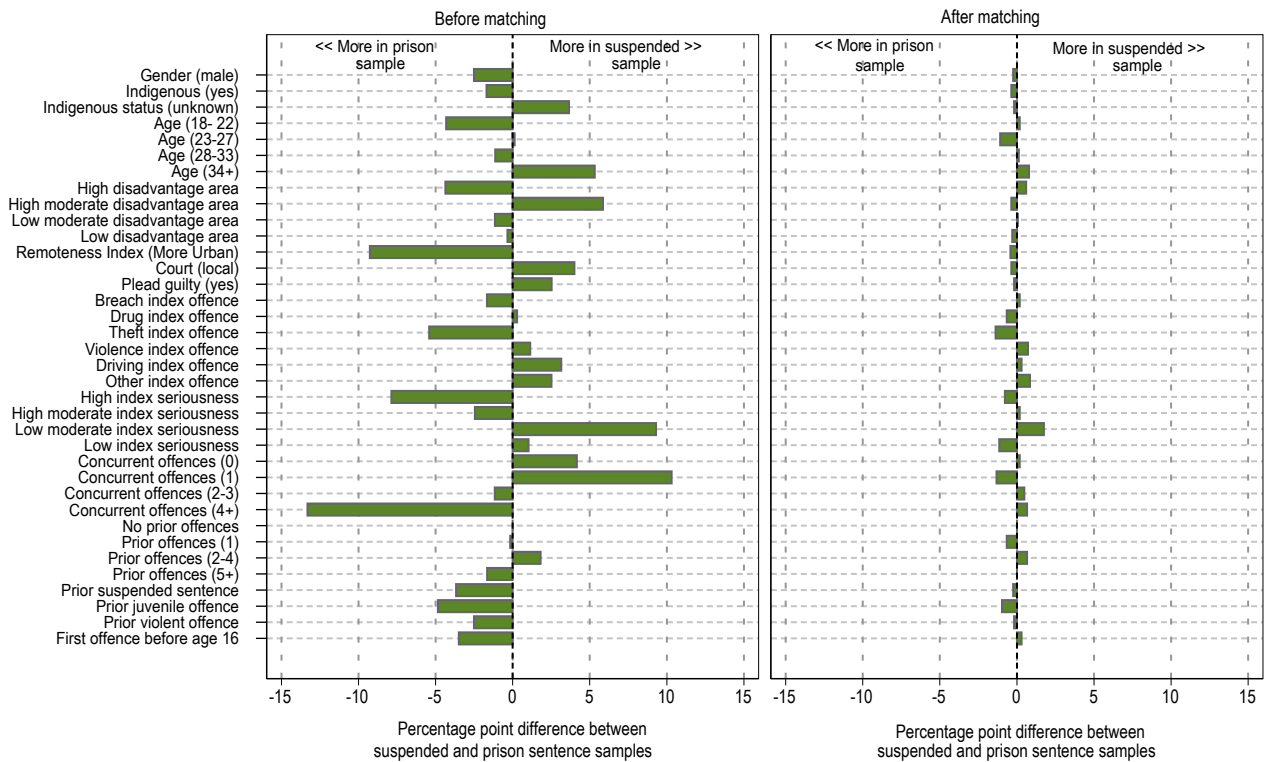
Unmatched						
Log-rank test	Observed	Expected	Wilcoxon test	Observed	Expected	Ranks
Prison	1276	1184.03	Prison	1276	1184.03	657406
Suspended Sentence	2064	2155.97	Suspended Sentence	2064	2155.97	-657406
Total	3340	3340	Total	3340	3340	0
$\chi^2(1) = 11.16, Pr > \chi^2 = 0.0008$			$\chi^2(1) = 12.99, Pr > \chi^2 = 0.0003$			
Matched						
Log-rank test	Observed	Expected	Wilcoxon test	Observed	Expected	Ranks
Prison Sample	1040	1036.04	Prison	1040	1036.04	45529
Suspended Sentence	1144	1147.96	Suspended Sentence	1144	1147.96	-45529
Total	2184	2184	Total	2184	2184	0
$\chi^2(1) = 0.03, Pr > \chi^2 = 0.86$			$\chi^2(1) = 0.22, Pr > \chi^2 = 0.64$			

1,661 suspended sentence cases were matched to 1,661 prison sentence cases. Sixty suspended cases were dropped as they could not be matched to a prison case within .01 propensity score units.

After matching, all individual RR standardised bias estimates were below 3.5 and, taken together, the covariates did not predict treatment (LR $\chi^2 = 9.05$; $p = 1.00$). Figure 4 shows the percentage point differences between the treatment

and control groups on each of the relevant variables for the unmatched and matched samples. From Figure 4 it can be seen that, after matching, the differences between the groups are very small.

Figure 4: Prior prison group - percentage point difference between suspended sentence and prison samples on relevant covariates before matching and after matching



Kaplan Meier survival analysis

Among those who had prior prison, the free time to re-offence outcome is analysed by comparing the Kaplan Meier survival functions for the PSM samples. The Kaplan Meier survival functions for the suspended sentence and prison samples before and after matching are shown in Figure 5. It is evident that in both samples a very high proportion of offenders were reconvicted, with 69.3 in the suspended sentence and 77.9 in the prison sample reconvicted at the end of follow-up. The tests reported in Table 4 indicate that both before and after matching the difference in time to re-offend between the samples is statistically significant. Those who received a prison sentence at the index court appearance offended more quickly than those who received a suspended sentence. Indeed, case matching appears to have done very little if anything to bring the two survival curves closer together.

DISCUSSION

The aim of the present study was to examine the relative efficacy of suspended sentences and full-time imprisonment in reducing the risk of further offending. Our results provide no evidence to support the contention that offenders given imprisonment are less likely to re-offend than those given a suspended sentence. Indeed, on the face of it, the findings in relation to offenders who have previously been in prison are inconsistent with the deterrence hypothesis. After the prison and suspended sentence samples in this group were matched on key sentencing variables, there was a significant tendency for the prison group to re-offend more quickly on release than the suspended sentence group.

There are three possible explanations for this finding. The first is that the experience of prison exerts a criminogenic effect. This interpretation is consistent

with theories asserting that that the experience of prison reinforces deviant values (Becker 1968; Braithwaite 1988; Lemert 1951); promotes the acquisition of new criminal skills (Clemmer 1940; Sykes 1958); and reduces the offender’s capacity (on release) to obtain income by legitimate means (Fagan & Freeman 1999). It is, however, hard to understand why prison would exert a criminogenic effect on those who have been to prison before but not on those who have not.

The second possibility is that offenders in the prior imprisonment group differed in terms of some variable we did not measure and control for, and that this factor artificially inflated the risk of re-offending amongst those given a prison sentence. This might seem very unlikely given the lack of any significant difference between the two groups on the covariates (see Figure 4). It must be remembered, however, that covariate balance testing is only able to assess equivalence on known or observed characteristics. It is

Figure 5: Among offenders with prior prison, the estimated proportion of offenders surviving (not reconvicted) at different intervals of free time since the index court appearance – comparison of suspended sentence and prison groups before and after matching

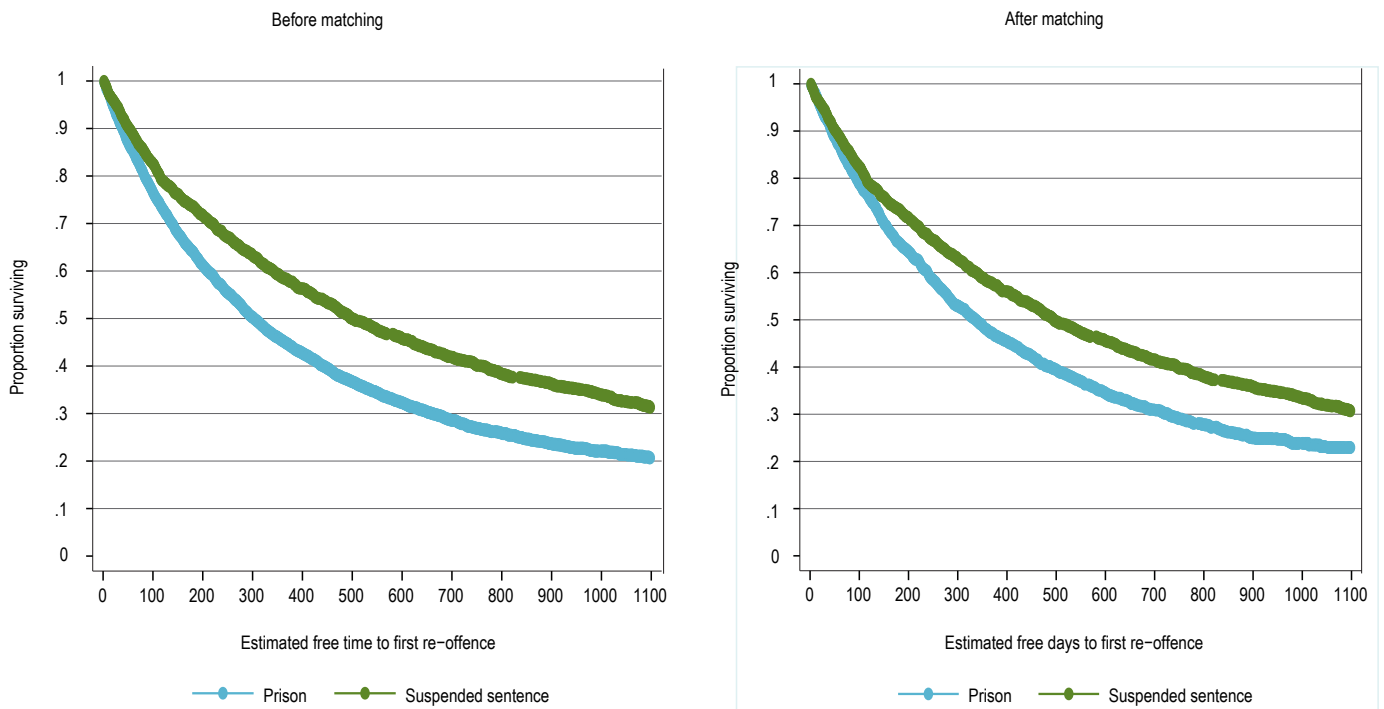


Table 4: Log-rank and Wilcoxin tests (unmatched and matched)

Before matching						
Log-rank test	Observed	Expected	Wilcoxin test	Observed	Expected	Ranks
Prison	2763	2465.51	Prison	2763	2465.51	1018124
Suspended Sentence	1175	1472.49	Suspended Sentence	1175	1472.49	-1018124
Total	3938	3938	Total	3938	3938	0
$\chi^2(1) = 98.03, Pr > \chi^2 = 0.00$			$\chi^2(1) = 90.9, Pr > \chi^2 = 0.00$			
After matching						
Log-rank test	Observed	Expected	Wilcoxin test	Observed	Expected	Ranks
Prison	1215	1058.92	Prison	1215	1058.92	332603
Suspended Sentence	1144	1300.08	Suspended Sentence	1144	1300.08	-332603
Total	2359	2359	Total	2359	2359	0
$\chi^2(1) = 42.41, Pr > \chi^2 = < 0.00$			$\chi^2(1) = 38.36, Pr > \chi^2 = 0.00$			

always possible some unobserved factor or factors related to re-offending differed between the groups.

The third possibility is that offenders in the two groups may have differed in time spent in prison and this may have impacted on our measurement of prior

criminal record. Prior criminal record is a critical variable in controlling for an offender’s propensity to re-offend. However, for offenders who have spent extended periods in prison, their official criminal record may not reflect their propensity to reoffend because they have been incapacitated for much of the

measurement period. While in this study those in the prison sentence sample and the suspended sample both had spent time in prison, it is possible that those who received a prison sentence had spent more time in prison and this resulted in a bias when controlling for their criminal propensity.

Since full-time prison sentences are much more expensive to administer than suspended sentences, our findings suggest that, from the vantage point of specific deterrence, suspended sentences are more cost-effective than full time imprisonment. It does not follow, however, that sentencers contemplating imposing a prison sentence on an offender would be better off imposing a suspended sentence. For one thing, prison has an incapacitation effect whereas suspended sentences do not. For another, suspended sentences have some intrinsic problems of their own. Weatherburn and Bartels (2008) found no difference in re-offending rates between offenders given a suspended sentence and offenders receiving a supervised bond. Bartels (2008) has also highlighted a number of problems with suspended sentences.

One problem, for example, is a poor public image. Over 30 years ago, the South Australian Court of Criminal Appeal observed in *R v Weaver* (1973) 6 SASR 265 at 267:

If, as has been suggested, persons convicted and members of the public take a light-hearted view of a sentence which is suspended then time will, we believe, prove them to be wrong. If the convicted person does not take seriously the warning that any breach of his recognizance during its term will lead to the serving of the suspended sentence, he is likely to appreciate its truth if he is convicted of even a minor offence. The public will learn the truth about suspended sentences only if it takes the trouble to inquire what a suspended sentence really means. In this connection the news media could be of assistance.

More recently, Perry J of the South Australian Supreme Court suggested in *Nicholls v Police* [2003] SASC 303 at [9] that 'it is abundantly clear that many members of the public do not regard a suspended sentence as any sort of a penalty at all'. Justice Parker of the Western Australian Court of Criminal Appeal similarly observed in *Latham v The Queen* (2000) 117 A Crim R 74 at [31] that because in 'most cases a suspended sentence involves neither custodial nor coercive consequences', it is understandable 'that the community's

perception and the reality of this sentencing option is quite different from that of a sentence of a term of imprisonment to be served immediately'.

Another problem is artificiality. In order for the court to impose a suspended sentence, it must first sentence the offender to a fixed term of imprisonment and only then determine whether to suspend the sentence, as set out by the High Court in *Dinsdale v The Queen* (2000) 202 CLR 321 (see Bartels 2007 for discussion). It has been suggested that 'the intellectual agility required to put suspension out of mind at the outset is very considerable, and to a degree artificial' (Samuels 1974, p. 400). In undertaking these 'mental gymnastics' (Stockdale and Devlin 1987, p. 9), the sentencing court must revisit the very factors that it considered in arriving at the decision that imprisonment was the only appropriate sentence. The complexity of the process is further compounded by the fact that 'the task of sentencing an offender, already hard, [is] made much harder by the knowledge that the sentence might never operate or, if it did operate, would operate at an unknown future date and in circumstances which could not be foreseen' (Advisory Council on the Treatment of Offenders 1952, p. 10).

Critics have also argued that any positive benefit suspended sentences may have on prison population is likely to be outweighed by net-widening, which occurs when sentencers use a more severe sentencing option in lieu of otherwise appropriate more lenient alternatives (Bottoms 1979; Bottoms 1981; Legislative Council Standing Committee on Law and Justice 2006; Stanley & Baginsky 1984). Ashworth (1995, p. 294) suggests that:

since its earliest days the suspended sentence has had no great impact in reducing the imprisonment rate, since those who would have been imprisoned immediately but received a suspended sentence were counterbalanced by those who were given a suspended sentence when they would never have received immediate imprisonment.

Bartels (2008) points out, however, that suspended sentences also have a number of advantages. The Victorian

Sentencing Advisory Council (2005b, p. 12-13) recently presented as one of the main arguments for retaining suspended sentences that they:

perform an important symbolic function by allowing the seriousness of the offence to be recognized and denunciation of the offender's behaviour to take place through the formal imposition of a term of imprisonment, while allowing the court to deal with the offender in a merciful way.

Similarly, when the New South Wales Law Reform Commission (1996a; 1996b) recommended the reintroduction of suspended sentences in NSW, it considered them to be appropriate in circumstances where other forms of conditional release did not allow for a sufficient element of denunciation of the offence. Shortly after suspended sentences were reintroduced in NSW in 2000, Wood J controversially imposed a wholly suspended sentence on radio broadcaster John Laws for contempt. In doing so, Wood J observed in *R v Laws* (2000) 116 A Crim R 70 at 79 that the purposes of such sentences are to convey:

the seriousness of the offence and the consequences of re-offending to the offender, while also providing him or her with an opportunity to avoid the consequences by displaying good behaviour and by not repeating the relevant breach of the law or any similar breach of the law.

When the availability of suspended sentences in England was restricted to cases involving 'exceptional circumstances', a Stipendiary Magistrate lamented their demise, stating that sentencers had now lost 'a very valuable tool' (Campbell 1995, p. 293). Similarly, Freiberg's suggestion in 2001 that suspended sentences be abolished in Victoria was met with resounding opposition from the Attorney-General, who declared that sentencers should have more, not fewer, sentencing options (Anonymous 2001). A similar observation was made by the NSW Law Reform Commission (1996a; 1996b) in support of its recommendation to reintroduce suspended sentences in NSW. The Magistrates' Court of Victoria argued in

its submission to the Victorian Sentencing Advisory Council for the retention of suspended sentences on the basis that 'the removal of suspended sentences or the limiting of their availability for imposition would remove an important arrow from the quiver of sentencing dispositions available to the Court' (VSAC 2005a, p. 2.4). The Tasmania Law Reform Institute (2008, Recommendation 9) similarly recommended in its recent sentencing review that 'notwithstanding criticisms of the suspended sentence...[it] is a useful sentencing option that should be retained'.

The value of suspended sentences as a sentencing option is clearly a matter of considerable debate. The present study resolves only one element of this debate but it is a fairly important element to resolve. Taken as a whole, our findings suggest that sentencers contemplating imposing a suspended sentence instead of full-time custody need not be concerned about the possibility that imposing a suspended sentence will increase the risk of recidivism. As a means of reducing the risk of further offending, suspended sentences are as effective as, if not more effective than, a sentence of full-time imprisonment.

NOTES

1. In total 1,616 cases had indigenous status recorded as unknown. We included them in the analysis due to the size of the unknown group and prior research indicating that they offend at a lower rate than indigenous and non-indigenous offenders. In addition when these cases were excluded from the analysis the substantive results did not differ.
2. This disadvantage variable was derived using the socio-economic indexes for areas tool (SEIFA) (Australian Bureau of Statistics 2006) and the postcode recorded in the ROD database for each offender. The resulting offender's index scores were categorized into four quartiles.
3. This variable was derived using the Australian standard geographical

classification tool (Australian Bureau of Statistics 2008a) and the postcode recorded in the ROD database for each offender. A binary variable was computed where the value of one (1) represented index score below one (more urban area), and zero (0) index scores one and above (more remote area).

4. This variable was derived using the Offence Seriousness Index (OSI) and the ASOC code (Australian Bureau of Statistics 2008b) for the primary index offence. The OSI is a instrument developed by the NSW Bureau of Crime Statistics and Research which ranks the seriousness of an offence based on the type and size of the penalty typically received for the offence.
5. Propensity matching (Rosenbaum and Rubin 1983; 1984) is a technique developed to evaluate medical interventions in circumstances where experiments are impractical or unethical. The basic idea behind propensity matching is to replace a collection of confounding covariates with one function of these covariates, called the propensity score. This score is then used as if it were the only confounding covariate. In effect, various groups are created that have been matched on their propensity to receive treatment. Individuals within each group are then examined to see whether those who received treatment have better outcomes than those who did not.

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Appendix 1: No prior prison - logistic regression model used to estimate the propensity scores

Number of observations = 8393
 Log likelihood = -5076.61; LR $\chi^2(26) = 1086.34$; Prob > $\chi^2 = 0.00$
 Dependent Variable = Treatment (Suspended sentence = 1, Prison = 0)

Variable	Categories	Coef.	Std. Err.	P>z
Gender	Male	-0.59	0.07	0.00
	Female			
Indigenous Status	Indigenous	-0.21	0.08	0.01
	Not Indigenous			
Indigenous status	Unknown	0.20	0.07	0.01
	Known			
Age	18-22	0.26	0.08	0.00
	23-27	0.14	0.07	0.07
	28-33	0.03	0.07	0.7
	34+			
Disadvantage areas index (quartiles)	High	-0.41	0.08	0.00
	High moderate	-0.19	0.08	0.02
	Low moderate	-0.29	0.09	0.00
	Low			
Court Jurisdiction	Local	1.35	0.08	0.00
	District			
Plead guilty for index offence	Yes	0.25	0.06	0.00
	No			
Index offence type	Breach	-0.48	0.14	0.00
	Theft	-0.10	0.07	0.16
	Violence	-0.22	0.07	0.00
	Driving	-0.27	0.09	0.00
	Other			
Index offence seriousness	High	-0.09	0.09	0.31
	High moderate	-0.03	0.10	0.75
	Low moderate	0.44	0.09	0.00
	Low			
Concurrent offences	None			
	1	-0.20	0.07	0.00
	2-3	-0.60	0.06	0.00
	4 +	-1.21	0.08	0.00
Ratio of prior offences by age	Continuous	-0.89	0.27	0.00
Any prior offence	None	-0.18	0.07	0.01
	One or more			
Prior suspended sentence	Yes	-0.80	0.08	0.00
	No			
Prior juvenile offence	Yes	0.10	0.09	0.28
	No			
Prior violent offence	Yes	-0.10	0.06	0.10
	No			
Constant		0.47	0.15	0.00

Appendix 2: Prior prison group - logistic regression model used to estimate the propensity scores

Number of observations = 5450.00
 Log likelihood = -3208.13; LR $\chi^2(26) = 381.50$; Prob > $\chi^2 = 0.00$
 Dependent Variable = Treatment (Suspended sentence = 1, Prison = 0)

Variable	Categories	Coef.	Std. Err.	P>z
Gender	Male	-0.38	0.10	0.00
	Female			
Indigenous Status	Indigenous	-0.11	0.08	0.18
	Not Indigenous			
Indigenous status	Unknown	0.13	0.11	0.21
	Known			
Age	18-22	-0.22	0.15	0.14
	23-27	0.08	0.11	0.50
	28-33	-0.03	0.08	0.73
	34+			
Disadvantage areas index (quartiles)	High	-0.21	0.12	0.07
	High moderate	0.01	0.12	0.92
	Low moderate	-0.19	0.13	0.12
	Low			
Court Jurisdiction	Local	0.75	0.15	0.00
	District			
Plead guilty for index offence	Yes	0.17	0.08	0.04
	No			
Index offence type	Breach	-0.60	0.19	0.00
	Theft	-0.18	0.09	0.04
	Violence	-0.17	0.11	0.11
	Driving	-0.26	0.11	0.02
	Other			
Index offence seriousness	High	-0.32	0.11	0.00
	High moderate	0.00	0.12	0.99
	Low moderate	0.17	0.10	0.10
	Low			
Concurrent offences	None			
	1	-0.18	0.08	0.03
	2-3	-0.48	0.08	0.00
	4 +	-1.08	0.09	0.00
Ratio of prior offences by age	Continuous	-0.87	0.18	0.00
Prior suspended sentence	Yes	-0.16	0.07	0.03
	No			
Prior juvenile offence	Yes	0.12	0.12	0.34
	No			
Prior violent offence	Yes	-0.08	0.08	0.30
	No			
Remoteness index	More urban	-0.31	0.07	0.00
	More remote			
Constant		-0.01	0.26	0.96