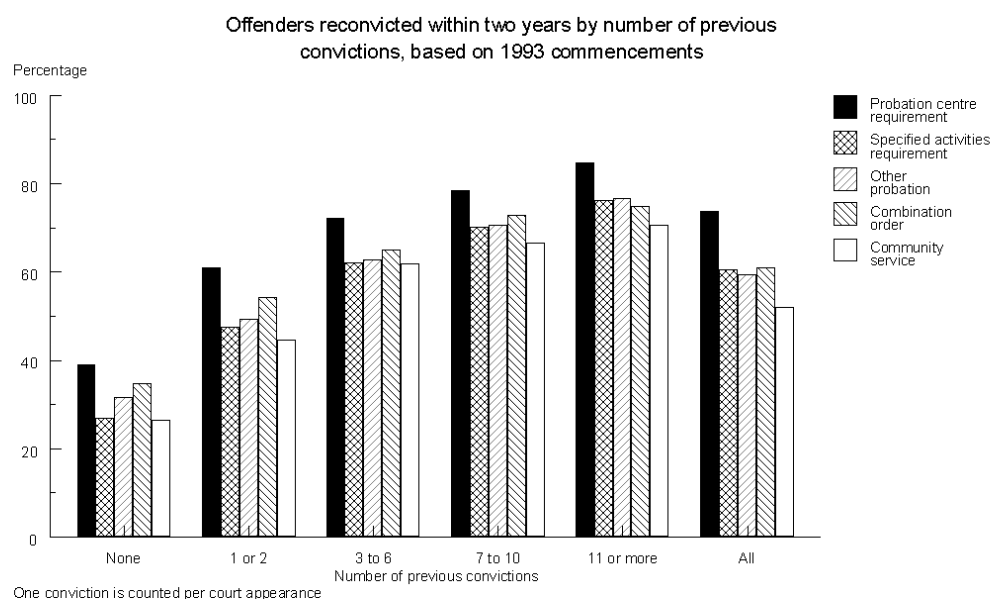## INTERPRETING RECONVICTION RATES

Christopher Kershaw

Detailed information is now available on reconviction rates of those released from prison or commencing community penalties in England and Wales between 1987 and 1993. Comparison of raw reconviction rates, without adjustment for differences in the characteristics of offenders, is inappropriate for monitoring underlying trends or comparing disposals. Approaches used to overcome these problems are discussed with reference to the recent results.

Introduction

This paper provides an update on methods used by Home Office researchers and statisticians to interpret and analyse reconviction information. A common thread running through this work is the calculation of 'predicted' or 'expected' reconviction rates. Such predictions are mostly based on demographic and criminal history information that are known to influence the chances of reconviction. More recently the occurrence of 'pseudo-reconvictions' (convictions after release from prison or commencing a court order that relate to offences committed before release or commencement) has been recognised as important in making comparisons between disposals (Lloyd et al., 1994).

Factors such as number of previous convictions, current offence age and gender influence reconviction rates. Figure 1 illustrates the variation in reconviction rates by number of previous convictions for offenders commencing various types of community penalties in England and Wales in 1993 (Kershaw, 1997).

Figure 1

Offenders reconvicted within two years by number of previous convictions, based on 1993 commencements

One conviction is counted per court appearance

Reconviction rates for particular disposals or offender treatment programmes have descriptive value, but do not necessarily indicate their effectiveness. Results are heavily influenced by the characteristics of the offender intake and some prediction of future offending is needed before drawing inferences about effectiveness. It should also be remembered that reconviction data is only a proxy measure of reoffending and that there are very large attrition rates within the Criminal Justice process.

Home Office use of reconviction data

One of the earliest Home Office studies (Mannheim and Wilkins, 1955) reported reconviction rates for borstal boys discharged between 1937 and 1950 (for example, among boys released in 1937 close to 44 per cent had been reconvicted within seven years). They produced prediction scores based on past criminal history and social factors such as 'evidence of drunkenness', '*not* living with parent or parents', 'longest period in job' and 'home is in an industrial area'.
A review of policy research (Clarke and Cornish, 1983) describes how this study became 'the most important single influence upon the subsequent progress of research in the Home Office'. Much of the initial work of the Home Office Research Unit was concerned with prediction of risk of reconviction and evaluation of offender treatment.
Hammond (Home Office, 1964) compared expected reconviction rates 'on the basis of age, current offence and previous convictions'. Results showed that fines and discharges were associated with lower than expected rates and prison and probation with higher than expected rates. Throughout the 1970s Home Office researchers and statisticians were heavily involved in analysis and interpretation of reconviction information. A major study (Philpotts and Lancucki, 1979) was undertaken to compare reconviction rates across a variety of disposals (the follow-up period was six years). The authors found that males given suspended sentences or probation had lower reconviction rates than those given custodial sentences but had higher rates for those fined or given discharges. However, they concluded that:

the variation with sentence as opposed to other factors of sex, age and previous convictions and offence appears to be relatively small.

Another study (Nuttall et al., 1977) employed prediction methods to evaluate parole. The prediction methods had been simplified relative to those used previously without significant loss in predictive power. Results indicated that parole may have an effect in reducing reconviction 'but as the non-parolees did worse than expected this is also consistent with a selection effect'.

A key study (Folkard et al., 1976) reported results of the probation IMPACT experiment (a study allocating intensive probation supervision to an experimental group). The results of this study were interpreted as largely negative and Clark and Cornish conclude that:

The project's main significance for them may have been that it marked the end of the probation research programme which had begun in some optimism fifteen years before, and which, in the search for effective treatment, had proceeded up so many inviting avenues only to discover they were dead-ends.

This negative interpretation of the results was in tune with a prevailing view among researchers that 'nothing works' (see Martinson, 1974). By the 1990s the position had begun to change. Mair, writing in a Home Office Research Bulletin (Mair, 1991) says:

Most would agree that penalties work much of the time, what we need to know is how, why, with whom, when ...

The computerisation of the Home Office Offenders Index (OI) in the 1990s opened up new opportunities for the provision of information on reconviction rates and information on criminal careers. Previously retrieval of OI information for studies had relied upon a laborious inspection of microfiche data. The OI contains information on convictions for 'standard list offences' (most indictable offences and some summary offences) recorded at courts in England and Wales since 1963. The OI is a database used solely for statistical and research purposes and contains information on more than six million offenders (Home Office, 1994).

Statistical Bulletin 18/93 (Home Office, 1993) reported on results of a two year follow-up of those commencing probation or community service in 1987, and since then information on reconvictions has regularly appeared in the annual Home Office Probation Statistics and Prison Statistics publications. The most recent information, relating to those released from prison or commencing orders in 1993, appeared in Home Office Statistical Bulletins 5/97 (Kershaw and Renshaw, 1997) and 6/97 (Kershaw, 1997).

Lloyd et al. (1994) was the first major exercise in England and Wales to compare and interpret reconviction rates across a range of disposals (probation, community service and custody) since Phillpotts and Lancucki (1979). Results were based on a sample of offenders commencing probation, community service or discharged from custody in 1987. The main data source was the OI. The follow-up period was two years, by then the favoured period in most studies. Lloyd et al. applied logistic regression techniques to produce predicted reconviction rates. Factors taken account of in the regression were offenders' age and sex, offence type, number of previous court appearances, previous appearance rate, average number of convictions per appearance, original conviction offence and number of youth custody sentences.

Pseudo-reconvictions

Lloyd *et al* also introduced the important new concept of 'pseudo-reconvictions' (i.e. convictions within the follow-up period for offences committed prior to release from prison or commencement of an order). The OI contains details of court appearance date but not offence date; this means that one cannot identify pseudo-reconvictions on the basis of OI data alone. A subsample of offenders was traced at the National Identification Service at New Scotland Yard (NIS) in order to determine date of offence for 'reconviction' offences recorded on the OI. Adjustments for pseudo-reconvictions based on this subsample removed an important systematic bias in favour of prisons in the comparison of results for community penalties and custody. Table 1 is based on a key table in Lloyd *et al* and gives raw (i.e. unadjusted) reconviction rates, rates adjusted for pseudo-reconvictions and predicted rates.

After adjustment the rate for custody was a little higher than predicted and that for community penalties a little lower. The key conclusion of this study was that:

there is little to choose between these sentencing options in terms of their impact on reoffending - whether the impact is construed as deterrent or rehabilitative.

Table 1 Predicted and actual reconviction rates within two years, correcting for pseudo-reconvictions

Sentence	Raw % reconvicted	Adjusted % reconvicted	Predicted % reconvicted
Prison	56	54	53
Community Penalties	53	47	49

The difference between disposals was relatively small and it was clearly important that predicted rates and adjustments for pseudo-reconvictions were applied before making judgements about the significance of results.

Trends over time

Results in Lloyd et al. (1994) were based on a two year follow-up of offenders released from prison or commencing orders in 1987. Information is now available for the years 1987 to 1993. The Probation Service Three Year Plan (Home Office, 1997) contains a wide range of key performance indicators. Key Performance Indicator 1 (KPI 1) is the indicator used to monitor reconviction rates for those commencing community penalties (rates for custody are also monitored for comparison purposes). The target for KPI 1 is 'to maintain actual reconviction at a rate lower than predicted'.

KPI 1 monitors changes in reconviction rates over time after making allowance for factors such as age, gender, offence and previous criminal history (the methodology is similar to that applied in Lloyd et al., 1994). The model was based on 1989 data so comparisons between actual and predicted rates monitor changes in rates since 1989. A factor for type of disposal is included in the model. This in effect allows trends to be monitored *within* disposals; unlike the Lloyd *et al* calculations there is no direct comparison made *between*disposals.

KPI 1 calculations have allowed us to largely account for the decline in reconviction rates for community service between 1991 and 1993 (see figure 2). Over the longer term results for community service appear to be better than one would have expected for 1987 and 1988 commencements as compared with results obtained in 1989. Since 1989 actual and predicted rates have been close.

Figure 2

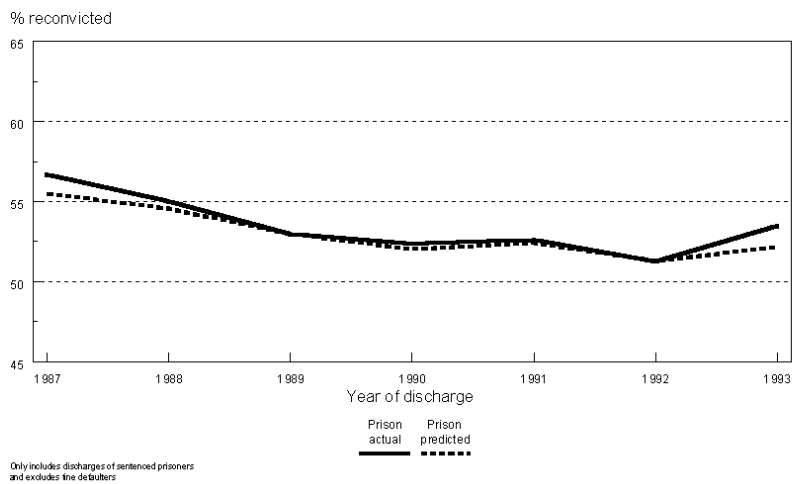**Predicted and actual two year reconviction rates for those commencing community service in 1987 to 1993**
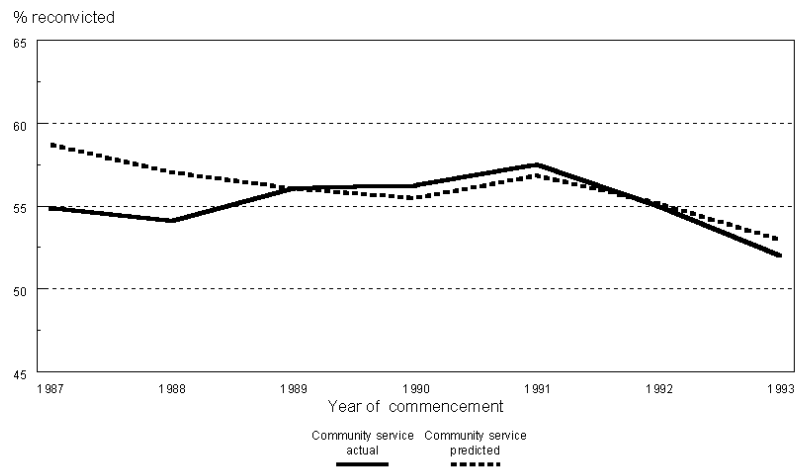
[High-res version of Figure 2 - use 'back' button on your browser to return here]
This modelling has also indicated that the decrease in reconviction rates for custody between 1987 and 1992 can be accounted for almost entirely by changes in offender characteristics (such as the decline in the number of young offenders discharged from custody).

Figure 3

**Predicted and actual two year reconviction rates for those discharged from prison in 1987 to 1993**

[High-res version of Figure 3 - use 'back' button on your browser to return here]
About half of the upward trend in two year reconviction rates for probation between 1988 and 1993 is accounted for by changes in predicted rates. There may have been factors influencing this trend that could not be incorporated into the calculation of predicted rates. It is, however, clear that without calculation of such predicted rates there would have been a danger of drawing unwarranted conclusions from recent trends.

Figure 4

Predicted and actual two year reconviction rates for those commencing probation in 1987 to 1993
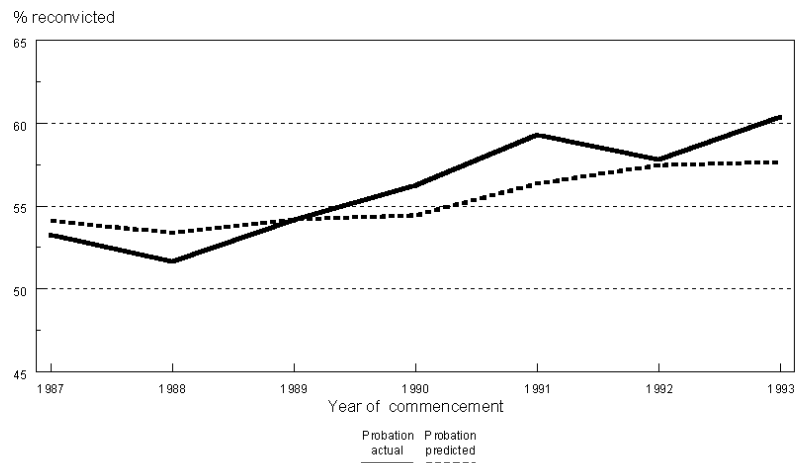
Sample sizes have increased over time; more than 53,000 offenders discharged from prison or commencing orders in 1993 were tracked to the two year point (under 25,000 offenders were included in the 1987 samples). Such large sample sizes reduce the statistical variability of the differences between predicted and actual rates. For the 1993 samples the 95 per cent confidence intervals for such differences are around plus or minus one percentage point for each disposal.

Even with such large samples there are limits on the reliance one can place on predicted rates in judging effectiveness. The process of sentencing takes into account many factors; some of these may be related to likelihood of reoffending but may not be available for use in making predictions. Some work is in progress within RSD to look at the effects of social variables (e.g. accommodation and employment status) on reconviction rates for community penalties. This may help to explain some of the deviation between predicted and actual reconviction rates. Local factors may also have an impact; this is discussed below.

Comparison of recent results across a range of disposals

Kershaw (1997) compared reconviction rates over a variety of disposals by fitting a separate model to each year's data similar to that used for KPI 1, but without a disposal factor included in the model. The results of an analysis to compare different types of community penalty are shown in table 2 below. After accounting for differences in the characteristics of those sentenced to each type of community penalty, variations in reconviction rates are substantially reduced.

So, for example, the large difference between the actual reconviction rates for probation with a requirement to attend to probation centre (74 per cent) and the rate for community service (52 per cent) can be largely accounted for by differences in predicted rates (17 percentage points out of an overall difference of 22 percentage points). These results illustrate well the pitfalls in making direct comparison of reconviction rates without some attempt to predict what

reconviction rates could be expected given the nature of offenders passing sentenced to different disposals (the section on reconviction predictors below discussing these issues in more detail).

Table 2 Actual and 'predicted' two year reconviction rates for those commencing orders in 1993

	Actual rate	Predicted rate(1)	Difference(2)
All probation	60	59	1
Probation with:			
Probation centre requirement	74	70	4
Specified activity requirement	61	60	0
Other probation	59	58	1
Community service	52	53	-1
Combination order	61	59	2

(1) Normalised so that the overall prediction for all community penalties equals the actual rate for community penalties.
(2) Rounded to nearest percentage point.
In this analysis no adjustment was made for the differential effects of pseudo-reconvictions, as research has shown that such differentials are small when making comparisons between community penalties. This is not the case for comparisons with custody (see Lloyd et al., 1994).
For those commencing community penalties in 1993 the two year reconviction rate was 57 per cent; the rate for those discharged from prison was 53 per cent. Application of the model described above indicated that an <u>upward</u> adjustment in the reconviction rate for community penalties of about two percentage points relative to custody should be made on account of differences in the characteristics of offenders. A further <u>downward</u> adjustment of four percentage points to account for the differential effect of pseudo-reconvictions was made (based on results in Lloyd et al., 1994). After making both types of adjustment (using unrounded of percentages) the difference between the overall reconviction rates for immediate custody and community penalties was reduced to one percentage point advantage for custody after rounding. This suggests that there is currently no significant difference between reconviction rates for custody and all community penalties.

Reconviction predictors

Reconviction predictors have been developed for use by the Parole Board and probation services in England and Wales. The development work for these predictors was mainly undertaken by Professor Copas of Warwick University. Copas et al. (1996) describes the new parole predictor. This predictor uses six variables (age at conviction, gender, current offence and three past history variables). The analysis is based on a sample of prisoners released in 1987. The main data source was the OI but information on the date of commission of a reconviction offence was sought from the NIS as the scale was designed to estimate the risk of committing an offence within the parole period (if this date was not available date of arrest was used instead and, failing that, date of conviction).
The parole predictor generates estimates of risk of reconviction and risk of reconviction for serious offending (defined as a reconviction resulting in a custodial sentence). The significant innovation for the parole predictor is that it produces estimates of cumulative risk at monthly periods up to the two year point. To do this a non-standard statistical model is fitted that essentially combines features of logistic regression and survival analysis.
Home Office Probation Circular 63/1996 (Home Office, 1996a) and Copas and Marshall (1998) describe the Offender Group Reconviction Scale (OGRS). The primary purpose of OGRS is as an assessment tool for probation officers writing pre-sentence reports (PSRs). It is aimed at helping officers consider what sentence to propose, and in assessing the level of

supervision required by a particular offender. This predictor is very closely related to the model used in connection with KPI 1, but with some simplification to allow easier calculation and without a fitted disposal factor. It is based on samples of offenders released from prison or commencing community penalties in 1990. The circular stresses that:

The scale is no more than an aid to the judgement of probation officers in preparing PSRs ... it cannot be a substitute for that judgement.

The circular discusses the use of OGRS as an evaluative management tool. OGRS can provide an expected reconviction rate for any group of offenders by taking the predicted rates for individual offenders and forming the average. Chapter V of the Home Office guide to the OI (Home Office, 1996b) contains a more detailed discussion as to how predictor can be used for evaluation.

It is important to recognise that, when any national scale is used to produce predictions, the difference between actual and predicted reconviction rates for a group of offenders does not provide an absolute measure of effectiveness. Local factors such as police clear-up rates, social conditions and local success in prosecuting cases are likely to be related to regional variations in reconviction rates. For this reason it is important to ensure that any evaluation includes a similar control group for comparison.

Raynor and Vanstone (1994) provide an interesting example of the use of a reconviction predictor for evaluation purposes. They used OGRS (then in development and termed the National Reconviction Assessment Scale - NRAS) with some modification by them to allow for a one year follow-up period to generate predicted reconviction rates across a range of disposals including the STOP (Straight Thinking on Probation) programme. The results of this study at the one year point had been encouraging. Follow-up to the two year point (Raynor and Vanstone, 1996) indicated that:

Those who complete the [STOP] programme show a reduction in offending over the first year from sentence. Although the effect has diminished by the end of the second year, there is a more lasting and very substantial reduction in the incidence of offences serious enough to attract a custodial sentence

The predictions used in Raynor and Vanstone (1996) were based on using the new parole predictor. It could be argued that use of the parole predictor could have been slightly inappropriate as it was specifically developed for parole cases, but Raynor and Vanstone report that use of this scale 'results in a very slight improvement in accuracy' of prediction (the improvement may reflect problems with their modification of OGRS to produce predictions at the one year point). In the absence of predicted rates it would have been virtually impossible to reach any firm conclusion regarding the effectiveness of the programme. Subsequent studies have also made use of the OGRS predictor (e.g. Oldfield, 1996 and Roshier, 1995)

Conclusions

Although information on reconviction rates has been available for many years, its use to evaluate offender programmes in England and Wales has been fairly limited. Meta-analytic reviews, that bring together results from many studies, have appeared (e.g. Andrews et al., 1990). They point to particular types of structured programme being effective in reducing reoffending. Such reviews also highlight the fact that comparatively few studies have been conducted outside North America. Maguire (1995) has been influential in opening up debate in the UK on 'what works' in reducing offending. Various scales for the assessment of criminogenic need have been piloted by probation services in England and Wales (e.g. Andrews and Bonta, 1995). These have raised significant interest among practitioners in 'what works?'.

As was mentioned above difficulties can arise in using a national scale, such as OGRS, which may not pick up local factors (such as police clear-up rates) that have an influence on results. In judging the effectiveness of an offender programme it is almost always advisable to have some form of local control group for comparison. Home Office (1996b) contains advice on the issues to be considered in undertaking local evaluations. It should also be borne in mind that results from reconviction studies will be of limited value unless a record is made of the specific aspects of offender programmes that may be contributing to success.

In the preface to Lloyd et al., (1994), Tarling remarked that 'reconviction rates are one of the key tools of criminology', but for many years little evaluative work was undertaken in the UK that made use of reconviction information. Among practitioners there has been a renewed

interest in determining whether offender programmes have a demonstrable effect in reducing reoffending. This has been encouraged by the results reported from mainly North American research. The opportunity to discover 'what works' in reducing reoffending has now been enhanced by the increased availability of reconviction information and the development of prediction instruments. These can be used in combination with other tools and other information to evaluate the effectiveness of programmes.

The increasing availability of data on reconviction for research purposes is likely to lead to such information being an integral part of most evaluations of offender programmes. The use of reconviction predictors, such as OGRS, for management purposes needs to be carefully considered. As Home Office (1996a) points out such scales should be used as 'no more than an aid to judgement... it cannot be a substitute for that judgement'. Predictions of the future behaviour of individual offenders are problematic. A predicted reconviction rate for an individual may not reflect the actual chances of future reconviction once more detailed information about an offenders circumstances are known.

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