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Re-offending of adults: results from the 2003 cohort

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national STATISTICS

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CONTENTS

INTRODUCTION

This report analyses the two-year re-offending rates of adults (those aged 18 and over at date of sentence or on release from prison). It covers offenders who were released from prison or commenced a community penalty in the first quarter of 2003 (the 2003 cohort). It shows two types of re-offending:

Actual re-offending rates: the percentage of offenders who re-offended during a two-year follow-up period, and who were subsequently convicted in court.

Predicted re-offending rates: the estimated percentage of offenders who will re-offend, after changes in offender characteristics over time have been controlled for.

These two measures are necessary to calculate progress against the Home Office's Spending Review 2002 Public Service Agreement (PSA) target on reducing re-offending. The target specifies a reduction in re-offending of five per cent from the 2000 baseline, against the predicted rates, for the 2006 cohort.

SUMMARY

For the baseline cohort (2000), the actual two-year re-offending rate was 57.6 per cent. Re-offending means that the offender committed an offence within the two-year follow-up period and was subsequently convicted in court. In 2003 the actual rate was the same as in 2000, 57.6 per cent, but the cohort of offenders in 2003 was on balance more likely to offend than in 2000, which resulted in a predicted rate of 58.9 per cent. As the actual rate is lower than the predicted result there has been an improvement over the 2000 baseline, resulting in progress of 2.3 per cent against the target.

Table S1: Overall re-offending rates against the PSA target to reduce re-offending by five per cent

	Actual re-offending rate (%)	Predicted re-offending rate (%)	Progress against target (%)
2000	57.6	n/a	
2003	57.6	58.9	2.3

MEASURING RE-OFFENDING

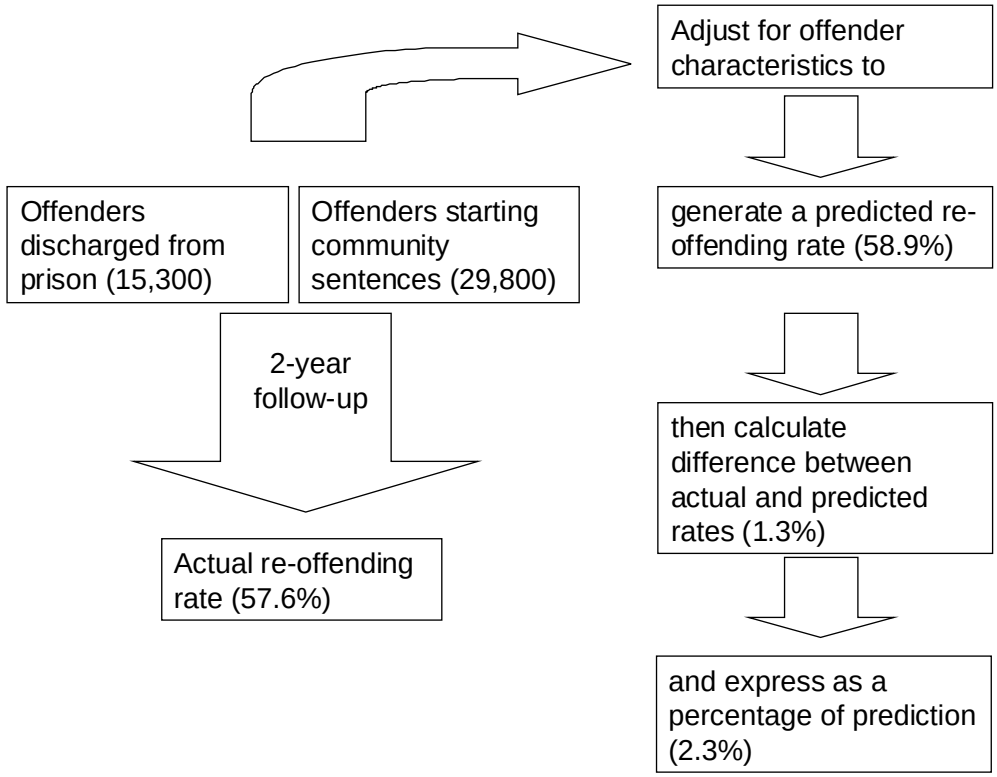
Every known measure of re-offending has its drawbacks. Those associated with using official records of re-offending or reconviction have been particularly well documented (see Lloyd *et al*., 1994, for example) and include the fact that they under-record actual offending behaviour and that they are partly determined by decisions on the part of criminal justice practitioners. However, other measures (e.g. self-report, re-arrest rates) also have disadvantages. For example, self-report studies rely upon respondents being honest about their offending behaviour.

The Home Office's Public Service Agreement (PSA) 5 specifies its re-offending targets in terms of a reduction in the re-offending rate, expressed as a percentage reduction against a

predicted rate. The predicted rate is necessary as the outputs from the Criminal Justice System (CJS) depend in part on the characteristics of those coming into it, just as the examination pass rate in a school will be related to its intake. The predicted rate of re-offending offers a like-for-like comparison with the 2000 cohort.

In the Home Office's PSA target, the starting point is offenders discharged from a custodial sentence and offenders starting community sentences. Data are obtained to calculate whether they re-offended during a two-year follow-up period and were subsequently convicted for this offence. This produces the actual re-offending rate. Separately, the 'like-for-like' predicted rate is calculated through a statistical model of the 2000 cohort. This is then compared to the actual rate. When the actual rate is lower than the predicted rate, there has been an improvement from the baseline period. The target is for the actual rate to be lower than the predicted rate by five per cent by 2006. The diagram below describes this process.

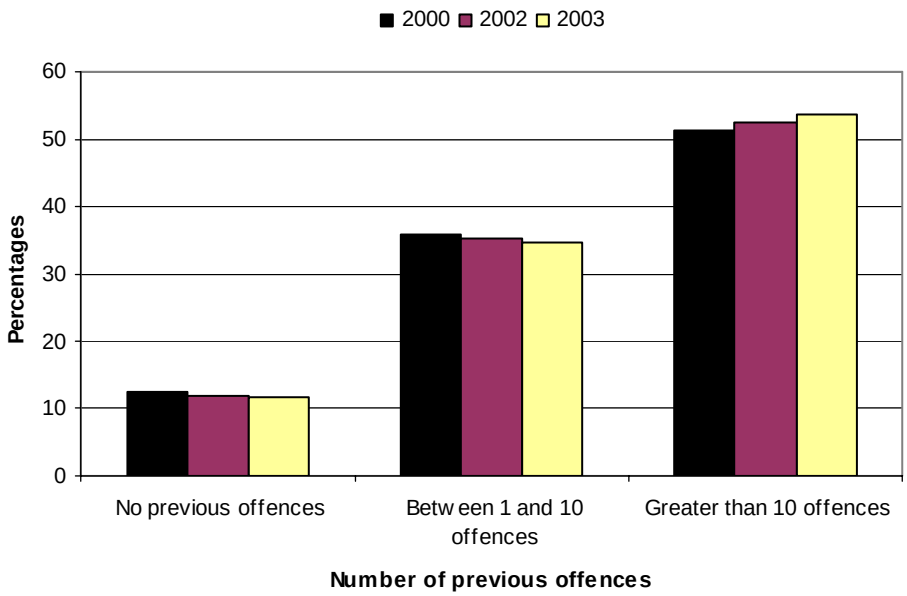
Figure 1: Building like-for-like comparisons



The like-for-like comparison means that changes in the characteristics of offenders in subsequent years do not affect the measurement of re-offending rates. Compared with the 2000 cohort, there are more offenders in 2003 with characteristics that have a stronger association with re-offending and fewer offenders with characteristics with a weaker association with re-offending. For example, members of the 2003 cohort have more previous offences than members of the 2000 cohort. As can be seen in the graph on the next page the proportion of offenders with no previous offences has declined between 2000 and 2003. Conversely, the proportion of offenders with 11 or more previous offences has risen over the same time period. In general the more previous offences an offender has committed the more probable it is that the offender will re-offend. Because of this, and because other

characteristics associated with re-offending have become more prevalent in the most recent offender cohort, the predicted rate of re-offending has risen.

Figure 2: Proportion of offenders by number of previous offences, 2000, 2002, 2003



Wider influences on re-offending

The predicted re-offending rate offers good estimates of the likelihood of offenders re-offending, but it does not explicitly model the activities of the wider CJS. Other factors, such as the changing socio-economic situation over time, are also not modelled. It is difficult to explicitly model such activity, but it is equally clear that the activities of the wider CJS will impact on reconviction and re-offending rates. To take an extreme example, if the police were to secure no convictions, the re-offending rate would be zero per cent.

The activity of the CJS and its relationship to re-offending is complex. From the British Crime Survey it is known that overall levels of crime are down, but it is also known that the number of persons sentenced in courts increased between 2001 and 2005. This increase has many elements but it is partially as a result of more offences being brought to justice. This results in a greater proportion of the offenders being proceeded against in court. One expectation of these changes is an increase in the re-offending rate. If more offenders are being charged by the police, and more cases are proceeding to successful conviction in court, then a rise in the re-offending rate may well be a logical consequence of these activities. At this time no attempt has been made to model these changes but the issue is under consideration.

RESULTS

This section presents more detailed results of the overall figures by different breakdowns of offenders and offences. Whilst these detailed breakdowns do not form part of the overall PSA target, they can provide useful additional information. Information is presented on the overall rate (p. 4), age breakdowns (p. 6), offence sentenced (p. 7), disposal (p. 8), the odds ratio of re-offending for disposals (p.10), previous criminal histories (p. 12) and ethnicity (p. 12). Where more detailed additional tables are available, these are shown in the statistical tables annex (p.15). The relevant tables are signposted at the start of each section.

Overall re-offending rate

As noted in the summary, the actual re-offending rate during the baseline year (2000) was 57.6 per cent. Re-offending means that the offender committed an offence within the two-year follow-up period and was subsequently convicted in court. In 2003, the actual rate remained at 57.6 per cent but the cohort of offenders in 2003 was, on balance, more likely to re-offend. This resulted in a predicted rate of 58.9 per cent. As the actual rate is lower than the predicted rate, there has been an improvement over the 2000 results. As a result progress against the target is 2.3 percent.

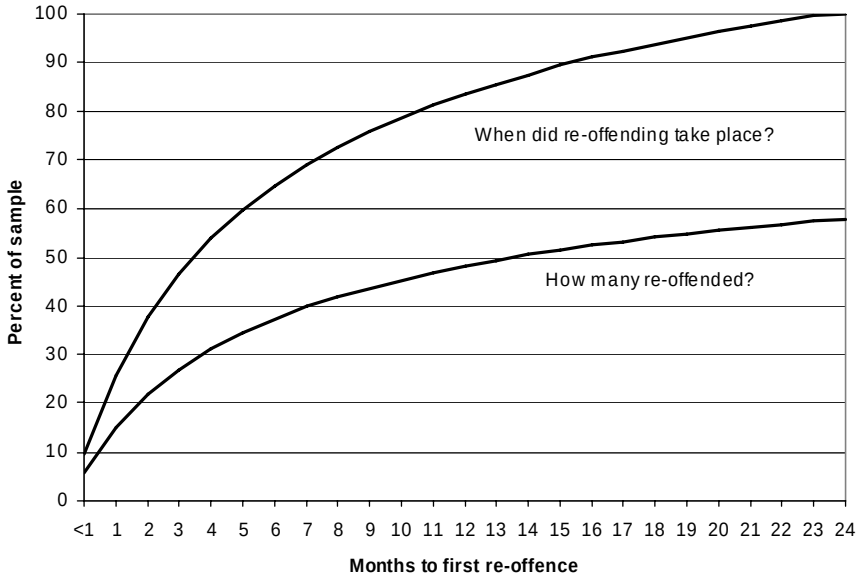
Table 1: Overall re-offending rates against the PSA target to reduce re-offending by five per cent

	Re-offending baseline (%)	Actual re-offending rate, 2003 (%)	Predicted re-offending rate, 2003 (%)	Progress against target (%)
Total	57.6	57.6	58.9	2.3

To give more background to the re-offending rate, the relationship between time and first re-offence can be examined. The following graph shows the percentage of the sample who first re-offended within one month, two months and so on, up to 24 months. It also shows when those who first re-offended in the two-year period did so.

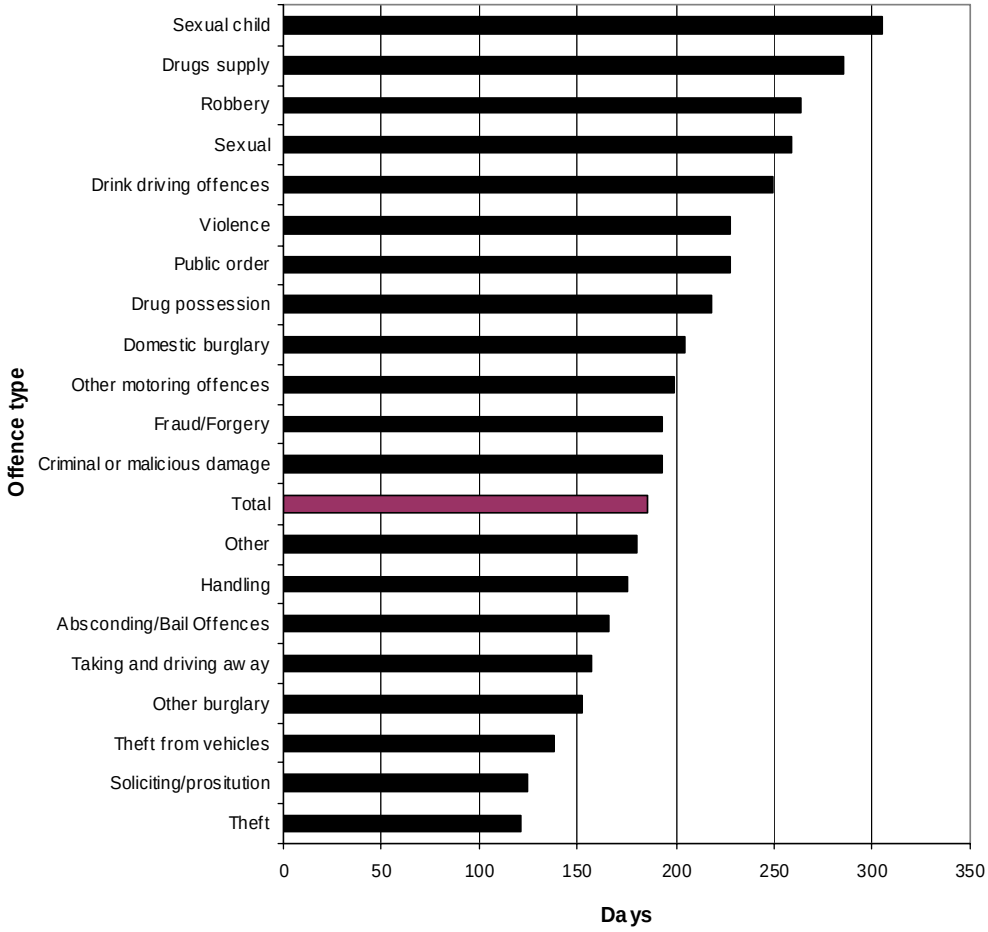
The rate of re-offending rises steeply. By the six-month mark 37 per cent of the sample had re-offended, and 65 per cent of those who re-offended within the two-year period had already done so. By the one-year mark 48 per cent of the sample had re-offended, and 84 per cent of those who re-offended within the two-year period had done so. A very similar relationship between time and first re-offence was apparent in the 2002 cohort.

Figure 3: When re-offending took place for the 2003 cohort



The graph below shows the average time that elapsed before offenders re-offended by the type of offence originally committed. The range goes from 121 days for those convicted of theft up to 305 days for those convicted of sexual offences against children.

Figure 4: Average number of days before re-offending took place by original offence



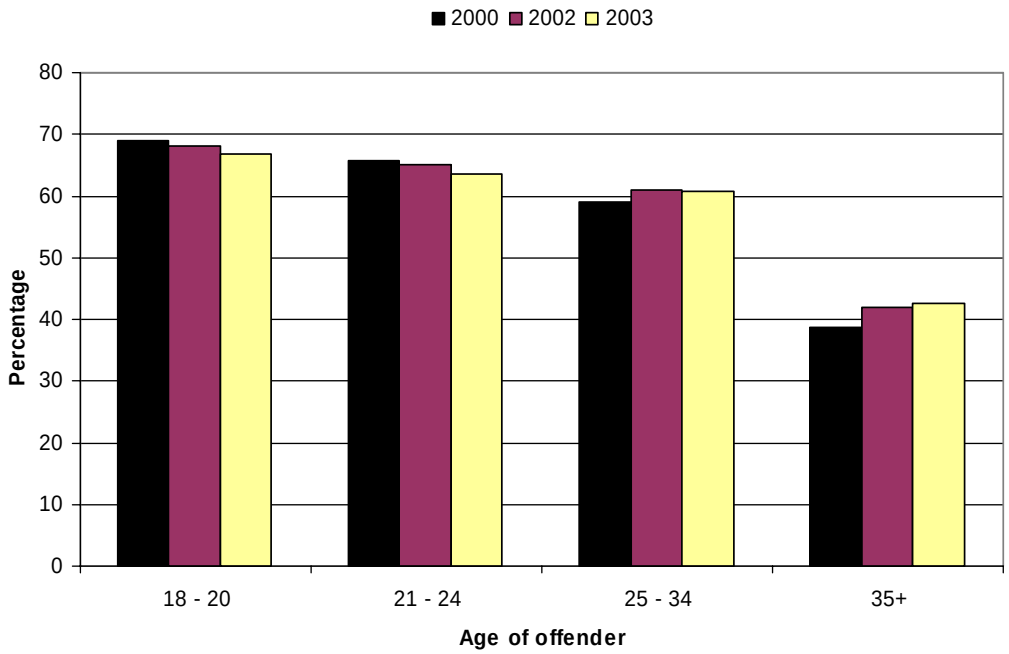
Caution should be used in the interpretation of Figure 4. It should not be assumed that offenders re-offend in the same category of offence: i.e. that an offender convicted of a motoring offence will commit another motoring offence if they re-offend. The evidence in this sample is that offenders do not specialise on the whole. At one extreme, of those who were originally convicted of theft and went on to re-offend within two years, 58 per cent had theft as their first re-offence. By contrast, for those who were originally convicted of robbery, only 5 per cent had robbery as their first re-offence. Overall, 29 per cent of those who re-offended committed their first re-offence in the same offence type as their original offence.

Re-offending by age (table A1)

There are clear differences in re-offending rates by age, with the youngest offenders in the sample being considerably more likely to re-offend. This pattern has not changed from 2000 to 2003. The graph below shows actual rates for offenders of different ages in 2000, 2002, and 2003.

Between 2000 and 2003, re-offending rates for 18-20 and 21-24 year olds decreased. At the same time, rates for offenders aged 35 or more have increased. Among offenders aged between 18 and 20, 69 per cent re-offended in 2000 and 67 per cent did so in 2003. Among offenders aged 35 or over, 39 per cent re-offended in 2000 compared to 43 per cent in 2003.

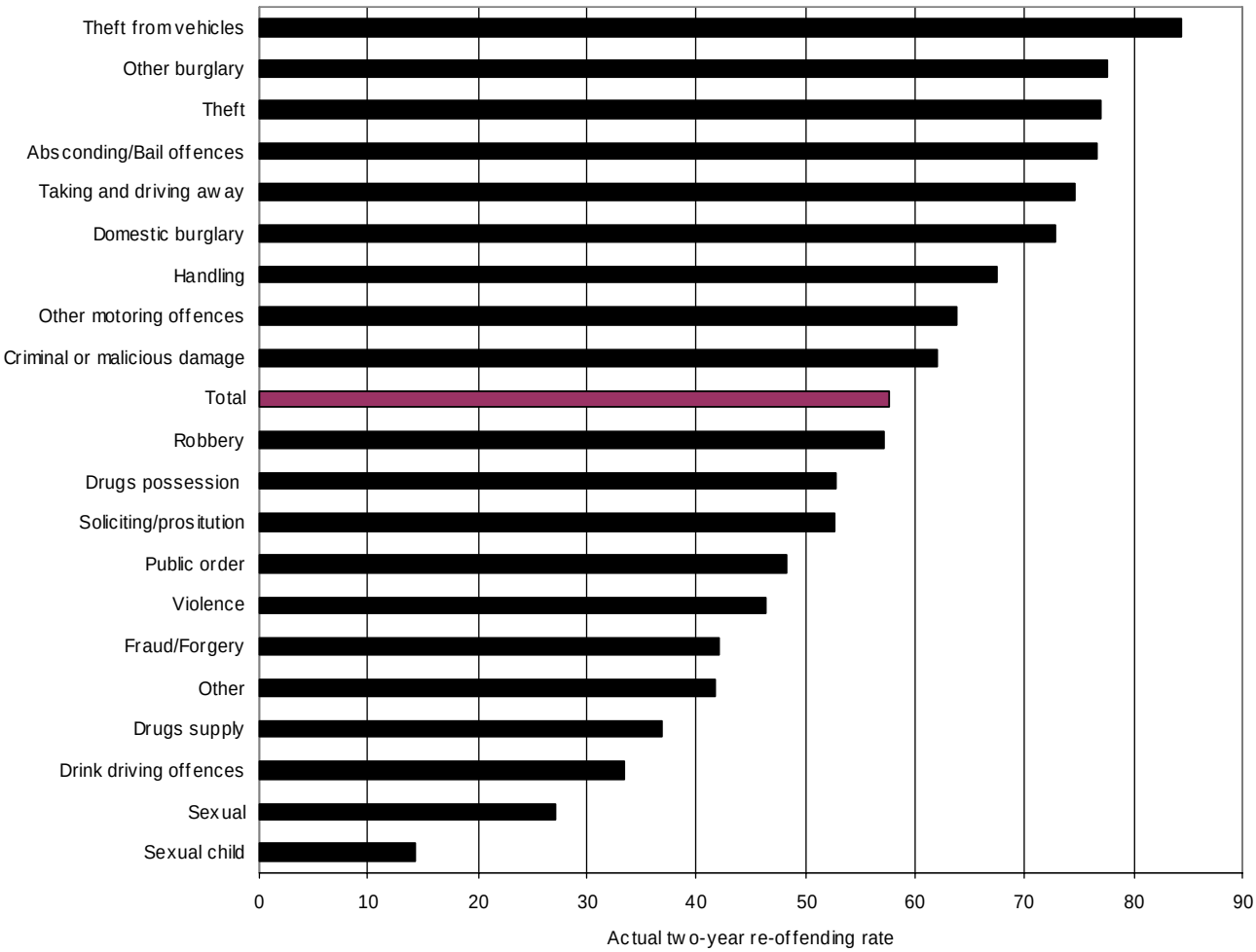
Figure 5: Re-offending rates by age of offenders, 2000, 2002, 2003



Re-offending by offence sentenced (tables A2, A3 and A4)

The following graph shows the re-offending rates by offence sentenced. As can be seen in the graph, actual re-offending rates vary considerably between the different types of offence. Rates of known re-offending are highest among those who committed offences relates to theft and other burglary and lowest among those who were convicted of sexual offences.

Figure 6: Actual two-year re-offending rates by offence groupings for 2003 cohort



Caution should be used when interpreting Figure 6. As noted already, the evidence in this sample suggests that offenders do not specialise in the type of offences they commit. If they re-offend they do not necessarily commit the same kind of offence as they did for their original offence.

The difference between the actual re-offending rate and the predicted re-offending rate varies by the type of offence originally committed. The two offence types that showed the largest positive difference between the predicted and actual rates were sexual offences and domestic burglary. For sexual offences, the predicted re-offending rate was 33 per cent but the actual re-offending rate was 27 per cent, resulting in a different of 6 percentage points. This means that fewer offenders convicted of a sexual offence re-offended than were predicted to do so. For domestic burglary the difference was five percentage points.

The offence type that shows the largest negative difference is theft from vehicles. For this offence type, 81 per cent were predicted to re-offend but 84 per cent did so, resulting in a difference of 3 percentage points. This means that more offenders convicted of theft from vehicles re-offended than were predicted to do so.

Offender profile: theft

The category of theft is defined here as being separate from theft of or from vehicles and also from offences that involve violence, such as robbery, involve criminally entering property, such as burglary, or handling stolen goods. It is one of the more common offence types, and almost 18 per cent of the 2003 cohort were originally convicted of theft.

Women account for a higher proportion of offenders convicted of theft. Of those originally convicted of theft 24 per cent, almost a quarter, were women. By contrast, 13 per cent of the entire cohort were women. Offenders convicted of theft were approximately the same age as offenders in general, with an average age of 29.

Offenders convicted of theft have more previous convictions than offenders in general. On average, offenders in the cohort convicted of theft have 14 previous convictions, compared with nine previous convictions for the cohort in general. Offenders convicted of theft re-offend at higher rates than other offenders, with a re-offending rate of 77 per cent compared to an overall re-offending rate of 57.6 per cent.

Re-offending by disposal (table A5)

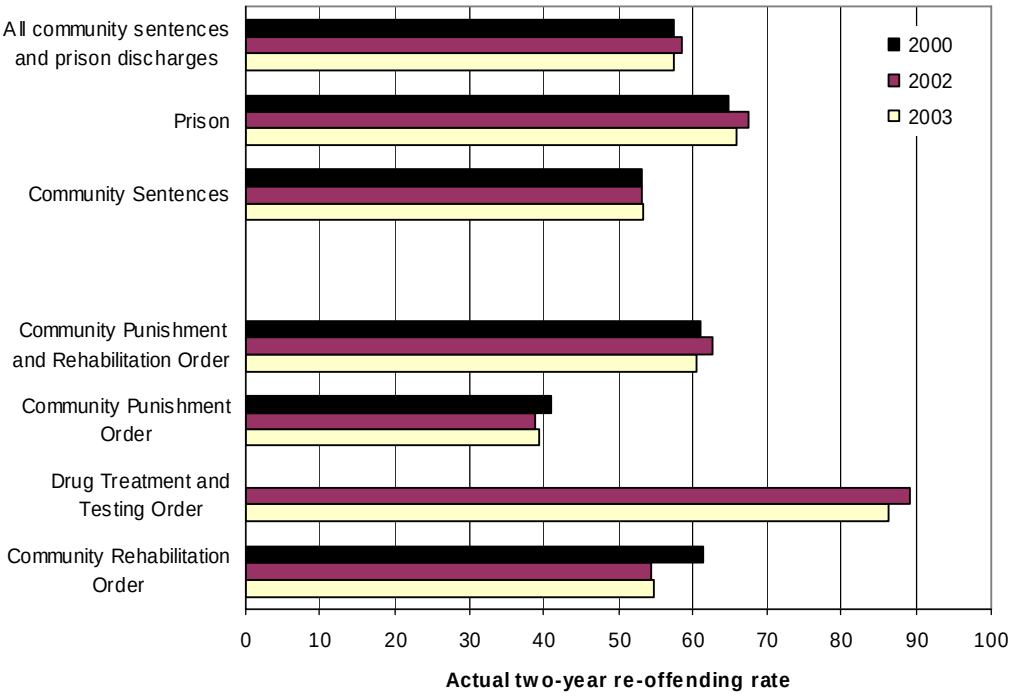
Re-offending rates vary considerably by type of disposal, but it is reasonable to assume that the disposal given depends upon the characteristics of the offender which will also affect their chances of re-offending. The relationship between re-offending and disposal is a complex topic, and RDS-NOMS currently has a comprehensive research programme underway to understand this further.

The figure below shows the actual rates for each disposal for 2000, 2002 and 2003. The Drug Treatment and Testing Order was piloted in 2000 and the people involved in the pilot have not been included in the sample for 2000.

For the 2003 cohort, offenders who were sentenced to drug treatment and testing orders have the highest actual re-offending rate at 86 per cent (this finding is in line with previous research, see Hough *et al*., 2003[1]). Offenders who were sentenced to a community punishment order have the lowest re-offending rate at 40 per cent. For those released from custody in 2003, the actual re-offending rate was 66 per cent.

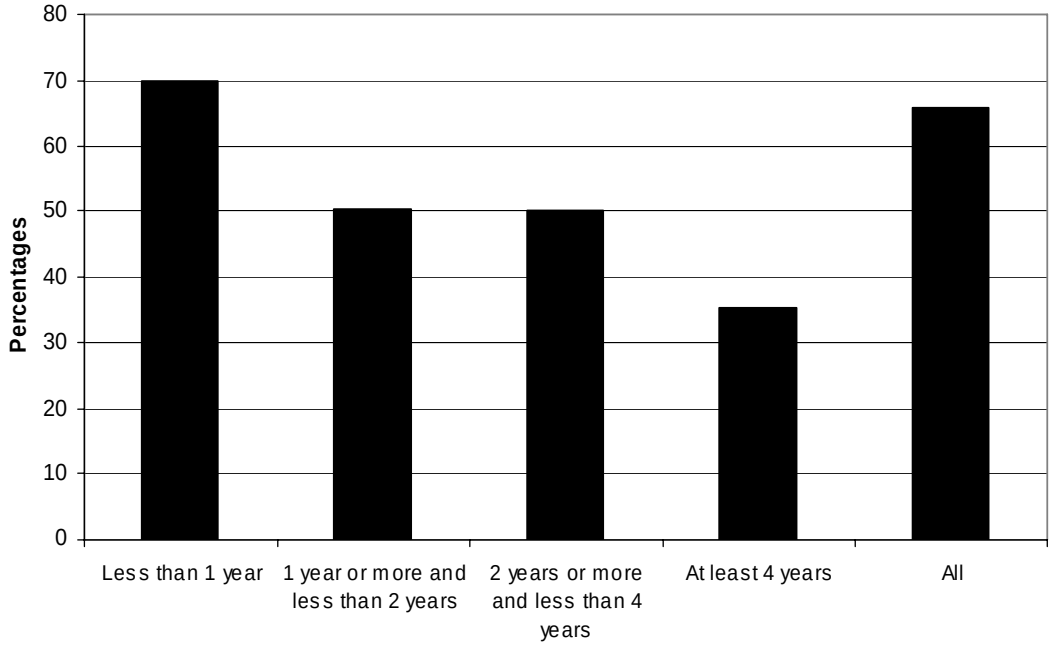
[1] *Although the overall re-offending rate for those given a DTTO was high, those who complete the order were found to have significantly lower re-offending rates than expected (53 per cent).*

Figure 7: Actual two-year re-offending rates by disposal for 2000, 2002 and 2003 cohorts



The graph below show how re-offending rates vary by length of custodial sentence. Longer custodial sentences are associated with lower re-offending rates. As noted above, the relationship between disposal and re-offending is complex and the evidence presented below does not, by itself, prove that longer custodial sentences cause lower re-offending rates.

Figure 8: Actual two-year re-offending rates by length of custodial sentence, 2003



Offender profile: comparing offenders discharged from a custodial sentence of less than a year with those discharged from a sentence of at least a year

Offenders discharged from a custodial sentence of less than a year were more likely to be women (8 per cent) than offenders discharged from a longer custodial sentence (6 per cent). They were also, on average, younger (29 years old) than offenders discharged from a longer custodial sentence (32 years old)

Perhaps surprisingly, offenders discharged from a custodial sentence of less than a year had, on average, more previous convictions (13) than those discharged from longer sentences (9). Offenders discharged from custody varied in the type of offences they were convicted for. Among offenders discharged from a custodial sentence of less than a year, the two most common offences they were originally convicted for were theft and motoring offences. Among offenders discharged from a longer custodial sentence the equivalent offence types were violence against the person and robbery.

As shown in Figure 8, re-offending rates are lower among offenders discharged from a custodial sentence of at least a year (49 per cent) than among those discharged from a shorter custodial sentence (70 per cent). Some offender characteristics of those discharged from longer custodial sentences are associated with lower re-offending, including being older, having fewer previous convictions, and the offence types they were convicted for. Disentangling the effect on re-offending of offender characteristics and the effect of the disposal itself is difficult. One approach is to examine the difference between the actual rate of re-offending and the predicted rate of re-offending, which is calculated solely using offender characteristics. This suggests that custodial sentences of at least a year are more effective in reducing re-offending. However, more detailed analysis is required to fully answer this question and a research programme to that effect is currently being carried out.

Odds ratios of re-offending for disposals

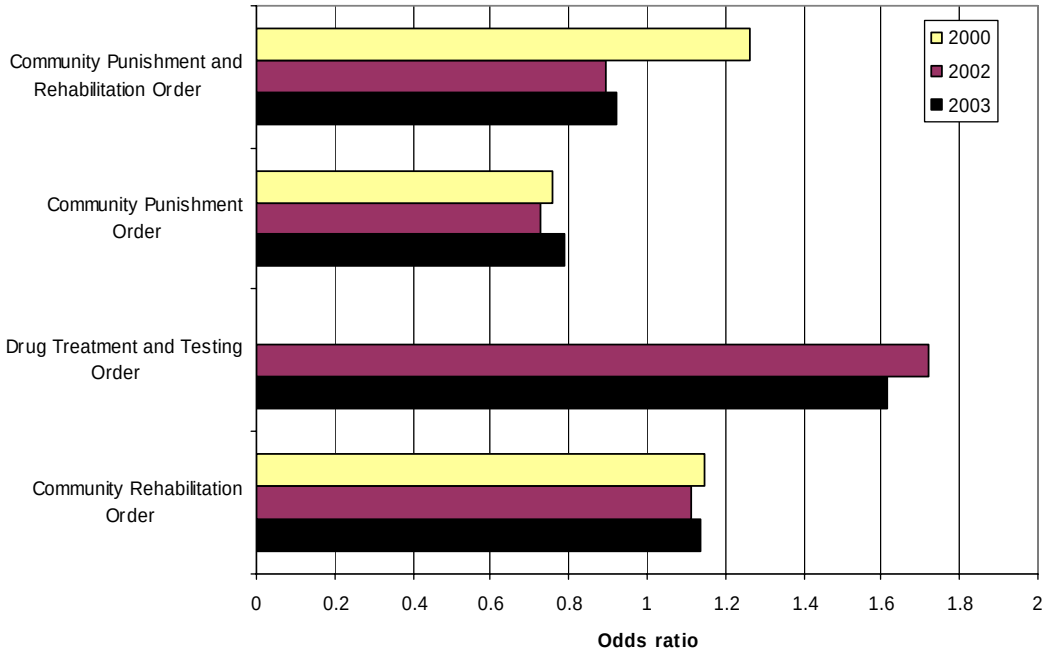
As noted above, the relationship between disposal and re-offending is complex and can only be properly handled by experimental designs that can control for the full range of differences between offenders. However, Figure 9 is of some interest.

Disposals are not included in the statistical model used to measure the PSA. The model is designed to look only at the characteristics of the offender and what happens to them post-sentence. However, a separate statistical model was built for the purposes of this section of the report to allow some limited understanding of the relationship between sentence and re-offending rates.

Figure 9 shows the result of adding disposals into the logistic model in the form of 'odds ratios'. If the odds ratio is above 1 then the offender given that disposal is more likely to re-offend than an offender who has been discharged from prison as long as all the other characteristics in the model are identical (the technical annex provides further details). The opposite applies for figures fewer than 1. On the face of it, the 2003 CPRO and CPO disposals are associated with lower rates of re-offending than prison and DTTOs and CROs

are associated with higher rates of re-offending than prison. Again, this is dependent on the other offender characteristics being identical.

Figure 9: Odds ratios of re-offending compared with custody, 2000, 2002 and 2003 cohorts



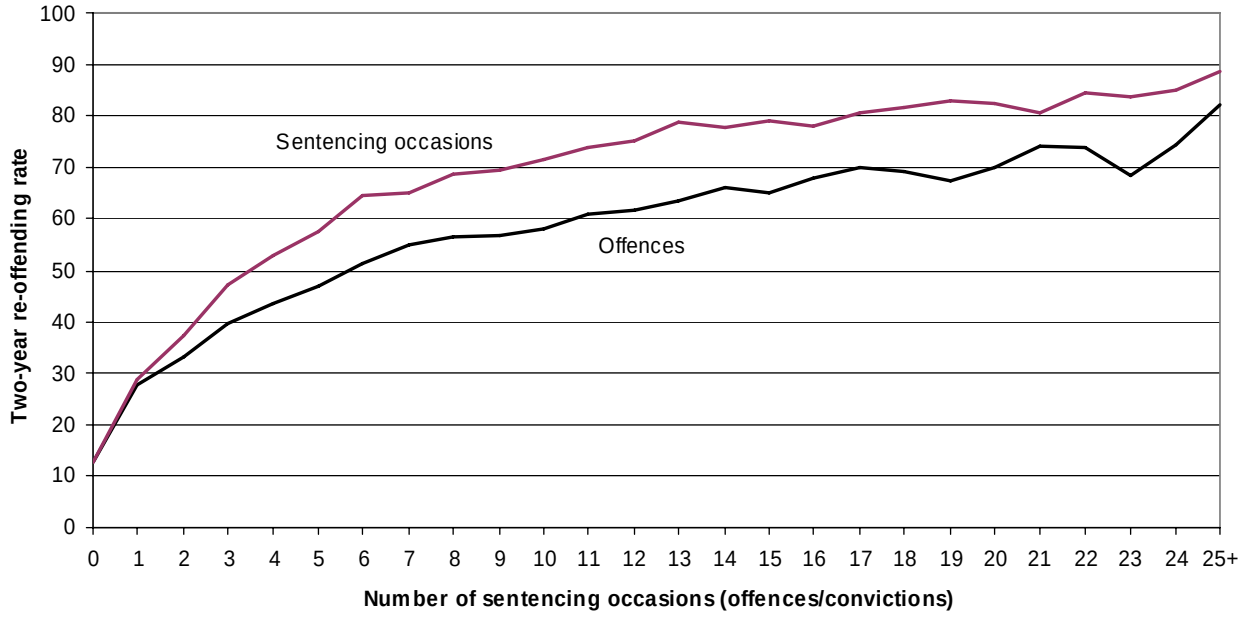
While the graph is interesting, it should be treated with caution. The odds ratios for CPROs, for instance, are below 1 for 2002 and 2003 and above 1 for 2000. This might be because offenders with drug problems who were given CPROs in 2000 were given DTTOs in 2002 and 2003. Consequently, in 2002 and 2003 offenders who were given CPROs were less likely to re-offend. Apart from the change in odd ratios that occurs for CPROs between 2000 and 2002 the ratios show a high degree of stability over time. For example the odds ratio for CROs remains between 1.1 and 1.2 across all three years. Whilst some of the impact of offender characteristics can be controlled, there are factors outside of the data that influence re-offending and not all of these are controlled for. Such lack of control could result in changes to the results for disposals.

It is because of this that it would be unwise to conclude that CPOs are working better than custodial or other disposals. The results are interesting but not definitive. It is for this reason that RDS-NOMs has further programmes designed to evaluate the relative effectiveness of sentences that control for a wider range of factors than can be dealt with here.

Re-offending rates by offending history (table A6)

The re-offending rate increases rapidly as the number of previous offences and the number of previous sentencing occasions (the number of times the offender has gone to court or has received a caution) increase.

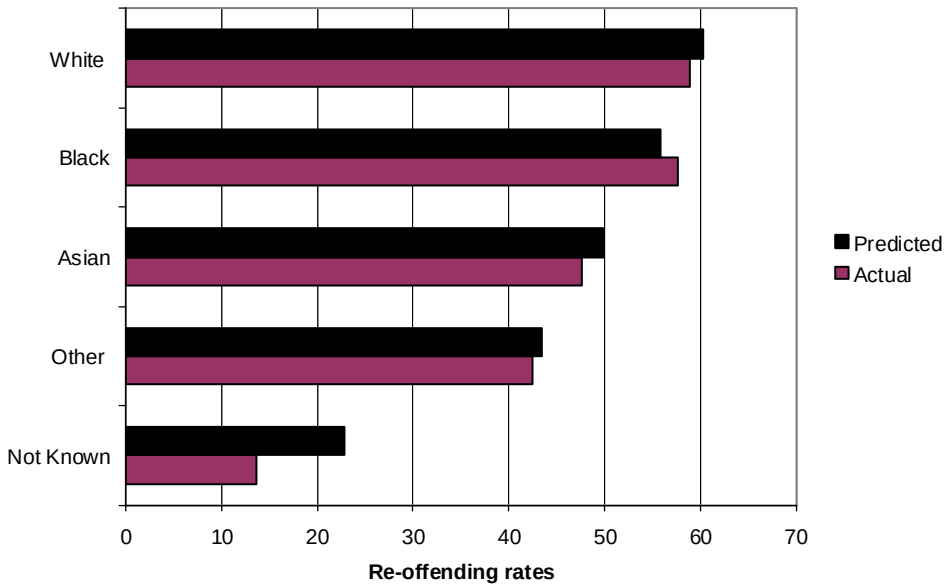
Figure 10: Re-offending by criminal history, 2003 cohort



Re-offending rates by ethnicity (table A7)

Information on ethnicity and re-offending is shown in Figure 10. It should be treated with caution. The ethnicity data are derived from an operational policing system and reflect the officer's view of the offender's ethnicity. There are advantages to this classification from an operational policing perspective. From a statistical point of view, it should be noted that the classification offers neither the level of detail of other ethnic classifications (e.g. the census) nor the opportunity for the offender to classify their own ethnic group.

Figure 11: Actual and predicted two-year re-offending rate by ethnicity, 2003 cohort



The rates show broad similarities in the actual rates between offenders classified as White and Black, with lower rates for offenders classified as Asian and Other. The numbers in both the not recorded/not known and the other category are low and are included for completeness only.

The predicted rates show some differences from the actual rates. Whilst the predicted rates for White and Asian offenders are broadly similar to or greater than the actual rate, the predicted rate for Black offenders is lower than the actual rate. This indicates that Black offenders within this cohort are more likely to re-offend, after controlling for criminal histories. This pattern also applies to the 2000 and 2002 cohorts. As with the other analysis reported here, there remain other factors which are not controlled for.

1997 PERFORMANCE

The previous Home Office Spending Review (in 2000) specified a target (PSA 10) for reducing re-offending by five per cent between 1997 and 2004.

The actual re-offending rate (for adults) in 1997 was 53.1 per cent; this compares with a predicted rate of 52.5 per cent. This represents a 1.1 per cent reduction between 1997 and 2000. Overall between 1997 and 2003 there has been a reduction of 3.4 per cent[2].

Owing to the change from the counting of re-conviction to re-offending, the PSA 10 figures should be seen as provisional and cannot accurately be compared with the figures in the rest of the report. Further work would be required to assess the comparability of the original 1997 baseline figures on reconviction with the 2000 baseline figures on re-offending.

[2] *The reduction between 1997 and 2003 is calculated as follows: 1.011x1.0023=1.034*

CONCLUSION

For the 2003 cohort, the two-year re-offending rate for adults is 2.3 per cent below the predicted rate calculated from the 2000 baseline.

For the 2002 cohort, the actual two-year re-offending rate was 0.2 per cent below the predicted rate. This means that since 2002 progress towards reducing re-offending amounts to 2.1 per cent.

STATISTICAL TABLE: A1

Actual and predicted re-offending rates by age and sex, 2003 cohort

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Actual 1 year	43.5	51.4	48.1	29.2	42.9	57.5	53.7	50.7	34.2	48.3	55.9	53.4	50.3	33.5	47.5
Actual 2 year	51.4	57.5	55.6	35.5	49.8	68.6	64.4	61.5	43.7	58.8	66.7	63.5	60.7	42.6	57.6
Predicted	57.3	60.7	57.0	33.4	51.3	70.7	68.2	62.2	43.2	60.1	69.2	67.3	61.5	41.8	58.9
Difference[1]	-5.9	-3.3	-1.4	2.2	-1.5	-2.1	-3.8	-0.7	0.5	-1.3	-2.5	-3.8	-0.8	0.7	-1.3
Difference[2]	-10.3%	-5.4%	-2.5%	6.5%	-2.9%	-3.0%	-5.6%	-1.1%	1.3%	-2.1%	-3.7%	-5.6%	-1.3%	1.7%	-2.3%
Number	856	1178	2080	1563	5677	7006	8446	13722	10178	39352	7866	9636	15812	11764	45078

1 Actual - predicted

2 Actual - predicted as a percentage of the predicted rate

STATISTICAL TABLE: A2

Actual two-year re-offending rate by offence group, age and sex, 2003 cohort

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Violence	33.2	42.9	38.2	33.3	36.6	57.7	52.0	47.6	36.9	47.5	54.6	51.1	46.7	36.5	46.4
Robbery	*42.3*	*40.9*	*61.1*	*50.0*	47.2	56.6	63.4	61.2	46.2	58.2	55.0	61.0	61.2	46.3	57.1
Public Order or Riot	*46.5*	*50.0*	*38.8*	*47.2*	44.9	58.1	51.0	42.7	42.2	48.6	57.1	50.9	42.4	42.5	48.3
Sexual	*	*	*	*	*	*31.6*	*25.8*	30.8	25.8	27.3	*31.6*	*25.0*	30.3	25.6	27.1
Sexual (Child)	*	*	*	*	*	*45.8*	*29.2*	21.9	10.0	14.6	*45.8*	*29.2*	21.4	9.8	14.3
Soliciting or prostitution	*	*	*33.3*	*	*33.3*	*	*	*66.7*	*57.1*	*61.5*	*	*	*55.6*	*50.0*	*52.6*
Domestic Burglary	*53.9*	*75.0*	*56.8*	*62.5*	61.7	79.8	74.8	73.1	62.0	73.5	78.2	74.8	72.2	62.1	72.8
Other Burglary	*33.3*	*72.7*	*75.0*	*66.7*	66.7	79.4	76.8	80.0	72.1	78.0	78.5	76.7	79.9	72.0	77.7
Theft	65.9	71.8	76.8	60.9	70.8	76.2	80.5	83.1	71.2	78.9	73.4	78.3	81.6	69.1	77.0
Handling	*73.0*	50.0	65.6	*63.9*	62.0	67.7	72.5	72.3	58.3	68.7	68.5	67.4	71.0	59.2	67.5
Fraud and forgery	40.6	46.5	39.8	25.2	35.9	60.1	55.3	47.5	31.2	45.1	55.1	52.3	44.8	29.2	42.1
Absconding or bail offences	*58.8*	*77.1*	*78.7*	*60.0*	71.8	82.5	74.5	78.4	76.5	77.8	79.2	75.0	78.4	73.2	76.6
Taking and driving away & related offences	*69.2*	*57.1*	*80.0*	*	*60.7*	76.6	71.4	78.8	66.2	75.1	76.4	71.0	78.8	63.2	74.7
Theft from vehicles	*33.3*	*	*	*	*42.9*	84.2	82.6	87.6	*83.8*	84.9	82.9	82.1	87.2	*84.2*	84.3
Other motoring offences	*77.8*	57.4	50.4	37.1	50.5	76.6	67.3	63.9	51.0	64.6	76.6	66.9	63.1	50.2	63.9
Drink driving offences	*36.4*	*22.6*	25.2	12.3	17.9	59.5	45.3	36.4	27.5	35.0	58.2	43.9	35.4	25.8	33.4
Criminal or malicious damage	*64.5*	*41.7*	44.7	53.7	52.6	71.3	66.7	59.4	54.7	63.1	70.7	65.6	58.1	54.5	62.1
Drugs import/export/production/supply	*20.0*	*28.0*	33.3	17.3	25.7	49.2	46.0	44.4	29.2	39.4	43.4	42.1	42.4	27.2	37.0
Drugs possession/small scale supply	*33.3*	55.2	57.4	33.8	47.9	57.4	57.9	55.4	43.8	53.6	55.2	57.5	55.7	42.2	52.8
Other	*30.0*	*34.7*	20.8	10.5	18.4	78.3	60.4	55.2	31.1	50.2	72.2	53.4	46.7	24.4	41.8

* Data removed as extremely low numbers make the identification of individual offenders possible

Italics mean less than 50 offenders - treat the data with caution

STATISTICAL TABLE: A3

Predicted two-year re-offending rate by offence group, age and sex, 2003 cohort

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Violence	43.1	45.1	41.0	29.4	39.4	61.7	57.5	49.8	35.5	49.8	59.4	56.3	48.9	34.9	48.7
Robbery	*47.1*	*52.1*	*58.4*	*43.4*	51.2	62.2	63.9	60.7	54.7	61.1	60.5	62.6	60.5	54.1	60.1
Public Order or Riot	*44.0*	*49.4*	*40.6*	*33.8*	41.6	59.2	54.0	47.0	38.1	49.9	58.0	53.7	46.5	37.7	49.3
Sexual	*	*	*	*	*	*46.7*	*46.3*	35.2	27.5	32.7	*46.7*	*45.6*	35.0	27.7	32.8
Sexual (Child)	*	*	*	*	*	*42.5*	*28.6*	22.3	10.8	15.1	*42.5*	*28.6*	22.7	10.7	15.1
Soliciting or prostitution	*	*	*76.8*	*	*74.9*	*	*	*72.4*	*61.8*	*66.7*	*	*	*73.9*	*59.8*	*69.3*
Domestic Burglary	*68.8*	*71.5*	*69.8*	*51.9*	67.3	80.9	79.5	78.6	69.8	78.1	80.1	79.0	78.2	68.7	77.5
Other Burglary	*63.1*	*70.0*	*66.2*	*54.2*	64.9	80.0	81.4	77.3	72.7	78.1	79.7	81.1	77.0	72.2	77.8
Theft	73.3	74.7	77.2	59.3	72.5	82.6	84.3	82.2	72.9	80.6	80.0	81.8	81.0	70.1	78.7
Handling	*60.4*	58.0	66.0	*48.7*	60.2	76.5	73.7	71.9	57.4	70.3	74.0	70.2	70.7	56.1	68.4
Fraud and forgery	47.4	51.5	40.9	20.4	36.2	64.2	58.4	48.0	31.6	46.5	59.8	56.2	45.7	28.2	43.4
Absconding or bail offences	*69.9*	*75.2*	*74.3*	*65.5*	72.2	81.2	79.4	75.1	63.5	75.2	79.6	78.5	74.9	63.9	74.6
Taking and driving away & related offences	*68.4*	*46.2*	*65.3*	*	*58.7*	78.2	79.5	78.2	67.9	77.8	77.9	78.5	77.9	66.4	77.3
Theft from vehicles	*88.8*	*	*	*	*80.0*	81.2	83.5	80.7	*76.2*	81.3	81.4	83.5	80.4	*76.7*	81.3
Other motoring offences	*58.0*	57.4	54.9	35.5	50.4	74.8	70.1	64.5	50.0	64.9	74.4	69.6	63.9	49.1	64.2
Drink driving offences	*39.4*	*30.7*	26.1	13.2	19.5	59.6	49.3	38.1	24.2	34.6	58.5	48.2	37.1	22.9	33.2
Criminal or malicious damage	*54.2*	*60.0*	49.8	38.3	47.1	72.9	69.5	59.4	52.5	63.7	71.3	69.1	58.5	50.2	62.1
Drugs import/export/production/supply	*34.6*	*34.6*	37.3	22.1	31.4	50.1	48.9	47.4	33.5	42.7	47.0	45.8	45.6	31.6	40.7
Drugs possession/small scale supply	*42.9*	52.6	49.2	33.4	45.0	62.5	59.7	56.3	46.2	55.7	60.7	58.7	55.4	44.2	54.3
Other	*50.1*	*43.0*	28.2	14.2	24.8	74.1	64.4	53.0	30.1	49.2	71.1	58.8	46.9	25.2	42.8

* Data removed as extremely low numbers make the identification of individual offenders possible

Italics mean less than 50 offenders - treat the data with caution

STATISTICAL TABLE: A4

Offender numbers by offence group, age and sex, 2003 cohort

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Violence	202	154	270	207	833	1419	1511	2332	2008	7270	1622	1665	2602	2217	8106
Robbery	*26*	*22*	*18*	*6*	72	205	205	214	117	741	231	228	232	123	814
Public Order or Riot	*43*	*30*	*49*	*36*	158	518	447	546	427	1938	562	477	595	464	2098
Sexual	*	*	*	*	*	*19*	*31*	65	163	278	*19*	*32*	66	164	281
Sexual (Child)	*	*	*	*	*	*24*	*24*	96	392	536	*24*	*24*	98	399	545
Soliciting or prostitution	*	*	*3*	*	*6*	*	*	*6*	*7*	*13*	*	*	*9*	*8*	*19*
Domestic Burglary	*26*	*28*	*37*	*16*	107	377	428	658	237	1700	403	456	695	253	1807
Other Burglary	*6*	*11*	*16*	*6*	39	301	379	661	226	1567	307	390	677	232	1606
Theft	287	464	763	361	1875	764	1362	2558	1384	6068	1052	1826	3323	1745	7946
Handling	*37*	68	96	*36*	237	198	236	401	204	1039	235	304	497	240	1276
Fraud and forgery	64	114	196	214	588	183	275	476	481	1415	247	392	678	702	2019
Absconding or bail offences	*17*	*35*	*47*	*25*	124	103	137	171	98	509	120	172	218	123	633
Taking and driving away & related offences	*13*	*7*	*5*	*	*28*	423	238	217	65	943	436	245	222	68	971
Theft from vehicles	*3*	*	*	*	*7*	120	144	177	*37*	478	123	145	179	*38*	485
Other motoring offences	*27*	68	143	89	327	1319	1638	2263	1403	6623	1346	1707	2407	1492	6952
Drink driving offences	*11*	*31*	107	204	353	227	484	1169	1610	3490	239	515	1276	1815	3845
Criminal or malicious damage	*31*	*12*	38	54	135	334	273	372	278	1257	365	285	410	332	1392
Drugs import/export/production/supply	*15*	*25*	60	52	152	61	100	284	260	705	76	126	344	312	858
Drugs possession/small scale supply	*27*	58	101	71	257	272	363	666	384	1685	299	421	767	455	1942
Other	*20*	*49*	125	171	365	138	169	386	392	1085	158	223	512	573	1466

* Data removed as extremely low numbers make the identification of individual offenders possible

Italics mean less than 50 offenders - treat the data with caution

STATISTICAL TABLE: A5

Actual two-year re-offending rate by sentence, age and sex, 2003 cohort

ACTUAL RATE

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Community Sentences	49.3	53.5	52.0	31.6	46.2	65.7	59.8	56.9	39.2	54.7	63.6	58.8	56.1	37.9	53.4
Community Rehabilitation Order	60.6	64.1	59.1	39.8	55.2	76.2	69.1	65.3	45.1	61.9	73.4	68.0	64.0	44.1	60.6
Drug Treatment and Testing Order	83.3	87.9	85.7	79.2	85.4	92.0	91.1	84.3	83.4	86.5	90.3	90.5	84.6	82.9	86.3
Community Punishment Order	26.2	21.1	26.0	15.7	21.7	54.4	45.2	40.9	27.8	41.9	51.9	42.9	39.1	25.8	39.5
Community Punishment and Rehabilitation Order	40.7	37.3	48.6	27.4	38.7	69.3	64.8	53.7	36.9	56.4	67.4	62.5	53.2	35.7	54.7
Prison	61.6	70.7	68.1	51.0	63.4	75.7	72.6	68.7	51.7	66.1	74.8	72.3	68.6	51.6	65.8

NUMBER OF OFFENDERS

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Community Sentences	710	905	1616	1247	4478	4966	5383	8428	6480	25257	5680	6296	10050	7747	29773
Community Rehabilitation Order	414	557	1011	714	2696	1855	2230	4064	3347	11496	2269	2789	5077	4069	14204
Drug Treatment and Testing Order	24	66	105	24	219	100	259	555	175	1089	124	325	660	199	1308
Community Punishment Order	218	223	393	414	1248	2222	2204	2893	2264	9583	2443	2432	3290	2690	10855
Community Punishment and Rehabilitation Order	54	59	107	95	315	789	690	916	694	3089	844	750	1023	789	3406
Prison	146	273	464	316	1199	2040	3063	5294	3698	14095	2186	3340	5762	4017	15305

STATISTICAL TABLE: A6

Predicted two-year re-offending rate by criminal history, age and sex, 2003 cohort

ACTUAL RATES

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
No previous offences	10.3	10.8	6.9	5.2	7.4	25.6	19.0	13.7	6.8	14.3	22.5	17.0	11.9	6.3	12.6
Between 1 and 2 offences	35.6	32.0	30.8	23.3	29.7	43.7	35.2	24.9	16.5	30.2	42.7	34.7	25.9	17.7	30.1
Between 3 and 6 offences	54.7	48.6	47.3	26.5	44.0	64.4	47.9	40.0	21.6	44.9	63.4	48.0	41.0	22.4	44.8
Between 7 and 10 offences	66.7	61.0	59.7	48.0	58.7	76.4	62.9	48.4	34.7	56.1	75.4	62.7	50.2	36.6	56.4
Greater than 10 offences	80.0	84.9	79.9	66.4	77.9	89.3	82.6	77.9	62.5	76.2	88.5	82.8	78.1	62.9	76.3

PREDICTED RATES

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
No previous offences	18.4	15.9	12.9	7.2	12.0	25.6	17.7	11.3	6.9	13.4	24.2	17.3	11.8	7.2	13.2
Between 1 and 2 offences	39.4	36.4	29.4	15.9	28.7	50.1	37.9	24.3	14.2	31.8	48.8	37.7	25.1	14.5	31.4
Between 3 and 6 offences	58.5	53.0	44.7	24.4	44.5	67.7	54.9	38.5	20.2	46.8	66.8	54.6	39.4	20.9	46.5
Between 7 and 10 offences	74.1	67.5	56.9	37.2	58.0	78.8	68.3	50.9	28.4	57.5	78.3	68.2	51.8	29.6	57.5
Greater than 10 offences	86.4	86.0	82.3	64.7	79.4	89.5	86.1	79.3	63.0	77.6	89.2	86.1	79.6	63.2	77.8

NUMBERS OF OFFENDERS

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
No previous offences	175	203	365	463	1206	704	705	1111	1418	3938	883	919	1486	1903	5191
Between 1 and 2 offences	146	147	224	223	740	1081	944	1107	972	4104	1227	1092	1331	1195	4845
Between 3 and 6 offences	172	181	258	200	811	1547	1277	1594	1111	5529	1719	1458	1852	1311	6340
Between 7 and 10 offences	108	123	221	127	579	950	981	1185	795	3911	1058	1104	1406	922	4490
Greater than 10 offences	255	524	1012	550	2341	2724	4539	8725	5882	21870	2979	5063	9737	6433	24212

STATISTICAL TABLE: A7

Actual and predicted two-year re-offending rate by ethnicity, age and sex, 2003 cohort

ACTUAL RATES

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Asian	*14.3*	*50.0*	*27.8*	*26.1*	27.2	54.9	51.3	50.1	32.2	48.6	52.8	51.2	49.0	31.7	47.6
Black	31.3	40.3	49.3	39.8	42.1	65.1	62.7	60.3	53.4	59.6	61.6	60.4	58.9	51.9	57.6
Other	*16.7*	*33.3*	*60.0*	*40.0*	*40.6*	*60.6*	47.1	43.8	32.1	42.9	*53.8*	44.8	45.2	33.0	42.5
White	54.6	59.3	58.1	37.9	52.5	70.0	65.9	62.7	44.0	59.9	68.2	65.0	62.1	43.2	58.9
Not recorded/Not known	*28.6*	*23.1*	5.8	2.8	6.1	*42.9*	40.7	18.7	6.4	17.9	*40.8*	35.2	13.5	4.9	13.6

PREDICTED RATES

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Asian	*37.1*	*55.4*	*38.1*	*32.3*	38.7	58.9	56.9	49.2	30.5	50.5	57.7	56.8	48.7	30.6	49.9
Black	47.3	51.9	49.1	36.0	45.5	68.4	62.0	55.2	48.8	57.1	66.2	61.0	54.5	47.4	55.8
Other	*34.0*	*61.0*	*53.8*	*22.0*	*41.5*	*67.3*	46.3	39.3	38.5	43.8	*62.2*	47.5	40.6	36.8	43.5
White	59.1	61.7	59.3	35.2	53.4	71.8	70.0	64.0	43.6	61.4	70.4	68.9	63.3	42.5	60.4
Not recorded/Not known	*36.0*	*31.9*	14.2	9.8	13.7	*46.9*	41.6	26.8	19.2	27.0	*45.3*	38.8	22.4	16.3	22.9

NUMBER OF OFFENDERS

	2003 Females					2003 Males					2003 All offenders				
	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total	18 - 20	21 - 24	25 - 34	35+	Total
Asian	*21*	*12*	*36*	*23*	92	366	536	683	286	1871	388	549	719	309	1965
Black	64	72	148	113	397	559	667	1038	942	3206	623	740	1186	1056	3605
Other	*6*	*6*	*10*	*10*	*32*	*33*	51	105	84	273	*39*	58	115	94	306
White	758	1075	1834	1310	4977	6006	7138	11805	8662	33611	6767	8218	13644	9979	38608
Not recorded/Not known	*7*	*13*	52	107	179	*42*	54	91	204	391	*49*	71	148	326	594

PSA QUALITY STATEMENT

Measuring re-offending

The measurement of re-offending is complex. There are a variety of different ways in which re-offending can be measured, and the Home Office is actively exploring additional approaches. These include measuring the frequency and seriousness of offending, different start dates for community penalties and prison sentences and different statistical models. It is possible that more comprehensive measures may emerge as the final outturn for 2006 data approaches.

PSA data quality statement on limitations of data – summary statement

Whilst there remain areas of uncertainty, the data underpinning the results are felt to be broadly robust. Considerable work has been carried out ensuring data quality and the results using the data have been used for other research publications. Scrutiny of the data continues in order to ensure the data remains reliable.

PSA data quality statement on risks to data quality

The National Audit Office (NAO) has identified six risk factors in its review of the reporting of PSA targets (NAO, 2005). The following commentary addresses these.

Complexity of data collection. The data required for the PSA target involve a range of data sources (prison data, community sentence data, and the criminal records) from a range of agencies (individual prisons and probation areas, and different police forces). As with any administrative data system, there are risks that the quality of the data entered in each of these systems is variable and occasionally inaccurate. However, the systems are operational systems used for day-to-day management and it is felt that it is unlikely that there are large-scale systematic errors in the data.

Complexity of data processing. The data processing involved for the PSA target is complex, and requires the extraction of criminal histories that can span a number of decades, and the subsequent matching of these histories against the community sentence caseload files and prison discharges in order to generate a statistical model. The components are:

- Matching offender records. This process uses automated matching routines that look at offenders' surnames, initials, and dates of birth, using direct name matching along with a variety of 'sounds like' algorithms. The matching algorithms appear to give good results, and additional security is offered by ensuring that offence dates from prison and community sentence data are within seven days of the criminal records database. However, not all offenders are matched and a thorough analysis of bias in the matching system has yet to be undertaken.

- The counting rules for choosing which prison discharges to include offer a variety of choices. For instance, it makes little sense to include offenders discharged for

deportation or because they have died. These counting rules were enumerated and discussed to ensure accurate and comprehensive counting.

- The extraction of the criminal histories. This is complex, and involves substantial programming effort in SQL. However, the end outcomes are reasonably transparent and are amenable to dip sampling of offender records for accuracy. The range and diversity of criminal history prohibits large-scale checking of offender records but the sampling undertaken allowed basic validation of the outputs of the SQL programme.

- The construction of the statistical model. This offers a variety of choices including the characteristics and methodology of statistical model, and the approach taken in identifying and entering variables into the model. The method used for the construction of the statistical model for producing predicted rates is robust and fit for purpose. Further development work could identify more parsimonious models and improved techniques, including those that allow the multi-level nature of the data to be handled. Further details on model fit and discrimination are available in the methodological annex.

Level of subjectivity. There is relatively little subjectivity in the system. Occasional judgements are required (e.g. where to classify an offence) but these will not significantly influence the results.

Maturity and stability of the data system. The system is well established having been used several times to produce statistics for publication. Nonetheless, vigilance continues to be exercised to ensure the validity of the results.

Expertise of those who operate the system. The PNC, prison and community sentence datafeeds have not been fully and recently audited, though, and as noted above, these systems are operational systems and large-scale systematic errors are not believed to exist. The internal processing of the results within the Home Office has been subject to dip sampling of criminal histories and the statistical model has been extensively tested.

Use of data to manage and reward performance. The data are not currently used to manage the performance of individuals or teams.

METHODOLOGICAL ANNEX: DATA SOURCES

Offenders in the cohorts

The offenders in the cohort are those starting community sentences or discharged from prison during the first quarter of 2000 (for the baseline year) and 2003 (for the current results). The use of the sample arises from the administrative effort required to match criminal records.

The persons starting community sentences are extracted from the community sentence data held by RDS-NOMS. Details of the offenders discharged from prison were taken from the Inmate Information System (IIS) held by the Prison Service. Both these datasets are managed centrally by RDS-NOMS Offender Management and Analysis Section and grateful acknowledgement is made to Rachel Councell, Jonathan Barbour and Gary Renshaw for their assistance in supplying these data.

METHODOLOGICAL ANNEX: MATCHING RATES

For each year, the sample used consists of adults (those aged 18 or over) who are discharged from custody or commence a community penalty in the first quarter (January – March) of that year. All actual and predicted rates refer to this sample.

TABLE M1: MATCHING RATES FOR 2003

Community sentence commencements	
Number in community sentence dataset (includes all offenders, including those aged under 18 and those included for breach offences)	37,084
Number matched to HOPNC criminal database (includes duplicate matches for common names)	35,395
Number without duplicates	35,206
Prison discharges	
Number discharged from prison (includes automatic discharges, and other relevant categories)	18,537
Number matched to HOPNC criminal database (includes duplicate matches for common names)	18,076
Number without duplicates	18,076
Community sentence and prison combined with duplicates	
Community sentence and prison combined without duplicates	53,282
Final dataset	
Number with a court date for the beginning of their community or custodial sentence which matched the court date on the HOPNC within seven days, and where the offence was dealt with by a HO police force and with a court conviction	48,490
Final number, as above but with all those aged 18 only and excluding those with breach index offences	45,078

METHODOLOGICAL ANNEX: STATISTICAL MODELLING

Introduction

Because the characteristics of offenders are likely to be systematically different over time, and because the CJS aims to target particular sentences to offenders most likely to benefit most from that type, it is important to note that one cannot reach firm conclusions about changes in rates over time, nor about the relative effectiveness of different sentence types from actual re-offending rates.

Predicted rates (see Lloyd *et al.*, 1994, for a discussion) are used to take account of some of the differences in characteristics of offenders. Accordingly they can give a more meaningful measure of the change that has occurred in the rate of re-offending than can be obtained using the actual rates. If the composition of the groups of offenders being compared differs significantly over a time period, so that the type of offenders in one year is inherently more (or less) likely to re-offend, this may result in a spurious rise or fall in the actual rates even when there may be no 'real' difference for similar offenders over that time. Hence the actual rates should be compared with the predicted rates using a model based on data from an earlier year, and change in re-offending rates measured by comparing the actual rate with the rate that would be predicted given this group of offenders.

The predicted rates model can only take account of a limited set of factors for which data are available, such as age, gender, offence type and criminal history. However, research has shown that other factors, for which data on these samples are not available, such as drug and alcohol use, employment, accommodation and marital background are significantly related to re-offending (see, for example, May, 1999).

Statistical method

To calculate the predicted rates to allow for like-for-like comparison, the statistical technique of logistic regression is applied (Hosmer and Lemeshow, 2000). This method allows the probability of one of two possible outcomes to be estimated based on a range of factors. In this instance the outcome is whether the offender re-offended or not, and the estimates are calculated from factors known to be related to re-offending.

A range of factors are entered into the model to identify factors which best predict re-offending. The model that has been developed contains an extensive array of factors, and more parsimonious models and equally valid models may emerge in due course. There are also issues about whether other techniques such as multi-level models might offer additional accuracy and insight, or similar levels of accuracy but with simpler models, using fewer factors.

The following notes provide some further detail on the model and show the relative impacts of different variables when holding all other variables constant. The coefficients follow the description:

Age and sex. Various combinations of age and sex were investigated. These include entering age as a continuous variable and as a categorical variable. The approach in the final model separated out males and females into seven age bands. This approach is derived from

work in progress by Lancaster University. Their advice and support, along with that of Philip Howard from the Home Office's ODEAT team, is gratefully acknowledged. Generally, for both males and females, older offenders are less likely to offend than younger offenders.

Previous custodial sentences. A number of approaches to counting previous custodial sentences were explored. These included: the total number of previous custodial sentences; the number of custodial sentences where the offender was less than 18 years of age or 21 years of age; and the number of custodial sentences with a sentence length of over four years. The best fit with these data emerged with number of previous custodial sentences, though work is in progress to identify whether various transformation or classifications might yield better fits.

Copas rate: The Copas rate (Copas and Marshall, 1998) controls for the rate at which an offender has built up convictions throughout their criminal career. The higher the rate the more convictions an offender has in a given amount of time, and the more likely it is that an offender will re-offend. The Copas rate was originally derived from convictions data from the OI. The recent work by Lancaster University (acknowledged above) has suggested that a recasting of the rate provides a better fit for HOPNC data for the prediction of re-offending. A variety of different approaches were undertaken for the prediction of re-offending that subsequently leads to conviction, but the revised Copas rate offered by Lancaster University had the best level of discrimination.

The revised formula is:

$$\text{Log}_e = \left(\frac{\text{Number of court appearances or cautions}}{\text{Length of criminal career in years} + 10} \right)$$

Criminal career. The length of criminal career proved to add a degree of extra discrimination to the original models. Whilst the length of criminal career is related to the COPAS rate it is not so co-linear to merit exclusion. Offenders with longer criminal careers are less likely to re-offend.

Index offence. Index offences were classified into 20 broad categories, based on the similarity of re-offending rates within these offence bands. The classification adopted owes much to original work done by Taylor (1999), and enhancements developed by Lancaster University for the aforementioned project on predicting re-offending. Offenders convicted for the range of theft offences (theft, handling, theft from vehicles, taking and driving away), the burglary offences, absconding and bail offences, motoring offences, criminal and malicious damage, all increased the chances of re-offending when compared to those sentenced for violence. Those convicted of soliciting and prostitution had the highest increased chance of re-offending, again when compared with those offenders sentenced for violence. Some figures should be treated with caution as they relate to a small number of offenders. Notably decreased likelihood of re-offending was seen for sexual offences against children, drink driving offences, robbery, and drugs import and export offences when these offences are compared with the reference category of violence.

Total number of previous offences. Offenders convicted of larger numbers of previous offences were more likely to re-offend when compared to offenders with little or no previous offending. The previous offending categories counted cautions and convictions.

Counts of previous offending. The number of previous offences were included in the model, under the same classification shown above, and added a small amount of additional discrimination to the final output. The number of previous offences was an improvement over simple 'yes or no' variables for recording the presence of prior offences in the relevant categories.

Does the statistical model work?

The appropriateness of a logistic model needs to be reviewed both by checking that a statistical model fits, and whether it offers sufficient discrimination.

Model fit. The fit of a model is assessed by calculating whether the difference between the observed and expected values is significant, when the data are collapsed into groups. If it is not significant, the model offers an acceptable degree of fit overall. The fit of the model was checked through conducting a Hosmer and Lemeshow test (Hosmer and Lemeshow, 2000, p. 147) which showed a chi-square value of 11.473 with eight degrees of freedom. The test shows that there is not a statistically significant difference between the observed and expected values ($p = 0.176$), and that the logistic regression model is valid.

Model discrimination. The discrimination of the test refers to the fact that the model should predict results accurately. The discrimination was tested by calculating the Area Under Curve (AUC) for the Receiver Operator Characteristics curve. The AUC can be interpreted as the proportion of all re-offender/non re-offender pairs which have a higher predicted probability for the re-offender when compared to the non re-offender. The AUC for the final model on the 2000 data was 0.832. This means that the model offers an excellent level of discrimination (Hosmer and Lemeshow, 2000, p. 162). The model generalises well to the 2003 dataset, and returns a similar AUC figure.

METHODLOGICAL ANNEX: COEFFICIENTS OF THE STATISTICAL MODEL FOR THE 2000 BASELINE COHORT

The following table shows the parameter estimates for the various components of the logistic model. Exp (B) relates to the odds of re-offending.

	B	Sig.	Exp(B)
Constant	0.48	<0.001	1.61

Criminal Career variables	B	Sig.	Exp(B)
Copas	0.73	<0.001	2.08
Length of criminal career	-0.02	<0.001	0.98

Age and sex categories	B	Sig.	Exp(B)
(reference) Male and aged 18 to 20			
Male and aged 21 to 24	-0.45	<0.001	0.64
Male and aged 25 to 29	-0.84	<0.001	0.43
Male and aged 30 to 34	-1.05	<0.001	0.35
Male and aged 35 to 39	-1.21	<0.001	0.30
Male and aged 40 to 49	-1.37	<0.001	0.25
Male and aged 50+	-1.67	<0.001	0.19
Female and aged 18 to 20	-0.48	<0.001	0.62
Female and aged 21 to 24	-0.67	<0.001	0.51
Female and aged 25 to 29	-0.70	<0.001	0.49
Female and aged 30 to 34	-0.97	<0.001	0.38
Female and aged 35 to 39	-1.15	<0.001	0.32
Female and aged 40 to 49	-1.58	<0.001	0.21
Female and aged 50+	-1.77	<0.001	0.17

Previous offence categories	B	Sig.	Exp(B)
(reference) No previous offences			
Between 1 and 2 offences	0.64	<0.001	1.90
Between 3 and 6 offences	0.99	<0.001	2.70
Between 7 and 11 offences	1.20	<0.001	3.33
More than 11 offences	1.38	<0.001	3.96

Number of previous custodial sentences	B	Sig.	Exp(B)
Previous custodial sentences	0.05	<0.001	1.05

	Index offences			Count of previous offences		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Offence categories						
Violence (reference)				0.01	0.24	1.01
Robbery	-0.09	0.34	0.92	0.04	0.10	1.04
Public Order	-0.16	0.01	0.86	0.07	<0.001	1.07
Sexual	0.03	0.87	1.03	-0.03	0.28	0.97
Sexual (Child)	-0.28	0.05	0.75	-0.02	0.67	0.98
Soliciting and prostitution	0.85	0.08	2.34	-0.02	<0.001	0.98
Domestic burglary	0.49	<0.001	1.63	0.01	0.03	1.01
Other burglary	0.35	<0.001	1.42	-0.01	0.20	0.99
Theft	0.67	<0.001	1.95	0.03	<0.001	1.03
Handling	0.27	<0.001	1.31	0.00	0.63	1.00
Fraud and forgery	0.11	0.06	1.12	-0.01	0.06	0.99
Absconding and bail offences	0.38	0.01	1.47	0.07	<0.001	1.08
Taking and driving away	0.52	<0.001	1.69	-0.01	0.14	0.99
Theft from vehicles	0.39	<0.001	1.48	0.00	0.66	1.00
Motoring offences (not including drink driving)	0.19	<0.001	1.21	0.01	0.01	1.01
Drink driving	-0.12	0.02	0.89	-0.03	0.10	0.97
Criminal and malicious damage	0.20	<0.001	1.22	0.01	0.16	1.01
Drugs (import /export /production /supply)	-0.21	0.01	0.81	0.06	0.07	1.06
Drugs (possess / small-scale supply)	-0.01	0.87	0.99	0.04	<0.001	1.04
Other	-0.02	0.77	0.98	0.03	0.08	1.03

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