

THE SENTENCING COUNCIL RESOURCE MODEL

1 INTRODUCTION

1.1 The Sentencing Council is required under the Coroners and Justice Act 2009 to have regard to the resource implications of its guidelines. Whenever it produces a guideline, it is required to produce a resource assessment which considers the effects of the guideline on the resources required for the prison, probation and youth justice services.

1.2 Although each guideline presents different challenges for resource assessment, the processes used to estimate the resource effect are often similar.

1.3 The Sentencing Council has therefore developed a general analytical model which has been designed to aid resource assessment in a wide variety of scenarios. For a given guideline, the model may be extended or modified to cope with particular challenges or intricacies, but the core methodological approach remains the same. By developing a model which is designed to be re-used for many of its guidelines, the Council ensures consistency in its approach to resource assessment, whilst minimising duplication of work.

1.4 This document explains how the model works, and presents an evaluation of the accuracy of the estimates produced by the model.

2 GENERAL APPROACH

2.1 The guidelines issued by the Sentencing Council will have a resource effect when they affect the disposal types used by judges when they pass sentences, or the severity of sentences within those disposal types.

2.2 An analytical approach to estimating the resource effects of guidelines therefore needs to consider how many sentences may be affected each year by the new guideline, and by how much the sentences might change. When combined with data on the costs of different sentences, this allows an assessment to be made of the overall resource impact of the guideline.

2.3 Technically speaking, the resource effect of a new guideline must be measured relative to a 'counterfactual' – a scenario in which a new guideline were not introduced. This scenario can be thought of as a 'baseline', which provides a point of departure from which the effects of the guideline can be measured. The impact of the new guideline is defined as the difference between the resource cost of the baseline, and the resource cost of a scenario in which the new guideline is introduced.

2.4 The Sentencing Council's approach to resource assessment thus begins by formulating two scenarios of future sentencing practice: the baseline scenario (the counterfactual) and a scenario in which the new guideline is introduced.

2.5 The baseline scenario is produced first. It is typically assumed that future sentencing practice in the absence of a new guideline would be similar to historical sentencing practice. Therefore this scenario is usually based on historical sentencing data from the previous year.

2.6 The next step is to produce the alternate scenario under which the new guideline is introduced. This involves considering how the sentences in the baseline scenario may have been different if the new guideline had applied. This is a complex exercise, because different sentences will be affected in different ways, depending on the severity of sentence, the possible characteristics of the offender and other facts of the case. This step requires strong assumptions, such as inferences about the severity of cases which are made on the basis of sentence length and disposal type.

2.7 The final step is to compare the resource cost of the two scenarios. By comparing the difference in the total resource cost of each scenario, an estimate can be made of the resource impact of the new guideline.

2.8 The Sentencing Council model provides a framework in which to implement this methodology. Historical sentencing data can be loaded into the model, which is then used to formulate the baseline scenario. Various 'transformation rules' can be applied to the sentences in this scenario to simulate how the new guideline may affect sentencing practice. A second scenario is thus generated of future sentencing practice in the presence of the new guideline.

2.9 Once the two scenarios have been generated, the model calculates the costs of each sentence in each scenario. By aggregating these costs, and cutting the data in various ways, it is possible to get a breakdown of the resource effects of the

guideline on the prison, probation and youth justice services for each offence covered by the guideline.

3 TRANSFORMATION RULES

3.1 The most important determinants of the estimated resource effects of the guideline are the ‘transformation rules’. These are the rules which are set up to estimate how future sentences differ depending upon whether or not a new guideline is introduced. It is therefore useful to describe them in more detail.

3.2 Transformation rules apply to a specific offence. A simple example may be: “Any sentence in the baseline scenario of over 10 years would be six months longer if the new guideline applied. All other sentences are unaffected.”

3.3 Such a rule can be tabulated as follows:

Sentence in absence of new guideline = x	Transformation rule
10 years’ custody or less	No change
More than 10 years’ custody	$x + 0.5$ years.

Table 1

3.4 A different rule will be required for each offence covered by a new guideline.

3.5 Tables of the transformation rules which have been used for a resource assessment are usually included as an annex to the resource assessment document. They are typically more complex than the rule applied above – for instance, they may use more complex mathematical adjustments such as applying different rules with different probabilities.

3.6 If the simple rule in Table 1 were applied, an illustrative output from the Sentencing Council Model may look like the following table:

Sentence in baseline case	Sentence cost in baseline case	Sentence if new guideline applies	Sentence cost if new guideline applies	Difference in cost
11 years’ custody	£167,000	11.5 years’ custody	£174,000	£7,000
5 years’ custody	£76,000	5 years’ custody	£76,000	£0
Community order	£2,800	Community order	£2,800	£0
...

Table 2

3.7 The full version of this table would have one row for each sentence in the baseline scenario for the relevant offence type, which could run into thousands of

sentences. By summing the 'difference in cost' column, an estimate can be obtained of the resource impact of the new guideline.

3.8 The table presented above has been simplified for presentation. In the full Sentencing Council model, it contains more detailed information, such as the breakdown of cost between the prison and probation service, the age of the offender, a breakdown of each custodial sentence into time spent in custody, and time spent on licence, and various other fields of interest. This allows final results to be presented in many different ways.

4 UNCERTAINTY

4.1 Any estimates about the resource implications of the new guideline are subject to a large amount of uncertainty because it is not possible to predict exactly how sentencers' sentencing behaviour will change in response to the new guideline.

4.2 This uncertainty is dealt with by estimating a range of possible outcomes, rather than just producing a point estimate. This range of outcomes – a lower bound and higher bound - can be generated by running the model twice using different assumptions about sentencers' behaviour each time. This equates to using different transformation rules for the higher bound and lower bound estimates.

4.3 A further source of uncertainty arises from the variation in the cost of community orders. The cost of a community order will depend upon the nature of the requirements which are specified under the order. Since it is difficult to estimate how the average intensity of community orders may change as a result of a new guideline, different assumptions are made which then feed into the difference between the upper and lower bound estimates.

4.4 There are other sources of uncertainty which are not dealt with by the Sentencing Council model, and could serve to increase the range of outcomes further. For instance, any future changes in criminality and the number and type of offenders coming before the courts would affect the resource impact of the new guideline, but the model makes not attempt to forecast such changes.

5 MODEL EVALUATION

5.1 The Sentencing Council model has been constructed to help generate the best possible estimates of the impact of the new sentencing guideline given available

evidence and data. However, strong assumptions have to be made which are discussed in more detail below.

Assumptions about behavioural change (the 'transformation rules')

5.2 The source of greatest uncertainty in the model's estimates stems from the uncertainty surrounding how sentencers' behaviour may change in response to a new guideline.

5.3 The Council takes a number of precautions in issuing new guidelines to try to ensure that judges interpret them as intended. Sentencing ranges are agreed on by considering sentencing data in conjunction with Council members' experience of sentencing. The Council has several expert advisors from various disciplines who scrutinise the guidelines. Guidelines are also road-tested. Finally, when the public consultation for a new guideline is made available, consultees can feedback their views of the likely effect of the guidelines, and whether this differs from the effects set out in the consultation stage resource assessment.

5.4 Furthermore, in order to validate this aspect of uncertainty, historical data is analysed on the changes to sentencing practice following the release of a guideline.

5.5 However, the future is inherently uncertain, and predicting behavioural change is never straightforward. Given the difficulty in estimating likely behavioural change, there are considerable differences in the transformation rules used in the 'high' and 'low' scenarios, leading to the large range of estimates which is usually presented in resource assessments.

The counterfactual

5.6 The model attempts to estimate the costs and benefits of a new sentencing guideline, relative to a 'counterfactual' - a scenario in which a new guideline is not released.

5.7 To conduct this exercise, it is necessary to generate a counterfactual scenario, in which it is typically assumed that sentencing practice in forthcoming years will be similar to historical sentencing practice.

5.8 This counterfactual does not take into account the impact of possible future policies such as those described in the recent Ministry of Justice Green Paper. There is also no attempt to forecast changes in criminality, changes to CPS charging

standards, or the use of out of court disposals. All of these factors could influence the true resource effect of a new guideline.

Data on time spent in custody

5.9 Good data exists on the lengths of the custodial sentences passed by sentencers. To calculate the cost of these sentences, the sentence must be deconstructed into its constituent parts, which can include elements of custody, home detention curfew (HDC) and licence.

5.10 Data is available on the time that offenders spend in custody as a percentage of their total sentence length. However, it is not felt that this data would not give an accurate picture of changes in time spent in prison when sentence length changes. This is because the data includes time spent on remand as part of time served, which it has been assumed would not be affected by changes in sentencing practice. It was considered that it would be most appropriate to assume that when sentence length changes, half of the change is spent in custody (with a small downward adjustments for the use of HDC).

Breaches

5.11 The model does not estimate the resource implications of breaches or licence recalls. The resultant impacts on the prison service are therefore not accounted for in the model.

5.12 These costs are potentially substantial due to the volume of breaches and licence recalls. There are around 2,000 receptions into custody per quarter as a result of breaches of suspended sentence or community orders. Offenders in custody as a result of these breaches occupy around 900 prison places. In terms of licence recalls, there are in the region of 4,000 per quarter. Detailed information is not published on the average length of time these offenders spend in prison as a result of the recall.

Cost data

5.13 Cost data has been provided by the Analytical Services Directorate at the Ministry of Justice. It is assumed that the average cost of a year in prison is around £30,000 and the average cost of a community order is assumed to be around £2,800. These figures are expressed in 2010/11 prices.

5.14 Data on the cost of a prison place is linearly interpolated to calculate the cost of shorter and longer sentences. For instance, it is assumed that four months in custody costs £10,000.

5.15 Suspended sentences are assumed to cost the same amount as community orders.

5.16 Home detention curfew cost data is taken from a report by the National Audit Office entitled “The Electronic Monitoring of Adult Offenders¹”. A 90 day period spent on home detention curfew is thus assumed to cost £1,500 in 2010/11 prices.

5.17 Data on the cost of the part of a custodial sentence which is spent on licence are taken from the NOMS Specification, Benchmarking and Cost programme specification documents for delivering a supervision requirement. It is recognised that a supervision requirement is not the same thing as time spent on licence; this data is used in the absence of a better alternative. On this basis, a year on licence is assumed to cost £720 in 2010/11 prices.

¹ http://www.nao.org.uk/publications/0506/the_electronic_monitoring_of_a.aspx