Organised crime: revenues, economic and social costs, and criminal assets available for seizure

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The impact of organised crime in the UK: revenues and economic and social costs

Edited by Richard Dubourg and Stephen Prichard

The views expressed in this report are those of the author, not necessarily those of the Home Office (nor do they represent government policy).

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Executive Summary

Background

The White Paper *One Step Ahead: a 21st Century Strategy To Defeat Organised Crime* (2004) describes organised crime as reaching "into every community, ruining lives, driving other crime and instilling fear". Organised crime cuts across all aims of the Home Office and the need to reduce organised crime activity has been highlighted as a priority both in the White Paper and also through the setting up of the Serious Organised Crime Agency.

This study aims to inform policy of the scale of organised crime in the UK, the values of revenue derived from organised crime, and the social and economic costs associated with these activities. The social and economic costs are not restricted to financial costs alone – although all costs are turned into monetary values – they provide a measure of 'harm' incurred by society. The economic and social cost valuations include, for example, emotional and quality of life costs.

Why calculate these values? Market size estimates provide some evidence of the likely resilience of organised crime markets to disruption activities, and, supplemented with further information concerning spending and saving habits, can give some idea of the value of assets available for recovery. Estimates of the social and economic cost provide an indication of the likely benefits to society of reducing organised crime activity, and can thus, at a high level, assist resource prioritisation.

Methodology

General conceptual issues relating to methodology are discussed in Chapter 1 with details on specific sector valuations being included in the relevant chapter. Due to limited data, many of the valuations are unavoidably very approximate, and subject to large margins of error – strong caveats apply and are noted in the appropriate chapters. There is not one methodology common to all sectors; rather, data have been taken from a wide range of sources.

Valuations

Table S.1 reports the valuations. In all cases, the values refer to the market size and economic and social costs attributable to the organised crime element only.

The table shows that the quantified market size of organised criminal activities is more than £11bn. As stated throughout the report, many of the individual components are likely to be underestimated, particularly the organised crime involvement in fraud, meaning that the true level of revenue accruing to organised crime is almost certainly at least £15bn. The quantified value of economic and social costs associated with organised criminal activity is almost £25bn – again this is likely to be understated.

Qualification

Organised crime is by its very nature largely unreported and this means that there is little reliable empirical data available. In the writing of this report it was therefore necessary to make a number of assumptions in order to construct estimates of market size. These assumptions were, where possible, based on reporting by law enforcement and intelligence agencies. Where reliable reporting was not available it was necessary to use "best judgement" to form assumptions. The sources of all assumptions are stated in the report and those based on judgement are indicated as such. Whilst every effort has been made to provide the best possible estimates of market size, all figures should be treated with caution and considered to be indicative only.

Table S.1 – Valuations of market sizes, and economic and social costs

Sector	Market size	Key caveats	Economic and social costs	Key caveats
People smuggling	£250m	Based mainly on data on asylum claimants, so limited in scope.	£1.4bn	Based mainly on the costs of running the asylum system, so again limitations apply.
People trafficking	£275m	Very poor data around the number of people trafficked, and hence large margins for error.	£1bn	Extremely difficult area to quantify and therefore estimate is very approximate.
Drugs	£5.3bn	Based solely on a detailed study by Pudney *et al*. (2006). Relies on self-reporting so may understate market size.	£15.4bn	Based solely on studies by Godfrey *et al.* (2000) and Gordon *et al* (2006).
Excise fraud	£2.9bn	Relies solely on estimates produced by HMRC. Subject to large margins of error, but no reason to think there is a bias.	£3.7bn	Key component is loss of excise tax revenue.
Fraud	£1.9bn	Very conservative estimate of organised crime involvement. Relies on industry and HMRC data. Private sector data often thought to be poor, because of low reporting.	£2.7bn	Consists mainly of direct financial losses, so caveats attached to market size apply equally to economic costs.
Non-excise intellectual property theft	£840m	Uses industry data on scale of IPT market. It is well known that it is difficult to get reliable data on this issue, so large margins of error exist. Market size figures based on 'street values' of counterfeit goods, not full retail price of legal goods.	£300m	Allows only for the lost 'value-added' which would have been spent in the legal sector, had the IPT market not existed. Because of a lack of data no attempt has been made to value harms to brand image, or incentives to innovate, so value likely to be an underestimate.

Note: the market size and economic and social costs should not be added together – this would involve double-counting some aspects. This is because in some cases, for example in the case of fraud, the values overlap – that is, the revenue accruing to the organised criminal may be a key component of the economic and social cost.

1. Introduction

Background

The White Paper *One Step Ahead: a 21st Century Strategy To Defeat Organised Crime* (2004) describes organised crime as reaching "into every community, ruining lives, driving other crime and instilling fear". Organised crime cuts across all aims of the Home Office and the need to reduce organised crime activity has been highlighted as a priority both in the White Paper and also through the setting up of the Serious Organised Crime Agency (SOCA).

This study aims to inform policy of the scale of organised crime in the UK, the values of revenue derived from organised crime activities, and the social and economic costs associated with these activities. It estimates the revenue derived from the following organised crime activities, and the economic and social costs associated with these activities. Only the most serious organised crime activities have been assessed as set out in the National Criminal Intelligence Services (NCIS) 2003 UK Threat Assessment[1]:

- supplying of illicit drugs;
- people smuggling;
- people trafficking;
- excise fraud;
- fraud; and
- non-excise intellectual property theft

In some areas, data and other limitations have necessitated the scope of investigations to be further restricted. People smuggling focuses only on the smuggling of people who are detected at some point (focusing primarily on those who claim asylum), due to lack of data on illegal migration generally. The people trafficking chapter concentrates on only a subset of this market – organised trafficked prostitution; this is because there are no available data concerning other forms of people trafficking. The implications of these and other limitations are considered in the respective chapters.

Objectives

The overarching objective of this study is to provide a snapshot of the UK's organised crime scene, providing policy with a tool to assist resource allocation in the fight against organised crime.

Market size estimates provide some evidence of the likely resilience of organised crime markets to disruption activities. Operators in lucrative, high-value markets are likely to resist disruption, whereas low-return markets might see rapid exit and reductions in activity levels if disruption takes place. Thus market value can inform on the potential effectiveness of interventions in different markets. Market value estimates also give some idea of the potential proceeds of crime, and hence of subsequent financial flows and the size of assets available for recovery. All this suggests the both relative market sizes between sectors, and the absolute figures are of interest.

Estimates of the social and economic costs associated with organised crime provide policy with a measure of 'harm' incurred by society which can be attributable to organised crime. The relative costs give an indication of the potential benefits of expending resources on different types of disruption activity in different organised crime areas, and can thus, at a high level, assist resource prioritisation. In particular, it can help when setting the priorities for the Serious and Organised Crime Agency (SOCA)[2].

[1] NCIS (2003).
[2] Although SOCA does not have responsibility for tackling excise smuggling.

Most of the estimates in this report are not robust enough to be directly used to assess trends in performance. The estimates in this study provide a snapshot of the revenues and harms of various organised crime activities – they are not intended to measure changes in harms over time. Many estimates rely on evidence bases which are not updated regularly, and others are based largely on quantifying proxies – so monitoring the quantified harms may be picking up trends in the proxy rather than the harm caused by the organised crime of interest. Most significantly, the estimates are necessarily often very approximate – changes in true harm over time are likely to be far smaller than the margins of error associated with the estimates.

Methodology

The data in the field of organised crime are very poor – unsurprisingly so given the covert nature of such criminals – but the researchers have been determined to produce estimates wherever possible. Failure to do so risks the harm of the activity in question being downplayed relative to other crimes where quantification is less difficult. In each chapter the key caveats are identified, to help provide some qualitative indication of the level of uncertainty. Ranges have not been used – in general there is little to base any ranges on, and there is a danger they would falsely indicate that the degree of uncertainty could be quantified precisely.

The methodologies used to estimate the revenues and economic and social costs are independent of one another, drawing from many data sources. All economic and social costs are expressed in monetary terms even if the underlying drivers are not themselves financial. In this sense, previous research into the economic and social costs of crime are built on[3], in monetising non-financial harms.

Economic and social cost, or 'harm', includes the costs incurred in anticipation of crime, as a consequence of crime, and in response to crime.

- **Costs in anticipation of crime** include defensive expenditure (for example, on Chip and Pin to help prevent credit card fraud) and precautionary behaviour and are considered to be a cost of crime since they are based on the risk of becoming a victim.

- **Costs as a consequence of crime** include the value of property stolen or damaged (for example, the value of plastic fraud), time costs of replacing property, documents and so on, the emotional and physical impact and reduced quality of life for victims, and reduced effectiveness at work for people affected by crime. In cases where crime involves violence to the victim, health costs fall on the NHS and other health service providers.

- **Costs in response to crime** are numerous and relate generally to the criminal justice system (CJS). This includes costs to police, the Crown Prosecution Service, Magistrates and Crown Courts, legal aid and non legally-aided defence costs, and costs to the prison and probation services.

The counterfactual

Exante appraisals or *expost* evaluations of policies need to define a counterfactual which specifies what would have happened without intervention. This is a particularly difficult issue in this context, as this study does not evaluate a defined policy; rather, the total market size and harms caused by a range of organised crimes are being assessed.

The researchers have quantified the economic and social costs of organised crime in a way that is consistent with previous Home Office research on the economic costs of crime. This implicitly involves quantifying the reduction in economic costs if the crime in question

[3] See, for example, Brand, S. and Price, R. (2000), and Dubourg, R, et al (2005).

disappears instantly, and is not displaced. When applying these estimates to policy appraisals, this may not be realistic. For example, if one type of organised crime were eradicated, it might be that a proportion of this would be displaced into other areas. However, one has no way of knowing this, and the degree, if any, of displacement impact depends on the policy that prompted any change. When feeding values in this report into specific appraisals or evaluations further consideration of the counterfactual should be given, bearing in mind the specific policy under examination.

Benefits of organised crime

This study has not examined the benefits provided by organised crime – it is restricted to looking at the costs. This is consistent with previous Home Office research on the economic and social costs of crime. A very simple inclusion of benefits would radically alter the net economic effect of fraud for example – a £1m loss for a credit card company would represent a £1m benefit for the fraudster. Similarly, benefits to the consumer of, for example, counterfeit products are not included. The appropriateness, or otherwise, of this approach has been the subject of some debate amongst academic economists[4], and is not discussed here.

Lack of reliable data

Due to the nature of organised crime, there are a number of organised crime sectors which lack well-founded data. Some estimates of market size and harms have been derived using isolated research with data collected from relevant units within law enforcement that were not collected specifically for this study. Consequently, the data on which these estimates are based may be questioned. Thus, it has not always been possible to make a judgement as to the reliability and validity of the estimates. However, assumptions and caveats associated with each estimate have been discussed in each chapter, making confidence in any estimate explicit.

As suggested above, lack of reliable data also explains the limited scope of some chapters. People smuggling focuses primarily on the smuggling of people for the purposes of claiming asylum, due to lack of data on illegal migration generally. Similarly, the work on people trafficking concentrates on organised trafficked prostitution due to similar limitations on data availability on forced labour.

To aid consistency, estimates use 2003 values where possible, even if more up-to-date data are available. An exception is made, however, in relation to intellectual property theft where the methodology has improved so significantly in recent years that it would be highly misleading to use 2003 figures.

[4] See, for example MacCallum (1997) for a summary.

Definition of Organised Crime

This study has adopted the NCIS organised crime definition.

Organised crime group

A group of two or more persons, jointly engaged in continuing 'significant illegal activities', irrespective of national or other boundaries. The group's primary purpose is to generate 'significant profits or other gains'. Such a group is capable of defending its members, enterprises, or profits using one or more of the following: violence, coercion, corruption or deception (including false identities).

Significant illegal activities

Include those activities where a person aged 21 with no previous convictions could reasonably expect to be sentenced to imprisonment for three years or more, or the illegal activities of the group have generated or have the potential to generate turnover of £1 million over a two year period.

Attribution to organised crime

Reliably estimating the extent of organised crime involvement in the different areas of organised crime is problematic for many crime types. Organised crime is assumed to account for the supply of all illicit drugs and people trafficking. However, evidence to suggest that excise smuggling, all forms of fraud and intellectual property theft were 'organised' was less obvious. In these cases, industry opinion gave the researchers assistance in estimating the extent to which organised crime was involved in the illegal activity. However, the reliability of these opinions remains unknown.

The treatment of criminal justice costs

Where sufficient data exist, we include all criminal justice system costs are included. This may appear counter-intuitive – after all, the criminal justice system is designed to bring benefits and reduce the total value of economic and social costs. But economic and social costs are defined as representing all costs associated with the organised crime in question. When the economic and social costs calculations in this report are used for specific policy appraisals, then a judgement is needed regarding whether CJS costs should be included.

References

Brand, S. and Price, R. (2000), *The economic and social costs of crime*, HORS 217.

Dubourg, R. Hamed, J and Thorns, J. (2005), *The economic and social costs of crime against individuals and households, 2003/04*, Home Office Online Report 30/05.

Home Office (2004), *One Step Ahead: A 21st Century Strategy to Defeat Organised Crime*.

MacCallum (1997), *The Economic Analysis of Criminal Justice Policy Options*, Ministry of Justice, New Zealand, available via http://www.justice.govt.nz/pubs/reports/1997/economic/index.html.

National Criminal Intelligence Service, UK Threat Assessment 2003 (2003), *The Threat from Serious and Organised Crime*.

2. People smuggling

Summary

- The size of the UK market for people smuggling is estimated to be around £250m in 2003.
- This is derived by estimating the number of people smuggled into the UK in 2003 – based only on those who have been detected at some point – and multiplying this by the average cost of facilitation disaggregated by region.
- The economic and social costs of organised people smuggling are defined as the costs of supporting smuggled asylum seekers during their claims for asylum; the costs of removals of failed asylum seekers and other smuggled immigrants; the health costs of accidents occurring in transit; and, the costs of border control and counter-smuggling operations.
- The economic and social costs of organised people smuggling is estimated to be around £1.4bn in 2003/04.

Introduction

People smuggling, also referred to as 'facilitation', is defined as a service procured by a non-UK citizen, or a UK-citizen with no right of permanent residency, to enter and remain within the UK clandestinely, including methods of illegal entry through false documentation. Smugglers can be jailed for up to seven years. It is distinct from trafficking, which is defined to involve some form of coercion (see Chapter 3).

Extent of organised crime

Illegal immigrants can use organised crime networks to enter the UK in a clandestine manner, or to buy false documentation in the UK, abusing legitimate means of entry relating to marriage, other visas and asylum Organised crime groups often control territory or specialise in a specific route. They often form alliances with other organised crime groups, trade facilitated immigrants,[5] or simply contract the facilitation of illegal immigrants to the UK using more experienced groups.[6]

Caveats

Accurate quantification of the number of illegal immigrants who are in the UK but remain currently undetected is almost impossible. This chapter therefore focuses on available statistics relating to those who are detected at some point, voluntarily or otherwise. This approach results in a conservative estimate of the number of people smuggled into the UK annually.

Assumptions have been made regarding the proportion of those smuggled using organised crime groups – in this area, given the absence of robust data, judgements have been necessary. A large element of judgement has also gone into the price data – these are subject to a great deal of uncertainty.

[5] NCIS Threat Assessment (2004).
[6] Europol Organised Crime Threat Assessment (2003).

Estimating the market size

To estimate the total market size one needs data relating to the number of people smuggled into the UK, the proportion of these that can be attributed to organised crime, and average prices paid to smugglers for the service. Given that prices vary significantly depending on the source region, it is necessary to disaggregate the data by region where possible.

Estimating the number smuggled to the UK via organised crime groups

Those being smuggled might choose to make themselves known once in the UK in order to claim asylum. In this case, we have good data relating to the number of asylum applicants per year. Estimating the number of people who are smuggled into the UK and do not claim asylum is much more difficult – they are actively attempting to remain undetected.

For the purpose of this chapter, the number of people smuggled into the UK with reference to three categories are estimated. The researchers include those who arrived in the UK via organised crime groups and:

- applied for asylum;
- were the subject of enforcement action for illegal entry, and did not claim asylum; or
- were detected at ports of entry attempting documentary deception, and did not claim asylum.

The researchers make no attempt to estimate the number of people smuggled who are not detected at any stage.

Using statistics from 2003, there is evidence that:

- there were 60,045 asylum applications (including dependants);[7]
- enforcement action was initiated against 48,050 people[8] who entered illegally – subtracting an assumed 80 per cent[9] who claimed asylum, leaves an estimated 9,610 who entered the UK clandestinely or by deception and did not claim asylum; and
- according to the researchers' estimates, around 4,000 passengers were detected at ports of entry attempting documentary deception, but did not claim asylum.[10]

A significant proportion of the facilitation of individuals seeking illegal entry into the UK is attributable to organised crime. Quantifying this precisely is extremely difficult, not least because much of the evidence tends to be anecdotal; nevertheless, the nature of this work requires such a quantification. Following discussions with NCIS, the researchers judge that 70 per cent of individuals claiming asylum and 100 per cent of all others detected, can be attributed to organised crime. These assumptions suggest a total of 55,642 people were smuggled into the UK via organised crime, of whom 42,032 were asylum applicants.

Next, these data are disaggregated into region of origin. These data are available only for asylum applicants, and it is assumed that these are representative of all those smuggled into the UK via organised crime groups. The data[11] suggest the following:

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[7] Based on *Asylum Statistics UK 2003*.

[8] Based on *Control of Immigration: Statistics United Kingdom 2003*. All figures relate to 2002, in the absence of 2003 data.

[9] Of a total of 57,735 against whom enforcement action was initiated – this includes action against those who did not enter the UK through illegal means – 80 per cent of them were principal asylum applicants. In the absence of other data, it is assumed that proportion applies to the subset of those who entered illegally.

[10] House of Commons Written Answers for 17 Jan 2005 (pt23) (2005) HANSARD, HMSO shows that in 2003 there were 7,985 fraudulent travel documents detected at United Kingdom ports of entry. Discussions with INDIS suggests that this equates to 8,000 people, of whom about half would have claimed asylum.

[11] Based on *Asylum Statistics UK 2003*.

Table 2.1 – Region of origin of those smuggled

Region	Assumed % of people smuggled	Estimated number of people smuggled
Europe	13	7,233
China	7	3,895
India	5	2,782
Middle East	16	8,903
Other Asia	15	8,346
Africa	41	22,813
Americas	3	1,669
Total	100	55,642

Figures may not sum due to rounding.

Average prices paid

The next step involves estimating the average price paid for facilitation, by region. The service offered may include provision of one or more of the following:

- forged documentation to pass immigration control to leave the country of origin;
- information on how to enter the UK clandestinely;
- transport to enter the UK clandestinely; and
- forged documentation to enter the UK.

Facilitation fees to the UK vary considerably. They are a function of the country of origin, the service offered, the nature of the organised crime group involved, the method of payment for the service and the smuggling route taken. Considerable uncertainty surrounds facilitation fee estimates, and this is reflected in the ranges below. They are based on discussions with the Joint Debriefing Team in Folkestone who used fees at known staging points – for example Turkey for Europe – as their evidence base. To calculate market values below, the midpoint of the range has been used.

Table 2.2 – Facilitation cost estimates by region

Region	Low price (£)	High price (£)	Mid-point (£)
Europe	3,000	5,000	**4,000**
China	6,000	18,000	**12,000**
India	4,000	7,000	**5,500**
Middle East	3,000	5,000	**4,000**
Other Asia	6,000	12,000	**9,000**
Africa	1,000	2,000	**1,500**
Americas	1,000	18,000	**9,500**

Estimating the total market size

The final stage involves using the information contained in tables 2.1 and 2.2, to estimate the total market size by region.

Table 2.3 – Total Market Size Estimates by Region

Region	Estimated number smuggled	Assumed price (£)	Estimated market value (£m)
Europe	6,703	4,000	29
China	3,609	12,000	47
India	2,578	5,550	15
Middle East	8,249	4,000	36
Other Asia	7,734	9,000	75
Africa	21,139	1,500	34
Americas	1,547	9,500	16
Total	51,559		252

Figures may not sum due to rounding

Thus the researchers estimate that the total market size in 2003 of people smuggling by organised crime groups is about £250m.

Estimating the economic and social costs

Valuing the harms due to the involvement of organised crime in smuggling illegal immigrants into the UK depends fundamentally on the definition of harm. People smuggling differs from other types of crime in that the principle parties involved are willing participants.

The act of smuggling itself, therefore, only results in direct costs to the extent that it represents a transgression of relevant laws, and hence precipitates preventative and reactive actions, which have resource or opportunity costs.

Smuggling can also have indirect costs for those being facilitated, in the form of accidents en route and also while employed illegally. A strict view of these costs would count them as 'internal' to the individual's decision to be smuggled, and hence not relevant to public policy. However, this would not be consistent with the obvious public concern expressed in response to events such as the recent deaths of Chinese illegal immigrants on the cocklefields of north-west England. It also assumes that the individuals concerned are fully informed of the risks they are undertaking, prior to undertaking them, which could be unlikely in this case. For these reasons, these costs are treated as external to the individual's decision, and hence they are counted as harms associated with people smuggling.

The second class of indirect costs which can be attributed to people smuggling is those borne by UK taxpayers. These include the costs of any public services used by illegal immigrants to which they are not entitled, which might include health services, education and so on. The costs of processing claims for asylum made by individuals who have been facilitated into the country are also included. Also included are the costs of support and other services (such as education), even though asylum seekers are entitled to these while their claim is being assessed. This is based on the assumption that these costs would not have been incurred if the individuals concerned had not been facilitated into the UK. It is therefore subject to the caveat expressed in Chapter 1 about the identification of the counterfactual. Any costs incurred after an asylum claim is accepted are not counted.

A number of costs are not included in the assessment for a variety of reasons. Additional costs which might be incurred by illegal immigrants, such as extortion, are not included due to lack of information. Similarly, only anecdotal evidence is available about the existence of corruption in relation to organised crime's involvement in people smuggling. There is no direct evidence of the extent of criminality on the part of, and against, illegal immigrants.

Finally, the researchers are not able to estimate the costs of paid work undertaken by illegal immigrants in the UK. By its very nature, the extent of such work is extremely difficult to estimate. It is also not clear what the economic cost of illegal work is in practice. Evidence suggests that many of the jobs undertaken by illegal workers are those which domestic workers are less willing to do, which weakens any claims of an unfair competitive effect.

The impact on the asylum support system

We have assumed that 70 per cent of asylum applicants are smuggled. It follows by assumption that 70 per cent of asylum costs to the public sector can be attributed to organised crime groups facilitating people into the UK. These costs include public expenditure on asylum support, asylum processing administration, the education of asylum seekers' dependents and the costs of healthcare. They also include the costs of holding immigrants in detention in facilities across the UK.

The total cost of processing asylum applications is obtained from a 2002/03 unit cost of £1,850[12] multiplied by the previously estimated number of asylum seekers facilitated by organised crime (42,032). This gives a total cost of £77.8m, or £79.3m in 2004 prices.

The costs of processing an application for asylum do not include the costs of asylum appeals, legal aid or the cost of supporting asylum seekers awaiting a decision on their application. In 2003/04, asylum appeals were heard by the Immigration Appellate Authority. The researchers do not have costs for processing these appeals. However, the Tribunals Group Business Plan for 2004/05 presented expected costs for that period based on an assumed workload. Actual workload figures are available for 2004 and 2003. This information is, therefore, used to generate an estimate of approximate costs for 2003/04, to which we apportion 70 per cent is apportioned to organised crime. These calculations are presented in Table 2.4.

Table 2.4 – Estimated costs of asylum appeals attributable to organised crime 2003/04

		2004/05 Business plan		**2004 Out-turn**		**2003 Out-turn**	
		Workload	%	Workload	%	Workload	%
Adjudications	Asylum immigration visa	30,200 35,700 18,000		47,002 31,404 28,883		70,577 14,637 15,778	
Tribunal applications	Asylum immigration visa	17,500 10,600 1,800		29,264 4,751 2,540		34,955 2,073 1,849	
Tribunal appeals	Asylum immigration visa	9,500 5,400 800		9,467 1,317 617		11,843 871 471	
Total	All asylum	129,500 57,200	100 44	157,249 85,733	121 55	153,054 117,375	118 77
Costs	Total (£m) Asylum (£m)	108 48	100 44	131 71	121 55	127 97	118 77
Costs attributable to organised crime (£m)		**33**		**50**		**68**	

Thus, the 2004/05 Tribunals Business Plan expected 129,500 workload receipts, of which 44 per cent were asylum-related. The cost of managing this workload was estimated at £108m. Assuming no difference in the costs of processing different types of case, this implies a cost of dealing with asylum cases of £48m. Actual outturn for 2004 was 157,249 cases, of which 55 per cent were asylum cases. Scaling up implies asylum-related costs of £71m. A similar procedure results in costs for 2003 of £97m for asylum cases.

Attributing 70 per cent of these costs to organised crime results in estimates of £50m and £68m for 2004 and 2003 respectively. Assuming that these costs are evenly distributed across the calendar year results in a final estimate for 2003/04 of £64m.

The costs of legal aid for asylum and immigration cases were estimated at £204m for 2003/04.[13] The vast majority of these costs are thought to relate to asylum[14]. It is therefore

assumed that 90 per cent are asylum-related, of which 70 per cent can be attributed to organised crime. This gives a figure for legal aid of £129m in 2003/04.

The costs of asylum support include the costs of supporting individuals awaiting a decision on their claim for asylum, asylum-seeking families who have received a final negative decision on their claim but who are still eligible to receive support and unsuccessful asylum seekers who are receiving support under Section 4 of the Immigration and Asylum Act 1999.[15] The cost of the National Asylum Support Service (NASS) was estimated at £1.01bn in 2003/04, implying a cost attributable to organised crime of £700m.

Asylum seekers under the age of 18 and dependants of asylum seekers aged between 5 and 17 are entitled to education at a unit cost of around £4,000 per place per annum.[16] We assume that the number of children receiving education is equal to the number of principal applicants under 18, and the number of dependents aged 5-17. In 2003, the number in the first category was 7,865,[17] and the number in the second 5,180.[18] This gives a total figure of 13,045, of which 70 per cent (9,132) are attributed to organised crime. This gives a total cost in 2003/04 of £37m. It is implicitly assumed therefore, that only costs during the application process are relevant, and that that process lasts one year.

Asylum seekers supported by NASS are entitled to National Health Service (NHS) healthcare. However, healthcare costs for asylum seekers in 2003/04 are not directly available so estimates have been generated instead. Estimates of cost by age group are based on the Wanless Report and have been uprated to 2003 prices using HM Treasury Green Book GDP deflators.[19] These can then be applied to asylum applicant numbers from Asylum Statistics 2004, which breaks down asylum applicants and their dependants by age.[20] Where cost and age categories do not match between the two sources, weighted averages have been taken, The results of this exercise are shown in Table 2.5.

Thus, it is estimated that approximately £24m was spent on healthcare for asylum seekers in 2003/04. Assigning 70 per cent of this cost to organised crime gives a total of £17m. (As with education costs before, it is assumed that costs incurred if an asylum application is accepted are not relevant, and that the application process takes one year on average.)

[12] House of Commons Written Answers for 9 June 2005 (pt11) (2005) HANSARD, HMSO
[13] House of Commons Written Answers 29 April 2004 (2004) HANSARD, HMSO.
[14] House of Commons Written Answers for 21 July 2004 (2004) HANSARD, HMSO.
[15] House of Commons Written Answers for 28 February 2005 (pt23) (2005) HANSARD, HMSO.
[16] Figure provided by the Department for Education and Skills in correspondence.
[17] Tables 5.1 and 5.2, Home Office (2004a).
[18] Table 6.1, Home Office (2004a).
[19] Wanless Report (2002).
[20] Home Office (2004a).

Table 2.5 – Estimates of the costs of healthcare of asylum seekers, 2003/04

Age	Male principal applicants	Female principal applicants	Male dependants	Female dependants	Total	Average cost	Total cost
0-4			1,775	1,695	3,470	£549.66	£1,907,320
5-9			1,325	1,300	2,625	£274.83	£721,429
10-14			945	865	1,810	£274.83	£497,442
15-17			320	425	745	£384.76	£286,646
<18	5,325	2,540			7,865		£3,103,118
18-20	3,595	1,500	15	120	5,230	£384.76	£2,012,295
21-24	6,000	2,550	30	240	8,820	£384.76	£3,393,583
25-29	8,130	3,310	90	390	11,920	£384.76	£4,586,339
30-34	5,205	2,290	100	355	7,950	£384.76	£3,058,842
35-39	2,950	1,320	70	185	4,525	£384.76	£1,741,039
40-49	2,205	1,130	75	175	3,585	£384.76	£1,379,365
50-59	410	345	20	60	835	£439.73	£367,175
60+	260	335	15	55	665	£916.10	£609,209
Total	34,080	15,320	4,780	5,865	60,045		£23,663,801

Health impacts on illegal immigrants

A proportion of those attempting to enter the UK clandestinely take significant risks, knowingly or otherwise, to avoid detection by the authorities. The Independent Race and Refugee News Network (IRR) has estimated that in the last 15 years, 90 people have died attempting to enter the UK clandestinely.[21] Although skewed by one significant episode where over 50 individuals lost their lives attempting to enter the UK from the Netherlands, the IRR suggest these numbers are probably an underestimate. An estimate of ten deaths a year may therefore be considered conservative. Using the Department for Transport's (DfT's) standard value of preventing a fatality of £1.4m[22] implies a conservative harm estimate of £14m.

Costs incurred in anticipation of and in response to people smuggling

Government measures against the threat of clandestine entry of illegal immigrants facilitated through organised crime include juxtaposed controls, an airline officer liaison network, surveillance and search technology, the National Forgery Section of the Immigration Service and law enforcement projects in third countries.

In 2004/05 it was estimated that the Home Office spent £146m on 'intake reduction' and 'secure borders'.[23] The figure for 2003/04 is not available. At least a proportion of this could be characterised as attempting to reduce the intake of illegal immigrants. If one assumes that 70 per cent of these costs can be attributed to organised crime smuggling, the costs incurred in anticipation of people smuggling are approximately £102m. It should be stressed that this is

[21] Athwal (2004).
[22] Department for Transport (2004).
[23] Home Office (2005).

highly uncertain and needs to be treated with caution. Costs incurred by other bodies such as commercial ferry operators have been omitted in the absence of relevant information.

Immigration and Nationality Directorate (IND) spends around 15 per cent of its total budget on enforcing removals of illegal immigrants and failed asylum seekers.[24] In 2003/04, 17,895 failed asylum applicants and their dependents were removed from the UK or left voluntarily.[25] A further 11,795 immigration offenders were returned as a result of enforcement action.[26] This gives a total of voluntary and enforced returns of 29,690.[27] The total cost of these returns – including detection, detention and removal, but excluding such activities as appeals (already covered above) – was estimated to be £300m in 2003/04.[28] Although these costs will include some which were incurred in relation to individuals who entered the UK legally (e.g. 'overstayers'), this is likely to be small as a proportion of the total. Therefore it is assumed that 70 per cent of these costs can be attributed to organised crime, giving a final figure of £210m.

REFLEX is a multi-agency taskforce, dealing with organised immigration crime. Discussions with REFLEX indicate that around 70 per cent of their £20m expenditure in 2003/04 was spent on smuggling issues – this suggests a total cost of about £14m.

Table 2.6 – The total harms of people smuggling attributable to organised crime, 2003/04

		Cost (£m)	
Costs of asylum support	Asylum processing Asylum appeals Legal aid Support of asylum seekers Education of asylum seekers' dependants Healthcare for asylum seekers TOTAL	79 64 129 700 37 17	 1025
Harms to illegal immigrants			14
Costs in anticipation of and in response to smuggling	Secure borders Removals REFLEX TOTAL	102 210 14	 326
TOTAL			**1,365**

The economic and social costs of people smuggling

Table 2.6 summarises the results of the estimates of the costs of people smuggling which are attributable to organised crime. Thus, it is estimated that £1.4bn could be attributed to organised crime in 2003/04. The major part of this is associated with dealing with smuggled asylum seekers, and around 50 per cent to the support of those individuals while there claims are being assessed.

The researchers stress that this is a very uncertain figure, especially relating to certain components. It ignores some costs of organised smuggling which are not asylum-related, and therefore might well be an underestimate.

[24] National Audit Office (NAO) (2005).
[25] Home Office (2004a).
[26] National Audit Office (NAO) (2005).
[27] National Audit Office (NAO) (2005) gives a total figure of 29,650. It is likely that the disparity is due to slight variation in the underlying data from various sources..
[28] *Ibid.*

References

Athwal, H. (2004), *Death Trap: The Human Cost of the War on Asylum*, Independent Race and Refugee Network.

Department for Transport (2004), *Highway Economics Note 1*, London: Department for Transport.

Europol (2003) *European Union Organised Crime Report*, Luxembourg: Office for Official Publications of the European Communities.

Home Office (2004a), *Asylum Statistics UK* 2003, London: Home Office.

Home Office (2004b), Control of Immigration Statistics, United Kingdom 2003, London: Home Office.

Home Office (2005), *Departmental Report 2004/05*, London: The Stationery Office.

House of Commons Written Answers 29 April 2004, (2004) HANSARD, HMSO.

House of Commons Written Answers for 21 July 2004, (2004) HANSARD, HMSO.

House of Commons Written Answers for 17 Jan 2005 (pt23), (2005) HANSARD, HMSO.

House of Commons Written Answers for 28 February 2005 (pt23), (2005) HANSARD, HMSO

House of Commons Written Answers for 9 June 2005 (pt11), (2005) HANSARD, HMSO.

NAO (2005), Returning Failed Asylum Applications, National Audit Office, HMSO.

NCIS (2004), NCIS Threat Assessment, London: National Criminal Intelligence Service.

Wanless, D. (2002), Securing Our Future Health, Taking a Long Term View, London: HM Treasury.

3. People trafficking for sexual exploitation

Chapter summary

- The size of the UK market for people trafficking for sexual exploitation is estimated to be up to £275m in 2003.
- This is derived by estimating the number of women involved in prostitution in the UK, and then making assumptions regarding the proportion of these that are trafficked. This is then multiplied by an assumed revenue per victim disaggregated by establishment-type.
- This chapter estimates that there were up to 4,000 women in the UK in 2003 who have trafficked for sexual exploitation. Experience from operation Pentameter, which is likely to have recovered fewer than 100 victims, suggests that this is an upper bound estimate.
- The total economic and social costs of people trafficking for sexual exploitation in the UK is estimated to be up to £1bn in 2003.
- This is estimated by attempting to quantify the amount of physical and sexual abuse of trafficked women; this is then monetised using Home Office research. In addition to this, the researchers estimate the deterioration in quality of life suffered by those being trafficked and monetise this as well. The resulting valuation is subject to very high margins of error.

Introduction

This chapter defines a woman as having being trafficked if she is smuggled into the UK illegally and then forced to work as a sex worker either through direct force or a threat to use force.[29] For data reasons this is also a more limited definition than that outlined in the UN Convention against Transnational Organised Crime, which defines trafficking as follows:

> "Trafficking in persons shall mean the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation."

In general, off-street prostitution of foreign women coerced into the industry is recognised to be a problem throughout the UK but concentrated in London. The UK has taken measures to criminalise trafficking for sexual exploitation. The Sexual Offences Act 2003, which came into force in March 2004, introduces offences of trafficking into, within or out of the UK for the purposes of sexual exploitation. These offences replaced the stop-gap offence of trafficking for prostitution contained in the Nationality, Immigration and Asylum Act 2002. The penalty for these offences is a maximum of 14 years in prison.

[29] This differs from the more standard definition of trafficking which requires a woman to have had her entry into, or travel to, the UK facilitated (not necessarily illegally). Using this wider definition would make very little difference to the 2003 numbers because at this time (before the expansion of the European Union), nearly all trafficked victims were thought to have been illegally smuggled. However, if this exercise were to be repeated using 2005 or 2006 numbers, such a restriction might be significant.

Extent of organised crime

Europol[30] describes organised crime networks facilitating trafficking within a 'global' model similar to drug trafficking and people smuggling networks. UK based organised crime groups demand sources of supply and transit of women to work within the commercial sex industry in the UK. The researchers assume, for the purposes of this research, that the entire people trafficking business for sexual exploitation can be attributed to organised crime.

Caveats

There are many significant caveats associated with the following analysis:

- It is limited in terms of the number of people included. Not included are:
  - women who are trafficked for exploitation outside the commercial sex industry;
  - trafficked males;
  - trafficked children;
  - trafficked women working in businesses that have not been identified; and
  - trafficked women working 'on-street'.

- And it is also limited in terms of the quantified harms per victim. Excluded in the analysis are harms to:
  - women before arriving in the UK (during transit or in their home country);
  - women on return to their home country – for example, difficulties in reintegrating into society;
  - communities experiencing a sex trafficking group within their areas; and
  - trafficked women's dependants.

- Finally, there are also methodological limitations:
  - the analysis is based on estimates concerning the proportion of women involved in prostitution who are likely to have been trafficked (it was not directly informed by evidence concerning the number of women observed to have been trafficked, so the estimate is very approximate);
  - the market valuations do not include any payments made to procure women outside the UK;
  - a range of sources have been used in a context for which they were not initially intended. This applies to the use of domestic violence statistics in the British Crime Survey, and that of Quality Adjusted Life Years (QALYS); and
  - there are uncertainties within the underpinning evidence bases – for example, it is very difficult to assign monetary values to the harm caused by sexual attacks.

These caveats suggest that the total estimated market size and economic and social costs quoted in this chapter should be treated with great caution.

Estimating the market size

Methodology

First, estimates are restricted to London, before scaling up to get a national picture. Data are generally poor regarding the number of women involved in prostitution (let alone trafficked victims), but the most reliable source seems to be that of Dickson (2004)[31]; this estimates the number of sex workers in London working from flats, parlours, saunas and escort agencies in 2003. The researchers have combined these with estimates on the number of walk-up establishments, and with evidence on the proportion of women involved in prostitution in the

[30] Europol Organised Crime Threat Assessment 2003 – Europol

[31] Dickson, S. - (2004), *Sex in the City: Mapping Commercial Sex Across London*, The Poppy Project

UK that are located outside London. Judgements are also made on the proportion of these workers who are foreign and trafficked, and, finally, the total market size is estimated, using assumptions concerning average revenue per victim.

Estimating the number of trafficked sex workers in London

The methodology for estimating the number of victims in London is driven largely by the analysis contained in Dickson (2004). This uses a variety of sources to estimate the number of establishments selling sex – free local newspapers, internet sex guides, Internet advertisements and so on. The number of women involved in prostitution in each establishment was based on information contained in any advertisements or by informed judgements.

Although Dickson expresses a concern that there may be double-counting of some workers who work in different establishments in different days of the week, overall, Dickson reckons that because of the difficulties in tracking down all establishments:

> *These figures should be taken as a minimum, and are likely to be an underestimation of both numbers of establishments where men can buy sex, and numbers of women in the sex industry*.

Dickson highlights the uncertainty by using ranges based on varying the number of workers per establishment. The following analysis simply takes the midpoint of these ranges; in practice, the range adopted by Dickson only hints at the levels of uncertainties inherent in any estimates of this kind.

Evidence was also taken from an article in *The Times* newspaper which reported an estimated 70 walk-up establishments.[32] Assuming six workers per walk-up establishment, suggests a total of 420 workers in walk-ups. These estimates are clearly very approximate.

Table 3.1 – Number of sex workers in London by establishment

Establishment	**Source**	**Estimated number of women involved in prostitution in London**
Flats, saunas and massage parlours	Midpoint of range estimated by Dickson	4,417
Escort agencies	Midpoint of range estimated by Dickson	1,988
Walk-ups	*The Times*	420
Total		**6,825**

It is necessary to estimate the number of women involved in prostitution that are trafficked. First, the number of women who are of foreign origin is estimated and of these women, informed assumptions about how many are trafficked are made. This enables a calculation of the total number of trafficked workers in London, split by establishment. The assumptions concerning flats, saunas and massage parlours are based on discussions with CO14[33], and the researchers assume that all foreign workers in walk-ups are trafficked.

[32] Cobain, I. 'Albanians take over organised crime', *The Times*, November 2002.
[33] Clubs and Vice Squad within the Metropolitan Police.

Table 3.2 – Assumptions regarding proportion trafficked in London

Establishment	Proportion that are of foreign origin	Of women that are of foreign origin, proportion smuggled	Of women that are smuggled, assumed proportion trafficked	Estimated number of trafficked women in London
Flats etc.	80%	50%	75%	1,325
Escort agencies	80%	20%	10%	32
Walk-ups	90%	100%	100%	378

Finally, following discussions with CO14, the researchers make assumptions concerning the average number of 'sessions' a woman works per day (assuming women work full-time), the number of working days per year, and the price per session – this enables an estimate to be made of the annual revenue per woman. These are reported below.[34]

Table 3.3 – Assumptions regarding annual revenue per worker

Establishment	Sessions per day	Working days per week	Working weeks	Price per session	Annual revenue
Flats etc.	6	5	48	£50	£72,000
Escort agencies	3	5	48	£150	£108,000
Walk-ups	6	5	48	£50	£72,000

This allows a calculation of the market size for London to be made:

Table 3.4 – Market sizes within London by establishment

Establishment	Total number of trafficked women involved in prostitution	Annual revenue per woman	Total market size
Flats etc.	1,325	£72,000	£95m
Escort agencies	32	£108,000	£3m
Walk-ups	378	£72,000	£27m
Total	**1,735**		**£126m**

Note: figures may not sum due to rounding.

Extrapolating to the UK market

The next step is to extrapolate to the full UK market, where data are even weaker. It is possible to derive from *The McCoy's British Massage Parlour Guide* an estimate of the total number of women involved in prostitution in the UK, but this is unlikely to be comprehensive – the researchers judge that Dickson's estimates for London are more reliable than those derived from assessing McCoy's. Examining the differences between McCoy's and Dickson in the number of women involved in prostitution in London does, however, allow the researchers to derive an estimate of the extent to which McCoy's under-reports the number of workers. Dickson estimates that there are 6,405 sex workers in off-street brothels and escort agencies in London, compared with an equivalent figure of 1,420 derived from examining McCoy's. On this basis, it is assumed that the number of women involved in prostitution listed in McCoy's should be scaled up by a factor of about 4.5. This implicitly assumes that although deriving estimates regarding the absolute number of workers from McCoy's would result in an estimate too low, its geographical coverage is representative. Assumptions concerning the proportion of women that are foreign are based on discussions with West Yorkshire Police and NCIS.

[34] The assumed number of sessions worked per day is lower than those included in Moffatt and Peters' (2004) analysis of the UK prostitution industry. The researchers would, however, expect trafficked workers to work more sessions than other sex workers. Note the prices assumed here are similar to those estimated by Moffat and Peters – they estimate a median price of £55 per session.

Table 3.5 – Estimated number of foreign sex workers outside London

Location	McCoy's quote	Dickson-McCoy's multiplier	Assumed proportion that are foreign	Estimated number of foreign women involved in prostitution
England, excluding London	4,709	4.5	33% (Source: West Yorkshire Police)	7,009
Rest of UK	775	4.5	15% (Source: NCIS)	524

The next step is to disaggregate these workers by establishment type. It is assumed that walk-ups exist only in London, and that the total number of foreign workers is split in the same proportions as in London (that is, 71 per cent in flats, saunas and massage parlours, and 29 per cent in escort agencies).[35] It is further assumed that the proportion of foreign workers trafficked and revenues per worker are the same as in London:

Table 3.6 Total market size outside London by establishment

Location	Number of trafficked workers in flats etc	Annual revenue from trafficked workers in flats etc	Number of trafficked workers in escort agencies	Annual revenue from trafficked workers in escort agencies
Total outside London	2,033	£146m	44	£5m

Table 3.4 shows that there are an estimated 1,735 trafficked women in London – this means that in total it is estimated that there are a total of 3,812 trafficked women within the UK. This total estimate should **not** be directly compared with the range of 142 and 1,420 quoted in Kelly and Regan (2000). Kelly and Regan estimate the *flow* of victims trafficked in 1998. In contrast this chapter estimates the *stock* of victims trafficked (in 2003). Furthermore, the methodologies used in this chapter and in Kelly and Regan are so different that meaningful comparisons cannot be made. This chapter thus presents no evidence concerning whether the scale of people trafficking has fallen or risen since 1998.

This analysis is based on estimates concerning the proportion of women involved in prostitution who are likely to have been trafficked; it was not directly informed by evidence concerning the number of women observed to have been trafficked. Operation Pentameter, a national law enforcement operation designed to recover trafficked victims and improve intelligence, is likely to have recovered fewer than 100 trafficked victims (although a final estimate has not yet been calculated), and was conducted after the interviews with law enforcement regarding the scale of trafficking. In this light, the estimate of 3,800 trafficked victims should be seen as an upper bound.

Using the information in Tables 3.4 and 3.6 enables the researchers to estimate the total market size.

Table 3.7 – Total market size in the UK

Location	Total annual revenue
London	£126m
Rest of the UK	£151m
Total	**£277m**

Note: figures may not sum due to rounding.

As noted previously, this is subject to a very large margin of error.

[35] For the purpose of this calculation, walk-ups are included in the same category as flats, saunas and massage parlours.

Estimating the economic and social costs

This chapter attempts to monetise the total harms caused by people trafficking – given the nature of the crime, all estimates should be treated with great caution. It is important to recognise the issue of human rights, and some would argue that condensing sufferings experienced by trafficked women into one monetary value cannot do full justice to the misery experienced by victims. However, failing to monetising the economic and social costs risks the issue being downplayed relative to other crimes where harms have been valued.

Prostitution is associated with a range of societal harms, including increased risks to the health of workers, their clients and the wider community, associated criminality and anti-social behaviour (which might in turn be linked to drug abuse), impacts on children via parenting effects, tax evasion and access to public services. Many of these harms are more strongly linked with street prostitution, but can also accompany off-street prostitution.

In addition, there is a range of harms linked specifically to trafficking and coercive prostitution. These can include higher levels of sexual and violent abuse, but also costs associated with loss of personal freedoms and general reductions in quality of life.

This chapter estimates the harms caused directly by traffickers and clients, as well as the deterioration in the quality of life experienced by victims.

The POPPY Scheme is a Home Office-funded initiative run by the charity Eaves Housing for Women. It is designed to provide safe accommodation and tailored one-to-one support for adult female victims who have been trafficked into the UK and into prostitution. The report by Dickson (2004) is based on this experience, and suggests that women who have been trafficked into the UK for the purposes of sexual exploitation suffer a range of impacts, including physical violence, sexual abuse, including rape, mental illness, as well as restrictions on their movements and day-to-day activities. In what follows the researchers develop monetary valuations for these, and apply them to an estimate of the total number of trafficked sex workers in the UK.

The costs of physical and sexual abuse

For the purposes of valuation, the researchers have assumed that the physical and sexual abuse of trafficked women at the hands of their traffickers, as reported by Dickson (2004), is approximated by levels of ‘non-sexual severe domestic force’ and ‘serious sexual assault’ reported by victims of domestic violence in the British Crime Survey Interpersonal Violence (BCS-IPV) module, as analysed by Walby (2004) but there is no reliable alternative evidence. The researchers recognise that this is likely to understate the harms experienced by trafficked women. From Walby, it can be seen that, of the mean number of 20 assaults per year reported by a victim of severe domestic violence, the breakdown by assault type is as follows:

- 3.5 chokings, or assaults with a weapon;
- 14.5 kicks/punches, threats to kill and threats with a weapon;
- one severe sexual assault;
- one rape.

Through inspection of the methodology adopted by Brand and Price (2000) to estimate the social and economic costs of crime, Walby (2004) assumes that the first category of assaults is equivalent to the Brand and Price ‘serious wounding’; the second category is equivalent to ‘other wounding’; and, the third category is equivalent to ‘sexual assault’. She further assumes that domestic violence incidents have the same probability of being reported to and investigated by the criminal justice system as equivalent non-domestic crimes. However, the researchers will assume that, due to the nature of the coercive prostitution relationship, these crimes do not generally get reported to the police, and hence result in no criminal justice costs. Similarly, because women involved in coercive prostitution are not working in legitimate jobs, there will be no lost output for the economy through any time they are unable to work because of injury. Therefore the lost output component of the cost estimates of Brand and Price is also excluded (2000).

Walby (2004) also separately estimates the health service costs of depression and other types of mental illness linked with domestic violence. The methodology employed does not easily translate into a cost per incident estimate. However, the values estimated are not significant, and as a result they are excluded from this analysis. The human costs of depression linked with coercive prostitution are considered separately below.

This leaves the following costs estimated by Brand and Price (2000) relevant to the current case: emotional and physical impact on victims, and health service costs.

The estimates produced by Brand and Price (2000) have been updated by Dubourg *et al.* (2005), and are presented in Table 3.8.

Table 3.8 – Emotional and health service cost by crime type

Crime type	Emotional cost (£)	Health service cost (£)
Serious and other wounding	4,554	1,348
Sexual assault	17,447	748
Rape	61,440	2,082

Applying these estimates to the breakdown given above of the average 20 incidents reported in the BCS, the average annual cost to the victim and the health service of serious domestic violence can be calculated at a total of £187,953 per victim. It is assumed that this figure is indicative of the costs of physical and sexual assault against trafficked women.

The above quantifies the harms caused directly by traffickers, and the researchers wish also to quantify the harms caused by clients. Each session with a client is non-consensual and can therefore be treated as rape; however, the researchers have no evidence on the harms caused by repeated rape. As an absolute minimum, then, one assumes the harms suffered by women when with clients is at least equivalent to the emotional cost of one rape. This increases the harm to each victim by £61,440. This is almost certainly an underestimate.

The costs of restrictions on quality of life

The approach adopted to value the costs of reduced quality of life for coercively trafficked women is based on the concept of the Quality-Adjust Life Year. This concept was developed and is used extensively in health economics and services literature to guide resource allocation across competing health treatments and interventions. It also provides the basis of research undertaken for the Home Office into the emotional and physical costs of violent crime and the fear of crime.

The QALY is defined in terms of a range of characteristics defining quality of life. The most commonly used definition is that developed by the EuroQoL group. This definition (termed EQ5D) is based on five dimensions. These are: mobility; the ability to care for oneself; the ability to undertake one's usual activities; levels of pain and discomfort; and levels of anxiety and depression. Each dimension can take three levels, ranging from no change from an individual's normal situation, to complete restriction/imposition on his or her normal situation (e.g. being confined to bed, and being in extreme pain).

The EQ5D has been applied in a large number of population sample surveys in which respondents are asked to trade off time spent in a range of EQ5D health states with time spent in other health states, including full health. This enables each health state to be assigned a 'utility score', where a score of one indicates a year spent in normal health, and a score of zero equals death. (Negative scores are possible for very serious health states.)

There is a range of possible approaches to translating these health utility scores into money terms. The most appropriate for this report's purposes is probably to use an outcome-based value such as that employed by the National Institute of Clinical Excellence for assessing the

cost-effectiveness of health interventions. Although NICE do not use an explicit value for a QALY, it has been suggested that the values implicit in their decisions tend to be in the range £20,000-£30,000.[36] For the purposes of this study, a value of £30,000 will be used.

This then leaves an assessment of the quality of life impacts of coercive prostitution to be translated into an EQ5D health state and then utility score. Physical and sexual violence are excluded from this assessment to avoid double-counting. This means that this assessment is based on impacts on personal freedoms, and emotional and psychological costs (e.g. depression). Based on evidence presented in the POPPY report discussed above, it is assumed that the non-violence effects of coercive prostitution translate into the following EQ5D health state:

- some problems with walking about/mobility;
- some problems with washing or dressing;
- some problems with performing usual activities;
- moderate pain or discomfort;
- moderately anxious or depressed.

Thus one assumes that the restrictions on women's freedoms can be approximated by some problems with mobility and performing usual activities. Anxiety and depression impacts are judged to be moderate, reflecting the range of severity reported in the POPPY Project report. The researchers assume that this health state will last for the full year. Using the methodology developed by Dolan (1997), this health state translates into a QALY loss of 0.48 per year per woman affected. This equates to a value of £14,520 per year. One assumes this applies to all trafficked women.

Financial costs

REFLEX is a multi-agency taskforce, dealing with organised immigration crime. Discussions with REFLEX indicate that around 30 per cent of their £20m expenditure in 2003/04 was spent on trafficking issues – this suggests a total cost of about £6m. The total cost of the POPPY scheme was £0.6m in 2003/04.

Valuation

Based on the estimate that there about 3,800 trafficked sex workers in the UK, it is estimated that the economic and social costs associated with people trafficking for sexual exploitation at just over £1bn per year, as detailed in Table 3.9.

[36] Towse (2002)

Table 3.9 – The economic and social costs associated with people trafficking for sexual exploitation

	Unit cost	**Total social and economic cost (£m)**
Costs of physical violence from traffickers	£187,953	£716m
Costs of physical violence from clients	£61,440	£234m
Quality of life costs	£14,520	£55m
Costs of REFLEX and POPPY		£7m
Total		**£1,012m**

Note: figures may not sum due to rounding.

References

Brand, S. and Price, R. (2000), *The economic and social costs of crime*, Home Office Research Study 217, London: Home Office.

Carthy, T. Chilton, S, Covey, J. Hopkins, L. Jones-Lee, M. Loomes, G. Pidgeon, N. and Spencer, A. (1999), The contingent valuation of safety and the safety of contingent valuation, Part 2: The CV/SG 'chained' approach, *Journal of Risk and Uncertainty*, 17: 187-213.

Dickson, S. (2004), *When women are trafficked: quantifying the gendered experience of trafficking in the UK*, London: The Poppy Project.

Dickson, S (2004), Sex in the City: Mapping Commercial Sex Across London: The Poppy Project.

Dolan, P. (1997), Modelling valuations for EuroQol health states, *Medical Care*, 35(11): 1095-108.

Dubourg, R. Hamed, J. and Thorns, J. (2005), *The economic and social costs of crime against individuals and households, 2003/04*, Home Office Online Report 30/05, London: Home Office.

Europol (2003), *European Union Organised Crime Report*.

Kelly, L. and Regan, L. (2000), *Stopping Traffic: Exploring the extent of, and responses to, trafficking in women for sexual exploitation in the UK*, Home Office Police Research Series 125.

Moffat, P. and Peters, S. (2004), Pricing personal services: an empirical study of earnings in the UK prostitution industry, *Scottish Journal of Political Economy*, 51(5): 675-690.

The EuroQol Group (1999), EuroQol – A new facility for the measurement of health-related quality of life. *Health Policy*,16(3):199-208.

Towse, A. (2002), What is NICE's threshold? An external view. Chapter 2 in Devlin, N. and Towse, A. (eds) (2002), *Cost effectiveness thresholds: economic and ethical issues*. London: King's Fund/Office for Health Economics.

Walby, S. (2004), *The cost of domestic violence*, London: DTI.

4. Illicit drugs

Summary

- The size of the illicit drugs market in the UK in 2003 is estimated to be about £5.3bn.
- This is based largely on survey evidence, supplemented with data and assumptions concerning purity, intensity of use and prices.
- Economic and social costs attached to illicit Class A drug use in England and Wales is estimated to be about £15.4bn in 2003/04.
- The consequences of Class A drug use are estimated for each type of drug user. These consequences each have a unit cost and these are used to estimate the overall costs for each consequence by type of drug user, and then summed to provide an estimate of the total economic and social cost.

Introduction

This chapter estimates the market size of the illicit drug market in the UK and their associated harms. The illicit drugs included are: cannabis, amphetamines, ecstasy, powder cocaine, crack cocaine and heroin.

Extent of organised crime involvement

That the UK illicit drugs market is dominated by organised criminal groups is well known. The industry is typically characterised by a vertically disintegrated supply chain: drugs are imported in bulk to the UK, sold onto different middle market groups (where numerous transactions may occur), before being sold to dealers and then the final user. The source country varies depending on the drug in question. For heroin the largest supplier is Afghanistan, and for cocaine it is Columbia.[37]

The researchers assume that the entire market is organised. Although there are some exceptions – for example some cannabis is grown and consumed by the same person – these instances make little difference to the total organised crime market size.

Estimating the market size

This section is based solely on *Estimating the Size of the UK Illicit Drug Market* by Pudney *et al.* (2006) which uses data relating to 2003 and 2003/04. All the analysis outlined below was conducted by Pudney *et al.* – this section provides a summary of their approach and results. Considerably more detail is available in their report.

[37] UNODC (2005).

Pudney *et al.* use a survey-based demand-side approach. Evidence is needed concerning the:

- proportion of the population using different illicit drugs;
- frequency of drug-use;
- quantities of drugs used (per episode of use);
- purity of drugs used; and
- prices of drugs.

No single survey achieves complete coverage. Three main sources of evidence are therefore used to estimate the proportion of the population using different illicit drugs and the frequency of their drug use. The population is split into three groups, each of which is directly accessible by existing surveys:

- juveniles (aged from 10 to 16), covered by the Schools Survey (SS) 2003;
- non-arrestee adults, covered by the Offending, Crime and Justice Survey (OCJS) 2003; and
- adult arrestees, covered by the Arrestee Survey (AS) 2003.

All analysis relates to England and Wales and is then scaled up to UK level.

The Schools Survey, carried out on behalf of the Department of Health, uses a self-completion questionnaire and smoking diary, given to pupils in 'exam conditions'. The survey includes questions on whether respondents have used drugs, and, if so, their frequency of use.

The Offending, Crime and Justice Survey, commissioned by the Home Office, asks, among other things, whether drugs have ever been taken, the frequency of use, and the total amount spent on drugs. The Arrestee Survey covers those who are in police custody and asks a range of questions relating to drug use. Splitting the population in this way also requires the total arrestee population to be estimated – Pudney *et al.* calculate this to be 652,000.

Caveats

Survey data – analysis of responses

It is never possible to be fully confident in surveys directly asking respondents to admit to criminal activity, but good survey design can help to overcome obstacles at least partially. Weighting the data to reflect differences between the characteristics of respondent and non-respondent households can also be important. Pudney *et al.* did this for each survey apart from the SS, where it was felt to be unnecessary because of the low variations in responses.

The researchers compare the results of the OCJS survey with the British Crime Survey (BCS). The OCJS elicits a higher proportion of drug users than the BCS, although, as the researchers point out, the differences are 'not dramatic'. The SS sample was also compared with English 11 to 15-year-olds from the OCJS. The SS elicits a much higher proportion of respondents who claim to have ever used drugs in their life. This can be partly explained by the more anonymous setting of the SS, although when the analysis is repeated using only those respondents in the OCJS who completed the questionnaire with no other household member present in the room, significant differences remain. The AS was also compared with its predecessor, NEW-ADAM. Again, differences are found, although this is likely to be at least partially due to the two surveys being separated by two years, and their very different designs.

Survey data – under-reporting

Given the nature of the questions asked, under-reporting is a risk. This has been partially mitigated by assuring respondents that their answers were to be used only for scientific purposes, and that they were not personally identifiable from the survey data. Nevertheless, some under-reporting may remain.

It is possible to estimate the degree of under-reporting by analysing the NEW-ADAM and AS results, which both ask respondents about their drug use, and physically test the same respondents. Pudney *et al.* provide some 'experimental' adjustments by comparing results from these two methods. Under their method the estimated total market size increases by seven per cent, but these adjustments are not included in their 'baseline' estimates reported below because the researchers do not consider them to be sufficiently robust.

Other data issues

As referred to below, there are also uncertainties surrounding estimates and assumptions made in respect of frequency of use, quantities per episode of use and prices.

Drug quantities per episode of use

Data here are poor – survey questions generally ask about frequency of use, rather than explicit quantities. Pudney *et al.*'s assumptions here are based on a range of sources and differ according to whether the user is classified as being intensive.

Purity

Assumptions are informed by data from the Forensic Science Service (FSS) who test the purity of drugs following seizures. There is considerable variation in purity levels between drugs, and within each type of drug.

Prices

Two data sources are considered for use – the AS and National Criminal Intelligence Service price data. In the AS, respondents were given the option of answering in terms of ounces or grams, and this appears to have caused considerable confusion. Some drugs are not bought by a particular weight but by, for example, 'bags' (for heroin) or 'rocks' (for crack) and these are not of a standard weight. The authors report that the prices are "noticeably out of line with evidence from other sources" and so do not consider them reliable enough for use, even once the outliers are removed.

The researchers therefore rely on the NCIS data, collected using information generated during police operations, often in the form of 'test purchases'. These data are also imperfect – the data collection and reporting methodology is not fully systematic – but they are considered the best available.

Summary of assumptions

Pudney *et al.* summarise their key assumptions in table 6.6 of their report – this is reproduced below in Table 4.1.

Table 4.1 – Summary of assumptions

Drug	Mean price [a]	Mean quantity per day of use for intensive users [a,b]	Mean purity [c,d]
Cannabis	£2.50 ± £0.75	1.2 ± 0.4 (intensive) 0.55 ± 0.4 (non-intensive)	-
Amphetamines	£8.50 ± £2.50	1.0 ± 0.2 (all users)	11% ± 4%
Ecstasy	£4.50 ± £1.50	2.0 ± 0.5 (intensive) 1.5 ± 0.5 (non-intensive)	26% ± 10% (65±25mg per tab)
Cocaine	£55.00 ± £10.00	0.8 ± 0.2 (intensive) 0.55 ± 0.2 (non-intensive)	50 ± 6%
Crack	£95.00 ± £15.00	0.7 ± 0.2 (intensive) 0.4 ± 0.2 (non-intensive)	65 ± 7%
Heroin	£60.00 ± £10.00	0.48 ± 0.1 (intensive) 0.34 ± 0.1 (non-intensive)	40% ± 6%

Notes: (a) all quantities in grams, except for ecstasy in tabs; (b) intensive users defined as using at least 3 times a week; (c) there is no purity factor for cannabis, since it is not usual to measure cannabis quantities in terms of the active constituent (THC); (d) estimate of the mean MDMA content of ecstasy tabs supplied by NCIS

Results

All assumptions relate to England and Wales. Results are subsequently scaled up to a UK level of aggregation, taking into account age-specific population differences, and the lower arrest rate in Northern Ireland. The results table below is reproduced from Pudney *et al*.

Table 4.2 – Estimates of market size by illicit drug

Baseline estimates of market size for England and Wales and the UK for 2003/04

	ENGLAND AND WALES			UK		
	Aggregate street quantity (tonnes)	**Aggregate pure quantity (tonnes)**	**Aggregate expenditure (£million)**	**Aggregate street quantity (tonnes)**	**Aggregate pure quantity (tonnes)**	**Aggregate expenditure (£million)**
Cannabis	360.33	360.33	900.8	412.41	412.41	1031.0
	±135.81	*±135.81*	*±372.4*	±155.44	±155.44	*±432.5*
Amphetamines	32.68	3.60	277.8	36.70	4.04	312.0
	±17.33	*±2.31*	*±72.9*	±19.46	*±2.60*	*±81.9*
Ecstasy (millions of tabs)	52.79	13.72	237.5	59.52	15.47	267.8
	±23.84	*±8.14*	*±76.2*	±26.88	*±9.18*	*±85.9*
Powder cocaine	15.7	7.85	863.4	17.70	8.85	973.3
	±12.17	*±6.16*	*±237.1*	±13.72	*±6.94*	*±267.3*
Crack	13.79	8.96	1309.8	15.58	10.13	1480.4
	±11.76	*±7.71*	*±348.9*	*±13.29*	*±8.71*	*±394.29*
Heroin	17.60	7.04	1055.9	20.11	8.04	1206.7
	±13.14	*±5.32*	*±199.2*	*±15.02*	*±6.13*	*±227.65*
TOTAL MARKET VALUE (£bn)			**4.645**			**5.271**
			±1.154			*±1.310*

Estimating the economic and social costs

This section is based on the updated report on the economic and social costs of Class A drug use by Gordon *et* al. The methodology used to estimate the original costs[38] has been revised and updated estimates have been provided for 2003/04. Unlike the market size estimates above, all numbers relate to England and Wales only.

The methodology identifies Class A drug users by type – young recreational users, old regular users, and problematic users – and cost consequences for each are derived. The cost consequences of Class A drug use are identified as drug-related crime, health service costs, drug-related deaths and the cost of social care. Monetised unit costs are applied to each consequence to give the overall cost for each consequence for each type of user. This enables a total economic and social cost of drug use to be estimated.

The methodology is not discussed in any depth here. See Godfrey *et al.* and Gordon *et al.* for further detail of the original and revised methodologies.

Number of drug users

The number of problematic users is based on indirect estimation methods. The number of young recreational and older regular users is estimated through evidence from surveys,

[38] Godfrey (2000).

taking care not to double-count those already included in the problematic users category.

Consequences of drug use

As with Godfrey *et al*., the consequences of drug use are identified as drug-related crime, health service use, drug-related deaths and social care. The largest cost element is drug-related crime. The number of offences per problematic user is based on the National Treatment Outcomes Research Study (NTORS).

The number of drug-related deaths is based on coroners' reports, and this is multiplied up by the Department for Transport's value of preventing a fatality. Health service costs are based primarily on mental health admissions, and hospital 'episodes' due to poisoning and intoxication following illicit drug use.

Results

The total economic and social cost associated with illicit Class A drug use is estimated to be about £15.4bn in 2003/04. Problematic drug users account for 99 per cent (or £15.3bn) of total costs. Drug-related crime costs account for 88 per cent of costs associated with problematic drug use. Young recreational and older regular users account for less than one per cent (£52m and £9m respectively) of total costs.

Results are presented below. These tables are reproduced directly from Gordon *et al.*

Table 4.3 – Economic and social costs of Class A drug use associated with problematic drug use 2003/04

	£m	% of total cost
Drug related crime		
Fraud	£4,866	32%
Burglary	£4,070	26%
Robbery	£2,467	16%
Shoplifting	£1,917	12%
Drug arrests	£535	3%
Health costs		
Inpatient care	£198	1.2%
Inpatient mental health	£88	0.6%
A&E	£81	0.5%
Community mental health	£61	0.4%
Primary care - GP visits	£32	0.2%
Neonatal effects	£3	0.1%
Infectious diseases	£25	0.1%
Drug related deaths	£924	6.0%
Social care	£69	0.4%
Total	**£15,337m**	**99%**

Table 4.4 – Economic and social costs of Class A drugs use associated with young recreational and older regular use, 2003/04

	Young recreational users (£)	Older regular users (£)
Drug related deaths	£43,304,580	-
Drug possession	£6,770,885	£6,770,885
Toxicity and overdose	£4,539	£252,636
Mental health admissions	£1,805,000	£2,338,140
Total	**£51,885,004**	**£9,361,661**

References

Pudney, S., Badillo, C., Bryan, M., Burton, J., Conti, G., and Iacovou, M. (2006) *Estimating the Size of the UK Illicit Drug Market*, Home Office Online Report 16/06.

Godfrey, C., Eaton, G., McDougall, C., and Culyer, A. (2002) *The Economic and Social Costs of Class A Drug Use in England and Wales, 2000*, Home Office Research Study 249.

Gordon, L., Tinsley, L., Godfrey, C. and Parrot, S. (2006), *The Economic and Social Costs of Class A Drug Use in England and Wales, 2003/04,* Home Office Online Report 16/06.

UNODC (2005), *2005 World Drug Report: Volume 1 Analysis*.

5. Excise fraud and smuggling

Summary

- The researchers estimate the market size for excise fraud and smuggling by organised crime groups to be approximately £2.9bn in 2003/04
- This is based on HM Revenue and Customs (HMRC) estimates of the volume of fraud and smuggling – their calculations involve estimating total consumption and comparing this with duty-paid consumption, making allowances for cross-border shopping – combined with estimated street prices.
- It is estimated that the social and economic costs associated with excise fraud and smuggling by organised crime groups is approximately £3.7bn in 2003/04.
- The biggest component of this loss relates to lost tax revenue; this is based on HMRC estimates.

Introduction

Excise smuggling involves buying tobacco, alcohol and oils (henceforth 'excise goods') outside the UK and selling them on within the UK without paying duty and (in some instances) Value-added tax (VAT). In the case of oils fraud, the method often involves abuse of low-duty red diesel. Excise smuggling is distinct from the (legal) practice of cross-border shopping where, although the excise goods are also bought from outside the UK and no UK duty is paid, they are subsequently consumed by the individual who bought them.

Excise smuggling leads to substantial reductions in revenue to the exchequer, distorting and generally undermining the tax system. It also damages the profitability of retailers selling excise-tax paid goods.

Note that this chapter includes market size and economic and social costs associated with counterfeit tobacco. This could equally be included in the chapter covering intellectual property theft, but, since no published data are available which separates out counterfeit tobacco, it is included it in this chapter instead.

Extent of organised crime involvement

There are four types of excise fraud or smuggling activities into the UK:

- *cross-channel importation* by individuals by sea, tunnel, and air;
- *freight-smuggling* – very large consignments, for example container loads;
- *diversion fraud* – goods which are notionally in transit between excise warehouses in the EU are diverted onto the market; and
- *counterfeit fraud* – goods which are sold as legitimate products but are copies of the real products .

Organised crime involvement is concentrated on freight smuggling, diversion fraud and counterfeit fraud, with NCIS (2004) reporting that the vast majority of illicit cigarettes are smuggled in freight by serious organised criminals. NCIS also reports that organised gangs are involved in diversion fraud in the alcohol industry where they then sell through independent licensed retail outlines at close to normal duty-paid prices – consumers often believe they are buying legitimate products.

Analysis of oils fraud distinguishes between activity in Northern Ireland and the rest of the United Kingdom. The smuggling of fuel between Northern Ireland and the Republic of Ireland is due to the long land border, the lower price of diesel and petrol in the Republic and the presence of established organised crime groups with expertise in smuggling.

Following discussions with HMRC, the researchers make the following assumptions regarding organised crime involvement:

- *Tobacco smuggling*: the researchers assume that all freight smuggling and diversion fraud is attributed to organised crime – this suggests that 80 per cent of the hand-rolling tobacco (HRT) fraud market and 90 per cent of the fraudulent cigarette market can be attributed to organised crime;
- *Alcohol smuggling*: the researchers assume that 100 per cent of the fraudulent market is organised; and
- *Oils*: the researchers assume that 70 per cent of the Great Britain illicit diesel market is attributed to organised crime.

Caveats

Estimating the volume of fraudulent consumption is difficult; a discussion of the uncertainties are contained in HMRC's *Measuring Indirect Tax Losses, 2005*. As explained below, calculations relating to illicit market sizes rely on estimates of total consumption based on surveys. Reliance on surveys leads to two potential sources of uncertainty: random variation in sample data; and the possibility of systematic errors where, for example, people consciously under-report their true tobacco consumption.

This chapter also makes assumptions regarding the proportion of excise fraud that is committed by organised crime groups; this introduces further uncertainty because judgments have been necessary.

Estimating the Market Size

HMRC uses a 'top-down' approach to estimate the volume of excise fraud associated with tobacco, alcohol and oil fraud and smuggling. This approach compares total consumption – obtained through a variety of data sources including surveys – with known legitimate purchases; the gap between the two represents fraudulent consumption (with allowances made for cross-border shopping). The data sources used to estimate legitimate consumption are:

- for *tobacco*: the General Household Survey and the Omnibus Survey;
- for *alcohol:* the Expenditure and Food Survey; and
- for *oils*: HMRC clearances data regarding UK duty paid oils.

Further information is available in HMRC's *Measuring Indirect Tax Losses – 2005*; the following analysis draws heavily on this work. These volume data are combined with estimates concerning the street prices at which these illicit goods are sold and assumptions regarding the proportion of the market that can be attributed to organised crime.

Tobacco fraud and smuggling

The illicit tobacco market can split into two: HRT (Hand Rolling Tobacco) and cigarettes.

Hand rolling tobacco

HMRC estimates that about 5.4m kg of HRT were successfully smuggled in 2003/04. Discussions with Action on Smoking and Health (ASH) reveal the street price for HRT is estimated to be between £4 and £5 for a 50g bag. Using a street price of £4.50, this suggests a street market value of around £486m. Assuming 80 per cent of this market is due to organised crime implies a total market valuation attributable to organised crime of about £389m in 2003/04.

Cigarettes

HMRC estimates that 12 billion cigarette sticks were successfully smuggled in 2003/04 – equivalent to 600 million packs of 20. Information from HMRC suggests a street price per pack of 20 of £2.56. This implies a total market value of £1.536bn in 2003/04, of which an estimated £1.382bn can be attributed to organised crime.

Alcohol fraud and smuggling

HMRC estimates that about 25 million litres of spirits were successfully smuggled in 2003/04. Discussions with HMRC intelligence suggest that illicit spirits are sold at close to their retail price – about £13 for a 70cl bottle (the price is very similar for both whisky and vodka). This gives a total market value for 2003/04 of about £464m, which one assumes is all attributed to organised crime.

Oils fraud and smuggling

The illicit oils market can be split into four.

- Great Britain diesel. Red diesel, which attracts a low rate of duty, can be used as a substitute for low-sulphur diesel; it is for use in off-road vehicles and machinery and dyed red to distinguish it from diesel for road transport use. However techniques exist to remove the dye and enable it to be redistributed.
- Great Britain petrol. Its market size is estimated by HMRC to be less than one per cent of the total market, and so is considered small enough not to be included here.
- Northern Ireland diesel. This market is similar to that of red diesel. But the fuel is smuggled from the Republic of Ireland, and is called green diesel – it is marked with green dye. Smuggling and other illegal activity are also used.
- Northern Ireland petrol Smuggling groups are alleged to smuggle petrol from the Republic of Ireland across the rural roads and into Northern Ireland for resale in UK markets.

All HMRC estimates for Northern Ireland relate to total non-UK duty paid consumption rather than the illicit market. This reflects the present difficulty in disaggregating total revenue losses between illicit activity and legitimate cross-border shopping. Therefore the researchers do not produce an illicit market size estimate for Northern Ireland.

Table 5.1 shows the researchers estimates of the total oils smuggling market in Great Britain. The data concerning the volume of Great Britain non-duty paid oil is taken from HMRC, and it is assumed that the illicit price is the same as that charged for the legal product. The proportion attributed to cross-border shopping in the Great Britain diesel market is also taken from HMRC. Note that these figures refer to 2003

Table 5.1 – The total illicit oils market size – 2003

Market	Volume of UK non-duty paid (million litres)	Proportion attributed to illicit activity	Proportion attributed to organised crime	Illicit street price (£ per litre)	Total illicit market size attributed to organised crime
Great Britain diesel	1,800	67%	70%	0.79	£664m

Total market size

The researchers therefore estimate the total market size of smuggled excise goods as follows:

Table 5.2 - Total market size of smuggled excise goods

Market	**Estimated size**
Tobacco	£1,771m
Alcohol	£464m
Oils	£664m
Total	**£2,899m**

Estimating economic and social costs

The economic and social costs associated with alcohol, tobacco and oil fraud and smuggling include lost tax revenue to the Exchequer, lost profit to UK business, and the costs of complying with regulations.

HRMC calculates tax evaded, so this chapter, in turning this into an economic and social cost, implicitly assumes that all excise goods bought at an excise-free price, would have been bought at the full price, if the illicit goods were not available. In the case of tobacco, this is unlikely to be true because of differing prices, but to make adjustments for this would require further assumptions on factors on which the researchers have little reliable evidence (for example, price elasticities of demand).

The costs of regulatory compliance are provided by Regulatory Impact Assessments (RIAs) of relevant legislation since these estimate the cost to business of compliance with regulation or regulatory amendments.

Various economic costs are not included due to a lack of data. These include the criminal justice system costs of investigating and prosecuting crimes relating to illicit activities, and the additional costs of air pollution from the consumption of illegal fuels.

Tobacco fraud and smuggling

Lost tax revenue

HMRC (2005) has estimated that in 2003/04, tax of £2.2 billion was evaded on the consumption of illicit cigarettes, and £700 million on HRT. Attributing 90 per cent of the tobacco, and 80 per cent of the HRT market to organised crime, gives a total cost of £2,540m.

Lost profit to UK businesses

Since a proportion of the tobacco market is served by illicit suppliers, legitimate suppliers will lose market share and profit. This is an important social and economic cost since it might affect market supply concentration. However, only the cost of the loss in profit has been estimated here.

HMRC estimates that 12 billion illicit cigarettes and 5.4m kg of illicit HRT were consumed in 2003/04. Using a standard coefficient of 0.4 to translate a gram of HRT into a 'cigarette stick equivalent' (CSE), gives a total CSE of 25.4 billion CSEs. HMRC estimates a per cigarette profit of 1.377 pence (on average).[39] Assuming this can be applied across the whole illicit market implies an estimate of £351m lost profit for UK industry in 2003/04. Attributing about 85 per cent (a weighted average of HRT and tobacco) of this cost to organised crime produces an estimate of £297m.

Law enforcement and regulatory costs

In March 2000, the Government announced its Tackling Tobacco Smuggling strategy, designed to reduce tobacco smuggling. This strategy provided £209m (over three years) for investment in almost 1,000 extra front-line staff and investigators, and a national network of X-ray freight scanners designed to detect bulk consignments of smuggled tobacco (costing £42m). In 2003 prices this equates to a strategy provision of £222m, averaging £74m a year, £63m of which the researchers attribute to organised crime.

To make it easier to identify illicit goods, 'UK duty-paid' pack marks were also introduced on tobacco products in 2001. However, the regulatory compliance cost to industry was not estimated in the Regulatory Impact Assessment and therefore is not included here.

Alcohol fraud and smuggling

Lost tax revenue

The researchers assume that organised crime is involved only in spirit smuggling (due to lack of data on beer and wine). Lost tax revenue attributable to spirit fraud and smuggling in 2003/04, including both excise tax revenue and VAT, is estimated at £250m.

Lost profit to UK business

The Department for Environment, Food and Rural Affairs (DEFRA) estimated spirits industry profit to be approximately ten per cent of turnover during the period 1994/2003. Applying this to the estimated spirits industry loss in 2003/2004 (£460m) produces an estimated industry profit loss of £46m in 2003/04.

Law enforcement and regulatory costs

Law enforcement costs attributable to alcohol smuggling have not been estimated.

Oils illicit activity

The economic and social costs associated with illicit oil activity include the lost profit to UK business (through lost sales), lost tax revenue to the Exchequer and enforcement and regulatory compliance costs attributable to illicit oil activity. Unfortunately, a lack of data has prevented the researchers from quantifying the first of these costs.

Lost tax revenue

HMRC estimated that illicit diesel oil activity into Great Britain resulted in a loss in tax revenue of £700m in 2003. Assigning 70 per cent of this loss to organised crime results in an estimated lost tax revenue of £490m.

Law enforcement and regulatory costs

The registered dealers in controlled oils regulation discussed in *'Oils Fraud Strategy: Summary of Consultation Responses Regulatory Impact Assessment'* (HMRC) provides

[39] Estimate, derived using data on profits from the two largest UK tobacco suppliers. The researchers do not have an equivalent figure for HRT production.

information on the costs associated with the introduction of an 'approval scheme', a 'tied oils scheme' and the introduction of a new, EU-wide 'Euromarker' to be added to rebated fuels. The compliance cost associated with the introduction of the Euromarker was estimated to lie in the range of £0.84m and £1.7m annually.

The 'approvals scheme' was estimated to cost 'large' businesses between £20,000 and £60,000 per annum (ongoing cost) and approximately £3,000 for small businesses. An estimated 1,200 distribution businesses were affected by this scheme. Taking the midpoint from the 'large' business compliance cost and assuming this cost is representative for all businesses derives a total cost of £48m.

The 'tied oils' scheme is estimated to be costly for 2,150 businesses. The on-going cost to small business of this regulatory change is between £120 and £6,000. No information on cost is provided for large businesses. Assuming the small business compliance cost to be representative (and taking the midpoint estimate of £3,060) the total cost to business of implementing the 'tied oils' scheme is estimated to be approximately £6.6m.

HMRC estimate the registered dealers in controlled oils regulation to cost approximately £33m per year to implement (£100m over a three-year period).

This gives total law enforcement and regulatory costs of approximately £90m in 2003. Attributing 70 per cent of this to organised crime results in a cost of £63m.

Total social and economic costs of excise fraud and smuggling

We therefore estimate the total social and economic costs of organised excise illicit activity to be £3.7bn in 2003/04.

Table 5.3 – Total social and economic costs of organised excise fraud and smuggling in 2003-04

	Tax revenue	Profit	Other	Total
Tobacco	2,540	297	63	2,900
Spirits	250	46		296
Oils	490		63	553
Total	3,280	343	126	**3,749**

References

HMRC (2005), Measuring Indirect Tax Losses – 2005

NCIS (2004), UK Threat Assessment

6. Non benefit fraud

Summary

- The market size of the organised fraud market is estimated to be about £1.9bn in 2003/04. This is a conservative estimate.
- This is based primarily on HMRC's and industry's estimates of their losses; the biggest element by far is that of Missing Trader Intra-Community (MTIC) fraud.
- The total economic and social costs of organised fraud is estimated to be about £2.7bn in 2003/04.
- This is composed of fraud losses – the biggest component – plus costs associated with preventing and dealing with the after-effects of fraud; it does not include emotional costs to victims or the cost of avertive behaviour.

Introduction

This chapter defines fraud as illegally gaining a financial advantage at the expense of a victim through deception.

This chapter covers the following types of fraud:

- Missing Trader Intra-Community (MTIC);
- plastic;
- cheque;
- telecommunications; and
- vehicle leasing.

MTIC fraud involves organised crime groups accessing VAT registration numbers to purchase VAT-free goods in other EU member states. Under single market rules, VAT is paid only in the member state where the goods are consumed. When the imports are sold on at VAT inclusive prices, the trader goes missing and keeps the VAT – the loser is the Exchequer.

Plastic fraud comes in many forms including[40]:

- *Card not present fraud*: primarily involves transactions over the telephone, on the Internet or through the post.
- *Counterfeit cards*: genuine card details are stolen at the point of transaction – potentially with the aid of skimming machines at cash points. The card is then copied and can be used fraudulently.
- *Lost and stolen fraud*: a card is used by somebody other than the cardholder and presented for payment using a forged signature.
- *Mail non-receipt fraud*: an issued card is intercepted in the mail before the genuine cardholder receives it and then fraudulently used.
- *Identity theft*: occurs when fraudulently-obtained personal information is used to open or access card accounts in someone else's name.

There is also a range of cheque frauds. When a cheque is drawn, fraud can consist of

[40] These definitions are taken from *Card Fraud: The Facts 2005* (2005), APACS

forged, counterfeit, or fraudulently altered cheques. Alternatively, when a cheque is cashed, incidents of fraud may also be detected.

Vehicle leasing fraud occurs when a vehicle is purchased using credit arranged through a retailer, and the purchaser then goes missing with the vehicle without making full payment. Telecommunications fraud occurs when telecommunications services are obtained without any intention of paying. Such fraud includes purchasing capacity on fixed lines and then reselling to the public or other communication companies.

The market size and economic and social cost estimates contained in this chapter are far lower than apparently analogous estimates produced by others. There are two major reasons for this. First, this chapter is concerned solely with fraud committed by organised crime groups. Secondly, excise fraud and intellectual property theft (which can involve fraud), although covered by this report, are included in separate chapters.

Extent of organised crime involvement

It is widely recognised that organised crime involvement is heavy in all the sectors covered in this chapter. Estimates concerning the specific proportion of organised crime involvement is based on interviews with industry participants, and are (unavoidably) extremely uncertain. The estimated proportions attributable to organised crime varies depending on the sector, and are reported in the relevant section.

Caveats

It is impossible to detect all frauds, thus some under-reporting is inevitable. Furthermore, where fraud is discovered, the defrauded firm may not report it, either because of the cost of proceedings, or a fear that being associated with fraud would damage its reputation. In other cases, it is difficult to distinguish between inability to pay and fraud; the estimates in this chapter rely on industry bodies to make this distinction.

Estimates relating to organised crime involvement are highly uncertain. The researchers do not have a perfect picture of all the sectors in which organised crime groups operate, and if such evidence is not available it is assumed that organised crime groups are not involved. All this suggests that the organised fraud estimates are likely to be very conservative.

The primary economic and social cost associated with fraud is the value of the direct losses. The researchers have estimated the costs of trying to prevent fraud and resolving fraudulent activity (for example, the issuing of new cards), but have not been able to quantify the costs associated with avertive behaviour by consumers, or the emotional costs of having been defrauded. Finally, CJS costs are very approximate – data are available only for CJS costs relating to all types of fraud regardless of whether it is organised, and even this is not perfect. To estimate the proportion relating to organised crime, it has been assumed that the CJS costs per pound of fraudulent gain is the same for both organised and non-organised fraud.

Other sector-specific caveats are reported in the relevant section.

Estimating the market size

Missing Trader fraud

HMRC estimates the scale of MTIC fraud in *Measuring and Tackling Indirect Tax Losses* (2004) with an outline of the methodology reported in *Measuring Indirect Tax Fraud* (2001).[41] HMRC reports a range, with the top end based principally on comparing data on sales to the UK declared in other Member States with purchases from other Member States declared in the UK. This is thought to be a maximum because it is likely to include contributions from data mismatches. The bottom end is based on estimates of the levels of carousel fraud in Belgium and the Netherlands and assessing what these estimates indicate about likely levels of fraud in the UK. This is thought to be a minimum because it covers only some sectors and only the carousel version of MTIC fraud. HMRC has made refinements when calculating the scale of MTIC fraud in 2003/04 – business transactions that are considered highly unlikely to be fraudulent are removed.

HMRC estimates the value of MTIC fraud to be between £1.06bn and £1.73bn in 2003/04. Taking the midpoint suggests MTIC fraud cost the Exchequer a total of about £1.395bn in 2003/04. Note that these HMRC estimates refer to *attempted,* not necessarily successful, MTIC fraud attempts, so therefore this may be considered a maximum. However, since the latest estimated MTIC successful fraud figure is £2bn-£3bn for 2005/06 (HMRC 2006, under a revised methodology), it is unlikely to be considerably too high. It is assumed that all MTIC fraud is attributed to organised crime groups.

Plastic fraud

The Association for Payment Clearing Services (APACS) estimates of the value of card fraud losses in 2003 are reproduced in table 6.1; these are taken from *Card Fraud: The Facts 2005* (2005) produced by APACS which are based on their members' reports of fraud, who in turn receive notifications from their customers. These data should be reliable – there is usually little doubt when plastic fraud has occurred.

Discussions with the Dedicated Cheque and Plastic Crime Unit (DCPCU) assisted in estimating the extent of organised crime involvement.[42] These estimates are unavoidably subject to significant uncertainty.

Table 6.1 – Plastic card fraud - market sizes

Fraud type	Losses (£m)	Proportion of org. crime Involvement	Losses (£m) attributable to organised crime
Card-not-present	122	85%	104
Counterfeit	111	85%	94
Lost/stolen	112	50%	56
Mail-non-receipt	45	85%	38
Identity theft	30	85%	26
Total	**420**		**318**

All figures are rounded to the nearest £million. Because of this, figures may not sum due to rounding.

[41] The description contained in this section is based heavily on this document.

[42] DCPCU works with APACS and the British banking industry to tackle organised crime involvement in cheque and plastic card fraud.

Cheque fraud

The British Banking Association (BBA) compiles members' losses which are reproduced in Table 6.2 following correspondence with BBA. All data relate to 2003. This relies on members reporting fraud losses accurately – note that sometimes it is difficult to distinguish between bad debt and fraud. The figures reported below allow for the fact that around 30 per cent of initial fraud losses are recovered.

Discussions with banking fraud specialists suggest organised crime groups are involved in about 85 per cent of the fraud (by value) – this assumption is clearly subject to a considerable margin of error.

Table 6.2 – Non-plastic fraud market sizes

Fraud type	**Losses (£m)**	**Losses attributable to organised crime (£m)**
Forged cheques	32	27
Counterfeit cheques	4	3
Fraudulently altered cheques	9	8
Forged authorities	15	13
Fraudulent endorsement	2	1
Encashments	11	9
Withdrawal against unclear effects/crossfiring	22	19
Other types	1	1
Total	**96**	**82**

All figures are rounded to the nearest £million. Because of this, figures may not sum due to rounding.

No estimate has been made of the size of the fraud losses suffered by building societies.

Telecommunications fraud

Home Office researchers held interviews with senior security personnel from a large UK-based mobile phone operator, and a major fixed-line provider. In both cases the interviewees were responsible for investigating and preventing frauds carried out against their companies. Interviewees requested that they and their firms remained anonymous. In addition to discussing criminal *modus operandi* they provided data on their firms' losses and estimated, through their experiences of fraud, the proportion of these that can be attributed to organised crime activity.

Figures are scaled up to the sector as a whole by examining the market shares (by revenue) of the companies interviewed; data on market shares were obtained from OFCOM.[43] This implicitly assumes that the firms interviewed are representative. The market share estimates should thus be considered conservative, since large telecoms companies are known to invest more in fraud-combating technologies and procedures than smaller firms.

This method suggests that total *fixed line* fraud is approximately £85m per annum. Of this, it is estimated that about half is attributable to organised crime, generating an estimated fixed line sector organised crime market of approximately £42.5m per annum.

The value of all subscription and similar fraud losses in the *mobile sector* is estimated to be approximately £82m per annum. Organised crime is thought to account for approximately 30 per cent of this, generating an estimated loss across this sector of the telecom industry of about £25m. This suggests a total organised crime market of about £67m.

[43] Ofcom Fixed Telecoms Market Information Update (May 2004), and Oftel Market Information Mobile Update (Dec 2003)

There appears to be some overlap in the way companies differentiate between 'fraud' and 'bad debt'. In some cases, a proportion of fraud loss is written off as bad debt for accounting purposes; this occurs when the company has insufficient evidence to suggest the loss is due to fraud. There are no figures available that assess the extent to which this is a major issue. PABX dial-through fraud, and other telecom frauds which usually involve an outsider taking control of part of a firms telecom network to make calls, are not included in the valuation.

Vehicle leasing fraud

Losses relating to vehicle leasing fraud are provided by the Finance and Leasing Association – the FLA is the major UK industry body for the asset finance, consumer finance and motor finance sectors.

Members of the Finance and Leasing Association financed approximately half of all new car registrations in the UK in 2003. The FLA collects data on the number of cases where payment has not been received and the cause has been traced to an attempt to defraud, rather than inability to pay. Some of the remaining 50 per cent of purchases are financed using similar channels to that employed by FLA members and these are, therefore, open to the same forms and levels of abuse. However, it is thought that a significant proportion are financed by other means, such as personal loans, and these methods of financing are not open to vehicle leasing fraud. Therefore, although the figures obtained from the FLA represent a lower limit on losses, it is not possible to extrapolate from these to the rest of the industry.

In the twelve month period from June 2003, the FLA estimate the loss to fraud was £17.9m. This estimate is derived from information returned by 80 per cent of FLA members. Assuming the losses suffered by the remaining 20 per cent of members are proportionate to those who returned information, we estimate that the total loss suffered by FLA members is about £22m.

From the Vehicle Fraud Unit's (VFU's) experience of the methods employed and intelligence from arrests, it is estimated that around 90 per cent of this loss can be attributed to organised criminal activity – these frauds require a significant degree of preparation. The market value of organised vehicle leasing fraud in the UK is therefore estimated to be approximately £20m in 2003/04.

Summary of revenue for organised crime groups from non-benefit fraud

Table 6.3 – Summary of fraud loss associated with organised fraud

Type of fraud	**Fraud losses (£m) as a result of organised crime activity**
MTIC	1,395
Plastic	318
Non-plastic	82
Telecommunications	67
Vehicle leasing	20
Total losses	**1,882**

Note: Figures may not sum due to rounding.

Estimating the economic and social costs

This section estimates the following economic and social costs:

- losses of revenue;
- costs of defensive measures;
- administration costs; and
- criminal justice system costs.

Estimated losses of revenue

Organised crime fraud revenues usually represent losses to institutions including the Exchequer and legitimate businesses.[44] Table 6.3 quantifies the losses to the government and business – it totals about £1.9bn in 2003.

Cost of defensive measures

MTIC fraud

New anti-fraud regulations were introduced in the 2003 Budget. These allow HMRC to impose, subject to a number of safeguards, joint and several liability on any business that knows or has reasonable grounds for believing, that VAT will go unpaid in a supply chain. HMRC estimates this will cost business an extra £1.7m a year (HMRC, 2003a). The 2003 Budget also enables HMRC to deny recovery of input VAT in circumstances where the taxpayer holds an invalid VAT invoice and is unable to demonstrate that he or she took reasonable steps to ensure the supply and the supplier were genuine. HMRC estimates this to cost businesses an extra £2.2m (HMRC, 2003b) a year.

Plastic fraud

The card issuers are attempting to reduce losses through the implementation of the 'Chip and Pin' scheme, at a total cost of £1.1bn (APACS, 2002). Discussions with APACS suggest that approximately 60 per cent of this cost was incurred in 2003/04, implying a cost of £660m.

APACS and the Home Office jointly fund the Dedicated Cheque and Plastic Crime Unit. Between 2002 and 2004, the budget for DCPCU was £4.5m. It is assume that this budget was split equally between the two years, and hence assume a cost of £2.25m for 2003/04.

Vehicle fraud unit

The Finance Leasing Association and the Metropolitan Police finance the Vehicle Fraud Unit (VFU). The cost of VFU is estimated at £350,000 per annum.

Administration costs

There were 606,537 cases of plastic fraud reported to APACS in 2003.[45] Using the proportions of cases attributable to organised crime assumed suggests that about 460,000 cases are due to organised crime. It is further assumed that a total of six hours is spent

[44] Although in the cases of vehicle leasing fraud and telecommunications fraud ideally the true loss would be estimated by also examining the costs of providing the services. However, due to a lack of data, revenue loss figures are used.

[45] APACS ask members to report the number of new cases notified to the banking industry in any one month. Where additional losses occurred for previously reported cases, only the additional number of transactions and their value should be included in the 'current' return. A 'case' relates to the loss or compromise of cards and to the fraudulent use of balance transfer and convenience cheques.

reporting losses and replacing cards, split equally between leisure and business time. Using Department for Transport values of time,[46] this implies a total cost of about £45m in 2003.

There were 86,214 cases reported to the BBA in 2003, of which industry assumes 85 per cent to be organised (as in section 6.2), suggesting a total of about 73,000 cases attributable to organised crime. Again assuming a case incurs six hours of time, and using DfT values of time, it is estimated that administration costs for non-plastic fraud sum to be about £7m in 2003.

Other victim costs

If consumers are sufficiently concerned about plastic card fraud, they may switch their method of payment. Since consumers would then be using a less-preferred method of payment, this imposes further costs (not necessarily financial). The researchers have not, however, been able to quantify these costs. Furthermore, some victims suffer emotional costs as a result of fraud and again it has not been possible to quantify these.

Criminal justice system costs

The Home Office's flows and costs model estimates the total costs to the CJS system of fraud and forgery to be £408m in 2003/04. This includes all types of fraud so this must be scaled this down so that it covers only fraud committed by organised crime groups.

The researchers do not have direct evidence on this, so it is assumed that CJS costs are proportionate to the market sizes of fraud – in other words it is assumed that CJS costs per pound of fraudulent gain is the same for both organised and non-organised fraud. NERA (2000) estimates that the market value of the frauds included in this chapter is about 25 per cent of the total fraud committed. This suggests total costs to the CJS system of about £102m in 2003.

The flows and costs model does not include costs incurred by police activities before charges are brought. Internal Home Office estimates, using the 'ABC' costings model, suggests the cost to the police investigating fraud and forgery totals about £180m; scaling this by 25 per cent reduces the total to about £45m. Note that there is a risk of double-counting some of the CJS costs, but the extent of this is likely to be small. The researchers thus estimate the total cost to the CJS, including the police, to be about £147m.

Table 6.4 – Summary of economic and social costs associated with organised fraud

Social and economic costs	
Loss of revenue	£1,882m
Cost of defensive measures	£667m
Victim/administration costs	£52m
Criminal justice system costs	£147m
Total	**£2,748m**

[46] Department for Transport (2004).

References

APACS (2002), Press Release on Chip and Pin Measures, APACS – available at www.apacs.org.uk/downloads/pinpr0802.pdf

APACS (2005), *Card Fraud: The Facts 2005* (2005).

Department for Transport (2004), *Values of Time and Operating Costs.*

HM Customs and Excise (2001), *Measuring Indirect Tax Fraud*, HMSO.

HM Customs and Excise (2003), *VAT Strategy: Joint and Several Liability – Regulatory Impact Assessment.*

HM Customs and Excise (2003a), *VAT Strategy: Input deduction without a valid invoice - Regulatory Impact Assessment.*

HM Customs and Excise (2003b), *Joint and Several Liability: Regulatory Impact Assessment.*

HMRC (2004), *Measuring and Tackling Indirect Tax Losses,* HMSO.

HMRC (2006), *Measuring Indirect Tax Losses,* HMSO.

NCIS (2004), *NCIS Organised Crime Report.*

NERA (2004), Valuing *Organised Crime: a Scoping Study*.

NERA (2000), *The Economic Cost of Fraud: A report for the Home Office and the Serious Fraud Office*.

7. Non-excise intellectual property theft

Summary

- The market size of the organised non-excise intellectual property theft market is estimated to be about £840m per annum.
- This is calculated from a range of sources, often relying on industry estimates.
- The quantified economic costs to the UK is about £300m per annum.
- This is based on estimating the lost 'value added' associated with expenditure in the illegal sector. It has not been possible to estimate the negative impact counterfeiting has on incentives to innovate and on brand image.

Introduction

This chapter estimates the market size of the piracy, counterfeiting and bootlegging sector in the UK. Piracy involves the infringement of copyright licensing – often, for example, copying a music CD onto a blank CD – usually with little attempt to deceive the buyer into thinking it's a genuine copy. Counterfeiting involves the infringement of associated trademarks as well – for example, the packaging associated with a music CD as well as the disc – in an attempt to make it look genuine. Bootlegging involves recording copyright material, and reproducing it.

The spread of broadband Internet connections has led to an explosion of illegal 'filesharing' of films and games via peer-to-peer networks. Where these are subsequently sold, they are implicitly included in the market size estimates below. However, where they are kept for the downloader's own use (or are given away free of charge), the monetary market size is zero and so no attempt has been made to quantify the scale of this.

Market size estimates of the counterfeit cigarettes and alcohol industry are not estimated here – instead they are included in the chapter covering excise fraud.

Extent of organised crime involvement

There has been a significant growth in seizures of counterfeit goods by Customs across Europe. The EU Commissioner for Taxation and Custom, Lazlo Kovacs (2005), attributed this trend to the increasing involvement of organised criminals. NCIS (2005) believe a ready market for pirated material and goods combined with a relatively low chance of detection, make intellectual property theft attractive to organised crime.

Kovacs suggests that intelligence revealing the necessity of investing in equipment, sophisticated organisation of production and concealing operations and the mass production of high quality counterfeits all indicate organised crime involvement. Europol (2004) notes the involvement of organised crime groups of Bulgarian, Russian and Chinese origin becoming increasingly involved in the international distribution to locally based organised crime groups to retail to consumers.

Attributing a specific proportion of counterfeiting to organised crime groups necessarily involves speculative assumptions. Following discussions with FACT (the Federation Against Copyright Theft), the trade body representing the UK film industry, and ELSPA (Entertainment and Leisure Software Publishers Association), the trade body representing interactive leisure and entertainment software in the UK, the researchers estimate that organised crime groups are responsible for roughly 65 per cent of the gaming and film markets. This proportion is

applied to business software and music counterfeiting as well, given the lack of alternative evidence. Counterfeiting other goods – for example clothing – requires a greater degree of sophistication and so it is assumed that the entire market is organised. Unavoidably, these assumptions may be subject to very large margins of error.

Caveats

As with other types of organised crime, the covert nature of the activity makes calculations regarding the size of the industry very difficult. Different approaches are applied to each sector, and to this extent the caveats vary depending on the sector in question; in each case the key caveats are included in the relevant section.

For the games and business software, films and music sectors, trade bodies' estimates regarding the scale of counterfeiting have been used, usually supplemented with the researchers own evidence on street prices. Industry evidence could be susceptible to bias – trade bodies may choose methods which are more likely to overstate rather than understate the size of the problem, to encourage government action – but where possible the researchers have interrogated the approach taken and have not found reasons for concern; it is always accepted, however, that these estimates are very uncertain.

As recognised above, the attribution of the market to organised crime is unavoidably arbitrary – quantitative evidence is very thin.

The researchers have been able to calculate only a subset of the total economic costs associated with counterfeiting. It has not been possible to quantify the impact counterfeiting has on incentives to innovate and on brand image – they could find no quantitative evidence was found relating to this, although extra economic costs certainly exist.

Estimating the market size

Industry estimates of the market size of the counterfeiting industry sometimes multiply the number of counterfeit products by the full retail price of the legitimate product. Although this result may be of some interest, it should not be confused with the market size of the counterfeiting industry – this should be calculated by reference to the street price of the counterfeit good.

Games software

ELSPA[47] estimates that 82m pirate copies of games software were sold in 2003. Their analysis is based on the number of pirate copies seized, scaled up by two factors: the proportion of pirates that they estimate they have not raided; and the number of discs each pirate is estimated to produce per year.[48] ELSPA reckon that this is a 'top-end' figure. Note that all calculations of this type are unavoidably subject to considerable uncertainty.

Given a street-market price of £5 per copy, it is estimate that the total value of UK leisure and software is around £410m. Attributing 65 per cent of this to organised crime groups suggests a total of about £267m accruing to organised criminals.

DVDs

The researchers use 2005 figures to estimate the market size of this sector, to take advantage of recent rigorous research undertaken by Ipsos on behalf of BVA (the British Video Association). It is not clear that the chosen year biases the results in any one direction – on the one hand, street prices have fallen since 2003, but on the other the scale of counterfeiting is widely thought to have increased.

The research surveys the consumer market, asking how many counterfeit DVDs respondents have bought in the last twelve months. Clearly this relies on honest responses from those being surveyed, but it is a significant improvement on previous estimates which derived market sizes from levels of seizures, and assumed seizure rates.

The Ipsos/BVA research suggests a total of 60.75 million counterfeit DVDs were commercially produced in 2005, at an average street price of £3.78; they also estimate that 17 million 'home-burned' counterfeit DVDs were sold at an average price of £2.84. Adding these together gives a total market size of £278m. Assuming 65 per cent of this is attributable to organised crime groups, suggests a total organised crime market size of £181m.

Music

Again 2005 figures are used, to take advantage of recent research. The researchers use research undertaken by Ipsos on behalf of the British Phonographic Institute (BPI), who use a similar method to that used to estimate the scale of DVD piracy. They estimate that 37 million pirate CDs were purchased in the 12 months prior to the survey (the survey was carried out between February and March 2006). Assuming £3 per CD suggests a total market size of £111m, of which it is estimated that £72m is organised.

[47] From private correspondence with ELSPA Anti-Piracy Unit (2005).

[48] ELSPA has requested that the specific calculations are not reported here because of commercial confidentiality.

Business software

The BSA *Piracy Study* (2004), undertaken by IDC and the BSA (the Business Software Alliance), estimates the extent of piracy of software in 2003. This was estimated by subtracting the amount of packaged software that had been legally purchased from the amount of packaged software 'put into use' (that is, how many copies, however obtained, of software packages have been installed onto computers) estimated through surveys of users.

The study estimates that, at *retail prices*, about $1.6bn worth of software was pirated in 2003 in the UK; this equates to about £976m.[49] This includes £50m worth of PC games; since PC games are included in the ELSPA estimates this amount is subtracted. This leaves the retail value of pirated non-gaming software at about £926m.

To turn this into an illegal sector market value, it is necessary to estimate the discounts applied to the pirated software, because they are not sold at the same price as legitimate products. Internal estimates suggest pirate copies of MS Office XP and XP operating system are discounted by roughly 80 per cent. Applying this discount to all business software suggests that the total pirated software market excluding games is valued at about £185m in 2003. Of this, it is estimated that £120m can be attributed to organised crime groups.

Other goods

The following valuations are based on seizure data provided by Customs. Rights holders can lodge an Intellectual Property Rights (IPR) application with Customs to allow Customs to detain and then seize counterfeit or infringing goods. The application covers only goods imported or exported from non-EU countries.

To estimate the black market value of each good, the researchers assume a seizure rate of five per cent (in the absence of any reliable evidence), with street prices also based on internal estimates. Clearly these estimates may be subject to a particularly large margin of error, but the researchers are not aware of alternative evidence.

[49] This is based on an average 2003 exchange rate of 1.64 dollars to the pound.

Table 7.1 – Black market value of goods seized by customs

Items	Number of articles seized	Assumed black market price	Estimated black market value
Perfumes and cosmetics	188,897	£10	£38m
Sportswear			
sports tops	13,120	£20	£5m
trainers	6,642	£40	£5m
Clothing			
jeans	26,222	£25	£13m
shirts	28,982	£20	£12m
of which t-shirts	82,807	£15	£25m
Clothing accessories			
sunglasses	240,594	£10	£48m
handbags	35,951	£20	£14m
watches and jewellery	1,272	£10	£0.3m
Toys and games	58,016	£5	£6m
Counterfeit medicine	215,330	£7.50[50]	£32m
Total			**£199m**

Note – figures may not sum due to rounding.

Total market valuation

The following table summarises the market valuations in each sector.

Table 7.2 – Counterfeiting organised crime market sizes by sector

Items	Market Value
Games software	£265m
Films	£181m
Music	£72m
Business software	£120m
Perfumes and cosmetics	£38m
Sportswear	£11m
Clothing and clothing accessories	£112m
Toys and games	£6m
Counterfeit medicine	£32m
Total	**£839m**

[50] Based on conversations with the Medicines and Healthcare products Regulatory Agency (MHRA).

Estimating the economic and social costs

Lost profit to business and the Exchequer

Estimates of financial loss to rights holders are normally based on lost sale estimates. These sometimes implicitly assume that, in the absence of counterfeit products, consumers would have bought the same goods but from legitimate retailers at the full retail price. These estimates also implicitly assume a zero cost associated with production and distribution.

These assumptions are not realistic. At an extreme, it is not credible, for example, to assume that a consumer buying a counterfeit Rolex watch for £20 would be willing to pay £2,000 for a genuine version. Furthermore, production and distribution costs are not zero.

BVA/Ipsos (2005) has estimated the impact of the pirate DVD market on genuine DVD sales more accurately. Their research asks consumers of pirate DVDs whether they would have bought the product at the full retail price if the pirate version were not available. This is clearly a much improved methodology for calculating the loss in sales to the DVD industry, although it is still not a 'lost profit' measure (and nor does it claim to be) since it does not include the product and distribution costs. Although recognising the value of this work, this section estimates the harm to 'UK plc', rather than lost sales to the DVD industry, and so adopts a different approach.

If the counterfeit goods did not exist, then expenditure on these counterfeit goods would be redirected to other areas of the economy. The researchers therefore calculate the economic cost of counterfeiting by estimating the (legal) gross operating surplus (value added, net of employee compensation), associated with this expenditure, as a proportion of final output, and apply this proportion to expenditure on counterfeit goods – this ensures we allow for costs and tax losses are allowed for. According to the 'Blue Book' estimates of gross profits and net tax payments from manufacturing, energy and non-financial services industries, this proportion is 36 per cent. Applying this to expenditure on counterfeit goods produced by organised crime goods results in a total economic cost of about £302m in 2003.

Loss of incentive to invest in research and development

If firms developing a new technology are not guaranteed the opportunity to make monopoly profits in the short run (through the imposition of copyright or patent law), the incentive to invest in research and development is reduced. If producers reduce investment in research and development, the cost to the economy could be significant. Technological growth is significantly correlated with economic growth, and if stunted or reduced, the rate of economic growth is likely to fall. Due to a lack of evidence, this cost has not been estimated.

Brand damage

Counterfeit products damage the brand name and the reputation of genuine producers. Counterfeit products, purchased by consumers believing them to be genuine, may be faulty and the consumer may blame the genuine producer for the fault, rather than the counterfeiter. This is costly because it is likely to impact on genuine product sales. Counterfeits of 'high safety products' may be extremely costly for genuine business, because they are unlikely to be produced to the same safety standard as the genuine product. Any injury/loss of life through consumption of the counterfeit may be associated with the genuine producer, damaging reputation. Again due to lack of data, it was not possible to estimate this cost.

Physical and emotional victim costs

Consumers deceived into buying counterfeit goods may suffer because of the lower quality of the good. For example, there have been a number of media reports of people suffering severe skin burns from counterfeit perfume and counterfeit medicine may result in unwanted side effects for consumers or provide lower health benefits compared with genuine medicines. Damage may also be caused by counterfeit alcohol and car and engine parts. However, a lack of data has prevented these economic costs from being estimated.

Other studies

IDC and the BSA (2005) have published research into the benefits to the global economy of reducing the scale of piracy by ten percentage points, and derive very high GDP benefits of doing so, running, in the case of the UK, into billions of pounds per year. While it is encouraging to see innovative research in this area, the researchers have two major concerns with this work.

First, the report assumes that a reduction in piracy rates would be met with an accompanying increase in full-price sales (e.g. if a country has a 50 per cent piracy rate and $100 million is spent on software, lowering the piracy rate to zero per cent, would create an additional $100 million software spend).[51] The report recognises that not every piece of formerly pirated software would be purchased if piracy rates go down, but they justify this assumption on the basis that "lower piracy rates yield more economic activity that stimulates more software production and purchase" and that therefore these two countervailing forces cancel out. The researthers concern here is that this hypothesis was not subject to rigorous testing. IDC examined the relationship between software and hardware spend and piracy rates across countries, but did not establish a 'cause and effect' relationship.

Secondly, the quoted 'GDP benefit' is not a net impact: it is an increase in the IT sector's contribution to GDP. In practice, a larger IT sector would be achieved largely through reductions in the sizes of other sectors. Reductions in piracy rates may lead to a more productive use of resources, but it is unlikely to bring previously unemployed resources into use.

Summary

The economic costs of non-excise intellectual property theft that the researchers have been able to quantify is about £300m per annum. This is likely to be an underestimate because the researchers have not been able to quantify many aspects, most significantly loss of incentive to invest in research and development, and brand damage.

[51] This example is taken from page 13 of the BSA/IDC report.

References

BPI/IPSOS (2006), Private correspondence

BSA/IDC (2004), Piracy Study

BSA/IDC (2005), Expanding the Frontiers of our Digital Future: Reducing Software Piracy to Accelerate Global IT Benefits

BVA/IPSOS (2006), Private correspondence

Europol (2004), Europol Organised Crime Report, 2003

Kovacs (2005), Stepping Up Action Against Counterfeiting and Piracy, (2005), TAXUD, Europa

NCIS (2005), NCIS Organised Crime Report 2004

A suggested methodology for estimating the value of criminal assets available for seizure

Stephen Prichard

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Abstract

This report sets out a method for estimating the value of new criminal assets available for seizure in a year through asset recovery activities and gives some broad indications as to the assets in which this wealth may be stored. The estimates refer only to assets seizable from organised criminals, and relate to the additions to assets made in one year.

Successful asset recovery deprives offenders of the proceeds of their crimes. The assets seized need not be linked to a particular crime – it is enough to demonstrate that the offender has benefited financially from crime; if enforced, the amount recovered is equal to the minimum of either the proceeds of the crime, or the value of his or her assets.

The primary motive for this work is to help policy-makers understand the extent to which current asset recovery performance is imposing a burden on criminals, and the level of performance needed to make a difference.

A four-stage bottom-up approach is used. This report estimates: the total revenue accruing from organised crime in the UK; the split of this revenue between different parts of the supply chain; the proportion of this revenue eaten up by costs directly associated with criminal behaviour; and the proportion of the remaining profits that is stored in assets available for seizure. This report then speculates on the types of assets in which criminal wealth may be stored.

This analysis leads us to estimate that the addition to the value of criminal assets available for seizure in the UK in any one year is about £2bn, with a further £3.3bn of revenue sent overseas.

Given the paucity of data, many of the underlying assumptions are speculative and some calculations are unfortunately reliant on judgements rather than hard evidence. Nevertheless, the author argues that it is better to derive some transparent estimates than force policy makers to operate with no evidence on the subject whatsoever. This report is intended as the first word on the subject, not the final.

Executive summary

This report sets out a method for estimating the value of criminal assets available for seizure in any one year through asset recovery activities and gives some broad indications as to the assets in which this wealth may be stored. The estimates refer only to assets seizable from organised criminals, and relate to the additions to assets made in one year.

Asset recovery deprives offenders of the proceeds of their crimes. The assets seized need not be linked to a particular crime – it is enough to demonstrate that the offender has financially benefited from crime; the amount recovered, if enforced, will be equal to the minimum of either the proceeds of the crime, or the value of his or her assets.

Why estimate the value of assets available for seizure? It helps policy-makers understand the extent to which current asset recovery performance is imposing a burden on criminals, and the level of performance needed to impose a significant burden. This can help target-setting, and develop an understanding of the importance of asset recovery compared with criminal justice sanctions such as imprisonment. Furthermore, an understanding of which assets offenders invest their income in can help financial investigations when looking for assets and enable the public sector to provide better feedback to the private sector in terms of criminal spending habits.

This report focuses on annual addition to the value of criminal assets rather than the accumulated stock, as this is better linked to policy needs – targets are set annually, and the value of new investments in assets is not subject to issues entirely unrelated to crime such as changing property prices. Furthermore, estimating the accumulated stock of assets is even more difficult than estimating the annual addition.

Previous attempts in this area have focused on money laundering rather than asset recovery, although the two concepts are linked. The Financial Action Taskforce (2001) bases its estimates solely on drug revenue within the UK, and makes assumptions regarding the proportion of revenue that is laundered. The method makes no account of non-drug crimes, and extrapolation to the UK is problematic. Walker (1999) uses Australian crime-specific estimates, with a range of assumptions; again extrapolating to the UK is very difficult.

This report focuses on the value of assets theoretically available for seizure, rather than money laundering. This avoids having to define money laundering, and, in any case, is more relevant to the policy issue of asset recovery. This report uses a four-stage bottom-up approach. It:

- estimates the total revenue accruing from organised crime in the UK;
- makes assumptions concerning the split of this revenue between different parts of the supply chain;
- estimates the proportion of this revenue eaten up by costs directly associated with criminal behaviour; and
- makes assumptions concerning the proportion of the remaining profits that is stored in assets available for seizure.

Estimating total revenue

This report focuses on the sectors where asset recovery is likely to be an issue, and where there are some data. These sectors are:

- drug markets;
- fraud, including excise fraud;

- intellectual property theft; and
- people smuggling and people trafficking.

Original market size analysis is not undertaken in this report. Instead, evidence is taken from Dubourg *et al.,* (2007), which in the case of drugs draws solely on Pudney *et al*., (2006). Dubourg *et al.* estimate the market sizes (the term 'market size' is used interchangeably with 'revenue') of the above sectors in relation to organised crime activity. The report points out that many of the estimates are approximate, primarily because of poor data. In particular, estimates surrounding people smuggling and people trafficking are crude, and estimates of the amount of fraud relating to organised crime groups are very conservative.

Table 1. Summary of market size estimates

Sector	**Market size (£m)**
Drugs	5,271
Fraud	4,781
Intellectual property theft	839
People smuggling	252
People trafficking	277
Total	**11,654**

How is this revenue split along the supply chain?

The evidence here is very weak, and is presented largely to illustrate an appropriate methodology and provide a base on which future work can improve, rather than provide firm estimates in which one can have strong confidence. Nevertheless, the numbers provided should give a feel for the orders of magnitude involved, and this report has been as transparent as possible concerning the assumptions used and the caveats associated with them.

This report splits each market sector into four sectors. Choosing an exact number of stages to a market is a little artificial and, for example in the drugs market, may understate the degree of complexity. The four sectors chosen are:

- UK retailer (e.g. drug dealer) or final stage of the offence;
- UK middle market/wholesalers;
- UK producer (if there is one); and
- overseas suppliers, refiners and distributors (anybody who receives revenue who is not based in the UK – e.g. an Afghan farmer who grows opium, corrupt law enforcement).

The drivers of the split vary depending on the market.

Business running costs

This report wishes to estimate the financial costs associated with running a criminal enterprise as a proportion of value-added revenue. Again, the evidence base is very thin; all estimates are extremely uncertain.

The author uses as the starting point Caulkins and Reuter (1998) who estimate the costs associated with retailing cocaine in the US in 1990. This report updates this using UK-specific information. The proportion of value-added revenue eaten up by costs varies by sector, but it works out at an average of about 20 per cent.

Proportion of profit saved or stored in assets

Due to a lack of reliable and unbiased data concerning the proportion of profits stored in assets, the author uses as a reference point data relating to general household financial behaviour (using the Family Expenditure Survey), recognising its limitations in this context. In an attempt to reduce the issues associated with using this data source, the figures are adjusted on an ad-hoc basis where judged to be appropriate. It is assumed that saving rates vary according to both the offence type and the stage in the supply chain, with the rates varying from 10 per cent to 50 per cent.

Results

Putting it all together

Combining these estimates concerning revenue, costs and investments/savings allows one to estimate the value of assets theoretically available for seizure for organised crime offences. This analysis suggests the value of additional criminal assets theoretically available for seizure is about £2bn per year in the UK, with more than £3bn of revenue sent overseas annually. This contrasts with existing asset recovery activity of about £125m in 2006/07.

Given the lack of reliable data, many of the underlying assumptions are speculative and some calculations are unfortunately reliant on judgements rather than hard evidence, although this report has attempted to be as transparent as possible. But – provided that these estimates and are not treated as established facts – it is argued that it is better to derive some estimates than force policy-makers to operate with no evidence whatsoever. This report is intended as the first, not the final, word on the subject.

Introduction

What is asset recovery?

Asset recovery deprives offenders of the proceeds of their crimes. Asset recovery powers were expanded significantly following the Proceeds of Crime Act 2002, driven partially by a Cabinet Office Report into Asset Recovery (PIU, 2000).

Note that the assets seized need not be linked to a particular crime – it is enough to demonstrate that the offender has financially benefited from crime; the amount recovered, if enforced, will be equal to either the minimum of the proceeds of the crime, or the value of his or her assets.

In the UK, four routes are available.

- *Criminal confiscation:* this can follow any conviction for an offence which has led to a financial benefit to the offender.
- *Civil confiscation:* this scheme operates exclusively as the preserve of the Assets Recovery Agency (ARA); it empowers the Director to sue in the High Court to recover the proceeds of unlawful conduct. The burden of proof rests with the applicant (the Director of the ARA) and is based on the civil standard – the balance of probabilities.
- *Tax:* where the Director of the ARA is not satisfied that there is a case for taking proceedings for civil recovery, or believes that taxing the proceeds of crime represents a more efficient use of resources, he or she may exercise the taxation function. The Director is able to assess for income, capital gains, corporation and inheritance tax.
- *Cash forfeiture:* police and customs officers possess powers to seize cash derived from or intended for use in crime, and to secure its forfeiture in civil Magistrates' Court proceedings. No criminal prosecution is necessary, although a criminal prosecution often accompanies it.

What are the aims of asset recovery?

PIU (2000) outlines the aims.

Show that crime does not pay. From a natural justice perspective, ensuring that offenders do not benefit from crime is, of course, an end in itself. Furthermore, removing offenders' assets can increase public confidence in the criminal justice system, and remove negative role models from communities.

Disrupt criminal markets. Removing criminal assets reduces the availability of working capital for existing enterprises and potential start-ups.

Act as a deterrent. Asset recovery should reduce the expected net gain from crime. To the extent that offenders are motivated by financial gain and act rationally, asset recovery should act as a deterrent. See Fleming (2005a) for a formal description of this rationale.

Improve crime detection by providing a deeper understanding of criminal markets.

Reduce the harm caused by money laundering. Asset recovery should improve the stability of UK financial markets by discouraging criminals from laundering money in the UK.

Although not a primary objective, asset recovery can raise revenue which can be used to fund other harm reducing policies. But the net financial effect depends on the costs of recovering the assets.

Some authors have questioned the effectiveness of asset recovery as a crime reduction tool. A critique of these arguments is not provided here; see Fleming (2005b) for an analysis.

Objectives of this research

This report aims to estimate the value of assets that are theoretically available for seizure, and to give some indications as to the assets in which wealth may be stored. Given the lack of data, estimates are (largely unavoidably) speculative and some calculations are reliant on judgements rather than hard evidence. Nevertheless, it argued that it is better to derive some estimates than force policy-makers to operate with an even weaker evidence base.

Why estimate the value of assets available for seizure? First, it helps policy-makers understand the extent to which current asset recovery performance is imposing a burden on criminals, and the level of performance needed to impose a more significant burden. This can help target-setting, and – when linked to an analysis of what makes a difference to offenders – develop an understanding of the importance of asset recovery compared with criminal justice sanctions such as imprisonment.

Second, understanding the assets in which offenders save or invest their income can help financial investigations looking for such assets. Finally, this work may enable the public sector to provide better feedback to the private sector in terms of criminals saving and investing habits – for example this report derives rough estimates of the proportion of the UK property market that is financed through criminal money. In turn, this could provide an idea of the importance (or otherwise) of monitoring and regulating this sector.

Previous estimates of the size of the criminal economy

The author is not aware of any previous estimates of the amount that is theoretically available for seizure in the UK; there have, however, been some estimates of the scale of money laundering within the UK and elsewhere. Although these two concepts differ, understanding the scale of money laundering does provide a starting point for discussion.

The Financial Action Task Force (FATF, 2001) estimates the scale of money laundering to be up to two per cent of global gross domestic product. This estimate is based on data concerning drug market sizes in the US and Europe, extrapolating worldwide, and assuming that 50-70 per cent of this revenue is laundered. The most widely quoted estimate comes from a 1998 speech by Michael Camdessus, Managing Director of the IMF, who quotes a "consensus range" of global money laundering as being worth 2-5 per cent (Levi and Reuter, 2006). The analytical origin of this estimate is unclear.

Some have applied this two per cent figure to UK GDP, yielding an estimate of about £25bn. However, there are a number of limitations with this approach. First, the UK definition of money laundering is far wider than that used by most countries – it covers use of any criminally-gained money. Second, applying this global figure does not take advantage of all the data available concerning the UK – separate estimates exist for the UK drug market (Pudney *et al.,* 2006). Third, it covers only a subset of criminal income – it does not include revenue associated with fraud, for example.

Perhaps the most elaborate estimate of the scale of money laundering is produced by Walker (1999). Walker's model uses Australian crime-specific estimates of average revenue per recorded crime. To estimate the scale of money laundering in countries other than Australia, these figures are scaled according to gross national product per capita, and country-specific corruption data. These revised revenue per crime figures are multiplied by the average number of crimes per offence, and then scaled down by the proportion of revenue that Walker estimates to have been laundered. From this, Walker estimates that money laundering worth $69bn (about £42bn using 1998 exchange rates) occurred in the UK in 1998.

Walker's model is very complicated and contains many assumptions that are not empirically based. There are also difficulties associated with building one model to explain the scale of money laundering globally: for example, recorded crime data across countries cannot be easily compared. Furthermore, since the Walker model was published, the UK Home Office has developed its costs of crime work considerably (Brand and Price, 2000; Dubourg *et al.,* 2005; and Dubourg *et al.*, 2007), which, given that a key component of the cost is also criminal gain, means that it is now out of date.

Methodology

The challenge, then, is to produce an estimate of the value of assets theoretically available for seizure. There are little direct data available, meaning any estimate will necessarily be approximate; this makes transparency important, so that the caveats are well understood.

This report estimates the value of new assets available for seizure accrued annually, rather than the existing stock of assets that may have been built up over a number of years because:

- asset recovery targets are set annually;
- the value of the stock of assets accrued over a number of years is determined by factors unrelated to crime and, potentially, from factors occurring many years ago – for example, property price changes; and
- the accrued stock of assets available for seizure is even more difficult to calculate than one year's worth – it is a product of many years' worth of criminal behaviour and appreciation and depreciation rates.

This report adopts the following methodology.

i. Estimate the total revenue accruing from organised crime in the UK[52].
ii. Make assumptions concerning the split of this revenue between different parts of the supply chain.
iii. Estimate the proportion of this revenue eaten up by costs directly associated with criminal behaviour.
iv. Make assumptions concerning the proportion of the remaining profits that is stored in assets available for seizure (for example, savings accounts, equities, property), and have not been spent on consumables. These assumptions vary by crime type and stage in the supply chain.

Stage (i) is clearly essential for any bottom-up work of this type. Stage (ii) is not strictly necessary, but greater disaggregation should improve the accuracy of any results although it does mean that further assumptions are needed, in this and other stages. Stage (iii) is generally given little attention in the literature. Asset recovery can strip offenders of all the revenue accrued from crime, regardless of any costs incurred in running their business. But any revenue eaten up by costs means lower asset values to seize, so it is relevant. Similar principles apply to stage (iv) – if the offender has spent his or her earnings on goods which are consumed quickly, the wealth is not there to be seized; Levi and Osofsky (1995) also make this point.

This bottom-up method is very data-hungry, and evidence in this field is generally poor; many of the assumptions – and therefore results – should be treated with caution. However, the advantage of this bottom-up approach is that all assumptions are explicit. So this report offers the first words on this subject, not the final ones.

The author chooses not to present a range. In general there is little to base ranges on, and there is a danger they would falsely indicate it is possible to quantify precisely the degree of uncertainty. Furthermore, the nature of this area means that any estimate is likely to be a lower bound, because so much organised crime activity goes unreported (or reported unreliably without details of methodology). Presenting a meaningful range around a lower bound estimate generates a number of further complications. Where possible, all values are quoted in 2003 prices to help ensure consistency. The year 2003 is chosen because it is in this year that values in the most relevant research are quoted.

[52] The author does not account for crimes occurring outside the UK, even if laundered in or via the UK.

Estimating the total revenue from crime in the UK

Naylor (1999) points out:

> *attempting to estimate criminal income flows is a task that would have caused Hercules to apply for early retirement.*

Instead of taking early retirement, the author makes an attempt at estimating this, noting that much of the data in this section come with severe health warnings. The focus is on sectors relating to organised criminal activity.[53] This is largely to abstract away from issues relating to the likelihood of asset recovery being used. It will generally not be cost effective, for example, to use asset recovery powers to pursue very small value cases, unless there were special circumstances. Having said this, this rather arbitrary restriction[54] means some crime types where asset recovery may be used are excluded; this includes some further types of fraud, prostitution and vehicle theft. Examining these areas are priorities for future research.

The sectors covered in this report are:

- drug markets;
- fraud, including excise fraud;
- intellectual property theft; and
- people smuggling and people trafficking.

Original market size analysis is not undertaken in this section. Instead, evidence from existing sources is used. The main source is *Market Size and economic and social costs of organised crime*, by Dubourg *et al*, (2007), which, in the case of drugs, draws solely on Pudney *et al*, (2006). Dubourg *et al*, estimate the market sizes (the term 'market size' is used interchangeably with 'revenue') of many of the above types of crimes. The report points out that many of the estimates are approximate, primarily because of poor data. Below, a brief summary of the methodology underpinning the market size estimates is given. Much more detail is included in the original report.

Drug markets

This contains the most sophisticated market size estimate although is still subject to numerous caveats given the nature of the area. Pudney *et al.* use a survey-based demand-side approach, gathering evidence concerning the:

- proportion of the population using different illicit drugs;
- frequency of drug use;
- quantities of drugs used (per episode of use);
- purity of drugs used; and
- prices of drugs.

It is never possible to be fully confident about responses to surveys directly asking respondents to admit to criminal activity, and some evidence is presented that suggests there may be some under-reporting.

Pudney *et al.* estimate the total market of the drugs sector in the UK to be worth between £3.961bn and £6.581bn in 2003/04, with a central value of £5.271bn. Table 2, taken from Pudney *et al*. (table 9.1), provides the split:

[53] The author follows the National Criminal Intelligence Service definition of organised crime groups. They are groups of two or more persons, jointly engaged in continuing 'significant illegal activities. For more details see Dubourg *et al,* (2007).

[54] Not least because *any* definition of organised crime, including the one adopted in this paper, is necessarily arbitrary (see, for example Levi and Reuter, 2006).

Table 2. Estimated drug market sizes

	Aggregate expenditure (£million)
Cannabis	1,031
Amphetamines	312
Ecstasy (millions of tabs)	267
Powder cocaine	973
Crack	1,480
Heroin	1,207
TOTAL MARKET VALUE (£bn)	**5,271**

Fraud

The market for organised excise fraud is calculated in Dubourg *et al*. (2007), which, in turn, draws on HMRC (2005). Dubourg *et al.* use HMRC's estimates of the scale of excise smuggling in 2003/04 for a variety of products: tobacco, alcohol and oils.

HMRC's estimates of the scale of excise smuggling rely on estimates of total consumption based on surveys. Reliance on surveys leads to two potential sources of uncertainty: random variation in sample data and there might be systematic errors where, for example, people consciously under-report their true tobacco consumption.

Dubourg *et al*. multiply these estimates concerning the levels of smuggling by the 'street prices' of these goods. This produces total revenue accruing to organised crime of £2.9bn in 2003/04.

The estimate concerning the scale of VAT Missing Trader Intra-Community (MTIC) Fraud is based on HMRC work.[55] HMRC reports a range based on comparing data on sales to the UK declared in other Member States with purchases from other Member States declared in the UK (the top end), and estimates of the levels of carousel fraud in Belgium and the Netherlands and assessing what these estimates indicate about likely levels of fraud in the UK (the bottom end). HMRC estimates the level of VAT MTIC fraud to be £1.06bn-£1.73bn in 2003/04. In this report, the mid-point of £1.395bn is taken. Note that these HMRC estimates refer to *attempted,* not necessarily successful, MTIC fraud attempts, so therefore this may be considered a maximum. However, since the latest estimated MTIC successful fraud figure is £2bn-£3bn for 2005/06 (HMRC 2006) under a revised methodology, it is unlikely to be considerably too low.

Dubourg *et al*. conservatively estimate the scale of other types of fraud committed by organised criminals to be £487m in 2003/04. This is made up of plastic fraud (£318m), non-plastic fraud (£82m), telecommunications fraud (£67m) and vehicle leasing fraud (£20m).

These estimates almost certainly significantly understate the true amount of fraud committed by organised criminals. However, this report is constrained by the lack of available data. Examining this area in more detail is a priority going forward.

Intellectual property theft

Again Dubourg *et al*. is used as the main source. They estimate the size of the intellectual property theft market using industry estimates of the number of counterfeit products, multiplied by their own assumed street prices (in this context, full retail prices are irrelevant since revenue to offenders is being estimated). Dubourg *et al*. estimate the total scale of

[55] VAT MTIC fraud involves organised criminals buying VAT-free goods in other EU member states, importing them, selling them at VAT-inclusive prices, and then going missing before paying the VAT back to the exchequer.

intellectual property theft committed by organised criminals to be worth £839m in 2003/04. Note this excludes counterfeit cigarettes; estimates relating to this are included in the analogous excise estimates.

People smuggling and people trafficking

The scales of these activities are very difficult to estimate with any degree of accuracy, and so these figures should be treated with great caution.

Dubourg *et al*. estimate the scale of people smuggling primarily by examining asylum statistics, with allowances made for those subject to enforcement action for illegal entry, or detected at ports of entry attempting documentary deception. This is then combined with estimated prices paid by those being smuggled. This results in an estimated total market size for people smuggling of £252m in 2003/04.

The market value of the people trafficking sector is even more difficult to estimate. Dubourg *et al*. first estimate the size of the prostitution sector, based partly on Dickson (2004), and then make assumptions concerning the proportion of women involved in prostitution that are trafficked. This is then supplemented by estimates of prices paid by clients. This produces a total market size estimate of £277m in 2003.

Summary

The estimated market size of each sector considered is summarised in Table 3.

Table 3. Summary of market size estimates

Sector	**Market Size (£m)**
Drugs market	
Cannabis	1,031
Amphetamines	312
Ecstasy	268
Powder cocaine	973
Crack cocaine	1,480
Heroin	1,207
Drugs sub-total	**5,271**
Fraud	
Excise fraud	2,899
VAT MTIC fraud	1,395
Fraud against the private sector	487
Fraud subtotal	**4,781**
Intellectual property theft	839
People smuggling	252
People trafficking	277
Total	**11,421**

NB: figures may not sum due to rounding

How is this revenue split along the supply chain?

The evidence base here is weak. The numbers presented in this section are largely to illustrate an appropriate methodology and provide a base on which future work can improve rather than provide firm estimates in which one can have strong confidence. Nevertheless, the numbers provided should give a feel for the orders of magnitude involved, and this report has been as transparent as possible concerning the assumptions used and the caveats associated with them.

Each market sector has been split into four stages. Choosing an exact number of stages to a

market is a little artificial and, for example in the drugs market, may understate the degree of complexity. The four sectors chosen are:

- UK retailer (e.g. drug dealer) or final stage of the offence;
- UK middle market or wholesaler;
- UK producer (if there is one); and
- overseas suppliers, refiners and distributors (anybody who receives revenue who is not based in the UK – e.g. an Afghan farmer who grows opium; corrupt law enforcement).

The middle market is not split into importer and below in the case of drugs, for example. This is partly because of the data available, but, in any case, for the purposes of this report, the distinction is not particularly important. The bigger issue is whether the revenue remains in the UK or not, or whether the revenue is kept by a middle-market dealer (who is likely to save a significant portion of this given that they will typically be wealthy), or street retailer (who typically will not be very wealthy and hence is not likely to save much).

Drugs

The assumptions concerning the split of heroin and cocaine are based on intelligence sources. Unfortunately, it is not possible to discuss either the sources or methodology here.

The proportion of 'revenue sent overseas' is higher than may be expected. This reflects the fact that some international groups are involved in distributing drugs within the UK – revenue which will find its way overseas.

The results for other drugs are based simply on assuming the same split as the (weighted) average of heroin and cocaine. It is assumed that 50 per cent of the cannabis and illegal chemicals markets is domestically produced, and 50 per cent imported.

Fraud: excise fraud

The distribution of revenue varies according to the type of group and product, and evidence is thin. Nevertheless, the author has applied his own estimates following discussions with Her Majesty's Customs and Excise – the discussions took place before the set up of HMRC – recognising the significant caveats associated with them and the element of judgement involved. The following assumptions are made:

- for tobacco fraud, 20 per cent of the revenue lies with the retailer, 20 per cent with the UK middle market, and 60 per cent with the overseas supplier;

- for oils fraud, it is assumed that the producer sells direct, so keeps 100 per cent of the revenue (minus costs); and

- for alcohol fraud, 20 per cent of the revenue lies with the retailer, 50 per cent with the middle markets including the importer and 30 per cent with the overseas supplier;

Fraud – VAT MTIC fraud

The nature of VAT MTIC fraud means that it does not fit naturally into this supply-chain disaggregation. Following discussions with HMRC, the author assumes ten per cent of the revenue accrues to the supplier outside the UK. The remaining 90 per cent is ascribed to the UK 'middle market'.

Other fraud

The assumptions here are even more speculative than for other types of fraud. The author was helped by his discussions with the Dedicated Cheque and Plastic Crime Unit, although all assumptions are his own. It is assumed that 40 per cent of the revenue accrues to the person committing the final stage of the fraud (e.g. withdrawing cash using a counterfeit card), 40 per cent to middle markets (e.g. those who sold a 'skimming machine' enabling a card to be counterfeited) and 20 per cent is sent overseas.

Intellectual property theft

According to Kovacs (2005), intellectual property theft is an international business, with many seized counterfeit goods originating from Asia. In the absence of any other information, it is assumed that the revenue is split equally three ways: one third of revenue is sent overseas,

one-third lies with middle markets, and one-third with the retailer. Clearly, this is very approximate, but the size of this market is fairly small relative to others considered.

People smuggling and people trafficking

The author has no evidence concerning the proportion of revenue from people smuggling and people trafficking that remains in the UK. It is assumed that 50 per cent is sent overseas.

Table 4. Disaggregated market shares

Crime type	Retailer	Middle markets	UK producer	Revenue sent overseas
Heroin	31%	39%		30%
Cocaine (inc crack cocaine)	47%	24%		29%
Cannabis domestically produced	41%	29%	29%	
Cannabis imported	41%	29%		29%
Chemicals domestically produced	41%	29%	29%	
Chemicals imported	41%	29%		29%
Volume facilitation	50%			50%
People trafficking	50%			50%
Oils fraud			100%	
Tobacco smuggling	20%	20%		60%
Alcohol smuggling	20%	50%		30%
MTIC fraud		90%		10%
Plastic fraud	40%	40%		20%
Intellectual property theft	33%	33%		33%

Business running costs

It is necessary to estimate the costs associated with running a criminal enterprise as a proportion of value added. Again, the evidence base is very thin; all estimates below are extremely uncertain.

Drugs

Caulkins and Reuter (1998) estimate the costs associated with retailing cocaine in the United States in 1990. Their estimates include significant elements of judgement, but are bottom-up and transparent. Their estimates are shown here.

Table 5. Caulkins and Reuter's estimated business costs as a proportion of cocaine retail price in the United States in 1990

Wholesale price in Columbia	1%
Importing of drug	12%
Costs of retailer's own time	13%
Higher-level labour	~3%
Drug and asset seizures	8-11%
Money laundering fees	2-4%
Packaging, processing and inventory costs	~2%
Compensation for risk of prison[56]	24%
Compensation for physical risk	33%
Total	~100%

Most of these items are not of direct interest in this context. This report is interested only in items that are financial, and are not already included in the value-added estimates above.

Drugs – labour costs (retail)

The Caulkins and Reuter figures relate only to the cost of the retailer's own time, not to the financial costs of employing runners and so on. For the purpose of this exercise, it is assumed that the cost to a retailer of employing any extra staff (whether it be in the form of money or drugs) is equal to half the total cost of his time – that is, 6.5 per cent of the total retail price. This is a rather arbitrary assumption, but is preferable to simply assuming there are no extra costs. Table 4 shows that dealers are estimated, on average, to receive 41 per cent of the retail price, suggesting that these costs make up 16 per cent of their share of value added (6.5%/41%).

Drugs – labour costs (higher level)

Again it appears that the Caulkins and Reuter refer only to the traffickers' own time, not the cost of employing extra workers. Consistent with above it is assumed that the additional labour costs equate to half the cost of the trafficker's own time and that higher level labour costs are incurred in proportion to revenue. Non-retailers receive 59 per cent (1-41%) of the total retail price, suggesting that at both the middle market and importer level, these labour costs take up about three per cent of value added revenue [1.5%/(59%)].

Drug seizures

The Caulkins and Reuter US-based figures are not used here – instead *Seizures of drugs in England and Wales, 2003* (2005) is used. It is assumed that all seizures made by HMRC are made against the overseas supplier (or UK producer), and all seizures made by any other law enforcer are at the middle market level. In practice, of course, some seizures are made at the retail level, but these tend to be very small in weight, and so ignoring this, for the purpose of this calculation is not significant.

The seizure data are adjusted for purity, and the loss to the drug trafficker at the price paid by the middle market is valued. When the seizure is made against a middle market operator, this value represents the replacement cost to them. When the seizure is against the overseas supplier, it is assumed that the seizure is made in the UK, and that the value of the drugs is equal to middle market price, since the value has already been added by bringing the drugs into the UK.

Table 6 shows the results – the impact of drug seizures on value added by type of drug and stage in the supply chain.

[56] 'Compensation for risk of prison' in this context, refers to the amount an individual would be willing to accept (perhaps theoretically) in order to compensate him or her for risk attached to going to prison.

Table 6. Cost to drug suppliers of drug seizures as a percentage of value added

	Middle market (%)	UK producer/ overseas (%)
All cocaine	18	9
Heroin	6	5
Ecstasy	7	5
All amphetamines	2	9
Cannabis	16	5
All drugs	13	7

Drugs – asset recovery

Since this report wishes to estimate the value of assets that are theoretically available for seizure before any recovery activity, this element is deliberately excluded.

Drugs – money laundering fees

Tighter regulations in the UK mean money laundering fees are likely to have risen over recent years, so the top end of the Caulkins and Reuter range of four per cent is taken, which suggests a total money laundering cost of £211m. It is further assumed that only middle-market suppliers and above profit enough to need to pay money laundering fees and that these costs are split in proportion to each sector's share of value-added. This suggests money laundering fees of around seven per cent of value added at these stages, broadly consistent with Levi and Reuter (2006) who quote studies and anecdotal evidence of fees being between four and 15 per cent.

Drugs – packaging, processing and inventory costs

In the absence of any evidence to the contrary, Caulkins and Reuters' estimate of two per cent of revenue at all stages in the supply chain is adopted.

Putting all this together suggests total costs to drug suppliers of between 18-24 per cent of total value-added.

Table 7. Estimated total costs to drug suppliers as a percentage of value added revenue

	Retail (%)	Middle market (%)	UK producer / overseas (%)
Paid labour costs	16	3	3
Drug seizures	~0	13	7
Money laundering	0	7	7
Packing, processing etc. costs	2	2	2
Total	18	24	19

Other markets

Evidence concerning the costs of running other organised crime activities is even thinner than for drugs. Given this, it is simply assumed that the costs are the same, on average, as the costs for running a drug trafficking enterprise, although it is not assumed they are split according to market segment in the same way. The financial costs calculated above make up 20 per cent of total drug revenue, so this estimate is extrapolated to other markets.

Proportion of profit saved or stored in assets

Ideally, data directly associated with offenders' behaviour would be used but such data are in short supply. One potential source is the Joint Assets Recovery Database (JARD). This includes Financial Investigators' (FI's) assessment of the criminal income gained during the

last six years, and the estimated value of assets. However, there are difficulties with using these data. The offender has no incentive to assist FIs in this process; it is likely, for example, that many 'hidden' assets are not discovered. Furthermore, estimating total criminal income over a number of years is a difficult task, so elements of judgements are called for. Moreover, to use these data in this report would have required further assumptions regarding appreciation and depreciation rates, since this report estimates only one year's worth of flow data.

So, unfortunately the author needs to rely largely on judgements. As a starting point only, data relating to general household financial behaviour is used; this covers households earning money from both legal and illegal sectors, but predominantly the former. The source for this is the Family Expenditure Survey (FES, 2004).

On the plus side, this source has the significant advantages of transparency and simplicity. On the downside, households involved in criminal behaviour may be expected to behave differently from other households, meaning data cannot be taken from FES without adjustment. There are a number of potential reasons for this.

- Offender households may have different preferences from the 'average' household, in terms of consumption now versus consumption in the future. There is plenty of anecdotal evidence to suggest that offenders disproportionately prefer to spend now rather than save for the future. This is particularly true in the case of drug retailers who are also users. This group may spend a large proportion of their income funding their drug habit.

- The very existence of asset recovery powers may encourage offenders to consume now, rather than save for the future; the courts cannot recover what has already been spent.

- Those involved in criminal activities, particularly of the type on which this report focuses, are likely to 'earn' very different sums from the average household.

One can get a 'feel' for the impact of this last point by looking at saving and investing habits of earners in different income groups in the FES sample. However, a meaningful sample can only be generated by looking at the top one per cent of income earners, and even this high level of income does not fully reflect the huge sums made by some organised criminals.

Each market segment for each organised crime type is placed in one of four segments: 'very high income' (VHI); 'high income' (HI); 'average income' (AI); and a special category for street drug dealers, 'low income or high consumer' (LI/HC). The placements are based simply on judgements.

Table 8. Assumed income categories I

	Street level/ final stage of crime	**Middle markets**	**UK importer or first stage of crime in UK**
Drugs	LI/HC	VHI	VHI
People trafficking and people smuggling	AI		
Excise	AI	HI	HI
Other fraud	HI	VHI	
Intellectual property theft	HI	HI	

In addition, it is assumed that these income levels correspond as shown in Table 9. This table is provided to help provide an idea of the types of income levels the author assumes different organised criminals have – average income levels attached to different organised crime activities are not directly estimated.

Table 9. Assumed income categories II

Income range	Category
LI/HC	<£15k or 'high consumers'
AI	£15k-£50k
HI	£50k-£250k
VHI	>£250k

It is now necessary to assign a particular level of savings to each of these categories. As a benchmark, data from the FES are looked at. The FES includes very detailed data concerning expenditure patterns – including capital expenditure on goods such as housing – and information regarding savings rates.

Examination of the FES suggests that approximately 20 per cent of total after-tax income[57] is stored in assets which may be seizable.[58] This is used as a rough benchmark, assuming that an 'average income' criminal will store 20 per cent of his annual income in seizable assets. The top one per cent of households in the FES sample, by expenditure, appears to have after-tax income of roughly £100,000 per year on average, so can be thought of as broadly corresponding to the 'high income' category. These households, store around 30 per cent of their after-tax income in seizable assets, so it is assumed a 'high income' criminal saves this same proportion. Sample sizes above this income threshold are not large enough to use the FES further, so further assumptions are made. Noting that some individuals in the 'very high income' category earn many millions of pounds annually, it is assumed that they invest about 50 per cent of their profits in seizable assets.

The FES suggests that the bottom ten per cent of households, by expenditure, store around ten per cent of income in seizable assets, so this proportion is applied to the 'low income/high consumers' households. Only drug retailers fit into this category of low income or high consumer category.

Putting this together, one can make assumptions concerning the proportion of criminal profit (after costs) that is saved or stored in assets varying by organised crime activity and stage in the supply chain.

Table 10. Assumed proportion of criminal profit saved or stored in assets

	Retailer/final stage of crime (%)	**Middle markets (%)**	**UK importer or first stage of crime in UK (%)**
Drugs	10	50	50
People trafficking and people smuggling	20		
Excise	20	30	30
Other fraud	30	50	
Intellectual property theft	30	30	

Anecdotal evidence, from, for example National Criminal Intelligence Service reports, suggests that at the lower end of the criminal spectrum, offenders may save or invest in assets less than the 10-30 per cent of profits that is assumed here. This, however, is unlikely

[57] Here 'income' is defined as the sum of all components included in the FES. Since the FES includes data concerning savings and investment, this does not seem an unreasonable assumption. But since the FES is designed primarily to monitor spending rather than saving behaviour, figures must be treated with caution. After-tax income is the appropriate metric, since it is assumed offenders do not pay tax on their criminal gain.

[58] The following assets are included in this group: purchase of vehicles; contribution to pension funds and life assurance; purchase or alteration of dwellings (but mortgage interest payments, and rental payments are excluded); and savings and investments.

to make a significant difference to the final estimates; it can be seen below, that if it were to be assumed those at the lower end of the criminal spectrum saved only half what has been assumed here, it would reduce the total estimated amount available for seizure by only about £200m a year.

Nevertheless, it is far from satisfactory that this crucial stage in the calculation is informed largely by judgement and that there are so little data relating to behaviour of relevant offenders. The estimates here thus need to be treated with caution.

Results

Putting it all together

Combining these estimates concerning revenue, costs and investments/savings ratios allows one to estimate the value of assets theoretically available for seizure for the offences covered in this report. The results are shown below.

Table 11. Estimated value of assets available for seizure

	Retailer	Middle markets	UK producer	Total UK	Revenue sent overseas
Drugs	180	580	100	860	1,310
People trafficking and people smuggling	40	0	0	40	270
Excise	70	140	160	370	1,200
Fraud	50	580	0	630	240
Intellectual property theft	70	70	0	140	280
Total	410	1,370	260	**2,040**	**3,300**

Figures rounded to the nearest £10m. Figures may not sum due to rounding.

This analysis suggests the flow of criminal assets theoretically available for seizure is about £2bn per year in the UK, with a further £3.3bn of revenue sent overseas. UK law enforcement may be able to seize cash before it crosses the border, making some of this £3.3bn potentially available for seizure. But once the money has left the UK, asset recovery becomes more difficult, and it is likely that the country in which the money is now held would receive a large proportion of any amount seized. If the UK assists in helping with the confiscation of these assets in another jurisdiction, the UK may be able to claim a share of this

Reality check – comparisons with asset recovery performance

This section includes a rough check on whether the split in revenue and seizable asset shares by offence type is broadly in line with that seen by confiscation activity, by comparing the estimates in this report with actual confiscation orders made, as analysed by Fleming (2006) using JARD. Fleming used a sample of 3,680 records of confiscation orders made between April 2004 and September 2005; in addition to the 3,680 records, 556 could not be used, mainly because of missing entries, but non-response bias was found to be low.

Nevertheless, caveats are needed here. The value of a confiscation order is determined by the minimum of identified criminal income, potentially over a number of years, and the value of the offenders' assets, again potentially built up over some time.[59] In contrast, the flows of assets calculated in this report are annual. Nevertheless, since one is comparing the proportion (not absolute) contributions of different offence types, such comparisons are still informative.

The author looks at the proportion of the value of confiscation orders made for each of the offence types considered in this report and compares this with 'predictions' made by (i) looking solely at market revenue and (ii) the methodology undertaken in this report. For

[59] It is normally the value of assets which determines the confiscation order's size (that is, offenders normally do not have enough assets to pay back the full proceeds of their crimes).

example, from looking solely at quantified revenue, it might be predicted that 16 per cent of the value of confiscation orders would relate to (non-excise) fraud. The methodology outlined in this report increases this estimate to 30 per cent. This compares with non-excise fraud's actual share of confiscation orders of 45 per cent.

Table 12. Reality Check

Offence type	**Market share by revenue**	**UK value of assets available for seizure as percentage of total**	**Share of value of confiscation orders**
Drugs	45%	41%	32%
People trafficking and people smuggling	5%	2%	0%
Excise	27%	20%	6%
Other fraud	16%	30%	45%
Intellectual property theft	7%	6%	1%
Other	not quantified	not quantified	16%
Total	*100%*	*100%*	100%

This analysis provisionally suggests that, across offence types, both estimated market sizes and the estimated value of assets theoretically available for seizure are reasonable in relative terms. One would not expect the shares to be identical. For example, it is commonly thought that fraud is under-reported, and the assumptions adopted in the sources concerning the share accruing to organised criminals is very conservative; it is, therefore, unsurprising that fraud's actual share of confiscation orders is higher than 'predicted' here. Excise fraudsters, people smugglers and people traffickers are rarely prosecuted (at least it is unusual for those high up the chain to be prosecuted), so it is of no surprise that their share of confiscation orders is lower than that 'predicted'.

Allowing different savings rates for different markets, and for the fact that a proportion of revenue goes overseas, appears to improve the 'prediction', provisionally suggesting that the methodology in this report has some merit. However, given the number of factors affecting asset recovery, this provides only a partial picture.

How much impact is asset recovery having?

From all sources, UK agencies recovered £125m in 2006/07, suggesting that just over five per cent of the annual build-up of assets was successfully recovered. Bearing in mind that the total accumulated stock of assets is likely to be far larger than that accrued in any one year, this demonstrates that there is considerable scope to improve performance, and that the proposed target of £250m by 2009/10 is attainable.

In which assets are profits invested?

Again, the Family Expenditure Survey is used to give some indications as to in which assets income *flows* are spent on. This is then compared with evidence from Fleming (2006) who analysed JARD data and provides estimates concerning the offenders' *stock* of assets. Fleming heavily caveats his analysis – complete asset-specific information was available for only 25 per cent of confiscation orders analysed. Nevertheless, JARD is the only known source of such information, so the Fleming analysis is used here.

Note that this analysis is comparing stocks with flows, and offender behaviour with that of the general population. This makes interpretation of the data difficult. Differences could be due to any or all of three factors.

- Differences in appreciation and depreciation rates. For example, one would expect the proportion of income spent on vehicles in one year to be higher than vehicles' share of net wealth, as the value of vehicles depreciate over time. Conversely, other financial assets have generally appreciated over time.

- Differences in saving behaviour between offenders and the general population. 'Lifestyle criminals are often thought to lead lavish lifestyles and, to the extent that they invest in assets, may prefer assets which given them 'jam today' as well as tomorrow. Thus, they may spend more on vehicles than the general population.

- Financial investigators are more likely to 'see' visible assets such as property, than, for example, complicated financial instruments held abroad.

Cash is ignored for the purposes of this analysis, since the FES does not ask respondents the amount of cash they hold. The value of cash held by offenders is orders of magnitude higher than that held by an average household because liquidity is so important to many offences and laundering rules make storage difficult, so any comparisons would in any case be meaningless.

Table 13 summarises the results from Fleming (2006) and the Family Expenditure Survey. The proportions shown relate to the proportion of expenditure on assets, not total expenditure.

Table 13. In which assets are profits invested?

Asset type	**Annual expenditure – average h/h (flow measure)**	**Annual expenditure – top 1% h/h (flow measure)**	**Identified assets held by offenders (stock measure)**
Property	41%	52%	69%
Vehicles	29%	21%	7%
Life assurance/ pension funds	20%	19%	1%
Bank/building society	10%	9%	11%
Other financial assets			8%
Other	Not recorded	Not recorded	4%

These figures are broadly as expected. The stock share of vehicle wealth is lower than its share as a proportion of annual expenditure, because vehicles depreciate over time. That, proportionately, more of identified offenders' wealth is held in property than is spent on property annually could be partially due to property being much more visible, and also down to the fact that property can appreciate very quickly over time. That identified life assurance and pension funds wealth is very low for offenders is not surprising – full-time offenders will not have a company's pension scheme to join. Instead, they are more likely to use other forms of financial assets.

These figures allow some speculation concerning the flow of criminal expenditure into sectors of the legitimate economy. The author has assumed that organised criminals store a greater proportion of their income in assets than the general population – this seems a reasonable assumption since the figures will be dominated by those 'earning' huge sums of money who are likely to save more. Furthermore, of this proportion stored in assets, it appears that organised criminals are equally or slightly more likely to use property as their choice of asset whether held in the UK or overseas. It is estimated that around £12bn worth of income accrues to organised criminals each year, approximately one per cent of UK GDP. Given all

the above, it would appear that very approximately one to two per cent of the annual property market transactions is funded through criminal gain. HMRC (2006) data suggest that, if this was accurate, this equates to roughly 150,000-300,000 properties each year worth around £3.7bn-£7.4bn.[60]

[60] It is at first counter-intuitive that this sum exceeds the author's total estimate of the sum of criminal assets available for investment each year. This apparent inconsistency is explained by the fact that most properties are not bought outright – usually a mortgage is obtained – so this £3.7bn-£7.4bn range does not equal the amount of income invested in property in any one given year; instead it represents the value of properties invested in (for example, the proportion of a mortgage paid off).

Conclusions

This report has set out a new method for assessing the value of assets available for seizure in the UK, and provided some approximate estimates. The analysis suggests that around £2bn is theoretically available for seizure in the UK, with a further £3.3 revenue sent overseas. This helps to provide some context for existing asset recovery performance, of about £125m per annum.

The strength of this approach is that it is bottom-up, transparent, and systematic. This allows an understanding of how estimates are derived and facilitates future improvements.

There are a number of limitations with the specific estimates quoted in this report, however. First, much of the evidence base is weak. This is largely unavoidable given the covert nature of organised crime, but further work is necessary if estimates are to be improved. Second, asset recovery activity is by no means taken only against organised criminals – understanding when else asset recovery may be undertaken, and the value associated with it, is important. Finally, estimates relating to the accumulated stock of assets available for seizure would also be of interest, although even more difficult than estimating the annual build-up of assets in any one year.

References

Brand, S. and Price, R. (2000), The Economic and Social Costs of Crime, Home Office Research Study 217.

Caulkins, J. P. and Reuter, P. (1998) What Price Data Tell Us About Drug Markets. Journal of Drug Issues. Vol. 28, No. 3, pp.593-612.

Dickson, S. (2004) Sex in the City: Mapping Commercial Sex Across London: The Poppy Project.

Dubourg, R., Hamed, J. and Thorns, J. (2005), The economic and social costs of crime against individuals and households 2003/04, Home Office Online Report 30/05.

Dubourg, R. and Prichard, S. (2007), The impact of Organised crime in the UK: Financial Revenues and Economic and Social Costs, Home Office Online Report (as first half of this report).

Financial Action Task Force (2001), Financial System Abuse, Financial Crime and Money Laundering – Background Paper, International Monetary Fund.

Fleming, M. (2005a), Asset Recovery and Its Impact on Criminal Behaviour: An Economic Taxonomy, unpublished.

Fleming, M. (2005b), Asset Recovery and Its Impact on Criminal Behaviour: A Review of the Literature, unpublished.

Fleming, M. (2006), Are Offenders Judgment Proof With Respect To Asset Recovery: A Profile of Acquisitive Offenders, unpublished.

HM Revenue and Customs (2005), Measuring Indirect Tax Losses.

HM Revenue and Customs (2006), Measuring Indirect Tax Losses.

Home Office (2005), Seizures of drugs in England and Wales, 2003, Findings 265.

Kovacs (2005), Stepping Up Action Against Counterfeiting and Piracy, TAXUD, Europa.

Levi, M. and Osofsky, L. (1995), Investigating, seizing and confiscating the proceeds of crime, Crime Detection and Prevention Series paper 61, Home Office.

Levi, M. and Reuter, P., Money Laundering, in M. Tonry (ed), Crime and Justice: A Review of Research, 2006, Vol.34: 289-375, Chicago: Chicago University Press. ISSN 0192-3234.

Naylor, R.T. (1999), Wash-out: A critique of follow-the-money methods of crime control policy, Crime, Law and Social Change 32: 1-57.

ONS (2005), Family Expenditure Survey 2003-2004.

Performance and Innovation Unit (2000), Cabinet Office. Recovering the Proceeds of Crime.

Pudney, S., Badillo, C., Bryan, M., Burton, J., Conti, G. and Iacovou, M. (2006), Estimating the size of the UK illicit drug market, Home Office Online Report 16/06.

Walker, J (1999), How Big is Global Money Laundering? Journal of Money Laundering Control, Vol. 3, No. 1.