Counting the Costs of Crime in Australia: Technical Report

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Abbreviations

ABS	Australian Bureau of Statistics
AFP	Australian Federal Police
AIC	Australian Institute of Criminology
AIHW	Australian Institute of Health and Welfare
ANAO	Australian National Audit Office
BCS	British Crime Survey
BOCSAR	Bureau of Crime Statistics and Research
BTE	Bureau of Transport Economics
CARS	Comprehensive Auto-theft Research System
CCS	Commercial Crime Survey
CIC	Criminal Injuries Compensation
COTSA	Clients of Treatment Service Agencies
CSS	Crime and Safety Survey
DUCO	Drug Use Careers of Offenders project
DUMA	Drug Use Monitoring in Australia project
ICA	Insurance Council of Australia
ICVS	International Crime Victims Survey
LRCV	Law Reform Commission of Victoria
MUARC	Monash University Accident Research Centre
NCVS	National Crime Victimisation Survey
NERA	National Economic Research Associates
NMVTRC	National Motor Vehicle Theft Reduction Council
NSCB	National Survey of Crime Against Business
OSW	Office of the Status of Women
SAAP	Supported Accommodation Assistance Program
SARCSS	South Australian Retail Crime and Safety Survey
SBCS	Small Business Crime Survey
SCRCSSP	Steering Committee for the Review of Commonwealth/State Service Provision
UEWI	unauthorised entry with intent
WSS	Women's Safety Survey
WTP	willingness to pay

1 Introduction

This technical report lays out details of the assessments of the costs of crime in Australia reported in *Trends and Issues* paper no. 247, "Counting the Costs of Crime in Australia" (Mayhew 2003), which is available on the Australian Institute of Criminology's web site at www.aic.gov.au/publications/tandi/tandi247.html.

Details of how the costs were calculated are shown so that:

- the basis of the figures are transparent; and
- more up-to-date and fuller estimates, when they become available, can be added to those shown, or can stand in place of them.

Discussed first are some general points about costing crime, and about the costing principles adopted. The main principles need describing, not least to allow comparisons with other work where different approaches may be taken. There is also no complete consensus as to the best approach, which heightens the need for transparency. Section 2 gives some information on the major studies referred to and/or used in the current analysis. Sections 3 to 15 deal with the costings for the offences covered. Section 16 deals with other costs (such as the criminal justice system).

Some Costing Principles

The full costs of crimes are myriad and not all of them are assessed. Box 1 lays out some that have a claim to be included. It indicates which are taken into account, at least in part. The costs fall into three main categories (cf. Brand & Price 2000):

- **Costs in anticipation of crime**. These fall mainly on people as potential victims—for instance, what they pay for security measures. There is also some element of "opportunity cost". The time put into neighbourhood anti-crime activities, for instance, might well be better spent.
- **Costs incurred as a consequence of crime**. These fall mainly on actual victims, particularly in terms of property loss and damage. But they can also mean time off work, costs for health services and so on.
- **Costs in response to crime**. These fall mainly on the criminal justice system.

No study—in Australia or elsewhere—has ever fully assessed the myriad costs involved. Rather, the main focus has been on what countries spend on their criminal justice systems (usually a matter of public record), and on some of the direct consequences of crime—though their full extent remains uncharted.

Box 1: Some of the various costs of crime

	✓ =Taken into account
In anticipation of crime	
Security expenditure	✓
Insurance	✓
Individual precautionary behaviour	✓
Central and local government crime prevention activity	
Community defensive action	
Social costs of fear of crime and precautionary behaviour	
As a consequence of crime	
Property stolen and damaged	✓
Lost output	✓
Health service costs	✓
Intangible costs to victims (emotional and physical impact)	✓
Victim support services	✓
Lost earnings on the part of prisoners	✓
Mental health costs	
Costs of supporting offenders and their families	
"Second generation" costs of offending	
Disinvestment in high-crime areas	
In response to crime	
Criminal justice system (police, prosecution, courts etc)	✓
Dealing with offenders (e.g. probation and prison)	✓
Criminal injuries compensation	✓

Estimating the Number of Crimes (the "Multiplier" Issue)

Sensible estimates need to allow for the fact that the number of crimes to be costed will be greater than the number recorded by the police. This is because not all crimes are reported to the police and the police may not record all crimes that are reported to them. Traditionally, two approaches have been taken to work out the number of crimes to cost. Both rely on victimisation survey data, but use it in different ways. Neither of the approaches is ideal, and they produce different estimates. The first is more conservative than the second approach which, with some caution, was taken here.

(i) The Unreported Crime Adjustment

The first approach is the one used by Walker (1992, 1997) in his analysis of the costs of crime in Australia. It allows for a greater number of crimes than recorded by the police, but merely by inflating police figures by the proportion of offences measured by the Australian Bureau of Statistics' Crime and Safety Survey (CSS) that victims said were not reported to the police. (For instance if there were 290,000 residential burglaries recorded, and a reporting rate of 60 per cent, then the real number of burglaries would be estimated as about 480,000.)

(ii) The "Face Value" Survey Count Approach

The second approach, which is adopted in US and UK work, is to take the "face value" victimisation survey count for a particular offence and then compare it to the number of offences of that type recorded by the police. For each crime a "multiplier" is constructed which is the ratio of the survey-estimated number of crimes to the number recorded by the police over the same period (with a few adjustments made where necessary to

improve comparability). For instance, suppose there were 800,000 residential burglaries on the basis of what victims say in the CSS, but only 290,000 recorded by the police. The ratio between the first and second number would be 2.8, which could be seen as the appropriate "multiplier". This can then be used to multiply up the number of recorded burglaries in the most recent year to estimate the current "real" level of residential burglaries.

The Pros and Cons

The first approach leaves an unexplained gap between the estimated number of burglaries (480,000 in this example) and the number actually estimated by the survey (800,000). In effect then, it rejects the survey estimate, although accepts its results on the proportion of offences reported to the police, which is arguably inconsistent.

The second approach accepts the survey measure, and thus presents the gap between survey and police figures, "as it seems to be". However, it invariably produces another gap between the estimated number of crimes reported (in the example here, 480,000—60 per cent of 800,000), and the number recorded by the police (290,000 here). This gap is often known as "the recording shortfall". The CSS shows this shortfall (ABS 1999, p. 84). The number of recorded burglaries, for instance, is less than two-thirds of those said to have been reported, while the figures are lower still for robbery (half), and robbery and sexual assault (about a third). Motor vehicle theft and homicide are the only offences where reported and recorded numbers are similar.

The issue is to what extent the gap is a "real" one reflecting police under-recording, and to what extent is it about an inflated survey count. It is probably a bit of both. First, it is almost certainly true that not all offences reported to the police are recorded by them (see, for example, the recent report from the AIC examining police recording practices in Victoria—Carcach & Makkai 2002). There are several reasons why police may not record all the offences that come to their attention. They may think there was not sufficient evidence; they may comply with victims' wishes not to proceed; some incidents may be seen as too trivial to warrant a formal record; or the police may feel that the report is mistaken or disingenuous. Some reports of crime by victims may actually be recorded, but under another offence category. An important study of police recording practices in the UK testified to a "recording shortfall" (Burrows et al. 2000). In Australia, a police activity survey in Queensland showed that only about one-third of calls responded to by police resulted in a criminal offences report—although there is no suggestion that all the calls would have been about crime (Criminal Justice Commission 1996).

On the other side of the coin, though, there are grounds for thinking that the survey count could be inflated. For one, survey respondents could "telescope" into the reference period incidents that in fact happened before it. This would lead to a survey overcount for a particular year (in other words, the 800,000 burglaries in the example above would be too high). Second, some respondents may say they reported when in fact they did not (seeing it as the "desirable" answer). This would also increase the apparent shortfall between the numbers of reported and recorded crimes.

In the event, the second approach was adopted in the current work, for one because it accords with the UK work that is used as the basis of a number of estimates in the absence of Australian data. As said, it leads to a higher count of crime than the first approach. However, while this will potentially inflate cost figures, it is balanced by a conservative approach taken to other elements of costings.

The Survey Data

The survey data for assault, sexual assault, robbery, burglary and motor vehicle theft come from the Crime and Safety Survey (CSS), measuring crime in 1997–98 (ABS 1999). The Women's Safety Survey offers alternative figures for assault and sexual assault, and indeed suggests the number of offences would be higher than indicated by the CSS. For consistency, however, the CSS is used throughout.

Other survey data are used on occasion, including the AIC's Small Business Crime Survey (SBCS), and the International Crime Victimisation Survey (ICVS). The various surveys used are discussed in Section 2.

The Age/Gender Adjustment for CSS Figures

When comparing CSS and police figures to derive a multiplier for assault and robbery, an adjustment is needed to account for the fact that the CSS only covers victims aged 15 or more (and in the case of sexual assault, women aged 18 or more only). The approach taken was to compare the number of CSS-measured offences with the number recorded by the police, excluding younger victims and, in the case of sexual assault, men also. These figures are reported in *Crime and Safety Australia* (ABS 1999, p. 84).

Transfer Payments: Exchange of Goods

Economists would not necessarily consider the illegal exchange of goods and purchasing power from victim to offender as a financial loss to society. Rather, they might see it as a transfer payment (the offender gains what the victim loses). However, the important distinction between transfer and loss turns on whether the transfer is wanted or unwanted. Since theft involves a transfer of property unwanted by the victim out of the legal economy into the illegal one, it is conventional in costs of crime work to treat it as a cost of crime. This convention is followed here.

Transfer Payments: Insurance

Insurance claims also involve a transfer of resources but, unlike the transfer from victim to offender, it can be seen as wanted. Thus, in line with UK and US estimates, insurance is treated as a transfer cost and not a loss to society. That is, premiums paid to insure against potential losses are seen as cancelled out by payments to victims. For this reason, gross costs to victims are taken, not costs after any insurance compensation. However, the cost to insurers of administering claims for crime victims is included. The information for this came from Insurance Statistics Australia (David Minty, personal communication). It indicates a figure of $500 million in Australia in 2001–02. This is about 15 per cent of the value of premiums for theft and damage.

Medical Costs

Medical costs are derived from estimates taken from a thorough study by the Monash University Accident Research Centre (MUARC) of the costs of deaths and injuries in Victoria in 1993–94, one cause of which is interpersonal violence (more detail below). MUARC included medical costs for fatalities, hospitalised and non-hospitalised cases.

Lost Output

Lost output counts the costs of victims not being able to work. Ideally, it should also include lost productivity on the part of family and friends—although this is rarely done, and not here either.

Lost output is what in economic terminology is called *human capital* loss—commonly used in Australia to cost accidents and disease. Both unpaid and paid work is usually accounted for—that is, the lost production that a dead or injured victim would have contributed, but in present values.[1] Unpaid work losses come from the imputed worth of household services and voluntary community work.

The value of potential lifetime work is translated back to the year in which a death or injury occurred using a "social discount rate". The best rate to take is subject to debate. A feature of the human capital approach is that it yields low lost output values for children and retired people because valuations are based on market earnings.

In the present study, the approach taken to assessing lost output differed according to whether violent crime or property crime was involved.

- For homicide, assaults, sexual assaults and robbery involving injury, lost output estimates are from MUARC's study. MUARC used a discount rate of seven per cent, which would now be seen as inappropriate (Gold et al. 2001). A social discount rate of four per cent was used in the Bureau of Transport Economics study of the costs of road accidents in Australia in 1996, which is also drawn on here and described below (BTE 2000). The four per cent rate was applied to adjust MUARC's figures.
- For no-injury assaults, robberies and property crime, lost output losses were mainly estimated using UK figures, although Australian survey data for the commercial sector were also used. The UK estimates are derived from a question in the British Crime Survey (BCS) that asked victims the amount of time they had to take off work.[2] The assumption is made that the impact of these offences in Australia is similar to that in the UK (there is discussion of this shortly).

1 Paid work is valued at average market earnings (plus labour "add-on" costs), with account taken of annual future productivity gains. Earnings specific to age and gender are applied to the estimated number of years a victim would have remained in the labour force.

2 This was multiplied by the average wage rate from the 1999 New Earning Survey, with a factor added for employment "on-costs".

Intangible Costs

Intangible costs of crime (such as fear, pain, suffering and lost quality of life) do not reflect any resource use, but are now usually included as a legitimate cost to estimate. Nonetheless, estimates of intangible costs are the most tenuous. Three main approaches to estimate them have been taken in costs of crime work elsewhere. There is no specific Australian material.[3]

(i) Willingness to Pay

The "willingness to pay" (WTP) approach estimates intangible losses in terms of the amount that individuals are prepared to pay to reduce risks (either of dying or avoiding harm). The WTP approach is now fairly common in many countries in costing social harms, particularly road accidents. It has featured less in Australia. People's preferences can be either stated or revealed (for instance by differentials in house prices in safe and unsafe neighbourhoods).

The use of stated preferences (or "contingent valuation") is more common. The main benefit of this WTP approach is that it is based on a subjective assessment of what people feel is the value of avoiding harm. A main criticism is that the public may be misinformed about the extent and severity of the risk they confront, so that WTP for increased safety may be higher than it needs to be based on actual risks. Another criticism is that answers can depend on whether respondents think *they* would have to pay for increased safety (for example, through higher taxation). A third criticism is that it is often unclear whether WTP figures include all or part of income and production losses, or just impaired quality of life.

(ii) Compensation Awards

This second approach measures intangible losses through jury or court awards for non-economic compensation to victims (or their survivors). An advantage is that awards are *ex post*, reflecting the value of harm "after the fact" rather than the *ex ante* assessment in WTP figures. One criticism is that juries can make unreasonably high awards or reach capricious judgments—though the evidence for this is less strong than might be thought (Cohen 2001a). In any event, the compensation award approach to costing intangible losses in road accident work generally gives much lower figures than contingent valuation WTP figures.

Costs of crime work from the United States takes a jury award approach, and does so on the basis of civil lawsuits in criminal injury cases (the US being litigious enough to produce sufficient information). This is considerably better as regards what is "fair"

3 A survey of crime victims in Victoria in 1993–94 conducted by the Victorian Community Council Against Violence (1994) covered indirect losses, but does not provide precise enough information from which to extrapolate. It showed that almost half of victims reported financial losses as a consequence of victimisation. Victims of attempted murder and burglary experienced the higher losses. About half of victims of robbery and assault experienced financial loss. The most common losses were from lost income. Other losses included travelling expenses, replacing clothing and, in some cases, selling a business.

compensation than data from Criminal Injuries Compensation (CIC) awards would be. This is because both the economic and non-economic element of CIC awards is capped by legislation, and—being funded from the public purse—is generally fairly low (Freckelton 2001). Moreover, in many Australian CIC schemes psychological harm is specifically excluded.

(iii) Victims' Desired Compensation

This is an unusual approach, apparently limited to the UK's British Crime Survey (BCS), in which victims were asked to say what their desired compensation would be to account for the physical and emotional impact of what had happened. The question was: "Apart from your financial losses, what would be a reasonable financial sum to compensate you for the upset and inconvenience you and/or your household suffered?"

For this study, intangible losses in violent crime and robbery incidents with injury are linked to figures from compensation awards taken by BTE in costing road accidents.[4] This is not ideal since the circumstances and consequences of criminal and road accident injury may differ. But it is much better than trying to use Criminal Injury Compensation award figures since awards for road accidents are essentially funded by compulsory third-party insurance, not by what state governments feel they can afford.

Because MUARC did not assess intangible costs, the ratio of BTE's intangible costs to their lost output costs for road fatalities and accidents requiring medical treatment were applied to MUARC's lost output figures to given estimates of the intangible costs of violence. For instance, BTE shows a figure of intangible losses in slight and serious road accidents of nearly $5,500 at current prices. Their lost output figure was about $5,200, making the ratio 1.059. This was applied to MUARC's lost output figure for non-fatal interpersonal violence, which was also just over $5,000.

For property crime (and no-injury assaults and robberies), the UK estimates from BCS figures on victims' desired financial compensation were adapted.

Inflation

Cost figures for Australia in previous years are adjusted by means of the Australian National Accounts Chain Price Index for final consumption expenditure. This takes account of price changes across the whole economy (for example, wages), not just tradeable goods.

4 Intangible costs were assessed for death or injury by reference to compensation payments from the Victorian Transport Accidents Commission with additional adjustments made on the basis of New South Wales and Queensland data to account for reductions in awards due to other compensation having been paid through insurance (BTE 2000). Intangible costs borne by relatives and friends of crash victims are not costed by BTE.

Purchasing Price Parity

When applying estimates of costs in the UK to Australia, the 1999 UK values were inflated to current UK prices and then converted into Australian dollars using purchasing price parities constructed by the OECD.[5] This is to take account of differences in prices levels. A purchasing price parity between the UK and Australia is the exchange rate that would be needed to purchase the same quality of goods and services costing £1 in the UK.

Relative price levels are the ratio of purchasing price parities to the official exchange rate. Used here, they show that in 2001–02, about A$1.35 was equivalent to £1 with price differences taken into account.

The Profile of Crime in Australia and England & Wales

In the absence of suitable Australian data, Brand and Price (2000) estimates for England and Wales are adopted on several occasions. The main uses are in relation to lost output and intangible losses for property crimes, the extent of unrecorded crime (in some cases), and average losses (again in some cases). This begs the question whether the profile of crime is sufficiently similar in the two countries to justify reliance on UK estimates. One is assuming, for example, that burglary or motor vehicle theft, say, are similar in nature, and have much the same impact in Australia as in Britain. It is difficult to be entirely certain of this, but several things suggest a fair degree of correspondence.

Assessments of Crime Seriousness

The International Crime Victimisation Survey (ICVS) has been conducted in Australia three times, along with England and Wales. In the ICVS, victims were asked to assess the seriousness of what happened to them (van Kesteren et al. 2001). Mean seriousness scores for different offences are very similar in the two countries, indicating remarkably common impact (Table 1.1). The main relevance of this here is that UK victims' assessment of "desired compensation" (intangible losses) may be transferred with some confidence.

Other Pointers

There are other pointers too, which are summarised below.

- For police crime categories that can be compared across countries, the relative importance of different offences was very similar. Violence (homicide, assault and sexual assault), for instance, comprised 12 per cent of all the comparable police-recorded crimes in England and Wales, and 10 per cent in Australia. Burglary accounted for 20 per cent of the crimes in England and Wales, and a rather higher

5 The UK figures were inflated using the UK Retail Price Index (www.statistics.gov.uk/statbase). Costs were converted to Australian currency using OECD purchasing power parity conversion factors (OECD 2002).

Table 1.1: Mean victim seriousness score for different crimes (1992 and 2000 ICVS)

	Australia	England & Wales
All crimes	2.0	2.0
Theft of vehicle	2.3	2.3
Car vandalism	1.5	1.5
Motor vehicle theft	2.4	2.4
Bicycle theft	1.8	1.8
Theft from vehicles	1.7	1.6
Robbery	2.3	2.2
Assaults and threats	2.2	2.1
Burglary with entry	2.4	2.5
Attempted burglary	1.8	1.9
Personal theft	1.8	1.9
Sexual incidents	2.0	2.2

Note: The scores were based on a three-point scale with "very serious" as 3, "fairly serious" as 2, and "not very serious" as 1.

Source: van Kesteren et al. 2001. Authors' averaging from original survey data.

27 per cent in Australia. The share for theft of vehicles was much the same (about eight per cent), as was robbery (about two per cent) and general thefts (43 per cent in Australia and 45 per cent in England and Wales).

- The homicide rate in Australia (1.88 per 100,000 on average over the period 1997–2001) is fairly similar to that in the UK (1.52).
- Levels of other victimisation are best measured by the ICVS to take into account possible differences in levels of reporting to the police, and differences in how police classify and count crime. Table 1.2 shows the percentage of people in Australia and in England and Wales who were victimised once or more. Those in England and Wales faced higher risks for crimes related to cars, and bicycle theft. Australians faced higher risks for burglary and sexual incidents. Nonetheless, the overall victimisation levels were not dissimilar.
- Levels of concern about crime were not particularly dissimilar either. Slightly more people in Australia felt they were likely to be burgled in the coming year (36 per cent) than in England and Wales (33 per cent), and the percentage feeling very or a bit unsafe when out after dark was also higher in Australia (34 per cent as against 27 per cent). In contrast, though, more people in England and Wales owned burglar alarms and slightly more had special window locks.

Table 1.2: Percentage victimised once or more in 1999 (2000 ICVS)

	Australia	England & Wales
All crimes	30.0	26.4
Theft of vehicle	2.1	2.6
Car vandalism	9.8	11.0
Bicycle theft	3.1	4.4
Theft from vehicles	7.3	8.0
Robbery	1.2	1.2
Assaults and threats	6.4	6.1
Burglary with entry	3.9	2.8
Attempted burglary	3.3	2.8
Personal theft	6.5	4.6
Sexual incidents	4.0	2.7

Source: van Kesteren et al. 2001. Authors' averaging from original survey data.

2 Studies Drawn Upon

This section describes some of the main studies drawn upon in this Australian cost of crime work.

Australian Studies

The Australian Crime and Safety Survey

The Australian Crime and Safety Survey (CSS) is used as the basis of many of the survey figures in this study. It was conducted by the Australian Bureau of Statistics in April 1998 and measured crime over the previous 12 months (May 1997 to April 1998). A nationally representative sample of 42,200 people aged 15 or more provided self-completed questionnaires. This represented a response rate of 82 per cent (see ABS 1999). The crimes asked about were rather more restricted than the British Crime Survey, covering burglary and attempts, theft of motor vehicles, robbery, assault, and sexual assault (women only). Details of what happened (such as injury or weapon use, for example) were collected for the last incident experienced, if there was more than one.

The main use of the survey here is for an alternative count of the "real" number of offences, which was discussed in detail in section 1. For comparisons with police figures, some adjustments are needed for offences involving personal victims to account for the fact that the CSS excludes young victims.

Other uses made of survey results are described at relevant points below. (For instance the proportion of people injured in assault and robbery incidents is used in estimating medical costs.) A limitation of the survey is the lack of information on financial losses from property theft and damage. The CSS has been repeated in 2002, but results are not yet available.

Women's Safety Survey

An alternative estimate of the extent of assault and sexual assault against women is available from the Women's Safety Survey (WSS). Conducted by the ABS early in 1996, it took a more "bespoke" approach to measuring violence and sexual assaults against women (ABS 1996). It covered the experiences of women aged 18 or more.

The WSS results are not particularly in line with those from the CSS—illustrating the sensitivity of survey figures to measurement approaches (cf. Percy & Mayhew 1997). The WSS shows that 5.9 per cent of women were assaulted once or more in 1995 (including attempts and threats). The equivalent figure from the CSS is lower, at 3.9 per cent. For sexual assaults, the difference is more pronounced still, with a WSS figure of 1.5 per cent—three times higher than the CSS figure of 0.4 per cent. Question wording

may explain some of the difference in the figures, but other factors will be the greater number of "prompts" in the WSS, and the fact that it was presented as solely concerned with women's safety. (The slight time difference between the surveys is unlikely to be a factor.)

Although the WSS may well lay claim to providing multipliers for assault and sexual assault, the CSS is nonetheless used in the present study. The CSS covers both men and women, and is consistently used as the basis of multipliers for other property crime in this report. The 2002 repeat of the survey will in due course provide new data for multipliers.

Queensland Victim Survey

This 1991 survey of 6,300 Queensland householders is the only survey in Australia to produce figures on the costs of property theft and damage to victims (Queensland Government Statistician's Office 1992). The losses are banded and this makes it difficult to set a value for $1,000 loss or more. Some use, nonetheless, is made of the Queensland survey.

Small Business Crime Survey

Some use is made of a 1999 postal survey by the Australian Institute of Criminology that covered crimes in 1998–99 against a nationally representative sample of 3,850 small retailers (see Taylor & Mayhew 2002a). (Small retailers have fewer than 20 employees and form the vast majority of retailers in Australia.) Retailers were asked about direct and indirect losses, and the amount spent on crime prevention measures in the past year (Taylor & Mayhew 2002b). The response rate was 16 per cent.

1997 Retail Crime and Safety Survey (South Australia)

Commissioned by the South Australian Attorney-General's Department, this survey covered 445 businesses in a number of areas of retail activity, including 22 supermarkets with a turnover of $20 million or higher, and 21 major department stores and discount department stores (Attorney-General 1998).

National Survey of Crime against Businesses

Another survey inspected but not used much was the Australian National Survey of Crime against Business. The NSCB was conducted by the Australian Institute of Criminology in 1993 and covered the victimisation experiences of a relatively small sample of 1,000 retailers, manufacturers, primary industries, and tourism/recreation operators (see Walker 1994, 1995).[6] No response rate is given but this is probably less of a difficulty than the small sample size.

6 Costs covered were the direct losses, security costs, indirect losses due to crime, and "leakage and shrinkage" (unexplained stock losses including crime incidents already mentioned).

Monash University Accident Research Centre (MUARC) Study

MUARC studied the costs of fatal, hospitalised and non-hospitalised cases of interpersonal violence with injury in 1993–94 in Victoria (Watson & Ozanne-Smith 1997). They were based on 57 fatalities and just over 20,800 non-fatal incidents, of which 14 per cent were treated in hospital. MUARC included medical costs relating to the treatment of injury (direct costs), and lost output costs relating to the loss or partial loss of the productive efforts of injury victims, and caregivers in the case of children. No attempt was made to value other services of family and friends in caring for the injured, because of lack of data. However, this "informal care" cost is thought to be significant.

Loss of productivity was estimated in terms of earnings and labour on-costs of injury victims, the unpaid contribution of victims to their households and communities, and productive time lost by caregivers of child injury victims. As said, MUARC's social discount rate was changed. No estimate was made for intangible losses.

Bureau of Transport Economics (BTE): Road Crash Costs

BTE did a comprehensive study of the cost of road accidents in Australia in 1996 (BTE 2000). Costs are assessed for fatal, serious injury, minor injury, and property-damage-only accidents (which form the vast majority). There is an impressive array of cost components, but only lost output and intangible losses are drawn on here.[7] Intangible losses were assessed through compensation paid to crash victims.

UK Studies

Brand and Price

The Social and Economic Costs of Crime (Brand & Price 2000) is a detailed assessment of the costs of crime in England and Wales in 1999 (referred to as the "UK estimates" hereon). They draw heavily on British Crime Survey (BCS) figures to estimate the "real" level of crime and thus give multipliers for police figures. The BCS also collects details on the gross and net costs of criminal victimisation, and on victims' desired compensation. These were used in the UK work to get the intangible cost of property crime and no-injury assaults. (The intangible costs of violent crime were based on UK figures relating to road traffic accidents, based on a "willingness to pay" methodology—DETR 1999).[8]

Brand and Price treat insurance as a transfer cost, not a loss to society (as is done here). However, they take account of the cost to insurers of administering claims and—unlike the current study—they do this in relation to individual crime types. Criminal justice

7 They included medical costs, workplace and household labour, intangible costs, legal services, workplace disruption, vehicle repairs, travel delays and insurance administration.

8 The intangible cost of a homicide was set to the same value as a fatal road accident, the cost of a serious assault to a serious road accident, and a more minor assault to a more minor accident.

system costs were apportioned to different crimes principally on the basis of information from a Flows and Costs Model. Victim services are also apportioned across different crimes.[9]

The main offences covered in the UK study were homicide, assault, sexual offences, robbery, burglary, thefts of and from vehicles, other theft, shoplifting, criminal damage, speeding offences, some other traffic offences, and drug offences. Fraud and forgery were also covered, drawing on a special study by National Economic Research Associates (NERA 2000).

In terms of findings, the Brand and Price study showed intangible costs were about 30 per cent of total costs, violent crime just over a third and fraud just under a quarter.

UK Commercial Crime Survey

Brand and Price also drew on results from the Commercial Crime Survey (CCS), which surveyed about 3,000 retailers and manufacturers in 1994 (Mirrlees-Black & Ross 1995). The CCS used essentially the same questionnaire as the Australian National Survey of Crimes against Businesses (Walker 1994, 1995), although this last covered additional sectors but with a much smaller sample. The CCS assessed gross financial losses for the most part.

Scottish Business Crime Survey

This looked at the nature and costs of crime affecting Scottish businesses during 1998 (Burrows et al. 1999). There were phone interviews with some 2,500 businesses, as well as a postal "head office" survey of 150 large businesses. A useful feature was that five business sectors were covered: manufacturing, construction, wholesale and retail, hotels and restaurants, and communications.

United States Studies

Miller, Cohen and Wiersema

A key US study on the costs of crime was sponsored by the National Institute of Justice (Miller, Cohen & Wiersema 1996). The "real" level of crime was taken largely from the number of victimisations in 1987 and 1990 measured by the National Crime Victimisation Survey (NCVS). Much cost information also came from the NCVS.

Little direct use is made of this US study since estimates of some unit costs will differ simply because of the greater involvement of firearms. Social welfare arrangements also differ. Nonetheless, some key features of the US estimates are worth mentioning.

9 Brand and Price used total financial support for victims from government, together with assumptions about the cost of volunteer time, to get an estimate of overall resource costs. These were allocated to different offence types of the basis of a BCS measure of relative seriousness. The total amount spent per crime was then divided by the estimated number of crimes to get a unit cost.

- Medical costs were mainly calculated using NCVS information on the nature of injuries and medical data on costs for given injuries.
- Mental health costs were assessed through a special study of mental health professionals. (Brand and Price do not directly estimate mental health costs.)
- Costs of reduced productivity were included, and were complex.[10]
- Intangible losses for fatalities were based on a synthesis of estimates of the amount people routinely spend to reduce risk of death. For non-fatal injuries, costs are mainly based on jury awards in civil lawsuits to victims of physical and sexual assault (less punitive damages).
- An essentially similar approach was taken in handling insurance in relation to losses.[11]
- There was some costing of victim support agencies, but no account was taken of voluntary services to victims.
- The US study excludes the cost of society's response to crime (that is, private security expenditure) and criminal justice costs (with the exception of the costs of the initial police and fire service response).

The crimes covered are similar to those in the Brand and Price UK study, including homicide, assault, rape and sexual assault, robbery, larceny, burglary, and motor vehicle theft. The US study also covers arson (but not criminal damage), child abuse and drunk driving (but not other traffic offences). There is no assessment of the costs of fraud or drug abuse.

In terms of findings, the study produced very high intangible costs—more than 75 per cent of total costs—much higher than the UK study. The cost of violent crime was also very high—more than 80 per cent of the total, and again much higher than in the UK study. The greater role of firearms in violence in the United States may play a part here.

10 They were derived taking account of lost wages, fringe benefits, housework, and school days lost by victims and families. The costs also include lost productivity by co-workers. NCVS data are used as the initial basis for many of the calculations, although adjusted in various ways to take account of age and employment status, and the ratio of short-term costs (measured by the NCVS) and longer-term ones.

11 Claims administration costs were added to property loss, with an estimate of 16 per cent added to incidents where losses were insured. For violent crime, insurance administration costs are subsumed under medical costs, and are based on a percentage of the medical costs covered under health insurance policies, and a percentage of workers' compensation-related cases.

3 Homicide

The Number of Homicides

The term homicide covers murder, attempted murder, manslaughter and driving causing death (unlawful killing through culpable, dangerous or negligent driving). In the present study, though, attempted murder is costed as assault.

There were 589 homicides in Australia in 2001 (and 458 attempts). It is assumed all homicides were known to the police—that is, there is a multiplier of 1.0. It is possible that the number of homicides is an underestimate. For instance, missing persons whose bodies have not been recovered may have been murdered. There could also be some undercounting of child deaths since the view is held that some children who allegedly die of Sudden Infant Death Syndrome are actually abuse victims.

Medical Costs

MUARC costs suggest the present-day medical cost of a homicide is $7,600 or, on the basis of the number of homicides in 2001, $4.5 million overall.

Lost Output

There is a much larger cost from lost output (the present value of foregone lifetime earnings). It is estimated to be about $1.2 million per incident, or over $700 million overall (Table 3.1). Young persons just entering the workforce who die lose more years of life, and so the average cost for victims aged between 15 and 24 amounts to about $1.6 million.

Intangible Losses

An estimate was made here. As explained, BTE's calculations of the value of intangible losses based on compensation payments for road accident fatalities were used as the starting point. In the absence of anything better, the ratio of BTE's quality of life figure to BTE's lost output figure for fatal road accidents (0.32) was applied to MUARC's lost output figure for homicide. This discounts the fact that the circumstances and consequences of road accident fatalities and homicides may differ. The intangible cost per homicide emerges at $400,000, or $225 million overall (Table 3.1).

Total Costs

The estimated total cost of homicide is $930 million.

Table 3.1: Costs of homicide[1]

	Per incident cost ($)	Total cost ($000s)
Medical costs	7,600	4,500
Lost output[2]	1,190,000	704,000
Intangible losses	380,000	225,000
Total[3]	1,600,000	930,000

1 Based on 589 homicides in Australia in 2001.
2 Based on a four per cent social discount rate.
3 Totals may not add to sub-components due to rounding.

Other Points

The total cost excludes any costs of supporting the surviving dependents of victims and offenders, and any intangible costs for family and friends of homicide cases. Also excluded are the costs of investigation, prosecution, trial and imprisonment of homicide offenders, which are included in criminal justice system costs.

Using BTE's award approach produces lower estimates of the intangible losses in homicide than a "willingness to pay" (WTP) approach. BTE discussed an illustrative figure of $2 million for a WTP intangible cost of a fatality (which is in line with estimates from other countries). Extrapolating from this would increase the intangible cost of homicide from about $225 million to $1.2 billion (five times higher). This assumes that the WTP intangible cost was simply "pain and suffering". If, however, the WTP cost is taken to represent the full value of life, including lost output, then the revised intangible cost comes down considerably (Table 3.2).

Table 3.2: Alternative intangible costs of homicide[1, 2]

	Per incident cost ($)	Total intangible cost ($000s)	Total cost of homicide—all costs ($000s)[3]
Intangible losses as in Table 3.1	380,000	225,000	930,000
WTP—quality of life	2,000,000	1,178,000	1,887,000
WTP—quality of life, less lost output	810,000	474,000	479,000

1 Based on 589 homicides in Australia in 2001.
2 Based on a four per cent social discount rate.
3 Totals may not add to sub-components due to rounding.

Other Estimates

In 1990, the Law Reform Commission of Victoria gave an estimate of $1 million for the cost of a homicide in Australia (LRCV 1990, p. 15). This included foregone income of the victim, the cost of providing for dependents, plus the cost of imprisonment for convicted murderers. Allowing for inflation, this figure would be reasonably in line with the estimate above although, as it happens, the elements are not the same.

4 Assault

Assaults Recorded by the Police

The ABS defines assault as the direct infliction of force, injury or violence, including attempts and threats, provided the attempts/threats are in the form of a face-to-face direct confrontation and there is reason to believe that the attempts/threats can be immediately enacted.

There were 151,573 recorded assaults in Australia in 2001. The police also recorded 458 attempted homicides, which are dealt with here.

Crime and Safety Survey

Assaults in the CSS are incidents other than robbery involving the use, attempted use or threat of force or violence. Victims are asked whether they were injured (one-fifth were). If injured, they were asked whether they went to hospital, but not otherwise whether they had medical treatment.

Estimating the Number of Assaults

The CSS count of assault may well be inflated relative to police figures, even taking account of non-reporting. One reason is threats. Although threats are in principle included in police figures, the police probably take a conservative approach to recording all threats brought to their attention. Another reason why CSS figures may be inflated is multiple victimisation—this can be very pronounced in relation to assault. Thus, while victims may say they have been victimised several times (by the same person in all probability), it is likely that if they go to the police, the police will not record the "face value" of the number of incidents, especially if they believe the incidents are highly related.

Adjusting only for age coverage, the difference between CSS and police figures for assault in 1997–98 would, on the face of it, suggest a large multiplier. To get a more cautious multiplier, the number of victims of assault was taken, rather than the number of incidents. This produces a multiplier of 5.3. This is reasonably in line with the UK multiplier, which is 7.

CSS results allow a distinction to be made between assaults requiring hospitalisation (two per cent of the total), those in which there was some other injury (19 per cent), and those with no injury (79 per cent). They have different probabilities of being reported to the police, as one would expect. Table 4.1 shows these, and the "multipliers" that have been calculated.

Table 4.1: Multipliers for assault

	No. of CSS assaults 1997–98[1]	Probability of reporting	Police-recorded assaults, 1997–98[2]	Multiplier[3]
Hospital	13,300	0.65	8,600	1.5
Other injury	115,000	0.38	34,800	3.3
No injury	490,000	0.24	72,900	6.7
Total[4]	618,000	0.24	116,300	5.3

1 Based on victims, not incidents. Victims over 15.
2 Injury and non-injury assaults are estimated. Victims over 15.
3 Different probabilities of being recorded if reported have been set for injury and non-injury incidents.
4 Totals may not add to sub-components due to rounding.

Applying the multiplier to the total number of assaults in 2001 produces an estimated total of 810,000 assaults (Table 4.2). This includes 458 attempted homicides, for which no multiplier has been applied.

Table 4.2: Estimated number of assaults in 2001

	Assaults recorded by the police, 2001[1]	Total estimated assaults
Hospital	11,700	18,000
Other injury	45,500	151,000
No injury	95,400	641,000
Total[2]	152,200	810,000

1 Including victims under 15. Injury and non-injury assaults are estimated. Attempted homicides are included in hospital assaults.
2 Totals may not add to sub-components due to rounding.

Medical Costs

MUARC's figures (see earlier) suggest the present-day medical cost of assault requiring hospitalisation is about $8,700, and an assault treated outside hospital about $400 (see Table 4.3). Other than being asked whether they had been to hospital, injured victims in the CSS were not actually asked if they had required medical treatment. Brand and Price, however, cover this and their results are extrapolated here. (Three in 10 of those injured are estimated to have had medical attention.)

Averaged over all assaults, the medical cost was just over $200 on average, with the overall medical cost for assaults about $170 million.

Lost Output

MUARC's costs for lost output are applied to those who had medical treatment. The lost output of those who were injured, but not treated, is set at a quarter of the cost of those treated outside hospital. UK estimates suggest that no-injury assaults (which Brand and Price call "common assaults") carry some lost output cost, but a small one. The UK figure is adopted here.

The lost output cost of an assault, averaged across all cases, is $700, although the figures are clearly much higher for hospitalisations. Overall, lost output from assault amounts to nearly $600 million (Table 4.3).

Table 4.3: Costs of assaults—medical, lost output and intangible losses

	Per incident cost ($)			Total cost ($000s)		
	Medical	Lost output	Intangible	Medical	Lost output	Intangible
Hospitalised[1]	8,700	24,300	17,000	155,000	435,000	304,000
Injured, medical treatment	400	2,000	2,100	17,000	89,000	95,000
Injured, no medical treatment		500	500		52,000	55,000
All injured	1,000	3,400	2,700	171,000	576,000	453,000
Not injured		30	300		18,000	219,000
Total[2]	200	700	800	171,000	594,000	672,000

1 Includes attempted homicide.
2 Totals may not add to sub-components due to rounding.

Intangible Losses

A similar estimate was made here as for homicides. That is, BTE's values for intangible losses for non-fatal road accidents were the starting point. The ratios of these to BTE's lost output figures, at different injury levels, were applied to MUARC's lost output figure for non-fatal violence.

The average intangible cost for assault is $800 per incident, but again very much more for injury assaults. Overall intangible costs amount to about $670 million. This is more than the lost output sum, even with the conservative approach taken to estimate intangible costs.

Total Costs

The estimated total cost of assault is $1,800 per incident, or just over $1.4 billion overall (Table 4.4).

Table 4.4: Overall unit and total costs of assaults

	Per incident cost ($)	Total cost ($000s)
Hospitalised[1]	50,000	893,000
Injured, medical treatment	4,000	200,000
Injured, no medical treatment	1,000	107,000
All injured	7,000	1,200,000
Not injured	400	237,000
Total[1]	1,800	1,437,000

1 Totals may not add to sub-components due to rounding.

Omissions

These are much as for homicide (see above). There is probably also a considerable hidden cost relating to child abuse by adult carers that escapes the administrative records of the police.

There is no separate costing for domestic violence, although there is some account taken later of services for victims (such as women's refuges). Laing and Bobic (2002) have recently drawn together various Australian studies on the economic cost of domestic violence. They identify five main costs, although not surprisingly they differ in methodology, the types of costs covered, and the estimated prevalence rate for domestic violence—which is a key issue in assessing costs.

5 Sexual Assault

Sexual Assaults Recorded by the Police

The ABS defines sexual assault as physical assault of a sexual nature directed at someone who:

1. does not give consent;
2. gives consent as a result of intimidation or fraud; or
3. is deemed incapable of giving consent.

There were nearly 16,750 sexual assaults recorded in Australia in 2001, with 83 per cent perpetrated against females.

Crime and Safety Survey

Sexual assaults in the CSS are incidents of a sexual nature involving physical contact, including rape, attempted rape, indecent assault, and assault with intent to sexually assault. (Sexual harassment is excluded.) Only women aged 18 or more were asked about sexual assault.

Although survey definitions are modelled on those used by the police, incidents recorded by the police may differ somewhat to those revealed in surveys. On balance, incidents recorded by the police may be rather more serious.

Estimating the Number of Sexual Assaults

Police figures for the CSS period were taken for women only, and an adjustment made for the survey age coverage. The multipliers, then, were based on adult females but applied to all sexual assaults recorded by the police in 2001, assuming similar hidden crime against men and younger people.

The difference between CSS incidents and police figures for sexual assault would on the face of it suggest a multiplier of 8.8. As with assault, a more cautious multiplier was taken, based on victims of assault, producing a multiplier of 5.6.[12]

CSS results show that about one-fifth of sexual assaults involved injury, but there is no information on whether hospitalisation or medical treatment was necessary. Nor does the CSS show reporting levels by injury level, but a differential was estimated. Table 5.1 shows the resulting multipliers.

12 The UK multiplier was 3.5, but this will be low as it is based on the British Crime Survey in which the main count of sexual offences is thought to be low (see Myhill & Allen 2002).

Table 5.1: Multipliers for sexual assault

	No. of CSS sexual assaults 1997–98[1, 2]	Probability of reporting[3]	Police-recorded sexual assaults, 1997–98[2]	Multiplier
Injury	7,000	0.60	2,500	2.8
No injury	23,100	0.24	2,900	8.0
Total[4]	30,100	0.33	5,400	5.6

1 Based on victims not incidents. Female victims over 18.
2 Injury and non-injury assaults are estimated. Female victims over 18. Different probabilities of being recorded if reported have been set for injury and non-injury incidents.
3 Estimated.
4 Totals may not add to sub-components due to rounding.

Applying the multiplier to the total number of sexual assaults in 2001 produces an estimated total of about 93,000 sexual assaults (Table 5.2).

Table 5.2: Estimated number of sexual assaults in 2001

	Sexual assaults recorded by the police, 2001[1]	Total estimated sexual assaults
Injury	7,800	21,700
No injury	8,900	71,600
Total[2]	16,700	93,300

1 Injury and non-injury assaults are estimated. Including victims under 18 and males.
2 Totals may not add to sub-components due to rounding.

Medical Costs

The injury costs were taken from assault figures. This gives the present-day medical cost of a sexual assault with injury as $1,000 (Table 5.3). Overall, the medical costs were $22 million.

Table 5.3: Costs of sexual assaults—medical, lost output and intangible losses

	Per incident cost ($)			Total cost ($000s)		
	Medical	Lost output	Intangible	Medical	Lost output	Intangible
Injury	1,000	4,500	3,600	22,000	99,000	78,000
No injury	–	40	500	–	3,000	32,000
Total[1]	200	1,100	1,200	22,000	101,000	110,000

1 Totals may not add to sub-components due to rounding.

Lost Output

The lost output costs were again based on assault figures. However, it is quite possible that the impact of sexual offences is greater, on average, than assault. One empirical clue to this is from the International Crime Victimisation Survey (ICVS), in which victims in 17 industrialised countries were asked to assess the seriousness of what happened to them. For sexual assault victims, 54 per cent judged it "very serious" as against 41 per

cent of victims of assault—suggesting a weighting factor of about one-third (see van Kesteren et al. 2001, p. 44). This has been applied here to both lost output and intangible costs for sexual assaults to inflate them relative to non-sexual assault.

The unit cost of a sexual assault due to lost productive potential is $1,100 averaged across all incidents, or about $4,500 for a sexual assault with injury. Overall, lost output from sexual assault amounts to about $100 million (Table 5.3).

Intangible Losses

The figures for intangible losses from assaults were adapted for sexual assault, but inflated by one-third to account for a probably greater emotional toll. The overall average intangible cost for sexual assault is $1,200 per incident, with an overall cost of $110 million (Table 5.3).

Total Costs

The estimated total cost of sexual assault is in Table 5.4, amounting to just over $230 million. The average incident cost is $2,500.

Table 5.4: Overall unit and total costs of sexual assaults

	Per incident cost ($)	Total cost ($000s)
Injury	9,100	199,000
No injury	500	35,000
Total[1]	2,500	234,000

1 Totals may not add to sub-components due to rounding.

Other Points

Sexual offences will differ in seriousness. Rape will generally incur the biggest human costs. There seems to be no guide from other work, though, as to the cost of rape relative to other sexual assault.

6 Robbery

Robberies Recorded by the Police

The ABS defines robbery as the unlawful taking of property, with intent to permanently deprive the owner, accompanied by the use and/or threatened use of immediate force or violence. Attempts are included.

Personal and Organisational Victims

Victims of robbery can be persons or organisations.[13] In 2001, ABS figures indicate that 19 per cent of robberies had organisational victims. For present purposes, organisational robberies have been treated as a different count from those encompassed by the CSS.[14]

Robbery Details

The ABS makes a distinction between armed and unarmed robberies, and this distinction is also used here. Armed robberies are those in which a weapon is used, with a weapon being defined as any object used to cause injury or fear of injury. Weapons can include imitation weapons and implied weapons.

In 2001, ABS figures show that five per cent of personal robbery victims were under 15 years of age—out of the scope of the CSS. The ABS does not collect information from the police on whether property was stolen, or the dollar loss.

Crime and Safety Survey

The question asked in the CSS is: "In the last 12 months, has anyone stolen or tried to steal anything from you?" This is followed by a question asking the number of times this has happened. Those answering affirmatively to the initial question are asked: "In how many of these incidents were you physically attacked or threatened with violence?" Victims are also asked whether they were injured and whether the offender used or threatened to use a weapon.

Robbery Details

The CSS shows that 25 per cent of incidents involved a weapon. As would be expected, weapon robberies were more likely to be reported to the police than other robberies (Table 6.1).

13 The element of property ownership determines whether the organisation (or business) is the victim. Some crime incidents might include both organisational and personal victims. (For instance, when a post office is held up and both the cash register takings and personal property of a staff member are stolen, both an organisational and personal victim would be counted.)

14 In fact, though, it is possible that victimisations measured by the CSS will include organisational robberies, since a bank teller who experienced a robbery might well report it in the CSS.

Table 6.1: Multipliers for personal robbery

	No. of CSS personal robberies 1997–98[1]	Probability of reporting	Personal robberies recorded by police, 1997–98	Multiplier
Armed	29,300	0.55	5,400	5.5
Unarmed	88,300	0.44	10,200	8.6
Total[2]	117,600	0.47	15,600	7.5

1 Based on victims, not incidents. Victims over 15.
2 Totals may not add to sub-components due to rounding.

The CSS shows that 28 per cent of incidents involved injury. The percentage of those injured was roughly the same for weapon and non-weapon incidents.

The CSS indicates that 48 per cent of all robberies involved some loss of property. No information is collected on dollar losses. The proportion of incidents involving loss of property was about the same in weapon and non-weapon incidents.

Estimating the Number of Robberies

CSS values are a reasonable guide to the number of robberies against personal victims aged 15 or more. The appropriate count is the number of incidents rather than the number of victims (ABS 1999, p. 32). The difference between police and survey figures indicate a multiplier of 7.5. This is large, but not excessively out of line with the UK personal robbery multiplier of 5.8. Table 6.1 shows results.

The number of organisational robberies that go unrecorded is not clear, but a number of surveys indicate that it would be reasonable to assume that 25 per cent of unarmed robberies are not notified to the police, and 10 per cent of armed incidents probably are not.[15] For simplicity, all reported organisational robberies are also assumed to be recorded by the police, using a multiplier of 1.1. For 2001, then, there were an estimated 4,200 armed robberies and 1,500 unarmed robberies with organisational victims.

Adding the estimated number of personal robberies in 2001 to the estimated number of organisational robberies produces a total of about 168,000 (Table 6.2).

Estimating Property Loss

A number of estimates of property loss in robberies were inspected, three of which are synthesised to get an average cost for organisational and personal robberies.[16] NSW

15 The Small Business Crime Survey indicated that virtually all armed robberies against retailers were reported to the police, although one in four unsuccessful unarmed robberies was not reported (Taylor 2002). The UK Commercial Crime Survey showed about 30 per cent of robberies against retailers were not reported (all types of robbery), with the figure higher for manufacturers. The Scottish Business Crime Survey showed the lowest reporting rates, with only half of robberies reported by victims across a broad range of sectors.

16 Other estimates are:
International Crime Victimisation Survey. The first ICVS provides figures for losses (in 1988) of $2,388 for reported personal robberies, and of $74 for unreported robberies. They are not taken into account here; the figures are fragile because of sample size and the fact that they were collected in the late 1980s.
National Survey of Crimes against Businesses. The NSCB collected costs of robberies for retailers, manufacturers, primary industries, and tourism/recreation. No distinction is made between armed and unarmed robberies. Nor was information available on whether all the robberies were reported to the police. At current prices, though, the cost of a business robbery in the sectors covered by the NSCB was $3,520.

Table 6.2: Estimated number of robberies, 2001

	Organisational robberies recorded by police, 2001	Personal robberies recorded by police, 2001[1]	Total estimated organisational robberies[2]	Total estimated personal robberies	Total estimated robberies
Armed	3,800	7,200	4,200	39,400	44,000
Unarmed	1,200	14,300	1,500	123,400	125,000
Total[3]	5,000	21,600	5,700	162,800	168,000

1 Including victims over 15.
2 Estimated to be 10 per cent more armed robberies than recorded; 25 per cent more unarmed than recorded.
3 Totals may not add to sub-components due to rounding.

police figures indicate that the average cost of an organisational robbery was in the region of $6,200, and $1,000 for a personal robbery. These of course are recorded robberies only.[17] The UK estimates are helpful as they cover both recorded and unrecorded incidents. Based on British Crime Survey figures, personal robberies run at an average of about $450 per incident. The UK Commercial Crime Survey, covering retailers and manufacturers, indicates an average cost of about $2,100.[18] The Small Business Crime Survey, covering retailers only, indicates a current unit cost of about $1,300 per robbery (direct costs).

Putting these figures together, the best estimate of property loss for an organisational robbery is $2,500 on average, and $730 for a personal robbery. The data are such as to defy reliable unit costs for armed and unarmed incidents separately. Applying the "best estimate" unit cost to the estimated number of organisational and personal robberies puts the overall cost of robbery due to property loss at $800 per robbery, or about $130 million overall.

Medical Costs

The CSS shows that 28 per cent of incidents involved injury, with the percentage roughly the same for weapon and non-weapon incidents. This injury rate has been taken here for both personal and organisational victims. Based on BCS estimates, the assumption here is that one in 10 of those injured were hospitalised, four in 10 received medical treatment, and the other half had no treatment (authors' computations). This gives nearly 24,000 incidents of robbery receiving medical attention.

On the basis of MUARC's estimates for medical cost for incidents of interpersonal violence, robberies requiring medical treatment would cost about $2,000 at today's prices. The estimated total medical cost is therefore nearly $50 million, or $300 averaged over all robberies (Table 6.3).

17 Information was collected from the Bureau of Crime Statistics and Research for 2000 and 2001 (an average was taken). Not all recorded robberies had a dollar loss available. (There was information for about two-thirds of incidents: about 12,000 personal robberies and about 3,000 organisational robberies.)

18 This is considerably higher than robbery costs estimated by the Scottish Business Crime Survey, which amount to about $550 per incident across a wider range of organisational sectors (Burrows et al. 1999).

Table 6.3: Costs of robberies—medical, lost output and intangible losses

	Per incident cost ($)			Total cost ($000s)		
	Medical	Lost output	Intangible	Medical	Lost output	Intangible
Injured, medical treatment	2,000	6,400	8,500	48,000	152,000	199,000
Injured, no medical treatment		500	500		12,000	11,000
All injured	1,000	3,500	4,500	48,000	164,000	210,000
Not injured		30	300		3,000	41,000
Total[1]	300	1,000	1,500	48,000	167,000	252,000

1 Totals may not add to sub-components due to rounding.

Lost Output

On the basis of MUARC's figures, the lost output cost of an incident with injury requiring hospital treatment would be nearly $25,000, and for medical treatment outside hospital about $2,000 at today's prices. This gives an average lost output cost of robberies requiring medical treatment of about $6,400. A quarter of the lost output costs for those treated outside hospital is set for incidents involving injury but no medical treatment. Across all incidents, the average cost is $1,000.

This costing approach is in line with that for the violent crimes already discussed. However, the UK estimates give a lower lost output figure for personal robbery of $600, based on victims' time off work.

Intangible Costs

For robbery involving injury, the same approach to assessing intangible losses was taken as with assault. For non-injury robberies, the same intangible cost was taken as for non-injury assault. The intangible costs emerge as higher than for lost output.

Total Costs

The estimated total cost of robbery is in Table 6.4, amounting to $3,600 on average per incident and nearly $600 million overall.

Table 6.4: Overall unit and total costs of robberies

	Per incident cost ($)	Total cost ($000s)
Property loss and damage	800	132,000
Medical	300	48,000
Lost output	1,000	167,000
Intangible	1,500	252,000
Total[1]	3,600	598,000

1 Totals may not add to sub-components due to rounding.

7 Burglary

Burglaries Recorded by the Police

Burglary in ABS terminology is unlawful entry with intent (UEWI) to commit an offence. Structures entered must be capable of being secured in some way. A distinction is drawn between UEWI involving the taking of property, and incidents where nothing is taken. The former are labelled "burglary with loss" hereon, the latter are "burglary without loss"—although this may not be strictly correct since some damage may have occurred.

Residential and Other Victims

ABS figures are presented for burglaries in residential locations, and those involving "community" and "other" targets, which can simply be called non-residential. These need to be treated as a different count from those encompassed by the CSS.

Crime and Safety Survey

Burglaries in the CSS are similar, including burglaries to garages and sheds. There is a distinction between break-ins and attempts. The former are equated here with the ABS loss burglaries, although an entry might not have involved loss of property. In the CSS, just over 40 per cent of burglaries were attempts. The police figures show a lower proportion of attempts, reflecting a lower reporting rate.

Estimating the Number of Burglaries

Residential Burglary

The CSS registered just over 800,000 burglaries in 1997–98 (Table 7.1). (Incidents are taken, not victims.) The difference between the survey and police figures for residential burglaries indicates a multiplier of 3.0, slightly smaller than the UK multiplier of 3.2.

Non-residential Burglary

The proportion of non-residential burglaries that go unreported is unclear, but from survey evidence it might be reasonable to assume that 20 per cent of attempts are not notified to the police, nor are five per cent of successful burglaries.[19] For simplicity, all

19 The Small Business Crime Survey showed a reporting rate of 72 per cent for attempts against retailers, and 97 per cent for completed incidents (Taylor 2002). The UK Commercial Crime Survey showed 96 per cent of burglaries against retailers were reported and 92 per cent against manufacturers. (There was no distinction between attempts and completed incidents.) The Scottish Business Crime Survey showed a 72 per cent reporting rate for attempts, and 97 per cent for completed incidents.

Table 7.1: Multipliers for residential burglary

	No. of CSS burglaries 1997–98[1]	Probability of reporting	Residential burglaries recorded by police, 1997–98[2]	Multiplier
Break-ins	460,400	0.76	238,000	1.9
Attempts	345,600	0.30	52,000	6.7
Total[3]	806,000	0.57	290,000	2.8

1 Based on incidents.
2 Some estimation.
3 Totals may not add to sub-components due to rounding.

reported non-residential burglaries are assumed to be recorded by the police. For 2001, then, there were an estimated 116,000 "non-residential burglaries with loss" and 60,000 "no loss" burglaries.

Applying the multiplier to the total number of residential burglaries in 2001, and adding non-residential incidents, produces an estimated total of 994,000 (Table 7.2).

Table 7.2: Estimated number of burglaries, 2001

	Non-residential buglaries recorded by police, 2001	Residential burglaries recorded by police, 2001	Total estimated non-residential burglaries[1]	Total estimated residential burglaries	Total estimated burglaries
With loss	110,000	215,000	116,000	416,000	532,000
No loss	50,000	60,000	60,000	402,000	462,000
Total[2]	160,000	275,000	176,000	819,000	994,000

1 Estimated to be five per cent more with loss than recorded; 20 per cent more no loss than recorded.
2 Totals may not add to sub-components due to rounding.

Estimating Property Loss

There are a number of estimates of property loss in burglary, and they were drawn together to provide an average figure. How accurately victims can assess the value of their losses—or the police do it for them—is a moot point, but hardly grounds for rejecting the estimates.

Residential burglaries. UK estimates were used, along with NSW and Victoria police figures, with an adjustment made to take account of the fact that they will be weighted towards more expensive loss burglaries.[20] The "best estimate" emerges as a $1,100 loss averaged across all residential burglaries.[21]

20 Victoria showed an average loss for residential burglary of $2,550, and NSW just over $800 (figure for 2001)—a fair difference. The UK estimates showed $2,100 for reported and unreported burglaries with loss, 14 times high than for attempts ($150). Victoria and NSW police figures were adjusted to take account of the differential between loss burglaries and attempts, indicated by the UK estimates.

21 The 1991 Queensland Crime Victims Survey also showed some costs (Queensland Government Statistician's Office 1992) for burglary and attempts. The losses are banded and this makes it difficult to set a value for $1,000 loss or more. For what it is worth, though, an estimate of average loss is $1,195 at current day prices—very close to what is taken.

Non-residential burglaries. The same sources were used as well as the Australian SBCS, and the Scottish Business Crime Survey. The best estimate was an average loss of $2,400.[22] It is not possible to differentiate loss and no loss incidents separately.

Applying these "best estimate" unit costs to the number of residential and non-residential burglaries gives an overall loss of about $1.3 billion, of which $0.9 billion was for residential burglary (Table 7.3).

Table 7.3: Costs of burglaries—property loss, lost output and intangible losses[1]

	Per incident cost ($)			Total cost ($000s)		
	Property loss and damage	Lost output	Intangible	Property loss and damage	Lost output	Intangible
Residential	1,100	100	800	923,000	82,000	643,000
Non-residential	2,400	1,200	800	429,000	219,000	138,000
Total[2]	1,400	300	800	1,353,000	301,000	781,000

1 Medical costs were not estimated.
2 Totals may not add to sub-components due to rounding.

Medical Costs

No medical costs were estimated due to lack of data. It is likely, though, that some victims will have received medical treatment, for emotional upset at least.

Lost Output

Lost output costs for residential burglaries were derived from UK estimates, based on victims' time off work. They amount to $100 per incident (Table 7.3). For non-residential incidents, figures from the Small Business Crime Survey and the Scottish Business Crime Survey on indirect losses indicate an average lost output of $1,200, bearing in mind the loss here could include business disruption and so on.

Intangible Costs

The only guide to intangible losses was the UK estimate of household victims' "desired compensation" (just under $800). This was also taken for non-residential burglaries, in the absence of any other indicator (Table 7.3)

22 Victoria showed an average loss for non-residential burglary of $2,290 while the loss in New South Wales was just over $1,630. The UK estimates, based on the Commercial Crime Survey, showed average losses of $1,710, rather lower than the Scottish Business Crime Survey ($2,990) and the Australian SBCS ($2,480). Since the police figures were not consistently higher than the survey estimates, an average of all figures was taken. None differentiated loss and no-loss incidents.

Total Costs

The estimated total cost of burglary amounts to $2,400 on average per incident, with the higher average costs for non-residential burglaries. The total burglary bill is $2.43 billion. Residential burglaries account for two-thirds of the overall cost, but since the number of dwellings relative to other targets will be much greater than this, the burden falls more heavily on the non-residential sector.

Table 7.4: Overall unit and total costs of burglary

	Per incident cost ($)	Total cost ($000s)
Residential	2,000	1,648,000
Non-residential	4,500	786,000
Total[1]	2,400	2,434,000

1 Totals may not add to sub-components due to rounding.

8 Thefts of Vehicles

Vehicle Thefts Recorded by the Police

The ABS defines motor vehicle theft as the taking of a vehicle unlawfully or without permission. Attempts are not included. Nor are thefts from vehicles, which are included within the ABS category of "other theft". "Vehicle" includes cars, motorcycles, trucks and lorries (the National Motor Vehicle Theft Reduction Council figures show that motorcycles account for five per cent of thefts). No distinction is made in ABS figures between privately owned and commercial vehicles.

Crime and Safety Survey

The CSS covers incidents where a motor vehicle was stolen from any member of the household. It includes privately owned vehicles as well as business/company vehicles used exclusively by household members.

Vehicle theft has an unusually high reporting rate, but in the 1998 CSS not quite all victims reported the theft (95 per cent did so). Some thefts may go unreported because the stolen vehicle was quickly found, or because it was uninsured due to old age or low value. The Small Business Crime Survey (SBCS) showed that only 87 per cent of retailers reported successful thefts (Taylor 2002).

Estimating the Number of Vehicle Thefts

ABS figures show that there were nearly 140,000 thefts reported in 2001. A multiplier of 1.05 (based on the 1998 CSS figures) has been taken to account for non-reporting. It is assumed that all reported thefts are recorded by the police. The total number of thefts, then, is about 147,000.

Estimating Property Loss

Average losses need to take into account the fact that on current estimates 79 per cent of stolen vehicles are recovered, although some may have suffered damage, or may have had items stolen off or from the vehicle. There are a number of estimates of property loss and damage arising from stolen vehicles, but the best one is from the National Motor Vehicle Theft Reduction Council (NMVTRC 2002).[23]

23 Other estimates are:
NSW police data, which show an average loss over 2000 and 2001 of $10,500 per theft. However, this is likely to be the initial loss, not the net loss. **Victoria police data** show an average loss of $7,300 in 2000–01. Again, though, this is a gross rather than net loss.
Small Business Crime Survey: Retailers were asked to assess losses due to theft and damage for thefts of company vehicles. They were also asked to assess indirect losses due to business disruption, medical expenses and so on. The average direct cost of vehicle theft was put at $4,200 and indirect costs at $1,600 (see Taylor & Mayhew 2002b). The direct costs will again not take losses recovered in account.

Motor industry estimates are presented regularly by NMVTRC using data in CARS (the Comprehensive Auto-theft Research System). For 2001–02, analysis of insurance claims involving the top 20 insurance companies gives figures for the total outgoing cost incurred by the insurer in finalising a claim, less any revenue received from the salvage of the recovered vehicle or any of its parts; the outgoing cost may include fees for car hire, for example.

The average loss of $7,914 is based on figures for which costs are known.[24] Added to this is an average "excess" of $388, paid by the victim. The average cost figures will take into account both recovered and non-recovered vehicles. Costs for specific types of vehicles, such as plant equipment, are likely to be higher.

The NMVTRC figures, though, will be based on those who made a claim on insurance. Some victims will not claim if, for instance, their vehicle is recovered fairly intact, or the value of loss is smaller than their policy "excess". Advice from the NMVTRC was taken as regards the proportion of vehicles not covered by theft insurance (75 per cent), and the proportion of thefts which did not result in a claim (40 per cent), assuming that the claim rate is spread evenly across insured and uninsured owners (Paul Thomas, South Australian Attorney-General's Department, personal communication). This gives a claim rate of 45 per cent (0.60 * 0.75).[25] A "best guess" estimate is made of a loss of $500 for thefts for which no claim was made. Table 8.1 shows details.

Table 8.1: Property loss and damage costs for vehicle thefts[1]

	Number of incidents	Estimated loss per incident ($)	Total loss ($000s)
No claim made[2]	81,000	500	40,000
Claim made[2]	66,000	8,300	550,000
Total[3]	147,000	4,000	590,000

1 Medical costs are not estimated.
2 Based on a no claim rate of 55 per cent, and a claim rate of 45 per cent.
3 Totals may not add to sub-components due to rounding.

Medical Costs

Although a few thefts may involve some violence against vehicle owners, or a stolen vehicle may be involved in a road accident, there is insufficient information to allocate medical costs.

24 In the NMVTRC 2001–02 figures, some 28 per cent of claims are shown and having no, or an unknown, dollar cost. However, it is not known what proportion is "nil cost" and what proportion is unspecified costs. This 28 per cent, then, is ignored here.

25 British Crime Survey (BCS) estimates from 2000 and 2001–02 are another guide to no-claiming. In the UK, BCS estimates show that 87 per cent of owners were not covered for theft, and of those covered 73 per cent made a claim, giving an overall figure of 64 per cent of victims making a claim. (This is based on combined average of figures from the 2000 BCS [Kershaw et al. 2000] and the 2001–02 BCS [Simmons et al. 2002]).

Lost Output

Victims of vehicle theft will lose their mode of transport, and will need time to report to the police and to insurers. A recent survey by NRMA of victims of motor vehicle theft showed four out of five were "very inconvenienced" (NRMA Insurance 2002). The average indirect cost for victims for items not covered by insurance, such as possessions stolen from the car and time lost from work, was about $650 (author's computations).[26] Costs for businesses that have vehicles stolen may be higher: retailers in the Small Business Crime Survey assessed an average "indirect" cost of $1,600 for vehicle theft. Taking a guide from NSW police figures that thefts from organisational victims comprise eight per cent of all thefts, the average lost output cost is $700 (Table 8.2).

Intangible Costs

The UK estimate for victims' "desired compensation" is updated to estimate an average intangible loss of just under $1,300.

Table 8.2: Overall unit and total costs of motor vehicle thefts[1]

	Per incident cost ($)	Total cost ($000s)
Property loss and damage	4,000	590,000
Lost output	700	106,000
Intangible	1,300	187,000
Total[2]	6,000	884,000

1 Medical costs are not estimated.
2 Totals may not add to sub-components due to rounding.

Total Costs

The total costs of motor vehicle theft are shown in Table 8.2. Two-thirds of the cost is due to property loss and damage, and one-fifth due to intangible losses.

26 UK estimates for losses from time off work taken by victims in the British Crime Survey amounts to $90 per theft.

9 Thefts from Vehicles

Estimating the Number of Thefts

Thefts from vehicles are subsumed in ABS figures for general thefts. Five states, however (NSW, Victoria, Queensland, South Australia and Tasmania), recorded about 225,000 thefts from vehicles in the last year for which their figures were available. On the basis of these states' share of all ABS thefts, the estimated national total is 266,000 thefts in 2001.

By no means all thefts are reported to the police. For instance, the Queensland survey showed that—much the same as the BCS figure—about one-third of thefts from household vehicles are reported. Reporting seems to be higher for commercial vehicles: about two-thirds were reported, taking an average of the SBCS, the Scottish Business Survey and the UK commercial theft results.[27]

The multiplier for thefts from commercial vehicles was derived simply by taking account of the non-reporting rate. This gave an estimated 53,000 thefts (Table 9.1). For thefts involving householders' vehicles, the UK multiplier (based on the BCS) of 3.9 was used.[28]

Table 9.1: Multipliers for thefts from vehicles

	Estimated thefts from vehicles recorded by police[1]	Multiplier[2]	Estimated total number of thefts
Commercial vehicles	34,000	1.5	53,000
Other	232,000	3.9	903,000
Total[3]	266,000	3.6	956,000

1 Based on NSW, Victoria, Queensland, South Australia and Tasmania.
2 For commercial vehicle thefts, account is taken of the non-reporting rate (35%). The multiplier for other thefts is based on UK estimates.
3 Totals may not add to sub-components due to rounding.

Estimating Property Loss

Again police figures will not give reliable estimates for the average value of thefts from vehicles, because more expensive incidents are more likely to be reported. Nonetheless, New South Wales police figures suggest an average loss of about $1,100 for thefts from commercial vehicles, and $400 for other thefts. Victoria gives an average of about $750 (with no distinction between different types of theft).

27 The South Australia Retail Survey did not ask about thefts from vehicles.

28 This is the multiplier for thefts excluding attempts.

Table 9.2: Costs of thefts from vehicles—property loss, lost output and intangible losses[1]

	Per incident cost ($)			Total cost ($000s)		
	Property loss	Lost output	Intangible	Property loss	Lost output	Intangible
Commercial vehicles	600	180	260	32,000	9,000	14,000
Other	250	15	260	226,000	14,000	235,000
Total[2]	270	20	260	257,000	23,000	249,000

1 Medical costs were not estimated.
2 Totals may not add to sub-components due to rounding.

Survey estimates from the SBCS, the Scottish Business Crime Survey, and the UK Commercial Survey, taken with police figures, indicate that a reasonable average for thefts from commercial vehicles would be $600. For other incidents, police figures, the Queensland Survey and the UK estimates suggest an average cost of $250. (The UK estimate takes account of some losses that are costs recovered.)

Medical Costs

No medical costs are estimated.

Lost Output

Taking an average from the SBCS and the Scottish Business Survey suggests a cost for lost output for thefts from commercial vehicles of $180. The UK estimate for time off work after thefts from vehicles suggests $15 on average (Table 9.2)

Intangible Losses

The UK estimates suggests an intangible cost of $260 for thefts from household vehicles, based on victims' "desired compensation". In the absence of anything better, this is also applied to thefts from commercial vehicles (Table 9.2)

Total Costs

The total cost of thefts from vehicles was $530 million, or $550 per incident. Almost half the total cost is accounted for by intangible losses.

Table 9.3: Overall unit and total costs of thefts from vehicles[1]

	Per incident cost ($)	Total cost ($000s)
Property loss	270	257,000
Lost output	20	23,000
Intangible	260	249,000
Total[2]	550	530,000

1 Medical costs are not estimated.
2 Totals may not add to sub-components due to rounding.

10 Shop Theft

Estimating the Number of Shop Thefts

There is no sound estimate of the number of shop thefts (thefts by customers and staff). It is not a discrete ABS recorded crime category, and although some police forces separate out shop theft (or shop stealing) from other thefts, it is evident that the police record very few incidents. For one, many incidents will go unnoticed by retailers, and even those that are witnessed are not always reported. The SBCS and South Australian Retail Survey, for instance, show that only 12 per cent of incidents are reported, although this will only be witnessed thefts.

The police in NSW, Victoria, Queensland and South Australia recorded about 60,000 shop thefts in the last year for which figures are available. These states account for 82 per cent of all thefts in ABS returns, so this was applied to give an estimated national total of shop thefts of 73,000 in 2001.

A fairly well-aired multiplier for shop theft, based on Farrington's (1999) extensive review of shoplifting studies, is that one incident in a hundred that are committed end up recorded by the police. The UK estimates adopt this principle, and it is adopted here too. This gives an estimated 7.3 million thefts (Table 10.1). Given the number of retailers in Australia currently, this indicates just over 40 thefts each in a year, on average.[29]

Table 10.1: Estimates for shop theft

	Estimate
Estimated number of shop thefts recorded by the police[1]	73,040
Multiplier[2]	100
Estimated number of shop thefts	7,304,000
Best estimate of value of theft per incident ($)	100
Best estimate of total property loss ($000s)	730,000

1 Based on NSW, Victoria, Queensland and South Australia, grossed up to Australia.
2 Estimate.

29 This is rather higher than some survey figures indicate. The NSCB shows an average of 21 shopliftings and staff thefts in the year, although there is substantial extra "shrinkage and leakage" which might have been attributable to crime. The SBCS indicates an average of 8.8 shop thefts in total, whereas the South Australia Retail Crime Survey's figure is 34. Like the NSCB, however, the retailers also report very high leakage and shrinkage losses. In the UK, the British Retail Consortium's annual survey and the Commercial Victimisation Survey give an average of about 20 incidents per retailer. The Scottish Business Crime Survey, however, produces lower figures of about 2.5 incidents of customer and staff theft per premises—albeit covering wholesalers and retailers.

Estimating Property Loss

Police figures are a poor guide to the average value of a theft, since more expensive incidents are those likely to be reported. For what it is worth, though, NSW police figures suggest an average loss of just over $450, and Victorian figures suggest just over $200.

Survey estimates are a better guide, and an average is taken here from three surveys, to give an estimate of $100 per incident. (All three surveys suggest that the average loss from theft is lower when customers are involved, rather than staff.) The three surveys are the Small Business Crime Survey, the South Australia Retail Crime Survey and the UK Commercial Crime Survey.[30]

No allowance is made of any costs recovered, but this is probably quite small.

Medical Costs

No medical costs are estimated.

Lost Output

Lost output will arise principally from the time spent dealing with offenders and from trying to account for stock losses. Victimised retailers in the Small Business Crime Survey assessed an average "indirect" cost of $250 per annum from shoplifting, and $350 for staff theft. Taking into account the number of incidents involved, this amounts to an average of $10 per theft.

Intangible Losses

There is no information on which to assess intangible costs.

Table 10.2: Costs of shop theft

	Per incident cost ($)	Total cost ($000s)
Property loss	100	730,000
Medical	not estimated	
Lost output	10	80,000
Intangible	not estimated	
Total[1]	110	810,000

1 Totals may not add to sub-components due to rounding.

30 The SBCS suggests an average cost of $110. This is rather higher than the figures from the South Australia survey (nearly $70), which itself is the same as the UK estimate. The unit cost from the NSCB at current prices is considerably higher than other estimates (over $1,500). The unit costs from the Scottish Business Survey are also higher, but the thefts are by outsiders rather than customers, and so may include delivery thefts.

Total Costs

The total cost of shop theft amounts to $810 million, or $110 per incident. For retailers, there would be a yearly bill of nearly $4,800 each.

Other Estimates

The Retail Traders' Association's rule of thumb is that 1.5 per cent of retail turnover goes on shrinkage and loss of all kinds. This would give a total loss estimate of just over $2 billion. This is appreciably higher than the current estimate, but is not strictly comparable with it since the losses are not just from thefts by customers and staff, but also include delivery thefts, damage to goods, burglary and refund frauds.

11 Other Theft and Handling

Estimating the Number of Thefts

"Other theft" covers a wide range of incidents, including thefts from work, in leisure settings, garden thefts, stock theft and so on. The ABS recorded a total of about 700,000 incidents in their "other theft" category. Of these, some have been accounted for already in the present study in the sections on shop theft and thefts from vehicles. An estimated 360,000 remain. Added to this are an estimated 32,000 recorded offences of handling stolen goods.

The multiplier here is tenuous, but lacking anything better, the UK figure of 4.5 is applied.[31] This seems a reasonable multiplier since it is likely that many thefts of a more minor nature go unreported.

Estimating Property Loss

The UK figure for the average loss from "other thefts" against householders was applied here, giving $200 per incident (Table 11.1). It is offered with caution.

Table 11.1: Estimates for other theft and handling[1]

	Estimate[2]
Estimated number of other thefts recorded by the police	392,000
Multiplier	4.5
Estimated number of other thefts	1,769,000
Value of theft per incident ($)	200
Total property loss ($000s)	354,000
Lost output per incident ($)	10
Total lost output ($000s)	17,700
Intangible losses per incident ($)	150
Total intangible losses ($000s)	265,000
Total loss per incident ($)	360
Total loss ($000s)	637,000

1 Medical costs are not estimated.
2 Totals may not add to sub-components due to rounding.

Lost Output

The UK figure for lost output would be $10 per incident averaged across all incidents.

31 It is based on bicycle thefts, thefts from the person, handling and other household and personal thefts in the BCS.

Intangible Losses

Based on victims' "desired compensation", the UK results suggest an average of $150 for intangible losses (Table 11.1).

Medical Costs

No medical costs are estimated.

Total Costs

The total cost of other theft is about $640 million, with an average total loss per incident of $360. These figures should be treated cautiously.

12 Criminal Damage

Estimating the Number of Incidents

Criminal damage (or vandalism) can range from fairly minor incidents of graffiti to cases involving considerable monetary losses. Arson is sometimes included as a form of criminal damage, but in this report is treated separately in the next section.

The ABS collects no figures on criminal damage, nor was it covered in the Crime and Safety Survey. Offences recorded by the police totalled about 320,000 in 2001. This will be a large underestimate since vandalism has a typically low reporting rate. The Queensland Crime Victims Survey showed 25 per cent of incidents of home vandalism were reported, the same figure as in the South Australian Retail Crime and Safety Survey. To take account of non-reporting and non-recording, a multiplier of 6.0 is applied, drawing on the UK figure. Again, this multiplier is tenuous, but gives an estimated 1,914,000 incidents of criminal damage. Police figures give no indication of the proportion of incidents against residential as opposed to non-residential targets.

Estimating Property Loss

On the basis of a synthesis of a number of surveys, an average unit cost of $350 is set for incidents of criminal damage, both against household and other property (Table 12.1).[32]

Lost Output

Business survey figures and UK estimates for lost output in incidents against householders suggest that $50 per incident is reasonable (Table 12.1).

Intangible Losses

Based on victims' "desired compensation" for incidents of household vandalism, the UK results suggest an average of $300 for intangible losses (Table 12.1).

Medical Costs

No medical costs are estimated.

32 The surveys taken are the Small Business Crime Survey, the UK Commercial Crime Survey and the South Australian Retailers Survey. Victoria police statistics show an average damage loss of $4,500, but a median value of $300.

Total Costs

Table 12.1 shows the cost element. The total cost of criminal damage is over $1.3 billion, with an average total loss per incident of $700. These figures should be treated carefully.

Table 12.1: Costs of criminal damage—property loss, lost output and intangible losses[1]

	Per incident cost ($)			Total cost ($000s)			
	Property loss	Lost output	Intangible	Property loss	Lost output	Intangible	Total cost[2]
Criminal damage	350	50	300	669,800	95,700	574,100	1,340,000

1 Medical costs were not estimated.
2 Totals may not add to sub-components due to rounding.

13 Arson

Estimating the Number of Incidents

It is hard to know how many incidents of arson take place. Police figures indicate about 17,500 incidents were recorded in 2001, although this may be less than the "real" total. Some victims may feel that there is no point reporting a fire to police if it was small, if they cannot be sure whether arson caused the fire, or if they are uninsured and not in a position to make a claim. Moreover, the police may not record all reported incidents if they are not convinced arson was involved.

Nor are there readily available figures from insurance companies of the number of claims for arson (as opposed to fire damage). Some claims for supposedly accidental fire damage are believed to be fraudulent claims involving fires started deliberately. Also, many claims may in fact involve arson but cannot be assessed as such because of the difficulty of knowing for certain how the fire started (Baldock 1997; Drabsch 2003). One somewhat dated estimate from the NSW Standing Committee on Arson is that for every established case of arson, there are 3.25 other incidents considered to be arson, and another 7.5 counted as suspicious (BOCSAR 1990). This, though, applies more to incidents attended by brigades as opposed to incidents recorded by the police. To account for the "dark figure" of cases of arson not recorded by the police, in the present report it is assumed that for each recorded case there are two others not recorded.

Estimating Loss

A number of tentative estimates of the cost of arson have been made, and are discussed below. Most focus on property loss and damage, thus excluding indirect losses from lost productivity, business disruption and intangible costs. Albeit in the early 1980s, the Insurance Council of Australia estimated that property loss comprised only about 25 per cent of total costs, taking indirect and intangible losses into account (BOCSAR 1990). Another estimate from Emergency Management Australia is that insured losses for bushfires comprise 35 per cent of total direct and indirect losses—an estimate used by the Bureau of Transport Economics in their study of the economic cost of natural disasters in Australia (BTE 2001). The 35 per cent figure is used in estimates here where appropriate to assess total costs. It is not considered by BTE to be particularly robust. It also applies to bushfires costing $10 million or more, so its applicability to smaller arson fires is unknown.

Insurance figures can give some guide to the extent of property loss for all fire damage. One caveat is that payouts for fire damage take no account of victims without insurance cover. It is estimated that 25 per cent of households and 17 per cent of small businesses

do not have contents insurance (Insurance Council of Australia 2002).[33] Moreover, one needs to take account of the proportion of fire damage that is caused by arson. A judicious estimate would be about one-third of fires—lower than for bushfires (see below).

Deaths

Any deaths due to arson are assumed to have been counted within homicide costs.[34]

Vehicular Fires

Many cases of arson involve vehicles. The proportion was 30 per cent in the NSW Standing Committee on Arson study. Some of these fires (assumed to be one-third for the purposes of this report) will involve cars that are stolen and then burnt either to destroy evidence that would link the theft to an offender, or for malicious reasons. These are likely to be recorded by the police as stolen vehicles, and thus costs will have been subsumed under motor vehicle theft. An adjustment has been made for this where appropriate.

Bushfires

The current estimate from the NSW Rural Fire Service is that about 50 per cent of bushfires are deliberately lit (Richard Woods, NSW Rural Fire Service, personal communication). This is a useful check on the assumption that one-third of all fire damage insurance payouts are due to arson. However, it is not an ideal starting point for estimating costs since the number of bushfires in any one year is variable, and bushfires account for only a proportion of fire costs (and an unknown proportion at that).

The Emergency Management Australia database shows that bushfires over the period 1997–2002 cost an annual average of $60 million, taking account of all losses (Graham Parker, Emergency Management Australia, personal communication).[35] Assuming half were deliberately lit, an annual figure of $30 million is obtained. Obviously, the cost of bushfires can vary considerably from year to year.

A Synthesis of Estimates

A "best estimate" of arson costs synthesises a number of strands of evidence (see Table 13.1).

33 Taking into account that the number of households is much larger than the number of businesses, this gives a 24 per cent non-insurance rate across the two sectors.

34 There were two homicides in 2001 involving arson.

35 The database records costs for major bushfires with a total cost of $10 million each, excluding deaths and injuries. However, on the basis of BTE (2001) estimates, the cost of these major fires can be taken to be 91 per cent of the total of all fires.

(i) Police-recorded Cases of Arson

One estimate can be made on the basis of cases of arson recorded by the police multiplied by an average cost per incident. Victoria police figures indicate that an average case of arson in 2000–01 cost about $17,500, albeit with a much smaller median value of $300.[36] Insurance Statistics Australia indicates a lower $13,550 for the average cost of domestic fire claims, although arson incidents specifically are believed to carry rather higher costs (Drabsch 2003).

Using an average cost of $17,500 suggests a national cost of about $300 million on the basis of recorded cases of arson. For the estimated number of unrecorded cases (that is, using the multiplier of two) it is reasonable to take a lower average value. There is no good guide to this, but one-fifth of the cost of recorded cases was taken ($3,500). This gives a total property loss bill of just over $420 million. Taking account of the fact that property loss may be only 35 per cent of total costs gives an estimate of $1.2 billion.

As said, it is assumed here that cars reported as stolen and found burnt out by the police will be recorded as motor vehicle thefts. They will thus have been counted in this report under costs for that offence.

(ii) Victoria Metropolitan Fire Brigade

On the basis of fire officer reports, the direct cost of deliberately lit fires in Victoria in 2001–02 was $65 million (Ian Hunter, Victoria Metropolitan Fire Brigade, personal communication). Grossed-up according to population share, this would suggest an Australian total of $230 million, making an adjustment to avoid double counting vehicle fires. Allowing for indirect and intangible losses brings the total to $670 million. These figures are sensitive to the picture in Victoria, and they leave aside any fires not attended by brigades.

(iii) Western Australia

Lampard (2000) estimated that the average annual dollar cost of deliberately lit and suspicious fires attended by WA's Fire Service was $18 million. Grossed-up and adjusting for vehicle fires, this gives an Australian total of just over $160 million. Allowing for indirect and intangible losses brings the total to $470 million.

(iv) Insurance Payout Estimate for Victoria

The Insurance Council of Australia estimated a cost to Victoria in 1991 of $50 million for arson-related insurance payouts. This was inflated and grossed-up to Australia, with the adjustment made for vehicle fires. The initial estimate will relate only to cases of arson for which a claim is made. Taking into account non-insurance gives a figure of about $250 million. Allowing for indirect and intangible costs gives an estimate of

36 Few business crime surveys seem to have covered arson. The South Australia Retail Crime Survey was an exception. Four incidents of arson were reported with an average value of $20,000.

Table 13.1: Estimates of the cost of arson

	Minimum cost ($m)	Including probable arson ($m)	Including indirect and intangible losses[1] ($m)	Comment
Police-recorded incidents by average unit cost in Victoria police figures[2]	300	420	1,210	Sensitive to average unit cost of recorded cases of arson. Cost of unrecorded cases estimated.
Victoria Metropolitan Fire Brigade estimate for 2001–02[3]		230	670	Victoria pattern may not apply elsewhere.
Western Australia estimate of incidents attended by Fire Service, grossed up to national figure[3, 4]		160	470	WA pattern may not apply elsewhere.
Insurance Council of Australia 1991: cost to Victoria in insurance payouts, inflated and grossed to national figure[3, 5]		250	720	Victoria pattern may not apply elsewhere. Estimate dated. Basis of original estimate not clear. Assumes probable arson is taken into account.
NSW Standing Committee on Arson estimate for of insurance payouts in NSW, inflated and grossed up to national figure[3, 5]		250	710	NSW pattern may not apply elsewhere. Basis of original estimate not clear. Assumes probable arson is taken into account.
Based on current insurance payouts for fire damage[3, 5, 6]		200	580	Proportion of fire damage due to arson is estimate only.
Average of above	300	300	730	

1 Direct costs inflated on assumption that they comprise 35 per cent of total costs (BTE 2001). The figure is not regarded as particularly robust.
2 Minumum cost multiplied by three to take account of incidents considered likely to be arson.
3 Figures reduced by 10 per cent to take account of fires that may have been counted under vehicle thefts.
4 The Western Australian figure relates to suspicious and deliberately lit fires.
5 Insured losses inflated by 24 per cent to take account of non-insurance rate for households and businesses.
6 Based on 20 per cent of all household claim payments being for arson and 40 per cent of other insurance payouts, of which one-third are assumed to be cases of arson.

$720 million. It is not entirely clear whether the Victorian payout figure includes an estimator for probable as well as definite cases of arson. It is assumed here that it does. The overall estimate will be on the low side if probable arson was not counted.

(v) Insurance Payout Estimate for New South Wales

Although now rather outdated, a similar estimate for insurance payouts for arson in New South Wales (BOCSAR 1990) suggests a similar national figure of $710 million at current prices, with the various adjustments made. Again, it is not clear whether the payout figure includes an estimator for probable as well as definite cases of arson. It is assumed that it does.

(vi) Current Insurance Payouts for Fire Damage

Assuming one-third of the current level of payout for fire damage by insurance companies in 2001–02 (about $580 million) was due to arson gives a total of about $200 million after the vehicle fire and non-insurance adjustment.[37] Allowing for the fact that property loss may be only 35 per cent of total costs, gives an estimate of $580 million. No account is taken of the fact that deliberate fires are considered to be more costly on average than accidental ones (Drabsch 2003).

37 This is about 20 per cent of payouts on household cover and about 40 per cent on commercial insurance (David Minty, Insurance Statistics Australia, personal communication).

Medical Costs, Lost Output and Intangible Losses

Medical, lost output and intangible losses have in effect been taken into account in the BTE estimate that property loss amounts to 35 per cent of total costs. Since the number of cases of arson is unknown, as well as the breakdown of additional total costs, it is not possible to give a unit cost for these losses.

The Cost of Dealing with Fires

Productivity Commission figures for 2001–02 give a total cost of funding fires services of $1.3 billion (SCRCSSP 2003). It is estimated that 25 per cent can reasonably be allocated to the cost of dealing with arson fires—about $330 million. Productivity Commission figures for ambulance services was $970 million. It is estimated that five per cent can reasonably be allocated to the cost of dealing with arson fires—nearly $50 million.

The Value of Volunteer Time

Volunteers play a significant role in the provision of emergency services in Australia. There is debate about whether voluntary effort should be given a monetary value since it is seen as inconsistent with the motivation of volunteers and the way they think of their contribution (Industry Commission 1995). Nonetheless, the counter-argument is strong notwithstanding the question of how volunteer time should be valued, if a valuation is made.

The Country Fire Authority of Victoria made a detailed assessment of the dollar value of the volunteer contribution to fire and ambulance services in Victoria in 2001 (Hourigan 2001). From a number of approaches, the preferred one was to value the contribution as equal to the level of funding that would be required to achieve the same service delivery with paid personnel. The estimate for Victoria was $470 million. Fire-fighting voluntary effort in Victoria is particularly substantial and volunteers offer a large proportion (about 64 per cent) of the total number of volunteer hours in Australia (Leon Collett, Australasian Fire Authorities Council, personal communication). Taking this into account gives an Australian figure of $740 million for the value of the contribution of voluntary effort. Of this, one-third is set for effort in dealing with arson fires—about $240 million. This figure excludes the costs of salaried personnel who deal with mobilising volunteer effort.

Total Costs

Table 13.2 summarises the "best estimate" cost of dealing with arson. It amounts to $1.35 billion. This takes no account of the additional costs of policing, courts and so on, which are subsumed under other costs of dealing with crime (see Section 16).

Table 13.2: Summary of arson costs

	$ million
Best estimate of costs of arson[1]	730
Fire service [2]	329
Ambulance service[3]	49
Volunteer effort[4]	244
Total	1,350

1 Includes property loss, and estimates for indirect costs and intangible losses.
2 15 per cent of fire service costs.
3 Five per cent of ambulance service costs.
4 Based on 25 per cent of the average number of hours of voluntary work done per year across all sectors.

14 Fraud

The Main Costing

Fraud is a generic category of crime that covers a number of offences that have the common element of a perpetrator seeking to obtain property by deception (Smith 1997). Estimating the cost of fraud is particularly difficult for a number of reasons:

- There are many types of fraud, including credit card fraud, small- and large-scale employee fraud, forgery, counterfeiting currency, a variety of welfare benefit frauds, insurance fraud, identity fraud, Custom and Excise fraud, tax fraud, and computer and telecommunications fraud. Although one approach could be to build up the overall cost of fraud from estimates of each of these, lack of sound data on costs precludes this.
- There is likely to be a large amount of "hidden" fraud that does not become known to the police or other accounting agencies. Moreover, it is difficult to say how unrecorded frauds differ in value from those that get recorded, and estimates will be sensitive to the assumption made. In particular, current work shows very high values indeed for many detected serious frauds (for example, Smith 2003), and the extent to which these costs apply to "hidden" serious frauds will substantially affect overall fraud cost estimates.
- There are also other uncertainties about costs. For the most serious fraud cases, for example, criminal courts are often reluctant or unable to make the detailed assessment of losses that might be done in civil proceedings. Victims, too, might be unable to calculate losses accurately.

In summary, the approach taken here was as follows.

a. The number of fraud offences recorded by the police in 2001 was multiplied by the average value of fraud in NSW and Victoria as a guide for Australia as a whole.[38]

b. An estimate was made of the number of undetected frauds. The average value of these was set lower than recorded frauds, but an allowance was made for a small number of very high-value cases.

c. To (a) and (b) were added the value of frauds against the Commonwealth that are investigated by the Australian Federal Police, assuming that there is little overlap. Also added was an estimate for undetected frauds against the Commonwealth.

d. (a) to (c) were adjusted to take rough account of lost output and intangible costs.

38 A few business crime surveys provide some figures, but unstable ones for national totals due to small sample sizes. The Small Business Crime Survey (SBCS), for instance, suggests a total of about 50,000 credit card frauds against Australian retailers and about 6,000 cases of employee fraud. Grossing up from the South Australian Retail Crime and Safety Survey (SARCSS) gives higher figures: about 270,000 cheque and credit cards frauds and about 365,000 other frauds.

Some details are given below for Australian estimates of the costs of some particular types of fraud. These are not directly taken into account in the costings in the present report because some of the frauds will have been counted within police figures and some within the costings for unrecorded frauds.

Police Figures

Individual state police figures give a total of about 110,000 recorded cases of fraud in 2001.[39] The average cost of a fraud recorded by the police in NSW was nearly $16,700, whereas Victoria police figures suggest a much lower figure of just over $3,000 (with a median cost of $500). Taking a straight average for the two states ($9,900) and applying this to the total number of recorded frauds gives a total of $1.09 billion losses overall for police-recorded frauds in Australia. It is assumed that this average takes into account some very high-value frauds apart from those dealt with by the Commonwealth (which are discussed below).

Unrecorded Fraud

There are two elements in relation to unrecorded fraud. One is whether offences are detected at all, and clearly many are not. The sophistication of fraud detection systems will play a part here, as evidenced by the finding of an Australian National Audit Office survey in 2000 of fraud affecting the Australian public service. This survey found that agencies reporting most fraud tended to be those with comprehensive fraud systems in place (ANAO 2000).

The second element in unrecorded fraud is whether, if detected, frauds are then reported to the police. A fair degree of non-reporting can be expected. Many businesses may feel that fraud could be difficult or time-consuming to prove, while others may not want to expose gaps in their business practices. In some cases, victims may not feel it worth bringing to the police's attention because it is clear that fraudulently obtained money has already been spent. That said, the available evidence gives mixed messages about reporting levels. In the Small Business Crime Survey, less than one-quarter of cheque and credit card frauds were reported, and only 14 per cent of employee frauds. The latest in a series of Ernst and Young fraud victimisation surveys, conducted in about 15 countries, showed a reporting rate of between 20 per cent and 25 per cent (Ernst and Young 2003). The Scottish Business Crime Survey shows a rather higher figure of 36 per cent of frauds reported (Burrows et al. 1999), whereas the South Australia Retail Crime and Safety Survey gives a much higher figure of 68 per cent, albeit on the basis of a small sample. The Deakin University and Victoria Police Major Fraud Group's survey of 477 median and large businesses in Victoria found between 65 per cent and 90 per cent of frauds were reported, depending on type (Deakin University 1994).

39 State police services define and count fraud in different ways. In Victoria, for instance, the offences are those of "deception". Offences of "receiving" are included in Western Australia.

For the sake of taking forward cost estimates, it is cautiously assumed that recorded offences represent 25 per cent of those that occur, taking into account both undetected and unreported frauds.

Average Costs of Unrecorded Frauds

It is likely, but not entirely certain, that undetected frauds will be smaller in value than those recorded by the police. The business crime surveys used for earlier crime costings can be used as some guide, bearing in mind that the majority of offences they cover will be unreported. The surveys covered rather different types of fraud and slightly different sectors, so some of the variation in average fraud costs may reflect this. The KMPG survey of very large businesses gives the highest average fraud figure (KMPG 2002).[40] The Scottish Business Survey had next highest costs, and had the widest coverage. (It showed particularly high fraud costs for the construction sector.) The two Australian retail surveys had the lowest figures, mainly reflecting average losses from credit card and cheque frauds. Taking an average from all five surveys, for all types of fraud, suggests a unit cost of $1,590 (see Table 14.1). This is well below the police figure.

Two other surveys need mentioning. Deakin University's survey of median and large businesses in Victoria found losses of nearly $420,000 per organisation. However, it is unclear how its average unit costs were calculated and they seem implausibly high—for instance $78,000 per incident for fraudulent travel and expenses claims, and $1.6 million for unauthorised use of credit cards. The survey by the Australian National Audit Office in 2000 of fraud affecting the Australian public service estimated a figure of $36,000 per fraud in 1998–99—or about $145 million overall. External frauds (the majority) mainly centred on inappropriate claims for benefits and payments by the community. Internal frauds mainly concerned inappropriate use of petty cash and expenses fraud. The ANAO average fraud cost is again not used in current estimates since it relates to a very much smaller number of agencies than the businesses covered in the other surveys.

Unrecorded Serious Fraud

Account should also be taken of the fact that some unrecorded frauds against state and territory law will be of especially high value. On the basis of Smith's (2003) study, there might be 155 such unrecorded cases, assuming a 25 per cent recording rate. For simplicity the AFP average costs (see below) are applied to these, giving a total of $77 million.[41]

40 Businesses reported on fraud losses over the past two years. The most costly frauds were by managers.

41 Smith (2003) looked at 155 cases over two years. These included about 50 cases from New Zealand and against the Commonwealth, and an adjustment is made for this. The average cost of cases excluding those from New Zealand and against the Commonwealth was $850,000—higher than the AFP figure of about $500,000. However, the AFP figure is a better guide since the indications are that sentenced cases carry higher losses on average than all cases that would be referred to the AFP.

Table 14.1 Business crime survey estimates of unit losses

	Coverage	Sample N	Average unit cost ($)
Australian Small Business Crime Survey[1, 2]	Retailers	3,850	200
South Australia Retail Crime and Safety Survey	Retailers	500	150
UK Commercial Crime Survey[3]	Retailers and manufacturers	3,000	540
Scottish Business Crime Survey[3]	Retailers, manufacturers, construction, hotels, restaurants, transport, telecommunications	2,500	950
KPMG (Australia and New Zealand)	Largest organisations	361	6,100
Average of the five estimates, all frauds			1,590

1 Costs take account of price inflation.
2 Direct costs only.
3 Costs take account of UK price inflation and purchasing price parity.

Recorded Serious Fraud

The Australian Federal Police (AFP) deals with serious frauds against the Commonwealth. In 2001–02, there were 921 economic crimes cases referred for investigation, with an average cost of $497,000 and a total cost of $460 million (AFP 2002).[42] It can be assumed that these frauds will not be double-counted in state police figures.

The AFP average fraud cost is high, but not implausibly so. A recent study by the Australian Institute of Criminology and PricewaterhouseCoopers examined case files relating to serious frauds that resulted in a court determination in 1998 and 1999, or a lodged appeal in those years (Smith 2003).[43] The maximum amount included in final charges resulted in a very high average of $1.7 million, or $850,000 per case, excluding New Zealand and Commonwealth cases taken forward to court (AIC computations). Another study of 50 sentenced major fraud cases in Victoria showed an average dollar loss to the victim(s) of about $4.4 million (Krambia-Kapardis 2001).

Undetected Serious Frauds

There will also be a number of high-value serious frauds that remain undetected. In the absence of any other guide, the same assumption is made as in relation to frauds recorded by the police—that is, that AFP figures represent 25 per cent of the total. The same AFP average cost is applied to the number of unrecorded offences, giving a total of $1.374 billion.

42 The "economic crimes" include fraud, counterfeiting and money laundering (about half the total). The money laundering offences here can be considered as frauds, although the costs involved will by no means reflect the full costs of money laundering—that is, the process by which illicit sources of money are introduced into the economy and used for legitimate purposes. The extent of this is likely to be substantial in relation to the drugs trade for instance. A survey by John Walker for AUSTRAC in 1995 concluded that the illicit drug trade is worth around $2 billion per year (John Walker Consulting Services 1995). He saw the costs as financial ones (due to the transfer of illegal purchasing power) rather than necessarily economic ones.

43 Some offenders paid monies back in restitution prior to the date of sentencing.

Other Costs

The fraud costs so far have centred on direct property loss. There is very little guide to other lost output costs such as the time taken in dealing with detected frauds, business disruption while computer systems are made more fraud-proof, or the replacement of staff dismissed for fraud. Moreover, there is no reason to think that fraud does not also carry intangible costs if, for instance, a victim of fraud loses their home, or has their financial stability undermined.

The Small Business Crime survey made an assessment of indirect losses for credit card and cheque fraud, and employee fraud (such as business disruption). They amounted to one-third of the direct costs. The Scottish Business Survey also included indirect costs, and showed them to be rather higher, at about half the total direct costs. For present purposes, though, an estimate of the lost output and intangible losses of fraud is taken from the other property crimes here (excluding robbery). Specifically, the proportion of lost output and intangible losses (40 per cent) from all losses including property loss was used to inflate the fraud figure.

Table 14.2 summarises the elements of the final fraud cost of $5.88 billion.

Table 14.2: The elements of the overall fraud cost[1, 2]

	Number of offences	Unit cost ($)	Total cost ($m)
Property loss			
(a) Recorded by the police	110,400	9,900	1,090
(b) Unrecorded offences—three times (a)	331,100	1,590	527
(c) Other unrecorded serious cases[1]	155	497,000	77
(d) Referred to AFP for investigation	920	497,000	458
(e) Unrecorded AFP cases—three times (c)	2,760	497,000	1,374
Other costs (based on other property crime)[1]			2,351
Total[3]			5,880

1 Based on a no claim rate of 55 per cent, and a claim rate of 45 per cent.
2 Medical costs are not estimated.
3 Totals may not add to sub-components due to rounding.

Other Information

Insurance Fraud

There is no firm estimate of the cost of insurance fraud. In 1994, the Insurance Council of Australia suggested a figure of $1.1 billion (ICA 1994), which was said to fall in the light of tighter procedures. The Council offered another "guesstimate" in 1997 of at least $500 million, although the basis of this is unclear (Sandy Watson, Insurance Council of Australia, personal communication).

One industry "rule of thumb" for some time was that 10 per cent of all paid claims were related to fraud, although there is debate about the types of claims to which this applies (Peter Anderson, Insurance Council of Australia, personal communication). Assuming a

limited set covering fire, household and commercial claims, and employers' liability (totally about $9.4 million in payouts in 2001–02), this would suggest a figure of $950 million for fraud.

A further adage is that fraud adds about $70 to $100 to each premium paid, though this is not particularly helpful since it remains unclear which premiums are being referred to. Moreover, a different figure of $21 per premium is also in the arena. The total number of policies in force in June 2001 was just short of 38 million (although this itself is not regarded as particularly reliable), with the figures for the more limited sectors above totalling nearly 26 million. Depending on which figures are used, then, the extent of fraud could lie between $540 million and $3,770 million. For what it is worth, the smaller figure is more in line with other estimates.

Insurance fraud appeared as a small category in Smith's (2003) examination of serious fraud cases. It is likely, too, that at least some frauds identified and acted upon by insurance companies will be notified to the police, so there is some potential for double-counting.

A recent study in the UK by the Association of British Insurers estimated that $1 billion of fraudulent claims are submitted each year on "personal lines general insurance" alone (see ABI 2001; Wojciechowski & Newiss 2003). Adjusting for population and purchasing price parity, this would suggest a figure of $270 million.

Table 14.3 summaries these various estimates.

Table 14.3 Different estimates of insurance fraud

	$ million	Comment
Insurance Council of Australia for 1993	1,100	Better procedures may have reduced the figure since 1993
1997 Insurance Council of Australia "guesstimate"	500	
Ten per cent of payouts relate to fraudulent claims	950	Based on claims expenses for fire, household and commercial claims, and employers' liability
Fraud adds $x to each policy		
$100 x 37.7 million policies	3,770	
$21 x 25.7 policies	540	Based on policies for fire, household and commercial, and employers' liability
Association of British Insurers	270	Adjusted for purchasing price parity and population size. Personal lines general insurance only.

Benefit Fraud

Benefit fraud is likely to be substantial, with much of it undetected. Centrelink referred nearly 3,800 cases for possible prosecution, of which 2,900 (involving nearly $29 million) were taken forward (Charlton 2002). The extent of benefit fraud is likely to be substantial. Figures for the UK showed that 17 per cent of total fraud costs between 2000 and 2002 were the result of fraudulent social benefit claims (Wojciechowski & Newiss 2003).

Other Estimates

Walker (1997)

Walker's (1997) count of the costs of fraud—within the range of $3 billion to $3.5 billion—was based on an estimate by AFP research staff, although its source and degree of sophistication is undocumented. Taking the mid-point, and allowing for inflation, would give a current figure of just under $3.7 billion. It is assumed that the AFP figures would not have allowed for indirect or intangible losses, although this is uncertain.

UK Estimates

In the course of the Brand and Price (2000) study, a special costing for fraud in the UK was commissioned from the National Economic Research Associates (NERA 2000). It provided estimates of expenditure on investigations, court proceedings, preventive measures and of the amount of money defrauded across the economy. Total estimated costs were in the range of £7 billion to £14 billion (1999 prices), with a large proportion comprising defrauded money. The difficulty of detecting frauds and the limited data in some sectors led NERA to argue for the higher figure, which even then was thought to probably be an underestimate. However, some of the £14 billion (about 12 per cent) was the cost of dealing with fraud, which under the costing principles here would be counted as part of the overall system costs. Of the remainder, a sizeable 40 per cent were benefit frauds and 20 per cent Customs and Excise fraud (including the equivalent of GST fraud), which suggest that these may have been undercounted in the present Australian costings. Adjusting for price levels and population size suggests a figure of $5.3 billion if UK figures could be directly read across to Australia.

Another estimate of the cost of fraud in the UK has emerged more recently, drawing on data from a number of non-police sources (Wojciechowski & Newiss 2003). The intention was not to estimate a total bill for fraud, and indeed some of the figures are based simply on detected frauds. Nonetheless, the UK figures are of interest as a guide to the breakdown of different fraud costs. A full 57 per cent of the total ($12 billion) was Custom and Excise fraud. The main component of this (about half the Custom and Excise bill) was tobacco smuggling, which is an unusually attractive illegal option for exploiting European Union price differentials. Another third was GST-equivalent fraud. Again, adjusting for price levels and population size suggests a figure of $5.2 billion for Australia (much in line with the NERA estimate), or $2.2 billion when Customs and Excise frauds are excluded.

New Developments

Under the new Commonwealth fraud control guidelines, all Commonwealth agencies are required to report the level of fraud detected and dealt with each year. This will provide a more accurate indication of fraud losses at least for the Commonwealth sector. There is also work started by the Securities Industry Centre for the Asia-Pacific on the Australian cost of identity fraud—which is a key element in many fraudulent transactions. This involves a complex modelling process that makes use of existing sources of information as well as surveys of relevant agencies and individuals.

15 Drug Offences

Drug offences fall into two main categories: (a) cultivation, manufacture, dealing and trafficking, and (b) possession and use of illicit substances. For both, estimates of the number of offences are difficult, with police figures an unreliable guide. In any case, the main costs of illicit drug use arise principally from the consequences of abuse. There are three main components:

- The "human costs" costs of drug abuse. These fall in part on health and social services since use of illicit drugs is a direct cause of death as well as a risk factor for HIV/AIDS, hepatitis C, suicide, self-inflicted injury and other health problems. An estimate is made below of some of these human costs.
- The cost of offences committed to fund a drug habit. This will have been included within the relevant offence categories earlier in this report (burglary and shoplifting for instance), but there is some further discussion of this cost below.
- Considerable law enforcement costs in preventing trafficking and drug-related criminal activity. These are picked up in the general criminal justice system costing in Section 16. They include the cost of the Australian Federal Police, and an estimate of five per cent of expenditure by the Australian Customs Service spent on drug enforcement.

The Human Costs

Deaths

Ridolfo and Stevenson (2001) estimated that there were 1,023 deaths in Australia in 1998 attributable to illicit drug misuse, including deaths from maternal drug dependence and suicide. This is a well established estimate (see, for example, AIHW 2003; Mathers et al. 1999), but a higher one than the alternative count of deaths in which opioid overdoes is the underlying cause (Degenhardt 2002).[44] The ratio of the first to the second in 1998 was 1.39. In 2001, there were 306 opioid overdose deaths (a large fall on the previous year). These were inflated by 1.39 for a more complete estimate of deaths due to illicit drug misuse in 2001.

Taking the medical and lost-productivity costs that were used for homicide gives a cost of about $510 million. There is room for debate as to whether lost productivity should be counted at the same level as for victims, since it is likely that drug users lead less productive lives. The position here is that without drug misuse, productivity might be equal to that of the general population.

An additional number of deaths in which opioids were a contributory factor are discounted.

44 These are deaths among 15–44-year-olds, but relatively few people older than this die as a result of opioid overdose.

Hospitalisation

Ridolfo and Stevenson (2001) provide a figure of 14,470 people treated in hospital for drug dependence in 1998.[45] Given the drop in serious drug misuse since then, in part as a result of the heroin shortage (Intergovernmental Committee on Drugs 2002), it is reasonable to assume that admissions to hospital will be lower than in 1998. The extent of the drop in opioid overdose deaths was taken as the best guide to this (they fell 42 per cent between 1998 and 2001).[46] The estimated number of hospitalisations was just over 6,000.

Taking simply the current Productivity Commission average cost of someone admitted to hospital (about $2,800) gives an estimated cost of $17 million.[47] Emergency admissions not leading to a stay in hospital outweigh separations by a factor of about seven to one for cases due to injury and poisoning (Helps et al. 2002). Adopting this same ratio for drug dependence cases, and applying the current average cost of emergency treatment gives an estimate of about $9 million.[48] There will also be costs of GP visits, but these are omitted due to lack of data. The total cost, then, of hospitalisations and emergency department visits might cost in the region of $26 million.

Drug Users in Treatment

The Australian Institute of Health and Welfare provides figures for 2000–01 of the number of people registered as seeking treatment at publicly funded government and non-government drug treatment centres (AIHW 2002). This is pilot-study data, and figures for Queensland are not available. Data were provided by 93 per cent of "in-scope" agencies, excluding Queensland. Adjustments have been made for both under-counts. The AIHW figures will not provide a complete picture of resources devoted to drug users, but they are a useful start.[49]

- There were an estimated 67,000 clients who sought treatment for illicit drug dependence in 2000–01. There is no breakdown between those receiving residential and non-residential community care, but a guide to this was taken from the 2001 one-day survey of Clients of Treatment Service Agencies (COTSA) (see Shand & Mattick 2002). The indications are that about 40 per cent were treated in residential units. Taking the COTSA figure of an average stay of 55 days, together with an indicative cost of $220 per day for treating mental

45 The Ridolfo and Stevenson approach is based on the aetiological fraction methodology that enables estimates of the proportion of cases of illness or injury that can be attributed to a risk factor—in this case illicit drug use.

46 With a more restricted coverage than Ridolfo and Stevenson, Grant and Petrie (2001) provide a figure of nearly 7,000 hospital "separations" in 1997–98 with a principal diagnosis of drug dependence. This will include those who die, and is thus fairly close to the present estimates.

47 This is the recurrent cost per casemix-adjusted separation in selected public hospitals (see Table 9A.26 in the 2003 Productivity Commission report).

48 See Table 9A.29 in the 2003 Productivity Commission report

49 The data cover a wide variety of treatment services including detoxification and rehabilitation programs, pharmacological and psychological treatments. Specialist drug units based in acute care hospital or psychiatric hospitals are included if they provide treatment on an outpatient basis. (Units that provide treatment to inpatients are also included.) Excluded are agencies whose main function is to provide accommodation, needle and syringe exchange programs, treatment services in prison and other correctional institutions, and private treatment agencies not publicly funded. Also excluded are most Indigenous substance use services and Aboriginal Health Services providing treatment for drug problems.

health patients in residential settings, gives an overall cost of about $320 million. Applying to the remainder the average case cost of about $1,200 for mental health patients treated in non-residential units, suggests an additional cost of just under $50 million.[50] This gives an overall total of $370 million for out-of-hospital drug treatment.

- These costs, while appreciable, are unlikely to be a full tally of the health resources spent on drug abuse. For one, mental health costs are not counted even though longer-term use of drugs can exacerbate an existing tendency towards mental disorder, or cause it to occur. Nor is any allowance made for a range of services for drug users such as the provision of accommodation, needle and syringe exchange programs, treatment services based in prison and other correctional institutions, and private treatment agencies that are not publicly funded.

Methadone Maintenance

An estimated 32,500 people were receiving methadone maintenance treatment in 2000–01 (AIHW 2002).[51] The average cost of treatment is currently estimated to be about $3,000. There is uncertainty about retention rates and average duration of treatment, but simply multiplying the number under treatment by the average cost gives an overall cost of nearly $100 million.

Lost Productivity

Lost productivity due to drug misuse is hard to ascertain given that drug users may be economically under-productive. Nonetheless, taking MUARC's lost productivity estimates for victims of violent crime as a guide suggests that lost output for those hospitalised and treated in residential units may amount to about $800 million. For those treated in emergency departments and non-residential settings, there could be a further bill of $160 million, bringing the total to $960 million. These figures leave aside any lost productivity from drug users not in treatment. Their numbers could be appreciable; present estimates indicate, for instance, that only about 30 per cent of illicit opioid users are in treatment.

Table 15.1 summarises the human costs of drug abuse presented above.

Drug-attributable Crime

There is much speculation about the proportion of crime that is committed to fund a drug habit (see, for example, Makkai 2002). This is not easy to guage. For one, it is difficult to be sure that the need for "drug money" is the main *cause* of offending, rather than being simply a contributory factor. It is also necessary to know the rate at which those dependent on drugs offend relative to other offenders.

50 See Table 11A.60 in the 2003 Productivity Commission report, and Table 11A.51 for the costs of residential mental health care per day.

51 This includes those in prison receiving treatment.

Table 15.1: Some human costs of drug misuse

	$ million
Opioid overdose deaths[1]	510
Medical costs of hospitalisation[2]	26
Drug treatment costs[3]	370
Methadone maintenance	100
Lost productivity[4]	960
Total[5]	1,960

1 Medical and lost productivity costs as estimated for homicide.
2 Those admitted to hospital and emergency department non-inpatients.
3 Those treated in residential and non-residential units.
4 Those treated in hospital; residential and non-residential centres.
5 Totals may not add to sub-components due to rounding.

The most useful data to assess the costs of drug-attributable crime come from the Australian Institute of Criminology's survey of police detainees—the Drug Use Monitoring in Australia (DUMA) project. This was used to provide information for Collins and Lapsley's (2002) study of the economic effects of drug abuse (see below). Detainees' reasons for why they committed the offence for which they were arrested suggest that 43 per cent of property crimes and 27 per cent of violent crimes are causally attributable to illicit drug consumption—the so-called "attributable fractions" (Makkai & McGregor 2002).

One caveat about these figures is the veracity of the arrestees' accounts; some arrestees may "deny" that drug dependence led to offending. Another is the extent to which drug-using offenders might be differentially likely to be arrested—and there is some evidence that this might be the case (see, for example, Chaiken & Chaiken 1990). A third caveat is that the data relate to *offenders* not offences. To the extent that drug-dependent offenders might commit more undetected offences than other offenders, then the attributable fractions will understate drug-attributable crime.

This said, applying the attributable fractions suggests that some $3.7 billion of the total costs of the property and violent crimes considered so far can be put down to drug dependency.[52] This is in addition to the $1.9 billion cost of drug misuse already counted in Table 15.1, making a total of $5.6 billion. This amounts to 29 per cent of the $19 billion cost of crime that has been accounted for so far. Some proportion of other costs that are considered in Section 16—policing for instance—can of course also be set against drug misuse, although no attempt is made to assess this.

52 This was calculated by (i) applying the attributable fraction of 43 per cent for property crime to burglary, thefts of and from motor vehicles, shoplifting and other theft; (ii) the 27 per cent violent crime fraction to all robbery (although Makkai & McGregor 2002 used this only for armed robbery); and (iii) the eight per cent "other crime" fraction to criminal damage and arson. An adjustment was made for violent crime (homicide, assault and sexual assault); the 27 per cent attributable fraction was halved on the assumption that drugs are involved less often in the large number of violent incidents which tend to go undetected by the police (for example, domestic violence). Another adjustment was made for fraud, where the 43 per cent property crime attributable fraction was reduced by a factor of four on the assumption that drug-related fraud will tend to be relatively low in value.

Other Estimates

Collins and Lapsley

Collins and Lapsley (2002) have recently costed the economic effects of drug abuse (tobacco, alcohol and illicit drugs) in Australia.[53] They estimated nearly $3 billion for the crime-related costs of illicit drug abuse in Australia.[54] The largest component of this was police costs (about 45 per cent of the total). Other significant components were the lost productivity of prisoners (about 25 per cent) and the value of property crime likely to have been committed to sustain a drug habit (15 per cent). The full costs of illicit drugs, taking into account costs to do with crime, health, lost productivity and road accidents, was estimated at just over $6 billion, of which 45 per cent were crime-related costs.

For the crime costs, Collins and Lapsley evaluated the total cost of a particular activity (for example, policing) and then estimated the proportion causally attributable to (as opposed to related to) drug use—the attributable fractions. These were developed using the AIC's Drug Use Monitoring in Australia (DUMA) survey of those detained by the police (referred to above), and the AIC's Drug Use Careers of Offenders (DUCO) survey of prisoners in Australia. The drug-related cost of property crime was based on AIC estimates of the value of property theft attributable to illicit drug consumption in 1991–02 (Carcach & Makkai 1998).

Collins and Lapsley's figures are not readily comparable to the present estimates for a number of reasons:

- In the present estimates, criminal justice system costs (such as police and courts) are estimated at aggregate level.
- Collins and Lapsley's estimate of intangible costs is based on a "willingness to pay" approach, which produces higher values than the approach taken here for other crimes (see Section 1).
- In estimating health costs and lost productivity, Collins and Lapsley adopt a different "demographic" approach, rather than the human capital approach adopted in the present report. The demographic approach compares the actual population size and structure with the size and structure of a hypothetical alternative no-abuse population. It produces costs in the year of study of past and present substance abuse and calculates the present production costs of abuse-induced deaths and impairment that occurred in past and present years. The human capital approach, in contrast, calculates present and future production costs of events that occur in the present year. Collins and Lapsley adopt the

53 Their definition of the costs of drug abuse is: "The value of the net resources which in a given year are unavailable to the community for consumption or investment purposes as a result of the effects of past and present drug abuse, plus intangible costs imposed by their abuse. This takes account of the fact that costs in a given year arise from abuse in earlier periods."

54 The four models of drug-attributable crime are: (i) because the drugs themselves induce antisocial or criminal behaviour; (ii) drug dependency compels addicts to derive income from crime; (iii) crimes result from the involvement in the illegal economy related to drugs; or (iv) drug-related actions (for example, drink driving, drug manufacture) are themselves defined as criminal.

demographic approach since their intention was to estimate the costs of drug abuse that are borne in a given year. The human capital approach is more common in relation to estimating the costs of crime.

Australian Federal Police

The Intergovernmental Committee on Drugs (2002) provides a figure from the AFP Drug Harm Index that represents the dollar value of harm that would have ensued had the drugs seized by the AFP and Customs reached the community.[55] The Index includes both domestic and international seizures where Commonwealth law enforcement played a significant role. The value of harm avoided was about $600 million in 2000–01, and was expected to exceed $700 million in 2001–02.

This is a useful figure, but not one that can be readily used in the present study since the Index subsumes costs already counted—for example, criminal justice costs.

Other Points

Money Laundering

No estimate has been made here of the costs of money laundering in relation to the drug trade—that is, the process by which illicit sources of money from drugs are introduced into the economy and used for legitimate purposes. A survey by John Walker for AUSTRAC in 1995 concluded that the illicit drug trade is worth around $2 billion per year (John Walker Consulting Services 1995). He saw the costs as financial ones (due to the transfer of illegal purchasing power) rather than necessarily economic ones.

Omissions

A number of omissions have been mentioned above. The following costs have also been ommitted:

- any health care costs or lost productivity incurred by victims who are injured by those who are drug dependent;
- intangible costs, for one because drug abuse might be considered a "willing choice";
- social welfare payments for those who are drug dependent and their families; and
- drug abuse health care services such as drug awareness programs, training and research.

55 The Index is restricted to the major illicit imported drugs such as heroin and cocaine. It does not include other drugs seized (such as cannabis). The economic estimate of harm avoided was based on analysis of United States reports of direct economic measures of drug-related harm and total expenditures on illicit drugs (Office of National Drug Control Policy 2001). See also McFadden et al. 2002.

16 Other Costs

Criminal Justice System

Productivity Commission figures for 2001–02 are used as the main basis of criminal justice system costs (SCRCSSP 2003). They cover the police, court administration and corrective services. The cost of juvenile justice is not included, and some estimation is necessary. No account is taken of the fact that revenue is generated from criminal justice system employment.

Police

The total cost of the police in 2001–02 was assessed at $4,610 million. Since police duties range wider than crime prevention and law enforcement, a reduction of 30 per cent was made, which in part accounts for the 10 per cent of policing costs spent on traffic safety and management. This gives a total of $3,230 million. The 30 per cent reduction is without a particularly firm empirical base, but was taken with advice from the Australasian Centre for Policing Research.[56]

The reduction is broadly in line with an estimate derived by setting the time spent by the police on the crimes covered here as a proportion of all detainee hours spent in police custody regarding those crimes (75 per cent).[57] The detainee data came from the 1995 National Police Custody Survey (Carcach & McDonald 1997).

Court Administration

The full cost of court administration was about $410 million. This includes the cost of handling juveniles in courts, as well as the cost of coronial courts. It does not include the cost of administering civil courts.

Corrective Services

Corrective services covers custody in both public and private prisons, and a range of community correctional orders and programs for adult offenders. The full costs amount to $1,590 million.

56 A police activity survey in 1995 in Queensland showed that only around one-third of calls responded to by the police led to a criminal offence being recorded—although admittedly many other calls required some kind of enforcement roles and not all calls would have concerned crime (Criminal Justice Commission 1996).

57 Collins and Lapsley (2002) also used this apportioning approach in assessing policing costs in relation to drug-related crime.

Other Portfolios

There are a number of other agencies whose costs are taken into account. They include the Commonwealth Attorney-General's Department ($350 million), the Australian Federal Police ($304 million), the Office of the Director of Public Prosecution ($60 million), the National Crime Authority—now the Australian Crime Commission ($59 million), and other agencies (such as AUSTRAC, the Australian Institute of Criminology and the Criminology Research Council). The data come from appropriation figures from the Attorney-General's portfolio (departmental outputs and administered expenses). The overall total is estimated to be $820 million.

Juvenile Justice

As said, the Productivity Commission report does not bring together the cost of dealing with juvenile offenders. In New South Wales, juvenile justice is the responsibility of a separate department, and their expenditure figures are available, amounting to nearly $120 million in 2001–02 (NSW Department of Juvenile Justice 2003). Accepting the NSW expenditure as indicative of that in other states gives an estimated total for Australia of $350 million. This covers youth justice conferencing, community-based services, custodial services and the youth drug court.

Another estimate was made which is more speculative and produces a slightly lower figure of $286 million. This estimate, which is not relied on in this study, took account of three main elements:

- The first was the likely number of juveniles dealt with under diversionary programs, case conferencing and supervision orders. The average adult cost of a community correction was applied to this. The number of juveniles so dealt with was estimated from O'Connor and Cameron (2002), who looked at how juveniles were dealt with in four states in 1999.[58]
- The second was the number of juveniles detained in correctional institutions, to which twice the adult correctional institution cost was applied. (The doubling of costs was on the advice of the NSW Department of Juvenile Justice.)
- The third was an estimate of the proportion of costs spent on child protection, out-of-home care, and supported assistance and accommodation services that might be attributed to juvenile offenders. The proportion was set at 15 per cent.

Table 16.1 summaries the criminal justice system costs.

58 Rates of disposals were taken at the same level as in 1999, but applied to the number of juveniles in 2001.

Table 16.1: Criminal justice system costs in Australia 2001–02[1]

	$ million
Police costs[2]	3,230
Corrective services[3]	1,590
Commonwealth portfolio[4]	820
Court administration[5]	410
Juveniles[6]	350
Total[7]	6,400

1 The basic source of figures is SCRCSSP (2003).
2 70 per cent of total police costs.
3 Excludes juvenile corrective services.
4 Includes Attorney-General's Department, Australian Federal Police, Office of the Director of Public Prosecutions, National Crime Authority and other agencies. Also included is five per cent of the cost of the Australian Customs Service.
5 Includes criminal courts and coronial courts; civil court expenditure is excluded.
6 Extrapolated from NSW Department of Juvenile Justice figures.
7 Some main exclusions are legal aid, and help for prisoners in and outside prison.

Lost Productivity of Prisoners

A potential cost arises from the loss of productive effort from paid and unpaid work that results from incarceration. This lost productivity is often included in costs of crime work (see, for example, Miller et al. 1993; Anderson 1999; Collins & Lapsley 2002), although the UK study did not do so (Brand & Price 2000). Consideration was given in the current work to three costings for adult sentenced prisoners.

- The first was the value of lost output, assessed at about $600 million. This took into account (a) the total number of productive life years lost for those in prison in 2001–2002 (an average),[59] (b) an estimated lost productivity loss per life year,[60] and (c) an assumed 50 per cent employment rate on release. This last was based on data for 1998 and 1999 from the National Prison Census relating to unemployment levels at time of arrest (AIC analysis).
- The second element was the value of work done by prisoners whilst in prison, assessed at just over $250 million. This was based on Productivity Commission figures of the proportion of eligible prisoners who worked in prison, with the value of productivity assessed at one-fifth that outside prison.[61]
- The third element was the savings that might be expected from crimes prevented because of incapacitation. This is subject to debate of course, but a fairly well aired estimate of 20 crimes was taken (Moxon 1998). The value of each of these prevented crimes was set at the average unit cost of the "main set" of crimes costed

59 The number of life years had to be estimated since there is no available Australian data to show the expected sentence length for the prisoners entering prisons in the year. Expected sentence length is available for the prison population "stock" at one point in the year, but this will underestimate the contribution of those on short sentences, and will relate to prisoners who have entered prison over a number of years (for example, ABS 2003). An adjustment was made to expected sentence length from the "prison stock" figures to account for this.

60 Lost productivity per year was based on figures in the MUARC study (Watson & Ozanne-Smith 1997) for males aged 25–44 ($40,000) covering paid work with add-on costs, and the value of unpaid household and community work. This estimate may be high for prisoners.

61 The one-fifth reduction takes into account shorter working hours, more restricted working conditions and so on. (David Biles, personal communication). The proportion of eligible prisoners who work was 78 per cent (SCRCSSP 2003, Table 7A19). No figures are given of the proportion of prisoners who are eligible to work; it was taken to be 90 per cent.

in this work ($690 per average incident, covering all forms of losses).[62] On the basis of the average number of people in prison in 2001 and 2002, the total crime saving amounts to about nearly $300 million.

These calculations are suggestive only. For instance, actual labour force participation levels after release are not certain. The relative value of work inside and outside prison is also somewhat debatable. And the amount and value of crime prevented by incarceration is subject to a wide margin of error. Nonetheless, the three costings would suggest a final lost productivity cost of about $50 million. Given the uncertainty, it is not included as a cost of crime.

Victim Assistance

A number of elements of assistance to victims were costed, although they are unlikely to encompass anything like the full expenditure on dealing with the consequences of victimisation. Victim Support Australasia helped with the collection of information from states and territories on some of the cost elements.

Criminal Injury Compensation

All states and territories have schemes to provide financial assistance or compensation to crime victims, although they differ in detail. The total amount spent in 2001–02 was nearly $180 million, although it is difficult in some cases to know whether the costs cover simply awards made, or administrative costs as well.

Victim Support Services

Each jurisdiction has service networks for victims. Some are located within the government sector and some outside it. Information on expenditure mainly covers the administrative costs of running victim service units within government departments, with the total amounting to almost $15 million. (Where information was unavailable, expenditure was set to the average of jurisdictions for which costs were known.) Any local government or Health Department spend is unaccounted for.

The Value of Volunteer Time

The issue of costing volunteer time was taken up in relation to the contribution of volunteers in fighting arson fires.

There is no firm estimate of the amount of volunteer time spent on services for victims. However, the ABS (2000a) estimates that a total of just over 180 million voluntary hours were spent in 2000 on community and welfare volunteering activities, about a quarter of the total volunteering time. An estimated five per cent of these hours have been taken here as being directed towards services for victims of crime (nine million hours in total). This amounts to just over one per cent of all voluntary activity.

62 The main set of offences are the violent and property crimes excluding arson, fraud and drug misuse.

The ABS generally recommends a "market replacement cost" approach to costing volunteer time, which is essentially the cost in wages of hiring others to do the work (ABS 2000b). Average hourly earnings can be taken as an approximation of this. Applying the current average hourly earning level gives a total value of about $200 million of voluntary time. This figure excludes the costs of salaried personnel in voluntary organisations, although some of this may have been subsumed under government funding for victim services.

Child Protection

The Productivity Commission accounts for some relevant spend in relation to protection and support services concerning:

- child protection (child abuse and neglect);
- out-of-home care services (for children placed away from parents for protective or family welfare reasons); and
- the Supported Accommodation Assistance Program (SAAP), which assists the homeless and those at risk.

The total bill in 2001–02 for child protection and out-of-care services was $796 million. The assumption is made that half of this can be set against criminal child abuse, giving a total of nearly $400 million.

Housing Assistance for Domestic Violence

From agency figures, it appears that 25 per cent of SAAP expenditure was directed at "women escaping domestic violence".[63] This gives a total of just under $70 million.

Office of the Status of Women

An additional cost that can be added is the spend by the Office of the Status of Women (OSW) on support for a number of programs to tackle violence within the family. The sum amounts to an estimated $20 million in 2001–02.[64]

Table 16.2 shows the spend on victims.

63 The proportion of SAAP expenditure for domestic violence was 23 per cent, but there was a further 20 per cent in the "cross target/multiple/and general" group. Most of the other SAAP spend is directed to assisting young people.

64 The elements are: (a) $1.875 million estimated for the "violence" area of the OSW budget; (b) $4.1 million as the one-year spend on the National Initiative to Combat Sexual Assault; (c) $12.5 million for the one-year spend on Partnerships Against Domestic Violence; and (d) $1.5 million for the one-year spend on the National Indigenous Family Violence Grants program.

Table 16.2: Estimated costs of provisions for victims

	$ million
Child protection	398
Volunteer effort	200
Criminal Injuries Compensation[1]	178
Housing assistance for victims of domestic violence	69
Office of the Status of Women	20
Victim support units[2]	15
Total	880

1 Estimate for Northern Territory. Queensland includes payments to secondary victims of crime.
2 Estimates for Western Australia and Northern Territory.

Security Industry

The Australian Security Industry Association Limited provided the following figures for private security turnover in 2001–02 (Brian de Caries, ASIAL, personal communication).

Table 16.3: Expenditure on private security in Australia, 2001–02

	$ million
Hardware and electronics	
Hardware and equipment (alarms, CCVT, access control)	590
Installation	675
Monitoring	260
Other	305
Total	1,830
Manpower	
Including customer services, loss prevention, retail security, concierge and reception desks, corporate risk, investigation service, cash collection, armed escorts, client banking. ATM services, security at special events and document and data storage and destruction	2,090
Overall total	3,920

Not all of these costs could be seen as attributable to the crimes covered here. Industry advice is that it would be reasonable to attribute 80 per cent of these costs to crime. This gives a total of about $3,140 million.

Insurance Administration

Insurance Statistics Australia estimates a figure of $500 million in Australia in 2001–02 as the costs of administering insurance for theft and damage—about 15 per cent of the value of premiums (David Minty, ISA, personal communication).

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