

Discussion Paper no.1

Experimental Output Measures for the Australian Justice Sector

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1. Introduction and Summary of Findings

1.1 Introduction

This paper outlines recent Australian Bureau of Statistics (ABS) work on developing new measures of the output of the Australian Justice Sector. This work is part of an ABS program, initiated in 1994, to develop improved measures of aggregate output for several significant non-market service industries. The ultimate objective is to use these measures to enhance the Australian System of National Accounts (ASNA), which provide a systematic summary of national economic activity and the structure of the economy.

The output measures for non-market sectors in the ASNA are, at present, less than ideal. Output is measured as the sum of expenditure on labour, capital and intermediate inputs. This input-based measure is often an incomplete representation of output as it fails to account for changes in productivity. Input-based measures will only reflect true 'output' if technological progress and other productivity improvements do not occur or are insignificant — an assumption which is unlikely to hold in the long run.

New experimental output measures were developed for health and government education services in 1996-97 and 1997-98. Attention has since turned to estimation of justice sector output. While this sector is substantially smaller than health and education, total government recurrent expenditure on justice in 1998-99 was approximately six billion dollars (*Report on Government Services, 2000*), which equates to approximately 1% of Australia's total Gross Domestic Product (GDP).

Chapter 2 discusses issues in measuring non-market output. Chapters 3, 4 and 5 develop separate experimental output measures for police services, justice services and corrective centres respectively.¹ Each of these chapters contain a number of sections discussing:

- the definition of the sector,
- a brief overview of the results of investigations into the structure of the sector,
- definition and measurement of output in the sector,
- availability of data,
- creation of output indices using available data, and
- conclusions and recommendations for implementation of the new measures.

To prepare the experimental output indices in this paper, a lengthy investigation into the structure and administration of each sector of interest was undertaken. This paper does not report all of the information accumulated in that investigation, however further information can be obtained by contacting the project team (see contents page for contact details).

¹ Note that the term 'Justice Sector' commonly refers to all three of these areas in aggregate. However, the term may also refer to the service area dominated by the work of the courts, which, for this analysis, also includes other activities encompassed by the ASNA justice definition.

1.2 Key Results — Police

Data which is suitable for the derivation of an index of police services output is very limited. An output measure for police is derived in Chapter 3, primarily based on ABS data from Recorded Crime (Cat. no. 4510.0). However, this measure is not suitable for implementation due to the number of assumptions which would have to hold in order for the index to be representative of the sector. It is recommended that the current input-based measures of police output be retained until further data becomes available. The analysis in this paper should serve to indicate the type of data and methodology which could be used to formulate a new output-based measure for police services in the future.

1.3 Key Results — Justice Services

An index of the output of justice services is calculated in Chapter 4. This index has two main drawbacks:

- data does not exist for some parts of the sector, particularly tribunals and specialist courts, and
- where data does exist, it does not include sufficient detail to allow differentiation between different case finalisation methods or case types within a court.

The issue of differentiation between different types of matters is partially addressed by breaking down the number of case finalisations by court level and civil/criminal jurisdiction. Moreover, while more detailed breakdowns may be essential for detailed studies of the justice sector, they are not essential for construction of an aggregate index for the ASNA. Further analysis, including a comparison between this experimental measure and its input-based counterpart, will be undertaken before determining whether this type of output measure should be adopted.

1.4 Key Results — Corrective Centres

The experimental corrective centres output index developed in Chapter 5 has only one main drawback, in that there was a lack of data for community corrections at the time the index was prepared. However, this data gap will be filled when new community corrections data comes on-line in 2000. Once again, comparisons between this experimental measure and its input-based counterpart will be undertaken before determining whether the new measure will be adopted.

Disclaimer

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2. Issues in Measuring Non-Market Output

2.1 System of National Accounts 1993 (SNA93)

The focus of the analysis in this paper was to suggest new methodology for estimating components of output in the ASNA, therefore the analysis was undertaken within the ASNA framework — The System of National Accounts 1993 (SNA93). SNA93 advocates a ‘process’ type rather than outcome oriented approach for defining public sector output, and states that:

‘The objective is to measure the quantity of services actually delivered to households. This should not be confused with the benefits or utility from these services.’ (SNA93, p. 16.135)

This statement means that a measure of output should be quantifiable, preferably, in physical terms.

2.2 Outputs vs Outcomes

Some analysts think of productivity in terms of outcomes — that is, in terms of the changes in the condition of consumers that result from the provision of services. However, the ABS is concentrating on developing output measures of the services provided rather than measures of their effects. Yet the notion of outcome will inevitably arise in the course of the ABS’s investigations;

- first, because that notion underlies many of the independently-developed performance indicators with which ABS productivity estimates will be compared, and
- second, because some elements of outcome may provide a gauge of the changing quality of services.

2.3 The Changing Quality of Output

The output of service providers such as police, justice services and corrective centres is more difficult to define and measure than is the output of producers who provide more tangible or homogeneous goods. The heterogeneity of services increases when one tries to monitor service output from one year to another — changing technology and changing institutional arrangements may entail significant changes in the quality of services. If these quality changes are not recognised when the output measure is being constructed, the change in productivity may be under-estimated or over-estimated. Understanding and measuring quality change is probably the greatest single difficulty for analysts who wish to track productivity change over time. In this paper, potential data sources for quality adjustment are discussed, but detailed exploration of quality adjustment issues is left for future work.

2.4 Aggregation of Measures of Different Outputs

The move from output indicators for a single activity to a composite measure of output raises issues relating to aggregation. The simple addition of the outputs of a number of services, without attention to the types of services provided, is not likely to yield a usable measure of composite output. Such a simple addition would take no account of either the different input costs of delivering services or the differential valuation the community may place on the delivery of those services. To reflect these factors, a composite measure requires the development of an appropriate weighting system.

2.5 Possibilities for a Weighting System

Aggregate measures of output volume in market sector industries are derived, either explicitly or implicitly, by weighting together elemental volume indicators using current price data. However, for the justice services industry, as for many service industries, a significant proportion of the output is the non-marketed output of the general government sector, meaning there are no market prices. This poses a problem for deriving an aggregate volume measure of output. Two options for overcoming this problem are to derive output weights using the costs associated with producing particular outputs or to use pseudo market values.

If cost weights are used there is an explicit assumption of a zero net operating surplus or profit. However, because of the difficulty of imputing market values for these outputs (for example, by using data from similar services produced in the market sector), cost data will be used to derive the experimental measures of the aggregate volumes of output.

2.6 Methodology used to construct an aggregate index of output for each sector

Taking all these factors into account, the following methodology has been adopted to calculate aggregate output indices for police services, justice services and corrective services:

1. Define outputs of the sector.
2. Formulate measures of each output.
3. Use a chained Laspeyres volume index (an index of the form shown below) to calculate an aggregate index for the sector, across all activities, using expenditure weights:

$$\text{Output Index } O_t = [\sum^i w_{i0} \cdot (q_{i1}/q_{i0})] \cdot [\sum^i w_{i1} \cdot (q_{i2}/q_{i1})] \cdot x \cdot \dots \cdot x [\sum^i w_{i,t-1} \cdot (q_{it}/q_{it-1})]$$

where :

t = time period

i = output activity $i=1, \dots, n$

q_{it} = output in period t , for output activity i

w_{it} = the share that output activity i contributes to total output in period t

\sum^i = sum across each output activity in the sector, $i=1, \dots, n$

2.7 Shifting Institutional Boundaries

The ABS is also aware of several other phenomena that must be taken into account while completing this project. First, the boundaries between segments of government service provision are shifting and becoming less clear. Second, the public and private sectors of service provision are closely intertwined.

These issues will demand careful verification of any conclusions about changes in the output and productivity of government services. In particular, the ABS must ensure that any apparent changes are not just artefacts of shifting boundaries in the real world or in the data sets.

2.8 Data Availability

Output estimation for the non-market sector is inherently difficult and it is important to realise the limitations of this type of analysis at the outset. No set of output indicators is going to be fully representative of all the services provided by the relevant agencies. The ABS has put considerable effort into gaining an understanding of the operations of police services, justice services and corrective centres so that the specification of output indicators is appropriate. Ultimately, output measures should reflect final services, be independent of input measures, capture changes in output quality and be in accordance with the SNA93 framework outlined above. Whether our preferred set of output indicators can be implemented will largely depend on data availability.

3. Police Services

3.1 Definition of the Australian Police Services Sector

The Australian System of National Accounts (ASNA) uses the Australian and New Zealand Standard Industrial Classification (ANZSIC) as the basis for dividing economic activity between various industries. Police Services are incorporated in the Personal and Other Services division of this classification system. Table 3.1 displays the primary activities and agencies contained within the ANZSIC Police Services category.

Table 3.1: The ANZSIC Police Services Category

ANZSIC Category	Primary Activities	Agencies Covered
9631 : Police Services	Police Station Operation (government) Police Service (government) Security or Intelligence Organisation Operation (government)	Six State and Northern Territory police forces Australian Federal Police (AFP) National Crime Authority (NCA) Australian Security Intelligence Organisation (ASIO) Australian Secret Intelligence Service (ASIS) Australasian Centre for Policing Research (ACPR) Australian Bureau of Criminal Intelligence (ABCI) Australian Institute of Police Management (AIPM) National Institute of Forensic Science (NIFS) National Exchange of Police Information (NEPI)

This structure was current at 30 June 1999. Note that private protection and security services are not included in the 9631 ANZSIC category. These services are incorporated within Security and Intelligence Services (ANZSIC classification 7864). The National Crime Statistics Unit, located within the ABS' National Centre for Crime and Justice Statistics (NCCJS), is also classified elsewhere.

Given the heterogeneous nature of these activities it is difficult to devise a new experimental output measure which is fully comprehensive. From the outset, it was recognised that it may not be viable or practical to include all agencies which are in scope for this analysis; for example, detailed information about ASIO and ASIS is not publicly available. From preliminary research it was clear that the larger police agencies were the State and Territory police services, the AFP and the NCA. These agencies represent the major part of the 9631 category.

3.2 Structure and Functions of the Australian Police Services Sector

3.2.1 State/Territory Police Forces

Each State/Territory police force is responsible for enforcing the law, preventing crime, and helping and reassuring the community, through both proactive and reactive initiatives. Reactive policing is concerned with law enforcement; activities undertaken in a reactive capacity are determined largely by events beyond the control of police. Proactive policing encompasses activities that protect, help and reassure the public and prevent crime, such as traffic management and community support. Unlike reactive policing, the level of preventative policing can be, to a degree, self-determined. (*Productivity Trends in the Public Sector in Sweden, 1996*)

Police activities can be classed into six broad groups:

1. Crime prevention and community support programs
2. Event and incident management
3. Criminal investigation
4. Supporting the judicial process
5. Road safety
6. Information and regulatory services

Each of these activities is detailed below.

Crime prevention and community support activities are proactive initiatives towards reducing criminal activity. Such activities may take the form of patrols made by police (on foot, via public transport, or in cars). This serves to prevent crime through the visible presence of the police. Community support activities aim to involve the community in crime prevention activities, such as encouraging and educating local community groups to undertake safety or education programs.

Activities involved with event management may also be classed as a proactive approach towards crime. Police will attend major events (both sporting and cultural) and public demonstrations to ensure order and public safety. Incident management involves reactive activities such as police responding to calls for assistance, for example attending domestic violence incidents, hostage and siege situations, search and rescue operations or armed robberies.

The criminal investigations carried out by police involve interviewing suspects and witnesses and the collection of physical evidence. Investigations are supported by scientific and forensic agencies and also involve cooperation with other law enforcement agencies such as the NCA or AFP.

The police support the judicial process by providing efficient management of court cases, and fair and expeditious handling of all those involved.

The road safety activities conducted by police include targeting drink driving (through random breath testing and education programs), operating speed and red light cameras, inspecting vehicles, and dealing with other traffic infringements. Attending and investigating road accidents is also a major role of police involved in road safety.

Information collected from road safety investigations may lead to the identification of traffic “black spots”, which may require road improvement to increase road safety.

The information and regulatory services undertaken by police include administering applications made under freedom of information and the provision of statistical information for policing activities, to government ministers and departments. The regulation of the gaming, liquor, and vice industries are also activities undertaken by the State police.

The State and Territory police forces vary in size, generally depending on the size of the population. Employees of the police forces can be divided into two categories, sworn officers and unsworn general employees. Sworn officers undertake activities such as arresting offenders, fingerprinting and patrolling, while unsworn general employees undertake other activities such as administration, communications, and scientific activities. (*Victorian Police Annual Report 1998-99*)

3.2.2 Australian Federal Police

Federal law enforcement agencies have specific charters (separate from those of the State/Territory police forces). The AFP has the primary task of deterring and investigating criminal breaches of Commonwealth legislation. The AFP works in cooperation with State/Territory police forces, other Commonwealth agencies including the NCA and Customs and international law enforcement agencies.

The AFP also has international obligations and special tasks within its jurisdiction, such as contributing to various peace keeping operations, for example in Bougainville and East Timor, or providing VIP protection. The AFP also undertakes general policing activities in the ACT, Jervis Bay, Christmas Island, and other external territories of Australia. (*Australian Federal Police Annual Report 1998-99*)

3.2.3 The National Crime Authority

The NCA conducts investigations along similar lines to the AFP although it is within the NCA’s jurisdiction to investigate crimes against Commonwealth, State, and Territory laws. The NCA also establishes and co-ordinates task forces with members from various law enforcement agencies. The collection, and analysis, of intelligence information is also one of the NCA’s primary tasks. (*National Crime Authority Annual Report 1998-99*)

3.2.4 National Common Police Service Units

National Common Police Service units, such as the Australian Bureau of Criminal Intelligence (ABCI), the Australian Institute of Police Management (AIPM), the National Exchange of Police Information (NEPI) and National Institute of Forensic Science (NIFS) were established to promote a more co-ordinated national response so as to maximise the employment of police resources. (*National Common Police Services Annual Report 1997-98*)

The Australasian Centre for Policing Research (ACPR) is concerned with stimulating and coordinating research projects concerned with various aspects of police activities. ACPR research projects include work on criminal investigation techniques, law enforcement methods and strategies, occupational stress, and police surveillance equipment. (*Australasian Centre for Policing Research Website*)

The Australian Institute of Police Management (AIPM) lies within the administrative arm of the AFP. The main aim of the AIPM is to improve Australasian policing performance. The AIPM conducts management and leadership programs with law enforcement agencies to improve their performance and productivity. The AIPM is affiliated with the Charles Sturt University through the Australian Graduate School of Police Management. (*Australian Institute of Police Management Home Page*)

The role of the Australian Bureau of Criminal Intelligence (ACBI) is to facilitate a national criminal intelligence service with links to all law enforcement agencies within Australia and also with overseas agencies. The ACBI has developed databases which are used to exchange computerised intelligence. (*National Missing Persons Unit Website*)

The NEPI provides infrastructure and information technology services that facilitate lawful access to police information on an Australasian-wide basis. NEPI has 10,000 secure computer terminals Australia-wide, from which police officers can access information. Non-law enforcement uses of NEPI include security checks for casino and gambling licenses, background checks on prospective Australian citizens by the Department of Immigration and Multicultural Affairs (DIMA), and prospective employee checks for the Sydney Olympics. (*National Common Police Services Annual Report 1997–98*)

NIFS is a relatively small organisation which is situated at La Trobe University. NIFS is concerned with sponsoring and supporting research into forensic science of common interest to all law enforcement parties. The activities of NIFS are concerned with developing procedures for the collection of crime scene evidence, examination of evidence, and the presentation of evidence in court. (*National Common Police Services Annual Report 1997–98*)

3.2.5 Co-ordination of Activities Between Law Enforcement Agencies

Although there are a large number of law enforcement agencies, co-ordination of investigations between different agencies at both the State and national levels is highly developed. National task forces (co-ordinated by the NCA) aimed at the investigation of certain criminal activities (e.g. drug trafficking and money laundering) are made up of police from all States/Territories and the NCA and AFP. Other relevant agencies such as the Australia Tax Office, Customs, and the Australian Securities and Investments Commission, may also be involved. Task forces of this nature allow free exchange of information between agencies and prevent jurisdictional boundaries from hindering criminal investigations. (*National Crime Authority Annual Report 1998–99*)

3.3 Defining and Measuring the Output of Police Services

Before attempting to develop new police services output measures, it is relevant to consider the output measures used in previous studies of police services.

3.3.1 Literature on Police Service Output and Related Topics

Much of the available literature on police services discusses trends in crime rates and expenditure on police services. These issues tend to be the focus of the literature because of their politically sensitive nature. While crime rates may indicate how effective police are in preventing crime, they should be carefully interpreted as many other factors also influence these statistics. Crime is also influenced by social, economic and institutional factors which are well beyond the control of police. Crime rates can therefore increase despite increases in the output or productivity of police services.

New South Wales Treasury Budget Papers

With an increased sense of accountability and the financial reforms adopted by governments, State treasuries have sought to develop performance indicators for most government services including police services. For example, the NSW Treasury reports outcomes and outputs for each of the four budget programs of the NSW Police — community support, criminal investigation, traffic and judicial support. The development of performance indicators has occurred within all jurisdictions, however indicators are not consistent across the States. Performance indicators include both effectiveness and efficiency measures. Effectiveness measures will need to be considered for the purpose of quality adjustment once volume estimates are obtained.

Some of the outputs recorded by the NSW Treasury include the number of responses to calls for assistance, the number of persons proceeded against and the number of drivers charged as a result of random breath testing. Treasury departments also report disaggregated expenditure information within their State budget papers which could be employed for aggregation purposes. For example, in the case of the NSW Treasury, the amount of expenditure devoted to each budget program is reported. (*NSW Treasury, Budget Papers 1998–99*)

New South Wales Police DEA Study

The NSW Treasury has also used Data Envelopment Analysis (DEA) to assess the efficiency of many government service providers including the police service. DEA is a non-parametric mathematical programming approach to frontier estimation. While DEA is not going to be undertaken in the current analysis, the NSW Police DEA study (undertaken by NSW Treasury in partnership with the NSW Police) is very useful in that it describes the production of police services, and defines a set of outputs and inputs. The study emphasises the need to specify the activities of police patrols completely and correctly.

Five output variables were defined including: number of arrests, responses to offences recorded, serving summons, and attending major car accidents. The fifth variable, kilometres travelled by police vehicles, measured the preventative activities of police. This measure is not an all-encompassing measure of preventative policing; it disadvantages metropolitan regions as it does not take into account time spent by police patrols on foot.

Kilometres travelled also does not take into account the number of hours spent educating children, for example, which is an effective preventative measure used by police. Three inputs were also used in the analysis; namely the number of police officers, the number of civilian employees and the number of police cars. (*Carrington et. al., 1997*)

Productivity Trends in the Public Sector in Sweden

Studies have also been conducted overseas in an attempt to measure the level of police output. A study by the Swedish Ministry of Finance into productivity trends in the public sector measured the level of productivity in the police force between 1980 and 1991. The study used the following variables to assess police output:

- Responding to calls : Number of responses
- Teaching : Number of hours
- Patrolling : Number of hours
- Investigation of crimes : Number of crimes submitted for prosecution in addition to the number of cases resolved before prosecution.
- Administration : Number of cases
- Vehicle inspections : Number of inspections
- Speed control : Number of infringements
- General traffic control : Number of drunk drivers & other traffic infringements

There are some issues associated with the use of the number of hours worked as a measure of police output, as it may be considered to be more of a measure of police effort than of output.

The Swedish study used police salaries and other costs of police services as inputs. This approach yielded a unit cost for each output, for example, one hour of patrolling cost SEK 550, while each narcotic case submitted to the public prosecutor cost SEK 34,341. This approach indicates the efficiency of the police force rather than its effectiveness. (*Productivity Trends in the Public Sector in Sweden, 1996*)

The Economic Theory of Crime and the Relationship Between Proactive and Reactive Policing

Recent studies have also focussed on the factors which motivate people to commit crimes, and how these factors are related to proactive and reactive policing activities, such as those described in Section 3.2. The interaction between these two types of activities is also important when considering output in the police services sector.

The motivation to outlaw an activity is that it is seen to be harmful to other members of society. However, any activity which causes harm to one party (the victim) may, in fact, be beneficial to another (the offender), for example, theft. Therefore, the net social loss from crime is the difference between the harm and the benefit of crime. The gain from criminal activities is likely to increase with the number of offences, while the harm caused by these activities will also increase. It is plausible to believe that offenders will eventually receive diminishing marginal returns from crime and cause increasing marginal harm from each additional offence. (*Becker 1968*)

The probability of an individual being convicted as a result of a criminal activity will determine the number of offences the individual commits. However, the punishment related to crime is not perceived to have as great a deterrent as the probability of conviction. With this view, for example, an individual is less likely to commit an offence which has a high probability of conviction with a light punishment, than an offence with a low probability of conviction and a severe punishment. Another factor which determines an individual's activities is the opportunity cost of crime; the expected utility from criminal activity compared to the utility gained from using their time and resources for another activity. In addition, those individuals who do offend can be seen to be risk takers, as opposed to those who do not offend who are risk adverse.

From this point of view, it is more effective to take a proactive stance towards crime, as an increased probability of conviction should imply that individuals will be less likely to offend. However, reactive and proactive activities are inextricably intertwined. Intuitively, a negative relationship should exist *ceteris paribus*; an increase in preventative activities should result in a decrease in reactive activities. For example, increased road patrolling should result in a reduction in the number of traffic accidents thereby reducing the demand for reactive policing. Likewise reactive policing such as a public arrest may have a preventative spin-off, in that it may deter others from partaking in criminal activities.

Therefore, it is plausible to argue that in order to reduce the number of offences committed by individuals (holding other variables constant), society should increase the probability (or at least an individual's perceived probability) of conviction. Increased funding towards proactive police services would increase the probability of offenders being convicted, assuming that the increased funding is used effectively and efficiently by police. However, it must be noted that an increase in police funding, combined with an adverse economic and social climate, may not reduce the number of offences, as the opportunity cost of crime would still be lower for those who cannot find employment. (*Grabosky 1988, Becker 1968*)

3.3.2 Output Measures for the Australian National Accounts

After consideration of police activities and previous studies which define police output, it becomes clear that it is extremely difficult to define a number of output indicators which will adequately capture all activities. In particular, preventative policing is impossible to fully quantify, as measuring the output or productivity of crime prevention would require knowing the number of offences prevented by police and the cost of these crime prevention activities. Obviously, the number of offences prevented by police will never be available. Other measures of crime prevention, such as hours spent on patrol, will have to suffice. According to the NSW Treasury analysis of the efficiency of police patrols, around forty percent of police time and resources is devoted to preventative policing. This result is also supported by results from the Swedish Ministry of Finance study. It is important to recognise that given the important role of proactive policing, any experimental output index will underestimate police output if proactive policing cannot be estimated.

Notwithstanding these limitations, a close to ideal index of the output of police services could be created from measures of each of the following outputs:

State & Territory Police Forces

- Patrols : number of hours spent on patrol
- Community Education : number of education programs delivered to community groups
- Event Management : number of events managed
- Emergency operations : number of operations undertaken
- Number of responses to calls for assistance
- Number of investigations : weighted by investigation outcome and/or the time spent on each investigation, to reflect the relative complexity of different types of investigations
- Support to the Judicial Process : number of cases presented to court
- Number of drink drivers apprehended & number of other tests conducted
- Number of red-light and speeding offenders caught, and number of other motorists tested
- Regulatory activities : number of hours spent undertaking regulatory activities

National Crime Authority

- Number of investigations : weighted by investigation outcome and/or the time spent on each investigation, to reflect the relative complexity of different types of investigations
- Number of national task forces conducted where police play a major role

NEPI

- Number of inquiries for information dealt with

NIFS

- Number of recommendations made

However, the reality of the situation is that the data currently available does not cover many of these outputs. The following section will discuss the data which is available, how this might be used to construct appropriate output figures, and the data which would be required to construct a more robust output index.

3.4 Data Availability

3.4.1 State Police Services

Police annual reports contain information regarding the crime prevention and community support programs. This information takes the form of the number of hours spent patrolling, hours spent on delivering education programs, and hours spent assisting the public at police stations and work areas. The format in which this information is presented differs from State to State. For the Victorian Police, the 1998–99 Annual Report clearly expresses the number of hours spent on each activity, and number of events attended. However, in Queensland, New South Wales, and the Northern Territory, this information is defined as performance indicators, while no absolute figures are provided. The AFP quotes selected statistics for its community police operations in the ACT and other Australian territories. Judging by the figures reported in these annual reports, it appears that police agencies would have relatively accurate statistics concerning their crime prevention and community support programs. However, our research to date indicates that some police agencies are reluctant to release this information in any form, due to its sensitive nature.

The Victorian State Police annual reports provide information regarding event and incident management, such as the number of call-outs to incidents and the number of public events attended. The remaining State annual reports do not provide this information. Reference is again made to performance indicators, which would no doubt be based on the relevant information, yet it is not released in a form from which output can be calculated. In addition, a number of State police forces are involved in emergency services activities, such as search and rescue operations. The output of such operations (i.e. the number of rescues performed or number of natural disasters attended) is not reported. However, it is again highly likely that this information is collected by the relevant police services, and therefore the output of these operations could be estimated if that information were made available.

The investigation of criminal offences could, theoretically, be estimated using data from *Recorded Crime, Australia* (Cat. no. 4510.0). However, the aim of this publication is to produce comparable crime statistics across all jurisdictions. Therefore, one limitation of Recorded Crime, for output measurement purposes, is that only a particular subset of offences is canvassed. Another issue is that criminal offences are reported on a victim basis, as national crime statistics count the number of victims for each offence category rather than the number of breaches of the criminal law. (*Recorded Crime, Australia, 1999, p116*)

Offences have been classified into nine offence categories including murder and attempted murder, manslaughter and driving causing death, blackmail/extortion, motor vehicle theft and other theft. For incidents where the same victim is subjected to multiple offences belonging to different offence subdivisions, one offence, the most serious, is counted within each subdivision. For instance, if a person is kidnapped and then raped by two offenders, one kidnapping and one sexual assault offence would be counted. However, only one investigation would be conducted as there was one incident which involved two offences. Therefore, the use of data from Recorded Crime would tend to over-estimate the number of investigations undertaken by police. (*Recorded Crime, Australia, 1999, p116*)

An additional difficulty in using this data is that the amount of resources and police time devoted to any investigation clearly depends on the seriousness of the crime being investigated. For instance, a murder investigation will usually require more time and resources than a robbery investigation. These two investigations are two different types of output. The use of expenditure data to weight the various types of investigations would proxy the relative intensity or complexity of the differing investigation types; however, such data is not available.

Road safety statistics such as the number of road accidents attended or the number of random breath tests conducted are presented in State police annual reports. However, the statistics are not standardised and the methodology varies from State to State.

The level of resources directed towards the supporting the judicial process, and information and regulatory activities are relatively low, 9% and 4% respectively according to the Western Australian activity survey (see below). This information could be used to impute the level of police output in these two relatively small areas for which there is no suitable data available. Activity surveys may also provide a weight for preventative policing activities. However, once again, the results of activity surveys are not reported in all State/Territory police annual reports.

All jurisdictions, apart from New South Wales, are currently in the process of conducting activity surveys to more clearly quantify how police officers spend their time. NSW has adopted a rostered activity system instead of activity surveys. This system is more comprehensive in that all staff are covered every day of the year. The results of activity surveys for Western Australia and Victoria have been presented in the Report on Government Services in 1999 and 1998. The allocation of total resource effort directed to major services for the Western Australia Police Service is presented below:

- Investigation of Offences: 28%
- Response to Incidents: 12%
- Community Support, Safety and Public Order: 26%
- Emergency Management and Co-ordination: 3% ²
- Support to the Judicial Process: 9%
- Traffic Management: 18%
- Regulatory and Information Services: 4%

Activity surveys reported in annual reports may take the form of the percentage of time spent on each task or the cost per capita of each task. The frequency at which activity surveys are undertaken varies from State to State, but they are frequently held twice yearly. The sample design takes the form of a census in most states, while in Western Australia and South Australia only selected samples of employees are surveyed.

²Emergency management & co-ordination and responses to incidents are combined in event and incident management.

While all police services have the same objectives and perform similar duties, the results of activity surveys for any one police department can not be applied to any other police department. The duties of police agencies differ between jurisdictions; in smaller states such as Tasmania and the NT, police take on added responsibilities such as emergency service activities. Police resources are allocated depending on the needs of the community. Having studied the detailed results of the Western Australian activity survey, the heterogeneous nature of police services is very apparent.

The results of activity surveys would be a valuable source of information in defining the output of police services. The results could also be useful in terms of imputing output for those activities for which no other data is available. Unfortunately, the results of activity surveys are not readily available from all jurisdictions due to their sensitive nature.

3.4.2 AFP

The AFP provides a detailed breakdown of the number of cases it undertakes in its annual reports. During 1997–98 the AFP conducted 10,515 investigations³, and protected 675 persons. The number of support activities is also reported, for example forensic support, surveillance, and corporate support. The number of investigations carried out by the AFP as part of its ACT policing operations is reported in Recorded Crime. The number of AFP staff who are overseas on peace keeping operations are also recorded in the annual report.

3.4.3 NCA

The NCA provides information similar to that provided by the State police forces regarding its operation. The number of charges brought against offenders is reported, yet the actual output, the number of investigations conducted, is not reported. The NCA divides its activities into national task forces, which are conducted in conjunction with other law enforcement agencies⁴. Each task force investigates certain activities, such as company fraud or outlawed motorcycle gangs.

The number of investigations conducted by each task force would no doubt be recorded by the NCA, yet is not published in the annual reports. Assessing the output from the NCA's collection and analyses of intelligence information is also difficult to assess. The collection of intelligence information may, in some cases, be a by-product of ongoing investigations, as information may be shared among different law enforcement agencies. Quantifying this output, even with more detailed statistics, would be extremely difficult or impossible.

³Does not include investigations in the territories.

⁴Task Forces may also include representatives from the Australian Taxation Office or Australian Security & Investment Commission

3.4.4 National Common Police Service Units

Information regarding NEPI is published in the National Common Police Services Annual Report. This information includes the number of requests for finger print information and inquiries for criminal information from other agencies. As the NEPI network is computer-based, information on the number of requests would be recorded. As NEPI institutes a “user pays” system for the information provided to other agencies such as the Department of Immigration and Multicultural Affairs, this financial information may be used to proxy the number of criminal information requests processed for external agencies. However, the NEPI annual report does not provide information which is detailed enough to accurately gauge this output. Financial information is included in the annual report. During 1997–98 total NEPI expenditure was \$7.12 million dollars..

In the overall picture of the police services sector, NIFS’ outputs are relatively insignificant. Total expenditure in 1997–98 was \$935, 136. As NIFS’ primary functions are to improve and coordinate forensic science methods used by the various law enforcement agencies, it is difficult to assess the output of this organisation. The annual report only provides financial information.

There are similar limitations in the data available for the Australasian Centre for Policing Research, the Australian Bureau of Criminal Intelligence and the Australian Institute for Police Management. In addition, the budgets of these agencies are less than one million dollars each. It is therefore unlikely that further investigation of the outputs of the agencies in this category would be justified, given their small contribution to the total output of the sector as a whole.

3.5 Construction of the Output Index

Due to the lack of relevant data on police services outputs, the only data series which could be constructed were for AFP investigations and expenditure, and approximate State and Territory police investigations and expenditure. These series are presented below. An index of police output has also been calculated from this data, to illustrate the type of approach that could be taken if suitable data was available. The index also serves to highlight the difficulties which arise from using the data which is currently available.

Table 3.2 : AFP Investigations and Expenditure

Year	No. of Investigations Completed ^(a)	Total Expenditure (\$m)
1994–95	3 162	274.8
1995–96	3 157	245.2
1996–97	2 665	281.4
1997–98	4 117	278.4
1998–99	4 740	274.8

^(a) Excludes investigations in the ACT

Source : AFP Annual Reports

The data in table 3.2 contains some inconsistencies, for example the number of AFP investigations conducted in 1997–98 is not comparable to other years due to the introduction of a new recording system. The following year saw a change in output framework. Figures are also revised from year to year.

To construct table 3.3, using data from Recorded Crime, the following non-trivial assumptions and estimations were required:

- The number of investigations has been estimated using the number of victims. This would probably result in an overcount of investigations, because if the same victim is subjected to multiple offences belonging to different offence subdivisions, one offence is counted within each subdivision.
- A murder investigation may well be more complex and involve different processes than a theft investigation, and would therefore be considered a different type of output. However, all victims are grouped together, as there is no appropriate weighting data to reflect the different types of investigations.
- Not all offence types are covered by the Recorded Crime data.
- Some data items are 'not available' — such as the number of assault victims for 1994. Where possible, this data has been estimated by straight-line interpolation to reduce unrepresentative fluctuations in the final index.
- The number of victims in some financial years (e.g. 1994–95) has been estimated by averaging the number of victims from the two adjacent calendar years (e.g. 1994 and 1995).
- Expenditure data has been obtained by summing State and Territory total recurrent expenditure from the Report on Government Services, 1999.

Table 3.3 : Approximate State/Territory Police Investigations and Expenditure

Year	No. of Investigations Completed	Total Expenditure (\$m) ^(a)
1994–95	1 108 934	3 244.9
1995–96	1 166 556	3 557.7
1996–97	1 228 378	3 757.5
1997–98	1 278 868	3 823.7
1998–99	1 335 513	4 016.6

^(a) Includes AFP activities related to community policing in the ACT, but does not include Federal Policing activities.

Sources : Recorded Crime Australia (4510.0), Report on Government Services, 1999.

The data in Tables 3.2 and 3.3 can be used to construct the output index shown in table 3.4, and graphed in figure 1. The formula used to calculate this index is as follows:

$$\text{Output Index}_{0t} = [\sum^i w_{i0} \cdot (q_{i1}/q_{i0})] \cdot [\sum^i w_{i1} \cdot (q_{i2}/q_{i1})] \times \dots \times [\sum^i w_{i,t-1} \cdot (q_{it}/q_{it-1})]$$

where :

t = time period

i = output activity : State/Territory police investigations or AFP investigations

q_{it} = output in period t , for output activity i : the number of investigations for State/Territory police or the AFP

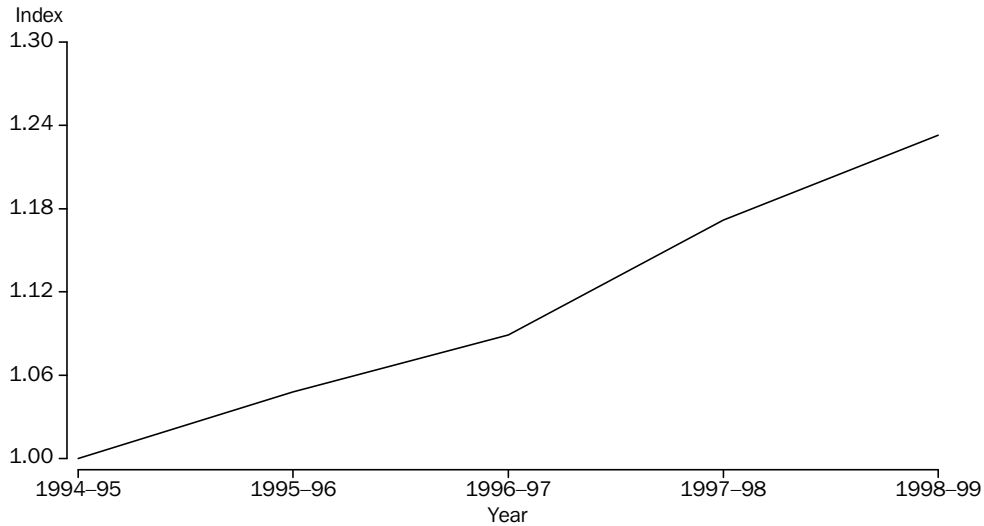
w_{it} = the share that output activity i contributes to total output in period t , calculated using the expenditure of each activity divided by total expenditure for the sector.

\sum^i = sum across both output activities

Table 3.4 : Output Index for Australian Police Services

Year	Index
1994–95	1.000
1995–96	1.048
1996–97	1.089
1997–98	1.172
1998–99	1.233

FIGURE 3.1 : GRAPH OF THE EXPERIMENTAL AUSTRALIAN POLICE SERVICES OUTPUT INDEX



This index shows steady growth between 1994-95 and 1998-99. However, as indicated at the outset, this index has been calculated for illustrative purposes only, as it is based on a very limited set of data. Essentially, this index assumes that:

- Investigations are the only outputs of the police sector. If investigations were the primary output of the sector, and the number of investigations was also a constant proportion of total police output, this assumption may be acceptable. However, we have no information to suggest that either of these suggestions is correct.
- The number of State and Territory police force investigations can be estimated using the number of victims published in Recorded Crime. This assumption cannot be justified.

3.6 Conclusions and Recommendations

Given the lack of suitable data available at this time, one can only recommend that the current input-based measure of police services output be retained. This study should serve to indicate the type of data and methodology which could be used to formulate a new output-based measure for police services.

Initiatives such as police activity surveys may provide new sources of data relevant to output measurement for this sector. If the results of activity surveys could be monitored over time, and the proportions of output attributable to each activity were found to be fairly constant, it might be possible to derive a measure using only the larger activity components (e.g. investigations, community support, traffic management/road safety and responding to incidents). While this would not be as accurate as a more detailed breakdown, the movements in output for the largest components may be representative enough of the whole sector for National Accounts purposes, and the value of the additional output could then be imputed.

The ABS has engaged in some consultation with State/Territory police agencies, and this process will be continued through the ABS National Centre for Crime and Justice Statistics and the Police Working Group. The ultimate goal would be to identify ways in which suitable output measures could be developed from the data which police agencies are willing to provide.

Development of output measures for this sector may therefore be revisited in the future.

4. Justice Services

4.1 Definition of the Australian Justice Sector

The Australian System of National Accounts classifies activity in the justice sector in accordance with the Australian and New Zealand System of Industrial Classifications (ANZSIC). The ANZSIC definition provides the scope of the justice sector used in this analysis. ANZSIC defines Justice (group 812) as:

'units mainly engaged in the operation or administration of judicial authorities or commissions including Royal Commissions or similarly constituted inquiries'.

The primary activities of this group are listed as :

- Arbitration court operation
- Bankruptcy court operation
- Conciliation and Arbitration Commission Operation
- Judicial Authority Operation (Federal or State)
- Law court operation
- Royal Commission operation

In 1998–99, total government recurrent expenditure on courts administration was around 784 million dollars, which constituted around 14% of expenditure in the crime and justice sector as a whole (*Report on Government Services 2000*). However, this figure does not include all of the primary activities listed above.

These primary activities do not map to specific agencies on a strictly one-to-one basis. In addition, research undertaken into the sector has also identified activities which could potentially fall within the ANZSIC justice definition, but which are not currently listed as primary activities. This is largely due to the fact that justice services are continually evolving; the sector has seen significant changes since the 1993 ANZSIC system was introduced. In this paper, output for the sector will be grouped according to activities which more closely reflect the current structure of the sector. These activities are shown below:

- Court operation and administration
- Tribunal operation and administration
- Arbitration and industrial relations commission operation
- Operation of Royal Commissions or similarly constituted inquiries
- Operation or administration of judicial authorities or commissions
- Government alternative dispute resolution service operation

It should be noted that the grouping of outputs will not affect the results of this study, as long as all outputs within the ANZSIC group are counted once and once only. Section 4.2 will cover the structure of the justice sector in more detail.

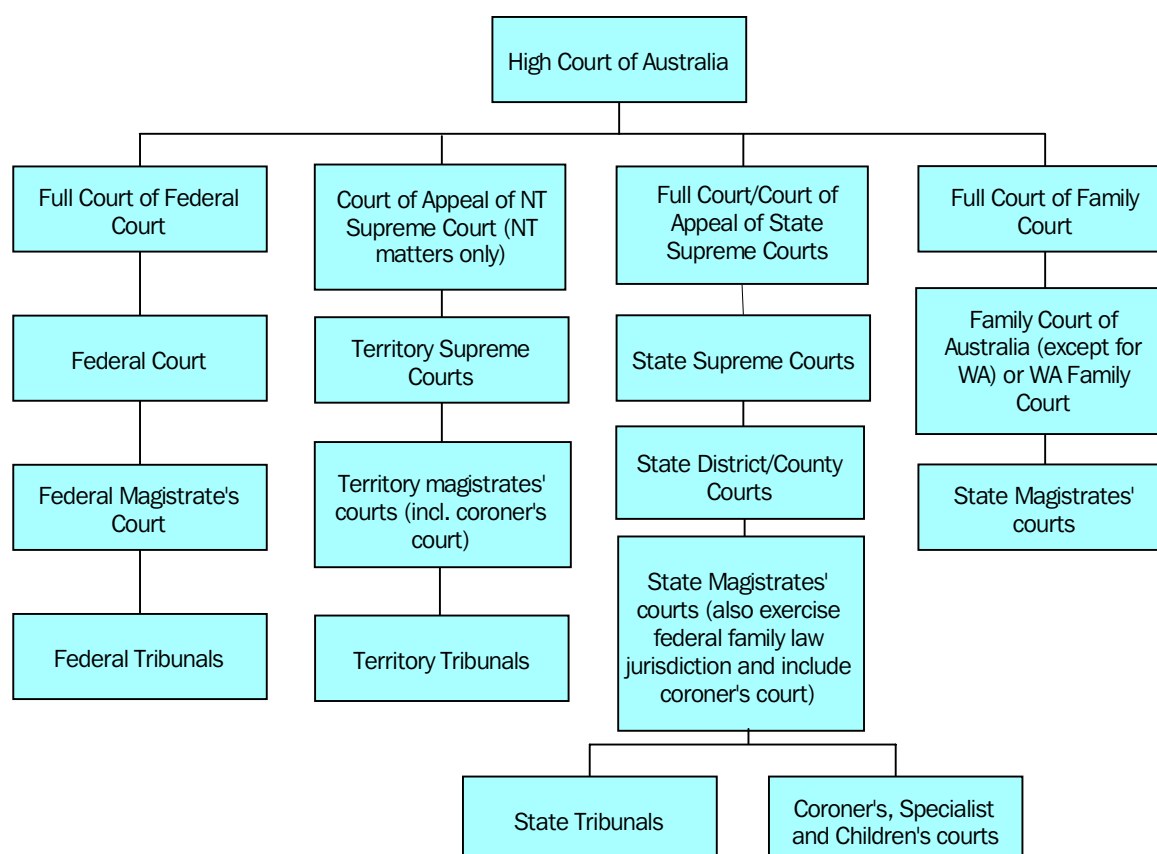
4.2 Structure and Functions of the Australian Justice Sector

4.2.1 Court Operation

Courts operate in all Australian States and Territories and are organised in a hierarchy (see figure 1), with higher courts hearing the more serious matters and appeals which originate from decisions made in the lower courts. Full courts also have appellate jurisdiction over decisions made by single judges or justices of the same court.

Courts deal with civil, criminal and coronial matters. A criminal case involves an allegation of a breach of the criminal law, whereas a civil case results from a dispute between two or more individuals or corporations. In general the same court infrastructure is used to deal with both criminal and civil cases, however separate case flow and information systems are generally used, and data collections often deal exclusively with either criminal or civil cases. A third type of hearing, a coronial hearing, investigates the cause of sudden or unexpected deaths or suspicious fires. (*Year Book Australia 1999, Report on Government Services 1999*)

Figure 4.1 : Major Relationships Between Courts in Australia⁵



Source : Derived from the Report on Government Services 1999.

⁵ Appeals flow from lower to higher courts, however not all lines of appeal are shown.

Commonwealth Courts

Courts operating at the Commonwealth level include:

- The High Court of Australia;
- The Family Court of Australia;
- The Federal Court of Australia;
- The Industrial Relations Court (although its jurisdiction has been transferred to the Federal Court); and
- The Federal Magistrates Court.

State and Territory Courts

In addition to the system of courts operating at the Federal level, each State and Territory has its own hierarchical court structure. These courts have original jurisdiction with respect to matters brought under State or Territory laws. The State and Territory courts may also hear matters arising under federal laws in special circumstances. (*Window on the Law*)

The State and Territory courts included in this study are:

- the Supreme Courts;
- the Intermediate Courts (also known as District Courts or County Courts);
- the Magistrates' Courts;
- small claims courts; and
- a number of specialist courts.

4.2.2 Tribunal Operation

There is also a large number of civil tribunals which operate within the portfolio of the Department of the Attorney General, or one of a number of other departments such as the Department of Immigration and Multicultural Affairs (DIMA) or the Department of Workplace Relations and Small Business (DWRSB). Unfortunately, there is no central repository of information about these tribunals, hence resources for this project did not allow a full investigation of the roles and outputs of all Australian tribunals. Instead, one of the major federal tribunals, several smaller State tribunals and one specialist court have been studied as examples of different aspects of tribunal and specialist court operation.

The tribunals investigated were:

- the Administrative Appeals Tribunal,
- the Queensland Building Tribunal,
- the ACT Tenancy Tribunal, and
- the Environment, Resources and Development Court.

4.2.3 The Australian Industrial Relations Commission and Australian Industrial Registry

The AIRC and the AIR function under the *Workplace Relations Act 1996*, and form a composite sub-program within the Workplace Relations and Small Business portfolio. The main functions of the AIRC include:

- 'assisting employers and employees, or organisations of employees, to make agreements regarding wages and conditions of employment';
- 'establishing and maintaining a system of enforceable awards';
- 'preventing and settling industrial disputes, so far as possible by conciliation';
- 'handling unfair dismissal claims';
- assessing whether proposed Australian Workplace Agreements referred from the Employment Advocate meet the no-disadvantage test; and
- dealing with matters concerning organisations, particularly registration, amalgamation...'

The functions of the AIR are broadly equivalent to the administrative functions performed by the courts to support court operation. (*Australian Industrial Relations Commission & Australian Industrial Registry Annual Report 1998–99*)

4.2.4 Alternative dispute resolution centres

Alternative Dispute Resolution centres (ADRs) offer an avenue of mediation which does not involve a court hearing. The work of these centres is diverse — ranging from family counselling to commercial arbitration. Clients can be referred to ADRs by the courts, or by accountants or legal counsel who believe a matter can be most expediently settled out of court. Information from the National Alternative Dispute Resolution Advisory Council (NADRAC) suggests that this is an industry very much in its infancy, and it is currently unregulated. There is therefore no information available on the number of ADRs operating, or the amount of work they undertake. This situation may be addressed in the future, if NADRAC is successful in implementing a national ADR accreditation scheme.

Some courts, particularly the Small Claims and Family Courts, now use informal methods of dispute resolution to reduce the number of matters that proceed to litigation. These processes will be considered in conjunction with other court processes for the purposes of this analysis.

4.2.5 Royal Commissions or similarly constituted inquiries

Royal Commissions have operated in Australia, at either the Commonwealth or State level, since 1819. They operate on an irregular, needs be basis, and inquire into a wide variety of issues, such as Aboriginal Deaths in Custody (1991) and The Loss of HMAS Voyager (1977).

The more general term 'commission' is used to refer to:

'public bodies set up by...government to consider specific policy problems, to gather evidence about them, and to report and make recommendations.' (*Bulmer, 1980, as cited in Weller, 1994*)

Royal Commissions gain their special standing from the fact that they are established under the *Royal Commissions Act 1902*.

Weller (1994) defines a number of common properties of public inquiries, including that:

- public inquiries are discrete organisational units — they are not part of any existing government agency, department or permanent advisory body;
- the majority of the membership of public inquiries is drawn from outside the public sector, and does not include sitting government ministers or back-benchers.

This definition therefore excludes parliamentary committees and the like, which appears to align well with the intent of the ANZSIC definition of this primary activity.

4.2.6 Judicial Authority Operation/Justice Policy Administration

It is not immediately clear which agencies should be counted as part of this primary activity. There is only one 'judicial authority' in Australia at present — the Judicial Commission of NSW. This agency looks after the wages, appointments and performance of judges, therefore its activities appear to be inputs into, rather than outputs of, the justice sector. Therefore they will not be counted towards the output estimates.

One relatively large component of this group could be a subset of the functions performed by the Federal and State Departments of the Attorney-General, and Ministries of Justice. The question is, how much of the work performed by such departments is relevant to outputs of the justice sector, as defined in this project?

The agencies examined for this project included the Commonwealth Department of the Attorney-General, and the eight justice administration agencies operating at the State or Territory listed in table 4.1.

Table 4.1 : State and Territory Justice Administration Responsibilities

State/Territory	Agency Responsible for Justice Administration
New South Wales	NSW Attorney-General's Department
Victoria	Victorian Department of Justice
Queensland	Queensland Department of Justice and the Attorney General
South Australia	SA Courts Administration Authority
Western Australia	WA Ministry of Justice
Tasmania	Tasmanian Department of Justice
Northern Territory	NT Office of Courts Administration
Australian Capital Territory	ACT Department of Justice and Community Safety

Some of these agencies perform a wide range of functions, many of which are outside the scope of this study. However, they are each responsible for the administration of, and provision of support to, their own State or Territory courts and tribunals. Some of these support services are directly consumed by the public, for example, the services of court libraries. These services might therefore be considered as one of the outputs of the courts. However, the outputs of courts and tribunals have already been considered, therefore the only question is whether these outputs are most readily gauged from individual court/tribunal annual reports, or the annual reports of the agencies listed above. This issue will be explored in Section 4.4.

It should also be noted that agencies such as the Office of the Director of Public Prosecutions and the Queensland Criminal Justice Commission (CJC) were beyond the scope of this project.

4.3 Defining and Measuring the Output of the Justice Sector

Having defined the structure of the justice sector, this section examines how new output measures for the Australian National Accounts may be devised. Section 4.3.1 reviews previous studies on justice sector output and productivity, Section 4.3.2 develops measures for each component of the sector, individually, and Section 4.3.3 summarises the measures across the sector as a whole.

4.3.1 Measures of output used in previous studies

The first step in determining the output measures we wish to use is to examine previous output and productivity work which focusses on the justice sector.

Swedish Public Sector Productivity Trends Study

In this study, output and productivity measures were calculated for each type of law court, and then aggregated. The number of decided cases was used as the output, with different types of cases weighted by unit cost weights.

For the Supreme Court two outputs were defined; handling of applications and handling of accepted cases.

The courts of appeal (which hear appeals from the district courts) have only one output; the number of decided cases. The authors felt there was no basis for division and weighting of cases in the courts of appeal by case type.

In the district court, simpler criminal and civil cases were grouped together. There were also two standard civil and criminal case groups, along with categories for bankruptcy, estate, inventory matters, registration and 'miscellaneous'.

Two approaches were considered for aggregating outputs across these three tiers of the law court system. In the first, the courts were seen as 'separate production units, where the gross value of production could be summed up'. The alternative view was to view appeals as 'merely a cost to handle the same case.'

Quality issues were also addressed. The authors noted that there had been an increase in the frequency of appeals, a statistic which could have been used to gauge the quality of decisions. However, the percentage of appeals where the verdict was changed was believed to be a superior measure. The increasing complexity of cases was also cited as a factor to consider in formulating output and productivity estimates, as increasingly complex cases can increase proceeding times even in the face of productivity gains. (*Productivity Trends in the Public Sector in Sweden, 1996*)

The first report of the Steering Committee for the Review of Commonwealth/State Service Provision was published in 1995, and has since been followed by annual publications. One early response to these reports came from the then Chief Justice of NSW who said :

'partly because of the novelty of the subject, some suggestions made about court performance standards are curious. A measure of court productivity which treats all cases as the same, so that a charge of murder is one case, and a charge of catching undersize fish is one case, and productivity is determined by the number of cases decided, is not likely to command much respect. However, this is an infant science, and it is encouraging that people are trying to develop it.'

(Hon Murray Gleeson AC, as cited in DEA: The Application of Advanced Efficiency Measurement in the NSW Local Courts)

The NSW Attorney General's/NSW Treasury DEA study therefore focussed on trying to produce improved measures of effectiveness and efficiency for future reporting. A number of inputs and outputs of the courts were selected for use in the DEA study. Inputs were the number of local court sitting hours and the average full-time equivalent number of staff. Output measures were:

- total defended cases disposed;
- total cases disposed;
- administrative workload — standard; and
- administrative workload — special.

The study noted that a weakness of the current national benchmarking approach is that 'all disposed cases are of like value'. The possibility of developing a system of case weights for use in future analysis was also discussed, however there has been no progress on this front to date.

Evaluation of the Administrative Efficiency of Courts

Once again, this study focussed on the use of DEA techniques to examine the administrative efficiency of courts. Using data from the Criminal Superior Courts of North Carolina, the 'total number of dispositions' and 'cases pending less than 90 days' were included as the output measures. Measures of the 'fraction of caseload disposed of' and the 'fraction of all cases pending at the end of the year greater than 90 days' were also examined, however these measures were found to be highly correlated with the other output variables. *(Evaluating the Administrative Efficiency of Courts, 1982)*

Other DEA court efficiency studies by Pedraja-Chaparro and Salinas-Jimenez (1996) and Carrington (1998) have also used the number of case disposals to quantify the output of the courts. Pedraja-Chaparro and Salinas-Jimenez divide total disposals into groups based on whether the cases were finalised through 'the full legal process' or via other means (e.g. by conciliation, dismissal etc.). Carrington divides disposals into defended and undefended case disposal groups.

4.3.2 Developing new output measures for the Australian National Accounts

This section develops an ideal set of output measures for the activities which are within the scope of our justice sector definition. Potential data sources for quality adjustment of these measures are also considered. Current data availability is discussed in Section 4.4, where the best approximations to the ideal measures are developed.

4.3.2.1 Output Measures for courts

Number of finalisations

The primary output of courts is the number of cases finalised. However, the way in which a case is finalised varies due to a number of factors, including caseflow systems, which vary between the civil and criminal jurisdictions. In addition, the level of the court in which a matter is heard can represent a significant difference between outputs. Each of these issues demands separate consideration in formulating an output measure for the courts system.

Level of court in which matter is finalised

The first, and perhaps most obvious, difference between case finalisations is the level of the court in which a matter is heard. A civil matter decided in the high court constitutes a much more complex and input-intensive output than a civil matter decided in a magistrate's court. For this reason, the measure of output must be broken down by the level of the court in which the matter is decided.

However, in some cases, a different 'level' of the courts hierarchy can apply within the same court. Appeals constitute a new case and will often be heard by the 'full court' of the court in which the original decision was taken, and therefore such appeals constitute a new output. For example, the Full Court of the Federal Court has appellate jurisdiction over decisions of the court made by a single judge. The original decision and the appeal outcome, while decided in the same court, are two separate matters and constitute two different types of output. Ideally then, full court decisions would be considered separately to other decisions made within the same court.

Case type

If detailed case type information were available, different classes of cases heard by a particular court could be given different weights (calculated using either case-type or expenditure data). This would represent a very fine level of detail, and at this time, appropriate weighting data is not available. The finest level of dissection by case-type considered in this analysis will be the breakdown of cases into civil and criminal matters.

Case flow and methods of finalisation

The case flows for civil and criminal matters have some important differences. For example, in many civil matters where a writ or summons to appear in court has been issued, the matter will be addressed via court based dispute resolution mechanisms, such as counselling or mediation. Criminal matters do not proceed in this way. Both of these case flow systems result in a large number of options for finalising a case. The complete list of finalisation classifications is given in Appendix A. These classifications fall into one of the following major groups:

- 100 Adjudicated charge finalisation
- 200 Finalisation by transfer between court levels
- 300 Non-adjudicated charge finalisation
- 900 Unknown/Not stated

Non-adjudicated charge finalisations include cases where the accused is deceased or deemed unfit to plead, or cases which are withdrawn by the prosecution. Cases are regularly withdrawn within the civil jurisdiction, as matters may be lodged with the courts, but do not proceed to hearing or mediation, as the threat of litigation is sufficient to resolve the dispute. A typical example of a matter where this might occur is one which relates to the payment of a debt; the threat of litigation may be sufficient to convince the defendant to make payment. Cases such as these, which are lodged, undefended and finalised by a non-adjudicated method can be considered one class of output. These cases are also important as they represent a substantial proportion of the administrative work of the courts, which revolves around the processing of lodgements.

Cases finalised by being transferred between court levels represent a different type of output from matters which are finalised by a non-adjudicated method. Cases which are finalised by transfer involve two separate outputs — for example, a committal hearing (and finalisation by transfer) in a magistrate's court, and then a trial or sentence hearing (and an adjudicated finalisation) a higher court.

At this point the distinction between hearings and finalisations is an important one to note. Even when cases are defended (and finalised) within one level of a court, a number of hearings may be undertaken en route to a finalisation. The finalisation of the case marks the output — not the hearings taken to reach that decision.

Adjudicated charge finalisations represent a more complex output than the previous two case finalisation groups. These finalisations involve cases where a verdict is handed down by a judge/judges and possibly a jury.

This suggests that the output measure for courts should be broken down by the broad method of finalisation (adjudicated, non-adjudicated and transferred between court levels). For adjudicated cases, those which are finalised by a guilty plea could be further distinguished by those finalised by a trial, as a trial generally requires a greater amount of court time than a case where a guilty plea has been entered.

This breakdown by finalisation methods means that an increase in matters finalised by non-adjudicated methods would result in a smaller change in output than an increase in matters finalised by adjudicated methods. This distinction appears to be appropriate.

Court libraries and transcription services

In addition to the central court functions of resolving disputes, other activities undertaken by the courts include the provision of:

- court libraries;
- transcripts of hearings to the public;
- victim support and counselling services; and
- services for the enforcement of court orders.

These outputs would also be included in our ideal estimates of output for the courts sector.

Courts also provide educational material to the public, such as pamphlets or web-sites about the workings of the court. However, in most courts this kind of activity appears to be fairly peripheral (in the output sense), with the possible exception of the Family Court. The additional counselling and mediation activities of the Family Court also warrant special attention.

Additional Outputs of the Family Court

In recent years, mediation and counselling activities have been playing an increasing role in the finalisation of disputes in several levels of the courts system, but particularly in the Family Court. Counsellors help separated parents to agree on parenting and care arrangements for children of the marriage, provide education on issues such as the changing needs of the children in a marriage dissolution, and provide emotional support during the transition out of the marriage. Mediation services are an alternative to undertaking litigation of a matter, and are based on an assessment of how suitable the matter is for mediation. (*Australian Family Court Annual Report 1998–99*)

In this analysis, mediated settlements will be grouped with finalisations obtained through a formal court hearing. If data on mediations was available separately for all courts, different weights could be allocated to the mediated settlements. However, if expenditure weights were used, and mediated settlements were less expensive than their adjudicated counterparts, the mediated disputes would receive a lower weight. This may not be appropriate, especially if the ability of the courts to mediate a dispute indicated the higher quality of the services provided to achieve this outcome.

Ideal Courts Output Measures

The outputs considered in the preceding sections suggest that an ideal measure of court output would be constructed as follows :

The number of finalisations, broken down by:

- The level of the court in which the matter is finalised (with Full Court matters distinguished from matters heard by a single judge):
 - ◆ High Court
 - ◆ Federal Court
 - ◆ Family Court
 - ◆ Supreme Courts
 - ◆ District Courts
 - ◆ Magistrates Courts
 - ◆ Small claims courts
- Case types, or where this information is not available, whether the matter is a civil or criminal case.
- The method of finalisation:
 - ◆ non-adjudicated/unknown;
 - ◆ adjudicated — guilty plea/no case to answer at committal;
 - ◆ adjudicated — other; and
 - ◆ finalised by transfer to another court.

A measure of the library, transcription, victim counselling and court order enforcement services provided by each court should also be included. This could be estimated by counting:

- the number of transcripts provided to the public;
- the number of hours the court library is open to the public;
- the number of counselling sessions provided to victims; and
- the number of court order enforcement cases dealt with.

In addition, it appears that a fully comprehensive output measure for the Family Court should specifically incorporate:

- the number of counselling and mediation sessions provided; and
- the number of educational products or publications produced in the year.

It would then be possible to aggregate all of these output groups using a system of weights which would reflect the different types of outputs being produced, such as the average expenditure per unit output.

In reality, data on some of these components of courts output is not available, nor would some of these components be likely to make a significant contribution to the total output of the sector for National Accounts purposes.

Potential Quality Adjustment Methods for Court Output Measures

For the number of matters finalised, timeliness statistics, that is data on the average time taken to process cases from initiation to finalisation, could be used as a quality adjustment factor. However, this figure would vary with differences in legislation, court practices and other factors, and is therefore likely to yield poor results.

Rates of appeal may be another quality indicator; however this measure would be partly determined by the nature of the plaintiff, the severity of the penalty imposed and a number of other factors. As the Swedish Ministry of Finance study suggested, the rate of appeals which result in a change in verdict may be a better indication of the quality of decisions.

Performance indicators are available from the Report on Government Services, and are also reported by the courts themselves. These figures may be another source of potential quality adjustment data. The Family Court also publishes resolution of dispute rates. Information is also available on how the court performed against its own timeliness performance standards. In 1998–99 the Court also reported on a survey it conducted to measure client perceptions of service quality. Complaint statistics are also provided. Annual reports of other individual courts may provide similar information. (*Report on Government Services 2000, Australian Family Court Annual Report 1998–99*).

4.3.2.2 Specialist Courts and Tribunals

The ideal output measures for specialist courts and tribunals would be very similar to the measures suggested for courts. Because tribunals and specialist courts generally specialise in one class of matters, the number of matters finalised within a tribunal would only need to be broken down by the type of matter and the method of finalisation.

The secondary outputs of specialist courts and tribunals, such as counselling services or education programs, would make a relatively small contribution to the overall output of the sector. Once again, different classes of matters could be aggregated by using a set of weights such as the average expenditure per unit output.

4.3.2.3 Output Measures for the Australian Industrial Relations Commission and Australian Industrial Registry

An ideal output measure for the AIRC and AIR would include the following output groups:

- the number of AIRC matters resolved or facilitated, broken down by type of matter (e.g. the number of agreements made, the number of awards established, the number of no-disadvantage tests applied etc.);
- the number of decisions reported to the public by the AIR; and
- the number of hours of advice and assistance provided to the public by the AIR.

In a manner similar to the courts, different classes of matters could be aggregated by using a set of weights, such as the average expenditure per unit output.

4.3.2.4 Output Measures for Royal Commissions and Similarly Constituted Inquiries

Royal Commissions and similarly constituted inquiries have several functions, namely to investigate issues, hear evidence and produce recommendations and reports. Investigations and hearings are inputs into achieving the final output, therefore they would not be counted as outputs themselves. Evaluation of the implementation of recommendations is also conducted, often some years after the report has been tabled. However, implementation of recommendations is a separate output, produced by parties other than the commission itself. In addition, the changes to social well-being resulting from implementation of the recommendations of commissions are outcomes, rather than outputs, of commission operations.

An output measure for Royal Commissions and similarly constituted inquiries may therefore focus around the number of reports and recommendations produced. Expenditure data may be one way to aggregate across commissions, with the more complex (and therefore expensive) inquiries receiving a higher weight.

4.3.2.5 Output Measures for Judicial Authority Operation/Justice Policy Administration

As stated previously, the outputs of the justice administration agencies are effectively the same as those of the courts and tribunals, and revolve around the provision of:

- court and tribunal administration,
- court libraries,
- transcripts of hearings to the public,
- victim support and counselling services, and
- services for the enforcement of court orders.

4.3.3 Summary of Ideal Output Measures for the Justice Sector

The following table summarises the output measures discussed in the preceding sections.

Table 4.2 : Ideal Output Measures for the Justice Sector

Output Group	Output indicators	Notes
Courts	The number of matters finalised.	Finalisations classed by the level of the court in which the matter is finalised, case type (or at least whether the matter is a civil or criminal case), and the method of finalisation. Includes mediated finalisations.
	The number of counselling sessions provided to clients of the family court or victims of crime.	
	The number of court order enforcement cases processed.	
	The number of transcripts provided to the public.	
	The number of hours court libraries are open to the public.	
	The number of educational products or publications produced by courts in the year.	.
Specialist Courts and Tribunals	The number of matters finalised.	Finalisations classed by tribunal, type of matter and method of finalisation.
AIRC & AIR	The number of matters finalised.	Finalisations classed by type of matter (agreements made, industrial disputes prevented/settled etc.)
	The number of decisions reported to the public by the AIR.	
	The number of hours of advice and assistance provided to the public by the AIR.	
Royal Commissions	The number of reports produced.	
Judicial Authority Operation/Justice Policy Administration	See courts and tribunals.	Where these outputs will be counted depends on availability of data.

4.4 Data Availability

In this section, current data availability is discussed, and the best approximations to the ideal measures outlined in Section 4.3 are developed. The complexity involved in generating these estimates, each year, for the Australian National Accounts, relative to the contribution of particular activities or agencies to sector totals, would also be considered when making a final decision on the implementation of these experimental measures.

In many of the instances which follow, either output or weighting data will not be available at the level of detail required to build the ideal output measures. This does not mean that output estimates cannot be produced. The final goal of this project is to produce an aggregate index of output, if we are forced to aggregate together different output groups, we are implicitly assuming that the mix of outputs between these groups will not change over time. A decision must be made in each case as to whether this assumption will be violated, and to what degree this may introduce a bias into the estimates produced.

4.4.1 Courts

High Court

The annual report of the high court provides data on the number of matters decided divided into categories of :

- Special Leave Applications (civil)
- Special Leave Applications (criminal)
- Appeals (civil)
- Appeals (criminal)
- Constitutional and other Full Court Matters
- Other (applications for removal of cause, Orders Nisi)

Expenditure data is only available for the court as a whole. However, the distinction between civil and criminal matters in the High Court is arguably less important than it is in the lower courts. Information is not available for library, transcription, victim support or registry services. This suggests that the output measure will have to be based on the total number of cases decided, without allowing for differing case types. If finer level expenditure data, or a set of case complexity weights became available, more refined estimates could be produced. This is unlikely to be necessary.

The Federal Court, State and Territory Courts and Mainstream Outputs of the Family Court

Higher Criminal Courts, Australia (Cat. no. 4513.0) provides details of case finalisations, for criminal matters only, dissected by the method of finalisation (adjudicated and non-adjudicated matters are separated). However, more detailed data for both criminal and civil courts is available through the Courts Administration Data Collection (CADC). The NCCJS has recently taken over administration of this collection.

The CADC provides expenditure, lodgements and finalisations data. The finalisations data is available for the civil and criminal jurisdiction in each court, and is further broken down as follows:

- committals
- non-appeal cases
- appeal cases

However, the finest level of expenditure information available (when considering output rather than financial splits) is at the court level, split between civil and criminal jurisdictions, as follows:

- the Federal Court (civil)
- the Federal Court (criminal)
- the Family Court (WA and Commonwealth)
- each State/Territory Supreme Court (civil)
- each State/Territory Supreme Court (criminal)
- Magistrates' court (civil)
- Magistrates' court (criminal)
- Magistrates' court (Coroners' courts)

Given that expenditure figures are only available at the levels shown above, the output for courts will have to be grouped by these categories. If case-type weights were available, these could be used to assign different weights to different finalisations, which could then be aggregated to the civil/criminal jurisdiction level for each court. These figures could then be weighted by expenditure totals to produce an index more reflective of the differences between case types. Unfortunately, no case-type weights are available at this time. Progress in this area will be followed with interest.

Data relating to library, transcription and mediation services is limited to expenditure data in the CADC. Owing to the relatively small contribution of these outputs, this information will not be incorporated into our aggregate output measure. This assumption is unlikely to introduce bias into our index, as the proportion of output in these areas could be expected to remain fairly constant over time.

Additional Outputs of the Family Court

The Family Court annual report provides numbers of defended matters finalised and the number of mediation and counselling sessions held. Once again, however, expenditure data is not available in this detail. However, given that the CADC contains expenditure data for mediation as a separate expense item, it may be possible to combine output information from the Family Court Annual Report, and expenditure data from the CADC to provide a more detailed picture of Family Court output. For the purposes of this analysis, and given the size of this output component, such detail was not warranted. Similarly, while some information is available about Family Court library, transcription and education services, owing to the relatively small contribution of these outputs, this information will not be incorporated into our aggregate output measure.

4.4.2 Specialist Courts and Tribunals

Tribunals are not covered in the CADC at this time. If the CADC was ever extended in this direction, tribunal output could be incorporated into an output index in a relatively straight-forward manner.

The annual reports of the tribunals and specialist courts which were investigated for this project yielded some information:

- The Administrative Appeals Tribunal's annual report provides details of finalisations dissected by jurisdiction (bankruptcy, corporations, health and aged care etc.) and outcome (for selected divisions). Expenditure figures are only available at the total agency level.
- The annual report of the Queensland Building Tribunal (QBT) provides details of finalisations for domestic building disputes, disciplinary matters, review matters and debt recovery matters. Once again, expenditure data is provided only at the agency level.
- The annual report of the Australian Capital Territory (ACT) Tenancy Tribunal is annexed within the annual report of the ACT Department of Justice and Community Safety. The number of cases finalised and number of mediations conducted are reported. However, expenditure data is not collected for the tribunal in its own right. Expenditure data for the Tribunal is incorporated within ACT Magistrate's Court figures (and would therefore presumably be included within the CADC collection).
- The annual report of the Environment, Resources and Development Court of South Australia is annexed within the annual report of the South Australian Courts Administration Authority. The number of planning and development appeals finalised is reported, however the number of native title matters finalised is not. Expenditure data is available only for the Courts Administration Authority as a whole.

Overall, the annual reports of tribunals and justice administration agencies provide some detailed finalisations data for some specialist courts and tribunals, but expenditure data is not available to create the weights for different case types, nor even to calculate weights for the total number of finalisations in some of the smaller tribunals. Therefore, the estimation of total tribunal output is not feasible at this time.

It would be useful to have an estimate of just how much tribunal and specialist court output might be being missed given the lack of data detailed above. It is most unlikely that the AAT and QBT are representative of all Federal and State tribunals respectively. In addition, the number of tribunals operating at any given time is constantly changing, with jurisdictions being merged, or new tribunals being created. Therefore, an estimate of total tribunal expenditure based on data from these two tribunals alone would be difficult to defend.

However, most tribunals and specialist courts are administered by the State and Territory justice administration agencies, which also administer the courts covered in the CADC. By summing together all relevant expenditure items from the annual reports of these agencies (i.e. those items relating to administration of courts and tribunals), and then subtracting the total expenditure captured by the CADC, we are left with an upper bound to the amount of expenditure which may be related to tribunal operations.

In 1998–99 this upper bound was somewhere in the order of 160 million dollars, or approximately 20% of current expenditure by the courts in the CADC. It must be stressed that some (or perhaps much) of this expenditure will be on activities which fall outside the scope of this paper, and do not directly relate to tribunal or specialist court operation. However, this figure does serve to show that data on the output of this part of the justice sector should be explored further. If adequate output data cannot be located, output for tribunals and specialist courts may have to be estimated by imputation.

4.4.3 The Australian Industrial Relations Commission and Australian Industrial Registry

The annual report of the AIRC includes data on the number of matters determined, broken down by the type of matter. The data reported by the AIR is focussed on the support it provides to the AIRC, and does not cover the number of hours assistance provided to the public, or the number of transcripts provided to the public. Expenditure data is only available at the total agency level.

4.4.4 Royal Commissions and Similarly Constituted Inquiries

There is no central register of commissions of inquiry. Research conducted for this project suggests that there is one Royal Commission currently in operation, however no data has been located on expenditure on this Royal Commission, or any other recent commission of inquiry. This suggests that the effort required to produce a new type of output measure for these inquiries each year may outweigh the significance of their contribution to the justice sector.

Owing to these difficulties, this output group will not be included in our experimental index. If expenditure data is available through the channels used to derive the current estimates, commissions of inquiry should continue to be estimated using this data.

4.4.5 Judicial Authority Operation/Justice Policy Administration

As noted in previous sections, the outputs of the justice administration agencies are effectively the same as those of the courts and tribunals. These agencies provide an alternative data source for information about court and tribunal activities, as annual reports of the State Attorney-Generals' Departments and Ministries of Justice include information on:

- the number of matters which are lodged with, and finalised by, the courts and tribunals within a State or Territory;
- total expenditure by the agencies — which in some cases is broken down by program structure, allowing data on the courts programs to be split from other activities; and
- some information on the other outputs of this group of agencies, such as victim support services.

However, the data provided by each agency differs due to widely different reporting standards. In addition, the data reported varies within agencies from one year to the next, as departmental structures and portfolios are very fluid. It is therefore not possible to use data from these annual reports to construct the justice output index.

4.4.6 Summary of data availability

Table 4.3 summarises the data which has been discussed in the preceding sections. For each output measure, the table indicates whether output data is available, and whether suitable expenditure data is available to create appropriate weights.

Table 4.3 : Availability of Data for Construction of a Justice Output Index

Output group (Data sources in brackets)	Output measure	Output Data Available?	Expenditure Data Available?
Courts (Courts Administration Data Collection, and Family Court Annual Report)	The number of matters finalised.	Y	Y (Civil/ criminal split only)
	The number of counselling sessions provided to clients of the family court or victims of crime.	Y (Family Court only)	N
	The number of court order enforcement cases processed.	N	N
	The number of transcripts provided to the public.	N	N
	The number of hours court libraries are open to the public.	N	N
Specialist Courts and Tribunals⁶ (Annual reports)	The number of matters finalised.	S	N
AIRC & AIR (Annual reports)	The number of matters finalised.	Y	Y (Total expenditure only)
	The number of decisions reported to the public by the AIR.	N	N
	The number of hours of advice and assistance provided to the public by the AIR.	N	N
Royal Commissions	The number of reports produced.	N	N
Judicial Authority Operation/Justice Policy Administration (Annual reports)	The number of matters finalised.	S	S
	The number of counselling sessions provided to clients of the family court or victims of crime.	S	N
	The number of court order enforcement cases processed.	S	N
	The number of transcripts provided to the public.	N	N
	The number of hours court libraries are open to the public.	N	N

Key : Y=Yes, N=No, S=Some Courts, States or Territories only

⁶ Note: Only a sample of tribunals and specialist courts have been studied for this project.

4.5 Construction of the Output Index

Using the data discussed in Section 4.4 we can now attempt to construct an output index for the justice sector. The Courts Administration Data Collection (CADC) is the pivotal output data set for the sector, as it covers the majority of the court system. The index will also incorporate data from the annual reports of the High Court, Australian Industrial Relations Commission (AIRC), Administrative Appeals Tribunal (AAT) and the Queensland Building Tribunal (QBT).

Where data is missing for one period from the sources listed above, it has been imputed using straight-line interpolation or extrapolation to reduce artificial fluctuations in the final index resulting from missing data points. Owing to data restrictions, and the relatively small contribution made to output by activities such as victim support and educational activities, the only outputs included in the calculation of the experimental index will be the number of matters finalised, broken down into court levels, and civil or criminal jurisdiction.

The index will be of the following form:

$$\text{Output Index}_{ot} = [\sum^i w_{i0} \cdot (q_{i1}/q_{i0})] \cdot [\sum^i w_{i1} \cdot (q_{i2}/q_{i1})] \cdot \dots \cdot [\sum^i w_{i,t-1} \cdot (q_{it}/q_{it-1})]$$

where :

t = time period

i = output activity, e.g. finalisations of civil cases in the Supreme Court, finalisations of criminal cases in the District Courts etc.

q_{it} = output in period t, for output activity i, e.g. the number of finalisations of criminal cases in 1995–96 in the District Courts.

w_{it} = the share that output activity i contributes to total output in period t, calculated using the expenditure of each activity divided by total expenditure for the sector.

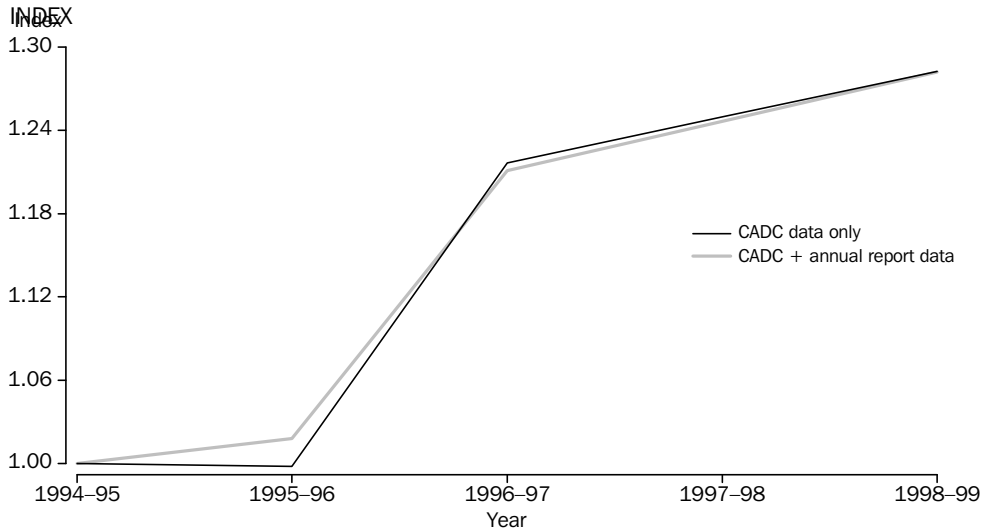
\sum^i = sum across each output activity in the sector, $i=1, \dots, n$

Owing to the large number of output activity groups incorporated in this index, finalisations and expenditure data for each group will not be presented. The aggregate experimental index of justice services output is shown in table 4.4, and figure 4.2.

Table 4.4 : Experimental Justice Sector Output Indexes

Year	Justice Output Index : CADC data only	Justice Output Index : CADC + annual report data
1994–95	1.000	1.000
1995–96	0.998	1.018
1996–97	1.217	1.211
1997–98	1.250	1.247
1998–99	1.283	1.282

FIGURE 4.2 : GRAPH OF THE EXPERIMENTAL AUSTRALIAN JUSTICE SERVICES OUTPUT



For comparison, an index based only on data from the CADC is also presented in table 4.4 and figure 4.2. The data underlying both indexes peaks quite markedly in 1997-98, due to a marked increase in the number of matters finalised in that year. A large component of this increase comes from an unusually large figure for one group of courts. The National Centre for Crime and Justice Statistics (NCCJS), have advised that this is a result of a reporting change for finalisations made through the 'electronic courts' system. The indexes shown are based on data corrected for this anomaly.

At present, the reason(s) for the significant increase in output shown above for 1996-97 is not known. Investigations into this issue are ongoing, and will be an important part of the analysis of the feasibility of implementing this type of justice output measure.

As we can see from figure 4.2, the contributions of the High Court, AIRC, AAT and QBT are quite small, and do not significantly alter movements of the index. The inclusion of data from all tribunals (rather than just one large and one small tribunal) would have a larger effect, however this information is not currently available (see Section 4.4.2).

4.6 Conclusions and Recommendations

This chapter has attempted to consider all of the outputs of the justice sector, and has drawn from a number of data sources. However, the resulting index is still not ideal, because:

- data does not exist for some parts of the sector, particularly tribunals and specialist courts, and
- where data does exist, it does not include sufficient detail to allow differentiation between different case finalisation methods or case types within a court.

The first of these two problems would be largely overcome if tribunals were included in the Courts Administration Data Collection. It is not known whether this may occur at some point in the future. If adequate output data cannot be located, output for tribunals and specialist courts may have to be estimated by imputation.

The inclusion of data on Royal Commissions and similarly constituted inquiries is potentially a less serious issue, but remains problematic. The ad-hoc nature of this output activity means that the research required each year to update output figures would be quite significant, and as yet no expenditure data for this type of output has been found. This part of the sector is probably best estimated on the current input-cost basis.

The second difficulty could be addressed if a set of case-type weights were developed which could be applied to the number of finalisations within each class of cases decided by a court. Alternatively, if expenditure data was collected for each class of finalisations, detailed average expenditure per unit weights could be used, with the same end result. However, it seems unlikely that the courts would want to collect, and report, expenditure data at an even finer level than that which they already provide.

However, the issue of differentiation between different types of matters has been partially addressed by breaking down the number of finalisations by court level and civil/criminal jurisdiction. While more detailed breakdowns may be essential for detailed studies of the justice sector, they are not essential for construction of an aggregate index suitable for implementation in the National Accounts. Further analysis, including a comparison between this experimental measure and its input-based counterpart, will be undertaken before determining whether the new measure should be adopted.

5. Corrective Services

5.1 Definition of the Australian Corrective Services Sector

Units fitting within this ANZSIC class consist of 'corrective and penal units including prisons or similar corrective units' (*ANZSIC 93 p.251*) and include units undertaking the following four primary activities :

- Gaol Operation⁷
- Prison Farm Operation
- Prison Operation
- Remand Centre Operation

Corrective Centres are an entirely government funded sector, however it is not a simple matter to ascribe the operation of these units to any one public authority. At present there are no agreed national standards, nor a national commission to administer the nation's corrective services. Agencies undertaking operation of corrective centres are overseen by different State, Territory and Commonwealth authorities. The authorities are listed alphabetically below :

- ACT Department of Justice and Community Safety (State)
- Department of Immigration and Multicultural Affairs (DIMA) (Commonwealth)
- New South Wales Department of Corrective Services (State)
- Northern Territory Correctional Services (State)
- Queensland Corrective Services Commission (State)
- South Australian Department for Correctional Services (State)
- Tasmanian Department of Justice (State)
- Victorian Department of Justice (State)
- Western Australian Ministry of Justice (State)

During the 1998–99 financial year, net expenditure by all levels of government to finance the services provided by these Corrective Centres was over one billion dollars⁸. (*Report on Government Services, 2000*) Given the diversity of government authorities responsible for providing these services, several issues arise when attempting to define key characteristics of the various services provided.

⁷ The terminology used within this analysis will be prison, although the word gaol and prison are synonymous.

⁸ The majority of this expenditure was funded out of general government revenue, while the remainder is recovered from prison activities which raise revenues such as prison industries and sales of inmates' artwork etc.

5.1.1 Definition of outputs falling within the scope of the sector

This has become a more complex issue over recent years as corrective institutions incorporate a greater array of increasingly diverse corrective activities. This is significantly different to the stereotypical view where convicted inmates are locked up in a confined cell to serve their time. One recent innovation is the introduction of home detention in NSW where convicted offenders are subjected to a 'rigorous and closely monitored community supervision program which constitutes an alternative way of serving the fixed or minimum term of a sentence of up to 18 months imprisonment'. (*NSW Annual Report 1998–99*) Other innovations include the Western Outreach Centres (WORC) program in Queensland where offenders undertake community service activities in remote communities (QCSC Annual Report 1998–99). Any potential output measure would ideally incorporate data on each activity relevant to the sector. However, some of these activities appear to fit within other ANZSIC classes and have therefore been excluded from the analysis. These activities include :

- Probation and Parole (classified within 'Non Residential Care Services not elsewhere classified' (n.e.c.))
- Juvenile Corrective Institutions (Residential Care Services n.e.c.)
- Psychiatric Detention (Psychiatric Hospitals)

However, the distinction between Juvenile Corrective Institution Operation (ANZSIC class 8722) and Corrective Centres is not entirely consistent between States. The definition of a juvenile ranges from under 17 in some States to under 18 in others. (*Prisoners in Australia, 1997*) Unless otherwise stated, the former distinction has been used for this analysis.

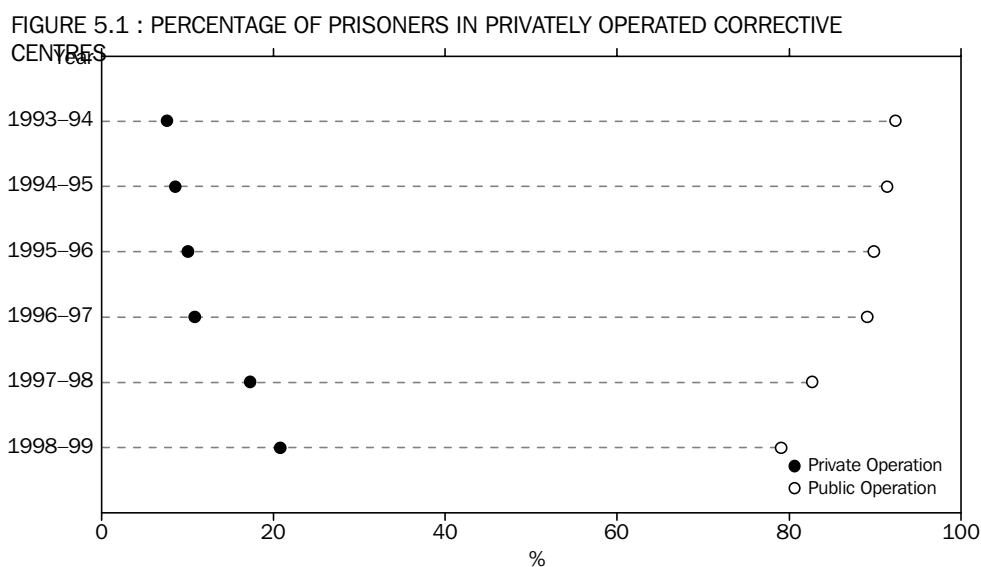
5.1.2 Community Correction Orders

Within each State and Territory, the range and quantity of the community correction orders produced varies significantly making individual measurement difficult. However, these orders cannot be ignored from any analysis of the Corrective Centres sector, as they also constitute a large⁹ portion of the output of the sector.

⁹ Community corrections accounted for over 10% of all expenditure on corrective centres during the 1998–99 financial year. *Report on Government Services 1999*

5.1.3 Introduction of the Purchaser/Provider approach

While all corrective centre activity is funded by the government, provision of corrective services may come from outside the government sector. In recent years many states have begun to adopt a purchaser/provider model. Under this arrangement, a government authority or board is established and is responsible for administering a tender process to purchase the services they require from an appropriate provider. This approach has been adopted entirely by DIMA which has contracted administration of all immigration detention services to a private contractor. Another example is in Victoria, where under the New Prisons Project, three privately owned and operated prisons were in operation in 1999. (*Victorian Department of Justice : Annual Report 1998-99*)



Source : Derived from the Report on Government Services 2000, the Department of Immigration and Multicultural Affairs Annual Report 1995-96 and the ACT Justice and Community Safety Annual Report 1997-98. Figures for financial years 1993-94 and 1994-95 exclude immigrant detention, as data is not available.

5.2 Structure and Functions of the Australian Corrective Services Sector

The primary function of the corrective services sector is to provide services to detain those members of the community who break the law. In addition, rehabilitation services, such as vocational and personal development activities, are provided to detainees. These functions will be described in more detail in Section 5.3. The table below lists the agencies responsible for administering adult corrective centres in each State or Territory, and the main types of facilities which they provide.

Table 5.1 : Provision of Corrective Services in Australia by State/Territory.

State/ Territory	Agency Responsible for Administration	Types of Facilities Provided
NSW	NSW Department of Corrective Services	<ul style="list-style-type: none"> • The Metropolitan Remand and Reception Centre • Periodic detention centres • Twenty-four prisons • Community corrections services
Vic	Victorian Department of Justice	<ul style="list-style-type: none"> • Ten public prisons • Three private prisons • One remand centre • Community corrections services
Qld	Queensland Corrective Services Commission (QCSC)	<ul style="list-style-type: none"> • Eleven public prisons • Two privately owned prisons • Community service orders • Community custody
SA	South Australian Department for Correctional Services	<ul style="list-style-type: none"> • Six full-time prisons • One privately operated full-time prison • One specialist remand facility • One psychiatric hospital
WA	Western Australian Ministry of Justice	<ul style="list-style-type: none"> • Eight prisons • Three prison farms • One metropolitan custodial centre • A 750-bed medium security prison • Community corrections services
Tas	Tasmanian Department of Justice	<ul style="list-style-type: none"> • Two prisons • A prison farm • A remand centre community service orders
NT	Northern Territory Correctional Services	<ul style="list-style-type: none"> • Two full-time correctional centres • Five police prisons
ACT	ACT Department of Justice and Community Safety (JACS).	<ul style="list-style-type: none"> • A remand centre • A periodic detention centre • Community corrections services

As shown in table 5.1, the ACT does not operate its own prison¹⁰; ACT full-time detainees are housed in either the Belconnen Remand Centre¹¹ or in NSW Corrective Centres¹². In measuring these services it is crucial that they are counted once only, regardless of who the provider or consumer of services may be. (*ACT Department of Justice and Community Services Annual Report 1997–98*)

Periodic detention centres (PDCs) are operated in the ACT and NSW. Care is required in measuring the output of such facilities, as all periodic detainees are subject to part-time imprisonment, and therefore will not all be held by a PDC at any one point in time. The relevant output measure for these services is therefore the number of orders, rather than the number of detainees held.

The large geographical size of Western Australia occasionally results in a very small portion of Western Australian prisoners being held within regional police lockups for a short period of time. (*Prisoners in Australia 1997*)

Purchaser/Provider Approach

Corrective Centres within Victoria are administered under a purchaser provider model by the Victorian Department of Justice. As noted earlier, this gives the department a choice of the provider used to supply the required services. (*Victorian Department of Justice : Annual Report 1998–99*)

In October 1996 the Queensland Government decided to corporatise corrective services, thus a public enterprise Queensland Corrections (QCorr) competes with private contractors for the right to provide prison services. (*Queensland Corrective Services Commission Annual Report 1998–99*)

Commonwealth Detention Services

In addition to State and Territory corrective centres, the Commonwealth Government is responsible for administering detention facilities for non-Australian citizens, typically overseas residents who have entered Australia illegally. The majority of detainees remain for a short period of time until they are either deported back to their country of residence or have been granted permission to remain in Australia. These facilities are administered by the Department of Immigration and Multicultural Affairs.

¹⁰ Plans are being made for provision of a prison in the next few years.

¹¹ The Belconnen Remand Centre also holds prisoners on behalf of Department of Immigration and Multicultural Affairs (DIMA).

¹² The cost of housing ACT prisoners in NSW Corrective Centres is met by JACS, however the service is delivered by the NSW Department of Corrective Services.

5.3 Defining and Measuring the Output of Corrective Centres

Having defined the corrective centre services provided in Australia, consideration can now be given to how the output of these services can be measured. Section 5.3.1 reviews previous studies of corrective centres output or productivity, and Sections 5.3.2 to 5.3.9 develop individual output measures for each output activity in the sector.

5.3.1 Measures of output used in previous studies

Steering Committee for the Review of Commonwealth/State Service Provision Data Envelopment Analysis (DEA) Study.

This study used DEA (a frontier estimation technique) to assess the relative efficiency of a sample of correctional facilities. This technique involves the specification of the inputs and outputs of the production process. The input measures chosen for the study were full-time equivalent custodial staff numbers, the number of beds in the correctional centre and other recurrent expenditure. The outputs chosen were the average daily number of inmates eligible for conditional leave of absence, the average daily number of other inmates (to distinguish between different levels of supervision), the number of inmate receptions, and the number of hours that inmates spent in personal development programs.

Swedish Public Sector Productivity Trends Study

In this study, output measures chosen for the ‘treatment of offenders’ were the number of days spent in one of the following types of offender treatment: prisons, custodies, non-custodial treatments and transportation abroad. The authors identified some drawbacks of using these types of measures. First, quality changes are not accounted for, so that if the capacity of the facility is exceeded (i.e. there is overcrowding), no allowance is made for the negative effect on the quality of the service provided. In addition, the activities provided for people in correctional facilities (such as psychiatric care, drug control or education) were not measured. (*Productivity Trends in the Public Sector in Sweden, 1996*)

United States Department of Labor and Bureau of Labour Statistics Productivity Study

This paper discussed three possible output measures for correctional institutions:

- the number of inmates incarcerated,
- the number of inmates incarcerated differentiated by level of security, and
- the number of inmates incarcerated differentiated by program service.

The preferred conceptual measure was found to be ‘the number of inmates weighted by the type of prisoner and the type of treatment provided’. However, the authors noted that data is not available to support this type of index, with the result that the most detailed index that could be formulated was based on a count of the number of inmates, differentiated by level of security. (*Measuring State and Local Government Labor Productivity, 1998*)

5.3.2 Remand Centres

Full-time remand services are typically provided to remandees who are due for trial before a nearby court, or are awaiting transfer into the prison system following sentencing. Thus the primary function of remand centres is to provide temporary detention until the detainee is relocated either to a specialist prison, or released back into the community.

As the number of remandees rises, the output of remand centres should rise¹³. Therefore, the output of these centres can therefore be estimated by the number of detainees. However, the number of detainees on a particular day (such as the Prison Census day) is a stock measure of output. The drawback of this stock measure is twofold. First, there is considerable ambiguity as to when this measure should be taken. June 30 may not be representative of the population over the entire financial year. Second, a flow measure of the value of goods and services produced over a period of time (typically a financial year or calendar quarter), is more consistent with the accounting framework used in the National Accounts

In an attempt to address both of these issues, the total number of prisoner days of detention provided might be used. One drawback of using the total prisoner days is that it does not directly measure the training and rehabilitative services that remandees receive, which may be crucial to the outcome of their detention. In 1997–98, 62.2% of eligible prisoners in Victoria were engaged in education or training (*Report on Government Services, 1999*). Previous work in this area refers to these training and rehabilitative services as part of the 'hotel services' provided by prisons (*Measuring State and Local Government Labor Productivity, 1998*), but does not attempt to separately measure them. While these aspects are of interest when it comes to measuring the effectiveness and quality of a corrective centre¹⁴, they will be ignored when constructing the basic output indicator.

There are also several other objectives pursued by corrective institutions, including offender care. A remand centre is responsible for ensuring its clients maintain an acceptable quality of life. This objective is therefore closely related to the rehabilitative objective. (*Report on Government Services, 1999*) It has been quantified by the number of hours a remandee is out of their cell. This measure may be useful in quality adjustment of remand centre output, as the longer a remandee is detained securely within the remand centre, but not confined to their cell, the better is the combined confinement and rehabilitative output.

5.3.3 Periodic Detention Centres

Periodic detention centres provide discontinuous periods of imprisonment for their detainees. For example, a person sentenced by the court to a periodic detention order will spend a certain proportion of their week¹⁵ within a detention complex and be a free member of society for the remainder of the week.

¹³ Note that if overcrowding were to occur in a remand centre or prison, an increase in the number of detainees would result in an increase in output, but that output may be of a lower quality. This issue has not been addressed in the current analysis, but should be noted in any quality adjustment to follow.

¹⁴ The Report on Government Services 1999 attempts to measure the quality and effectiveness of prison services rather than the output.

¹⁵ Periodic detention is provided only by the NSW and ACT authorities who provide detention over different periods. NSW provides both weekend and midweek detention services while the ACT provides weekend detention only.

The objectives of a periodic detention centre appear to be very similar to those of a remand centre, however it must be remembered that the service is only being provided for a portion of the week. The number of detainee days served is an output measure suited to this activity.

Owing to the part time nature of periodic detention, several additional issues become apparent with respect to this indicator which do not apply to the remand centre measure described earlier :

- Once sentenced, the periodic detainee is subject to the periodic detention order for its entire duration. However, during the non-detention period they are free members of society able to make unconstrained choices. One such choice is the decision to return to the detention centre for the next period of detention. While the rate of escape from remand centres is relatively small, the absenteeism rate from periodic detention is much more significant. The effort required to follow up absentees and enforce orders therefore involves a large proportion of a detention centre's activity.
- Periodic Detention orders cover a period of between 12 and 104 detention periods¹⁶. By attributing the output of the centre to the total number of detainee days, there is no attempt to account for the degree of turnover. For example, if the periodic detainee population were all serving 96 period orders, there would be eight times less administrative overheads than would be the case if the population was serving the minimum twelve period orders. By not counting this measure directly in the output measure, the analysis assumes the population of periodic detainees are serving an identical distribution of orders through time.

5.3.4 Prisons

The output of prisons can be measured in a similar fashion to remand centres using the total number of prisoner days provided. However, unlike remand centres which provide only secure detention, prisons provide both secure detention and open detention¹⁷. Since an inmate held in secure detention receives more intensive rehabilitation and more incarceration services during a day than an inmate held in open detention for a day, some attempt should be made to account for the different services provided to these two prisoner groups.

This can be achieved by dividing the total prison days measurement into total secure prisoner days and total open prisoner days. By constructing a separate output measure for each of these two custodial categories, it is then possible to assign each output measure a different weight (as discussed in Section 5.5) to reflect the different bundle of services. Such a distinction has already been made between categories of prisoners in ABS statistics.

¹⁶ A detention period refers to the time a detainee is within custody — thus in the ACT this refers to a weekend.

¹⁷ A prisoner held in open custody is not required to 'be confined by a secure perimeter physical barrier, irrespective of whether a physical barrier exists'. Secure custody of prisoners 'requires them to be confined by a secure physical barrier'. (Corrective Services Australia)

This distinction is also consistent with previous attempts to define the output of this sector. (*Productivity trends in the Public Sector in Sweden, Measuring State and Local Government Labor Productivity: Examples from Eleven Services*) It should also be noted that the distinction between open and secure custody is based on the classification of the prisoner, rather than the characteristics of the institution housing them. In some cases, open custody prisoners are housed in secure custody if open custody accommodation is unavailable. However, it is assumed that the proportion of open custody prisoners housed in secure custody facilities has remained constant over time, and will therefore not affect movements in the aggregate output index.

5.3.5 Prison Farms

Many prison farms provide agricultural infrastructure and the inmates provide labour to produce agricultural output. The inmates are housed in open custody when they are not working on the farm. However, the incarceration objectives more heavily targeted by this type of facility are :

- Vocational Development of inmates for release: In the process of performing the daily farming duties the inmates will acquire vocational skills which should assist them to be valuable members of the workforce, and therefore reduce their chances of re-offending when they are released.
- Personal Development of inmates: Significant emphasis is placed on team work and team building while the inmates are working with each other on the farm. In addition to developing self-confidence, this should develop general interpersonal skills which would assist assimilation back into the community.

It would be possible to produce an output measure which represents the results of these developmental objectives e.g. recidivism, income after release (*Measuring State and Local Government Labor Productivity, 1998*), however the variability in these indicators is considered to be a function of the individual concerned, in addition to the production technology of the prison farm. Therefore, these indicators could instead be used as indicators of the effectiveness of a prison farm when analysing the quality of prison farm output.

5.3.6 Immigrant Detention

The objective of immigration detention centres has been defined as 'to provide for the lawful, appropriate and economical detention of non-citizens not entitled to enter or remain in Australia'. (*Department of Immigration and Multicultural Affairs Annual Report 1998-99*) Facilities have been established to house illegal entrants until DIMA can rule on the validity of their entry. With this in mind the activities of the immigration detention centre are more akin to those of a remand centre, thereby enabling output to be measured by total detainee days.

5.3.7 Community Service Orders/Punitive Work Orders

These orders involve a client undertaking work for a non-profit community or sporting organisation. There is little doubt these orders provide one of the most useful vehicles by which reparation can be achieved. The work performed is either proposed by the offender as an alternative to full-time or part-time custody and validated by the court, or it can be imposed directly by the court.

One measure of output in this area is the total number of orders administered by the authority. While this measure is easily obtained, it is problematic as it fails to represent the diversity between orders; one order for 200 hours of community service would be equivalent to a 50 hour order. Another possible measure of the output provided by these services is the total number of hours served by clients within the period. By adopting this flow based measure, the output index will reflect the amount of labour provided by the clients to the sporting and community organisations, which is consistent with the reparation objective pursued by the corrective services system.

However, while performing the community service order, the client is developing skills and gaining experience which should help them be more positive social contributors. These skills can range from the technical skills required to undertake a community service order (e.g. landscaping, painting) to interpersonal skills (e.g. communication, time management), and are a major objective of utilising the community service order option.

However, it is not possible to measure the rehabilitation provided, as this is a function of the individual concerned, and may not be seen for some time. In addition, the resulting change in behaviour of the client is an outcome of the process, not the output of the community service order itself. Therefore the total number of hours worked has been chosen as the output measure for this type of activity.

5.3.8 Home Detention Orders

Offenders are made subject to a home detention order as an alternative to full-time incarceration, for sentences of a short period of time. This service is particularly targeted at groups of offenders with special needs. For example, female primary carers of young children made up 71% of all women subject to home detention orders in NSW during financial year 1997–98. (*New South Wales Department of Corrective Service Annual Report 1997–98*)

Offenders subject to a home detention order are required to remain at a private residence, community or neighbourhood identified by the court, typically the participant's usual residence. The participant may not be required to remain at the nominated residence at all times, however, any time spent outside of that residence is normally either specified at the commencement of the order or subject to approval. In order to provide this service the authority is responsible for following up the offender and ensuring compliance. To this end, each client will receive a very similar group of services throughout the course of their order, and the output of this activity can therefore be measured by the number of home detention orders completed in the financial year. While this measure fails to account for differences in duration, the number of orders completed in a financial year should suffice.

5.3.9 Community Custody

In the Western Outreach Centres (WORC) program, open custody prisoners are relocated from a prison to a new location to undertake a form of community service. Participants will undertake the community service during the day and will be detained in open custody conditions when not working. These centres typically experience a high turnover of inmates as they receive existing prisoners for short periods of time (approximately three weeks), after which they are returned to the open custody prison.

The WORC programs and other community custody programs are an extension of the prisons, detaining existing prisoners not held in specialist prisons. Therefore the output of these facilities will be measured by the number of prisoner days and included with the measure for prisons.

5.4 Data Availability

5.4.1 Remand Centres

All jurisdictions operate remand facilities; however, separate identification of the remand services provided is not always possible. This has become an issue as many jurisdictions have incorporated the remand facility as part of a central corrective centre. For example, the Metropolitan Remand and Reception Centre (NSW) incorporates the remand facility for prisoners facing a NSW court, in addition to custodial facilities for sentenced prisoners. However, neither the number of prisoners, nor the total expenditure for each service, is separately reported. The number of prisoners receiving remand services have therefore been included in the secure custody days served and expenditure figures reported in table 5.3.

5.4.2 Periodic Detention Centres

As stated earlier, the only two authorities operating periodic detention are the NSW Department of Corrective Services and the ACT Department of Justice and Community Safety. It is therefore a simple matter to obtain data on the services they provide¹⁸. Hence, table 5.2 can be constructed :

Table 5.2 : Total Days served in Periodic Detention

Financial Year	PDC (Periodic Detainee Days)	
	JACS (ACT)	DoCS (NSW)
1993-94	0	466 835
1994-95	0	500 780
1995-96	1 496	528 885
1996-97	3 401	570 130
1997-98	4 378	558 815
1998-99	7 076	505 890

Source : Report on Government Services 2000 (and previous reports). Note that periodic detention was first implemented by the ACT Department of Justice and Community Safety in September 1995. This has resulted in zero values of output for financial years 1993-94 and 1994-95.

¹⁸ The data in Report on Government Service Provision relates to financial years. Quarterly data for the number of periodic detention orders current can be obtained from ABS 4512.0.

These figures, obtained from the Report on Government Services, are presented as the average number of detainees held on each day the centre is open, and have been multiplied by the number of days for which the centre is open in the financial year. In the case of the ACT, this figure is the number of Saturdays and Sundays in the financial year, as only weekend detention is provided. In the case of NSW DoCS, the figure has been multiplied by the total number of days in the financial year as periodic detention is provided on all seven days of the week (although each detainee still serves two days per week in detention).

However, expenditure data for periodic detention is not a simple matter to obtain as it is not reported separately by either authority. However, the expenditure on prisoners in both open custody and periodic detention is reported, enabling total periodic detainee days to be added to total open custody prisoner days, and weighted by the combined expenditure on these two outputs. The value of this expenditure is reported in table 5.4.

5.4.3 Secure Custody Prisons

Data for prisoners receiving secure custody services is reported in the Report on Government Service Provision. While this data refers to financial years, quarterly data for the average daily prisoner population can be obtained from Corrective Services Australia (Cat. no. 4512.0). As shown in table 5.3, the classification for secure custody includes both prisoners held in specialist secure custody facilities, as well as remand.

Table 5.3 : Details of Secure Custody Prisons

Financial Year	Secure Custody (incl. Remand)	
	Total Prisoner Days	Expenditure (\$m)
1993-94	3 807 242	549.3
1994-95	3 959 155	599.9
1995-96	4 106 615	639.3
1996-97	4 375 255	698.6
1997-98	4 729 670	733.6
1998-99	5 181 905	801.2

Source : Report on Government Services 2000 (and previous reports), ACT Department of Justice and Community Safety Annual Report 1997-98.

5.4.4 Open Custody Prisons

Annual data for prisoners receiving open custody services is also reported in the Report on Government Service Provision. Once again, quarterly data for the average daily prisoner population can be obtained from Corrective Services Australia. As noted below, the classification for open custody includes both prisoners held in specialist open custody facilities and specialist prison farms.

Table 5.4 : Details of Open Custody Prisons

Financial Year	Open Custody (incl. Prison Farms)	
	Total Prisoner Days	Expenditure (\$m)
1993-94	1 886 993	244.4
1994-95	1 895 080	256.5
1995-96	1 979 030	255.3
1996-97	1 971 730	263.0
1997-98	1 966 255	301.1
1998-99	2 108 240	306.4

Source : Report on Government Services 2000 (and previous reports), ACT Department of Justice and Community Safety Annual Report 1997-98. Note that the expenditure figures for open custody detention include expenditure on periodic detention.

5.4.5 Prison Farms

Only two jurisdictions (Tasmania and Western Australia) operate Prison Farms, however separate identification of the prison farm service provided is not possible. To this end, both prisoners held in prison farms and total expenditure on prison farms will be included in the open custody measure. Thus the output and total expenditure on prison farms has been recorded as part of table 5.4.

5.4.6 Immigrant Detention

The average daily population and total expenditure on Immigration Detention Centres can be obtained directly from the Department of Immigration and Multicultural Affairs Annual Report, for years since 1995–96. This data is shown in table 5.5. DIMA have been contacted with a view to obtaining this data to complete the series for earlier periods.

Table 5.5 : Details of Immigration Detention Centres

Financial Year	Immigrant Detention	
	Total Detainee Days	Expenditure (\$m)
1993–94	–	–
1994–95	–	–
1995–96	220 264	31.4
1996–97	173 798	22.7
1997–98	152 061	22.1
1998–99	201 205	20.5

Source : Department of Immigration and Multicultural Affairs Annual Report, 1999–2000 (and previous years).

5.4.7 Community Service Orders and Home Detention

Currently, there is a distinct lack of data available concerning both community service orders and home detention. As both are relatively new sentencing options, relevant information may not be collected consistently in all states. The Report on Government Services 1999 marked the first occasion where information from all states regarding community service orders and home detention were presented in a consistent manner. This information took the form of the percentage of successfully completed orders and detentions. In addition, data is also collected by relevant State departments, and is published in some annual reports. The ABS is commencing publication of this information as an extension of *Corrective Services Australia* (Cat. no. 4512.0) in 2000. This may provide sufficient information for future assessments of output in this area.

5.5 Construction of the Output Index

An output index for corrective centres can now be computed using the data shown in Tables 2,3,4 and 5. The index has the following form:

$$\text{Output Index}_{0t} = [\sum^i w_{i0} \cdot (q_{i1}/q_{i0})] \cdot [\sum^i w_{i1} \cdot (q_{i2}/q_{i1})] \times \dots \times [\sum^i w_{i,t-1} \cdot (q_{it}/q_{it-1})]$$

where :

t = time period

i = output activity, e.g. secure custody prisoner days or open custody prisoner days.

q_{it} = output in period t , for output activity i , e.g. the number of secure custody prisoner days provided

w_{it} = the share that output activity i contributes to total output in period t , calculated using the expenditure of each activity divided by total expenditure for the sector.

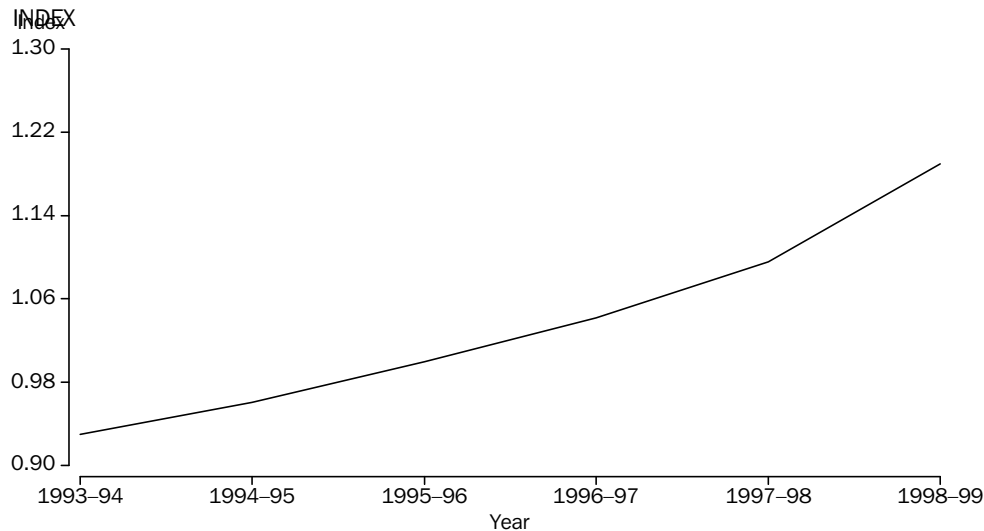
\sum^i = sum across each output activity in the sector, $i=1, \dots, n$

The results of the index calculations are shown in table 5.6 and figure 5.2.

Table 5.6 : Experimental Output index for Australian Corrective Centres

Year	Index
1993–94	0.930
1994–95	0.961
1995–96	1.000
1996–97	1.042
1997–98	1.096
1998–99	1.190

FIGURE 5.2 : GRAPH OF THE EXPERIMENTAL AUSTRALIAN CORRECTIVE SERVICES OUTPUT



This index shows upward movement over recent periods. This is consistent with our expectations given the rapid growth which has occurred in the average daily prisoner population over recent years. However this index is lacking in two significant aspects :

- Lack of data for financial years 1993-94 and 1994-95 : This problem has arisen as there is no expenditure and average detainee population data available for Immigration Detention Centres (IDCs) in these years. To address this issue, a chained Laspeyres output index was calculated using the available IDC data from 1995-96 onwards. A second index, excluding IDC data in all periods, was linked to the series for 1993-94 and 1994-95.
- Community corrections have been ignored from the results. Due to a lack of data. The ABS will commence publication of these values as an extension of *Corrective Services Australia* (Cat. no. 4512.0) in 2000.

5.6 Conclusions and Recommendations

The experimental corrective centres output index developed in this paper is somewhat less than ideal, owing to a lack of data for community corrections. However, this data gap will be filled when ABS community corrections data comes on-line in 2000, as an extension of current correctives services publications.

This being the only serious difficulty encountered in compiling the corrective centres index, its implementation into the Australian System of National Accounts is considered to be entirely feasible. Further analysis, including a comparison between this experimental measure and its input-based counterpart, will be undertaken before determining whether the new measure should be adopted.

Bibliography

Police Services : Chapter 3

Australasian Centre for Policing Research (27th June 1999). Australasian Centre for Policing Research Website [Online]. Available : www.acpr.gov.au. [15/8/2000]

Australasian Police Ministers' Council, 1998 (and previous years), *National Common Police Services Annual Report 1997-98*, Ausinfo, Canberra.

Australian Bureau of Criminal Intelligence (n/d) National Missing Persons Unit Website [Online]. Available www.missingpersons.info.au/acbi. [15/8/2000]

Australian Bureau of Statistics (ABS) 1997, *Recorded Crime, Australia*, Cat. No. 4510.0, ABS, Canberra.

Australian Federal Police, 1999 (and previous years), *Australian Federal Police : Annual Report 1998-99*, Australian Federal Police Media & Publications, Canberra.

Australian Institute of Criminology, 1988, *Efficiency and Effectiveness in Australian Policing*, Trends and Issues in Crime and Criminal Justice, Vol 16.

Australian Institute of Police Management (n/d). Australian Institute of Police Management Home Page [Online]. Available : www.aipm.gov.au. [15/8/2000]

Becker, G., 1968, *Crime and Punishment : An Economic Approach*, Journal of Political Economy, Vol 76 169-217.

Carrington, R., Puthuchery, N., Rose, D., Yaisawarng, S., 1997, *Performance Measurement in Government Service Provision: The Case of Police Services in New South Wales*, Journal of Productivity Analysis, Vol 8, 415-430.

Grabosky, P., 1988, *Efficiency & effectiveness in Australian policing*, Australian Institute of Criminology, Canberra.

Marshall, P., 1999, *Measuring the Effectiveness of the Justice System*, Law Reform Commission of Western Australia, Perth.

Ministry of Finance, 1996, *Productivity Trends in the Public Sector in Sweden*, Norstedts Tryckeris AB, Stockholm.

National Crime Authority, 1999, (and previous years), *National Crime Authority Annual Report 1998-99*, AusInfo, Canberra.

New South Wales Police Board 1999, (and previous years), *Annual Report : Police Board of New South Wales*, New South Wales Police, Sydney.

New South Wales Treasury 1999, *Budget Papers No. 3 1998-1999*, NSW Treasury, Sydney.

Northern Territory Police, Fire & Emergency Services, (1998), (and previous years), *Northern Territory Police, Fire & Emergency Services : 1997-98 Annual Report*, Emergency Service, Fire Service of the Northern Territory, Darwin.

Police Services : Chapter 3 (Continued)

Queensland Police Service, 1999 (and previous years), *Annual report : Queensland Police Service*, Office of the Commissioner of Police, Brisbane.

SCRCSSP (Steering Committee for the Review of the Commonwealth/State Service Provision), 2000, (and previous years), *Report on Government Services 2000*, AusInfo, Canberra.

South Australia Police Department, 1999, (and previous years), *Annual report of the Commissioner of Police*, Government Printer, Adelaide.

Victorian Police, 1999, (and previous years), *Victorian Police : Annual Report 1998-99*, Melbourne.

Western Australia Treasury 1998, *Budget Papers No. 2 1997-1998*, Western Australia Treasury, Perth.

Withers, G., 1983, *Crime, Punishment and deterrence in Australia : An empirical investigation*, Australia National University, Canberra.

Justice Services : Chapter 4

ACT Department of Justice and Community Safety, 1999, *Annual Report 1998-99*, Ausinfo Canberra.

Administrative Appeals Tribunal, 1999, (and previous years), *Annual Report 1998-99*, Ausinfo, Canberra.

Australian Bureau of Statistics (ABS), 1999, *Australian and New Zealand Standard Industry Classification*, Cat. No. 1293.0, ABS, Canberra.

Australian Bureau of Statistics, 1999, *Year Book Australia 1999*, Cat. No. 1301.0, ABS, Canberra.

Australian Bureau of Statistics, 1999, *Higher Criminal Courts*, Cat. No. 4513.0, ABS, Canberra.

Australian Bureau of Statistics, 1999, *Industrial Disputes, Australia*, Cat. No. 6321.0, ABS, Canberra.

Australian Bureau of Statistics, 1999, *Marriages and Divorces, Australia*, Cat. No. 3310.0, ABS, Canberra.

Australian Industrial Relations Commission and Australian Industrial Registry, 1999, (and previous years), *Annual Report 1998-99*, Ausinfo, Canberra.

Attorney-General's Department, 1999, (and previous years), *Annual Report 1998-99*, Ausinfo, Canberra.

Attorney-General's Department (n.d.). Window on the Law [Online]. Available : <http://law.gov.au/auslegalsys/auslegalsys.htm>. [13/1/2000]

Australian Capital Territory Department of Justice and Community Safety, 1999, (and previous years), *Annual Report 1998-99*, Ausinfo, Canberra.

Justice Services : Chapter 4 (Continued)

Australian Family Court 1999, (and previous years), *Annual Report 1998–99*, Ausinfo, Canberra.

Carrington, R., 1998, *The Performance of the Local Courts in New South Wales*, a dissertation submitted to the Department of Econometrics, University of New England, Armidale.

Commonwealth Director of Public Prosecutions, 1999, *Annual Report 1998–99*, Ausinfo, Canberra.

Department of Justice Victoria, 1999, *Annual Report 1998–99*, Department of Justice Victoria, Melbourne.

High Court of Australia, 1999, (and previous years), *Annual Report 1998–99*, Ausinfo, Canberra.

Judicial Commission of NSW, 1999, *Annual Report 1998–99*, Judicial Commission of NSW, Sydney.

Lewin, A.Y., Morey R.C. and Cook T.J., 1982, *Evaluating the Administrative Efficiency of Courts*, The International Journal of Management Science, vol 10, No 4, pp 401 to 411, Pergamon Press Ltd, U.K.

Ministry of Finance, 1996, *Productivity Trends in the Public Sector in Sweden*, Norstedts Tryckeris AB, Stockholm.

National Native Title Tribunal, 1999, (and previous years), *Annual Report 1998–99*, Ausinfo, Canberra.

New South Wales Attorney General's Department, 1999, *Annual Report 1998–99*, New South Wales Attorney General's Department, Sydney.

New South Wales Attorney General's Department and NSW Treasury, 1998, *Data Envelopment Analysis : The Application of Advanced Efficiency Measurement in the NSW Local Courts*, NSW Treasury, Sydney.

Northern Territory Office of Courts Administration, 1999, *Annual Report 1998–99*, Northern Territory Office of Courts Administration, Darwin.

Pedraja-Chaparro, F. and Salinas-Jimenez, J., 1996, *An Assessment of the Efficiency of Spanish Courts Using DEA*, Applied Economics, vol 28, pp 1391 – 1403.

Queensland Building Tribunal, 1999, *Annual Report 1998–99* (and previous years), Queensland Building Tribunal, Brisbane.

Queensland Criminal Justice Commission (CJC), 1999, *Annual Report 1998–99*, CJC, Brisbane.

Queensland Department of Justice and the Attorney-General, 1999, *Annual Report 1998–99*, Department of Justice and the Attorney-General, Brisbane.

Justice Services : Chapter 4 (Continued)

SCRCSSP (Steering Committee for the Review of the Commonwealth/State Service Provision), *Report on Government Services 2000*, (and previous years) AusInfo, Canberra.

State Courts Administration Council (South Australia) *Annual Report 1998–99* (and previous years), Courts Administration Council, Adelaide.

Tasmania Department of Justice, 1999, *Annual Report 1998–99*, Department of Justice, Hobart.

Weller, P., 1994, *Royal Commissions and the Making of Public Policy*, Centre for Australian Public Centre Management, Brisbane.

Western Australia Ministry of Justice, 1999, *Annual Report 1998–99*, Ministry of Justice, Perth.

Corrective Services : Chapter 5

ABS 1999, *Corrective Services, Australia*, Cat. No. 4512.0, ABS, Canberra.

Australian Capital Territory Department of Justice and Community Safety, 1999, (and previous years), *Annual Report 1998–99*, Ausinfo, Canberra.

ABS, 1997, *Prisoners in Australia : results of the National Prison Census 1997*, ABS, Canberra.

Australian Capital Territory Attorney General, 1996, *Annual Report 1995–96*, ACT Attorney General, Canberra.

Department of Immigration and Multicultural Affairs, 1999, (and previous years), *Annual Report 1998–99*, AusInfo, Canberra.

Marshall, P., 1999, *Measuring the Effectiveness of the Justice System*, Law Reform Commission of Western Australia, Perth.

New South Wales Department of Corrective Services, 1999, (and previous years), *Annual Report 1998–99*, NSW Department of Corrective Services.

Ministry of Finance, 1996, *Productivity Trends in the Public Sector in Sweden*, Stockholm.

Northern Territory Correctional Services, 1999, *Annual Report 1998–99*, NT Correctional Services, Darwin

Queensland Corrective Services Commission, 1999, (and previous years), *Annual Report 1998–98*, QLD Corrective Services Commission, Brisbane.

Queensland Government Statistician's Office, 1998, *Compendium of Queensland Statistics 1998*, Queensland Government, Brisbane.

Queensland Government Statistician's Office, 1998, *Sentencing in Queensland Criminal Courts 1997–98*, Queensland Government, Brisbane.

Corrective Services : Chapter 5 (Continued)

SCRCSSP (Steering Committee for the Review of the Commonwealth/State Service Provision), 2000, (and previous years), *Report on Government Services 2000*, AusInfo, Canberra.

South Australian Department for Correctional Services, 1999, (and previous years), *Annual Report 1998–99*, SA Department for Correctional Services, Adelaide.

Tasmania Department of Justice, 1999, *Annual Report 1998–99*, (and previous years), TAS Department of Justice, Hobart.

United States Department of Labor and the Bureau of Labor Statistics, 1998, *Measuring State and Local Government Labor Productivity : Examples from Eleven Services*, United States Government Printer, Washington.

Victorian Department of Justice, 1999, *Annual Report 1998–99*, (and previous years), VIC Department of Justice, Melbourne.

Western Australian Ministry of Justice, 1999, *Annual Report 1998–99*, WA Ministry of Justice, Perth.

Appendix A : Methods of Case Finalisation

100 Adjudicated Charge finalisation

- 100 Adjudicated Charge finalisation nfd
- 110 Charge proven
- 111 Guilty Finding by Court
- 112 Guilty Plea by Defendant
- 120 Charge unproven
- 121 Acquitted by Court
- 122 Not guilty on grounds of insanity
- 123 No case to answer at committal
- 129 Charge unproven nec

200 Finalisation by transfer between court levels

- 200 Finalisation by transfer between court levels nfd
- 210 Transfer from a court of summary jurisdiction to District/County court or Supreme court
- 211 Committed for trial
- 212 Committed for sentence
- 213 Non — Committed transfer
- 220 Transfer from District/County court or Supreme court to a court of summary jurisdiction
- 230 Transfer from District/County court to Supreme court
- 231 Transfer from District/County court to Supreme court for trial
- 232 Transfer from District/County court to Supreme court for sentence
- 240 Transfer from Supreme court to District/County court
- 241 Transfer from Supreme court to District/County court for trial
- 242 Transfer from Supreme court to District/County court for sentence
- 290 Transfer between court levels nec

300 Non-Adjudicated charge finalisation

- 300 Non-Adjudicated charge finalisation nfd
- 310 Accused deceased
- 320 Bench warrant issued
- 330 Unfit to plead
- 340 Withdrawn by prosecution
- 390 Non-Adjudicated charge finalisation nec

900 Unknown/Not stated