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# J Measuring costs

## J.1 Introduction

This appendix outlines the way the Commission has estimated the dollar value equivalents of a range of adverse consequences that result from gambling for some people: adverse consequences for certain gamblers; for their families; and for the wider community. This involves collecting information on the prevalence of a range of adverse consequences (chapter 7) and then placing a dollar value against them. Some of these (such as job loss) are relatively easy to quantify, while others, such as the reduction in the quality of life of problem gamblers and their families, are inherently difficult. Nevertheless, as these intangible costs are a major element of the adverse consequences of gambling for some people, it is essential to gain some idea of their possible size, if only so that the costs can be compared with the benefits which are more readily quantified (see chapter 5).

### *The prevalence of adverse consequences resulting from gambling*

In this inquiry, the Commission conducted two surveys which included questions about a range of possible adverse consequences from gambling:

- a national survey of the general population, (*PC National Gambling Survey*) including questions on adverse consequences asked of regular gamblers, together with the SOGS set of questions (appendix F); and
- a survey of problem gamblers currently undergoing counselling (*PC Survey of Clients of Counselling Agencies*). This survey asked a range of questions about the consequences of their gambling as well as the SOGS questions (appendix G).

Wherever possible, the Commission has used data from the *PC National Gambling Survey* as it more accurately reflects the prevalence of adverse consequences in the general population. By using information that relates to the general population of regular gamblers, the need to identify problem gamblers is avoided.

The information from the national survey has been supplemented in a few instances by data from the problem gambler group (*PC Survey of Clients of Counselling Agencies*), but caution should be exercised in drawing inferences from this group as

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it is likely to represent the more severe problem gamblers in the wider population of problem gamblers (box J.1).

**Box J.1      Estimating the cost from information from problem gamblers in treatment**

A number of studies have estimated the costs of problem gambling by looking at the prevalence of adverse consequences in the group of problem gamblers who are seeking treatment. These costs are then attributed to the wider group of problem gamblers.

This presents two problems. The *first* is that problem gamblers who seek treatment are a very small percentage of the number of people typically identified as problem gamblers, using measures, such as the SOGS. In addition, it is likely that the prevalence of adverse consequences for the group in treatment is much higher than for other problem gamblers, because problem gamblers typically seek treatment as the result of some traumatic event, or when the adverse consequences become unbearable.

Attributing the prevalence for this group to the much wider group of problem gamblers would thus be likely to overstate the costs for the wider group.

A *second*, but countervailing, problem derives from measuring the costs of problem gambling only for those identified as problem gamblers, using screening devices such as SOGS. This assumes that the rest of the population does not suffer from any adverse consequences from their own gambling.

In many cases this is unavoidable, as the information on the prevalence of adverse consequences is available only for the problem gambler group, and it would be dangerous to infer any level of cost from that group to the wider population. Nevertheless, there is a risk of severely understating the cost of gambling if only because, as the rest of the population is so large, even a very low incidence of gambling-related impacts may generate significant total costs.

The problem is compounded by some researchers choosing a very high SOGS score to establish the population of problem gamblers. This is often done to overcome the criticism that the SOGS generates an excessive number of false positives, that is, identifying people as problem gamblers when, in fact, they are not. However, when it comes to measuring costs, false positives are not of great concern as the measure of the prevalence of adverse consequences will automatically take this into account. That is, those in the group who are not really problem gamblers will not report adverse consequences, and as a result the prevalence will be (correctly) lower for the group. But a measure of problem gamblers that is too severe can mean that significant costs generated by others are not included.

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### Box J.1 continued

Where minimising false positives does matter in the Commission's analysis is when we consider whether problem gamblers are getting value for money from their expenditure on gambling. If we are to include part of that expenditure as a cost rather than being offset by satisfaction achieved, the accurate identification of the population of problem gamblers is more important. The Commission's analysis of the SOGS score and its relationship with adverse gambling consequences is presented in chapter 6.

Ideally, we would like information on the prevalence of adverse consequences from gambling from the total population. The prevalence of the adverse consequences in the general population is the important issue when measuring the extent of costs, not whether these costs are generated by those easily 'tagged' as problem gamblers using a measure such as SOGS. But this is rarely available. The costs of conducting a large scale survey where all respondents were asked the full range of questions would be prohibitive. The Commission's national survey asked questions on adverse consequences only from the group of 'regular' gamblers. These comprise 39 per cent of the adult population. The Commission has assumed that there are no adverse consequences for the rest of the population. While this, in principle, means an understatement of the level of costs, it is unlikely to be significant.

Whether these costs are concentrated in a particular identifiable group is nonetheless important (though not for measuring the extent of costs) as it can be used by government when targeting policy action. The distribution of reported adverse consequences by SOGS scores is discussed in chapter 6

In the few instances where the survey of problem gamblers in counselling has been used, the Commission has attempted to compensate for the expected tendency to overstate the prevalence rate by applying this to the smaller number of problem gamblers who most closely match the group in treatment — those scoring 10 or more on the SOGS (46 800 people), rather than the wider group of problem gamblers, scoring 5 or more (293 000 people).

#### *The survey information on prevalence*

The *National Gambling Survey* asks all regular gamblers questions on a range of adverse consequences of gambling. All questions were asked on the basis of 'in the last 12 months', and many also asked if the gambler had 'ever' experienced the adverse consequence as a result of their gambling. The *Survey of Clients of Counselling Agencies* comprised a similar range of questions, asking the gambler to relate the questions 'only to the time when you were experiencing problems with your gambling'. The results from the survey indicated that the average period of problem gambling was 8.9 years. The SOGS questions were asked on the basis of 'in the last 12 months'.

Table J.1 presents the information on the prevalence of a range of adverse consequences derived from the Commission's surveys.

**Table J.1 Information on prevalence from the Commissions surveys**

	National Gambling Survey — regular gamblers			Survey of clients of counselling agencies	
	ever	over last 12 months	over last 12 months	over the period of gambling problem	over last 12 months
	% <sup>a</sup>	% <sup>a</sup>	number <sup>b</sup>	% <sup>c</sup>	% <sup>c</sup>
<b>Financial impacts</b>					
Borrowed from loan sharks	na	0.1	17 000	na	8.4
Went bankrupt	0.03	0.02	2 900	8.4	na
Sold property to gamble	na	0.3	35 100	na	36.7
Pawned or sold possessions	0.4	0.2	31 200	na	na
Lost house	na	na	na	7.9	na
Lost superannuation	na	na	na	13.4	na
<b>Productivity and employment</b>					
Lost time from work or study	na	0.7	98 100	na	50.3
Reduced productivity	1.2	0.7	94 300	na	na
(sometimes to always)	na	0.4	49 200	na	na
(often to always)	na	0.1	7 000	na	na
Average level of productivity loss	na	na	na	7.88	na
Changed jobs	0.2	0.04	5 600	18.3	na
Been sacked	0.1	0	0	18.6	na
<b>Crime and legal</b>					
Any crime	0.5	0.2	20 900	44.1	na
Bounced cheques deliberately	na	0.1	13 600	na	21.2
Borrowed without permission	na	na	na	42.3	na
Obtained money illegally	0.3	0.02	3 400	na	na
Trouble with the police	0.2	0.04	6 300	18.3	na
Appeared in court	0.1	0.00	700	15.8	na
Jail sentence	na	na	na	6.4	na
<b>Personal and family</b>					
Suffered from depression	2.1	1.5	205 900	95.6	na
sometimes to always	na	1.0	142 400	89.2	na
often to always	na	0.50	70 500	60.1	na
Major adverse effect on partner	na	na	na	na	46.6
Major adverse effect on children	na	na	na	na	20.7
Argued with family over gambling	na	1.9	266 900	na	83.2
Breakup of relationship	0.4	0.3	39 200	na	na
Divorce or separation	0.3	na	na	26.0	na
Seriously considered suicide	0.3	0.1	12 900	57.8	na
Attempted suicide	na	na	na	13.6	na
Prevalence of violence	na	na	na	13.1	na

**a** per cent of regular gamblers reporting the consequence. **b** estimated number affected in the adult population in Australia. **c** per cent of problem gamblers in counselling reporting the consequence. **na.** Not available.

Source: PC National Gambling Survey 1999, and PC Survey of Clients of Counselling Agencies 1999.

Costs have not been attributed to all of the adverse consequences listed in table J.1 above. Some are too difficult to value or could be included in other categories, but they are listed above to indicate the extent of impacts of costs borne by people as a result of problem gambling.

In addition to information on the extent of adverse consequences, the questionnaires provided additional information that has assisted the Commission in placing values on some of the costs of gambling (table J.2). This includes, for example, the number of people in the household, which establishes a lower limit on the number of other people likely to be adversely affected by some of the problems relating to gambling.

**Table J.2 Other information gathered from Commission surveys**

	<i>National Gambling Survey</i>	<i>Survey of Clients of Counselling Agencies</i>
current gambling debt	na	\$10 044
length of problem gambling	na	8.9 years
average number of people in household (problem gamblers)	3.3	2.6
number of children under 15 (problem gamblers)	0.62	0.58
current employment status (per cent employed)	69	75

*Source:* PC *National Gambling Survey* 1999, and PC *Survey of Clients of Counselling Agencies* 1999.

### *The survey questions were asked only of regular gamblers*

The national survey asked questions on gambling related problems of the general population of *regular* gamblers. Regular gamblers are those who engage in some form of gambling, on average, once a week (other than those who are solely 'low level' regular lottery or lotto players). These questions were not asked of non-regular gamblers, as it is unlikely that group would suffer significant adverse consequences as a result of their own gambling activities. Nevertheless, the costs are understated to the extent that any of the non-regular gamblers do suffer some adverse consequences.

In most cases the Commission has used information on the prevalence of adverse consequences among regular gamblers from the *National Gambling Survey*. In a few areas (such as the level of debt, incidences of violence, and prevalence of jail terms) information was only available from the *Survey of Clients of Counselling Agencies*. As noted, because the prevalence of problems is likely to be much greater for those seeking counselling, the prevalence rate from the *Survey of Clients of Counselling Agencies* has been applied only to the population scoring 10 or more on SOGS (47 000 people). To the extent that those scoring 5 to 9 on the SOGS are likely to

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suffer from some of the adverse consequences identified in the 10+ group, the Commission's estimate of the costs will be understated.

The information on adverse consequences from the *Survey of Clients of Counselling Agencies* is sometimes available only for the period of the duration of gambling problems rather than in the last year. Where they have been used, these 'duration of gambling problem' events have been estimated and converted to an annual basis using information on the average length of gambling problems (8.9 years) derived from the *Survey of Clients of Counselling Agencies*.

### *Measuring the counterfactual*

In estimating the cost of problem gambling, the question of what the situation would have been without gambling, especially problem gambling, is important. As mentioned in chapter 10, the extent to which gambling is the primary cause of the problems we observe has been questioned. Problems with gambling may be only one of a number of inter-related problems that some people have. At the same time, such adverse consequences as divorce or separation, are going to happen to many people even without gambling.

The Commission's questionnaires asked respondents a range of questions relating to adverse consequences attributable to their gambling activities. This relies on the respondent accurately assessing that gambling is the principal contributing cause. Where an adverse consequence is recorded, the Commission has accepted the respondent's judgment that this is gambling related.

The NORC study (Gerstein et al 1999) recently released in the United States used a different approach. Briefly, they asked respondents questions on a whether they had suffered a range of adverse consequences for whatever reason. By including all adverse consequences, whether attributed to gambling or not, the US study was able to compare the prevalence of adverse outcomes for those identified as problem and pathological gamblers (using a variant of the DSMIV) with the prevalence among those who were not problem gamblers. The estimates were of the excess of costs experienced by problem and pathological gamblers.

The Commission has looked at the results of the NORC study and those from the Commission's surveys. Despite the differences in methodology and variations in the way questions were asked, where a comparison could be made, the prevalence rates generated by the NORC study relating to pathological gamblers are similar to those from the Commission's client survey. Table J.3 presents comparisons where the questions asked and the groups involved most closely matched.

**Table J.3      Prevalence rates, selected consequences, NORC and PC  
Survey of Clients of Counselling Agencies**

	<i>NORC pathological gamblers</i>	<i>PC Survey of Clients of Counselling Agencies</i>
	%	%
Job loss	8.0 (last 12 months)	18.1 (ever)
Bankruptcy (ever)	8.4	8.3
Divorced (ever)	20.1	23.4
Arrested (ever)	13.0	17.0
Incarceration (ever)	15.1	6.9

*Source:* Gerstein 1999 and PC *Survey of Clients of Counselling Agencies* 1999.

Following the draft report, the Commission held a meeting with a number of prominent academics and researchers in the field of problem gambling in Australia (Clive Allcock, Alex Blaszczynski, Jan McMillen, and Michael Walker). The participants were specifically asked their views on the extent to which problem gamblers would have problems in the absence of gambling. The consensus was that for a number of adverse consequences, particularly depression, divorce and separation, a reasonable rule of thumb is that some 15 to 20 per cent would have problems even in the absence of their gambling.

Where the adverse consequence was more directly financial, such as embezzlement, or bankruptcy, the view was that the gambling activity was generally the central and overwhelming problem, as the most immediate and direct adverse consequences of problem gambling are financial difficulties. This is consistent with overseas findings that gamblers who engaged in crime typically had no prior history of criminal activity.

Drawing on these judgements, the Commission has made an adjustment for ‘causality’ in its estimates of the personal and family impacts of problem gambling by discounting by 20 per cent the number of people estimated to be affected.

## **J.2      Measuring components of cost**

The Commission has estimated the costs for a range of adverse consequences. These are:

- financial costs (debts and bankruptcy);
- productivity and employment (productivity loss and job change costs);
- crime and legal costs;
- personal and family costs; and

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- costs of gambling counselling services.

The following sections outline the methodology for estimating the cost of each type of impact identified. In areas where either the prevalence is uncertain, or where the cost can vary significantly, and where there is sufficient information, the Commission has estimated a range of costs — a lower and a higher estimate. Even when estimating the higher costs in the range presented, the Commission has tended to be conservative.

## Financial costs

Problem gamblers spend a considerable amount of money on their gambling, estimated to average \$12 200 each per year across all problem gamblers. Severe problem gamblers spend significantly more, averaging an estimated \$20 700 each per year.

Spending at these levels, problem gamblers can quickly get into financial difficulties. The information from the Commission's *National Gambling Survey* indicated that:

- 82 per cent of problem gamblers had borrowed money to pay for their gambling in the last year;
- 19 per cent (54 800 people) had borrowed without paying back;
- 6 per cent had borrowed from loan sharks; and
- 0.2 per cent (2900 people) had gone bankrupt in the last 12 months as the result of their gambling.

Of problem gamblers seeking help, the *Survey of Clients of Counselling Agencies* indicated that 53 per cent had borrowed money without paying back, 13 per cent had lost their superannuation and 8 per cent had lost their house as a result of their gambling.

This section is concerned with the costs imposed on others by the debts of problem gamblers, and the costs associated with bankruptcy by problem gamblers. 'Costs' associated with the high level of spending by problem gamblers themselves, and the need to borrow money to finance this spending, are not included in the calculations in this section. In chapter 5, when estimating the benefit that gamblers gain from their spending, the Commission has discounted the gain that problem gamblers receive to take into account their 'excessive' spending and the assumption that they do not obtain full value for money for that excess spending.



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## Debts

### *What is the level of gambling-related debt of problem gamblers?*

Problem gamblers typically accumulate considerable debts. They include debts to family and friends, debt with financial institutions, and sometimes significant debts with the ‘informal’ lending sector, including loan sharks.

Information from other studies indicate that the level of gambling related debt can be significant.

- Dickerson et al (1998, p. 80) reported that ‘... debts at the time of help-seeking, range from \$150 000 - \$240 000 (excluding those with debts over \$1 million). Debts were owed to family (36%) major finance companies (37%) and credit cares (28%).’
- Lesieur (1992) was reported in Goodman (1994) as finding that the mean gambling-related debt of people in compulsive therapy in the United States ranged from about US\$53 000 to US\$92 000.
- Goodman (1995) also reported that a typical middle-income compulsive gambler who enters treatment usually owes about one to two years salary, while some higher-income people often owe several million.

Information on debt was not available from the *National Gambling Survey*. The Commission’s *Survey of Clients of Counselling Agencies*, however, found an average debt level of \$10 044. This appears low considering both the level of spending by problem gamblers, the high rate of borrowing reported in the surveys, and the information from other studies. Feedback from those conducting this survey indicated that many respondents may have misunderstood this question. One comment was that where, for example, the respondent had increased the mortgage to finance gambling activities this was not considered by the respondent to be a gambling-related debt.

### *Does debt represent a cost?*

In itself, debt does not represent a cost to society as, when money is borrowed, it is presumed to be used to generate an equivalent benefit (in terms of income if invested or satisfaction if used for consumption) at least as large as the cost of the debt, including any interest on repayment. Even bad debts do not represent a cost, as the money would have been used elsewhere in the economy — either for investment or consumption — to generate an equivalent benefit, irrespective of the source of the funds.

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To the extent that borrowed money is not used to generate an equivalent benefit, this is already accounted for in chapter 5, where estimates have been made of the extent to which problem gamblers may not be getting ‘value for money’ on their expenditure on gambling.

The failure to repay debts does, however, involve a transfer of money from various members of the community, and even when debt is repaid, the burden is often borne by other members of the family (chapter 7). Lesieur (1998) commented:

The pathological gambler’s financial burden is chiefly borne by the family. Added debt may mean that fewer family expenditures are possible. The mortgage, rent, gas, electricity, telephone, and other bills may be late or overdue. In extreme cases, utilities are shut off, automobiles or furniture is repossessed, household items are sold, and there is the possibility of being evicted from an apartment experiencing a foreclosure on the mortgage.

To get some idea of the possible magnitude of this transfer, the Commission assumed that half of the debts of problem gamblers represent a transfer from other members of the family. As this does not include debt that may have been paid off prior to seeking treatment, the true cost could be higher.

#### *How has the value of the debt transfer been calculated?*

To estimate the extent of the transfer of gambling related debts the Commission has used the following information:

- the value of debt of \$10 045 per problem gambler from the Commission’s survey of problem gamblers in counselling;
- as the information on debt levels relates to gamblers in treatment, and these are generally those with the more extreme manifestations of problem gambling, the Commission has applied the average debt rates only to the number of people who are likely to be particularly severe problem gamblers — those scoring 10 or more in the SOGS — or 46 800 adults nationally; and
- it is assumed that half of the value of debt is borne by other members of the family.

As information was not available on the level of debt accumulation and repayment on an annual basis, this is an estimate of the extent of the transfer over the period of problem gambling — a ‘lifetime’ estimate. On the basis of the information from the *Survey of Clients of Counselling Agencies* that gambling problems have lasted for an average of 8.9 years, this is estimated to be equivalent to \$26 million annually.

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## *Bankruptcy*

### *How many gamblers have been made bankrupt by gambling?*

The *National Gambling Survey* indicated that 2900 people nationwide declare bankruptcy each year as a result of their gambling activities. However, as noted in chapter 7, the proportion affected is so small that the estimate is unreliable statistically.

Official statistics on the causes of bankruptcy provide a lower number — some 317 bankruptcies a year attributed to ‘gambling and speculation’ in 1997-98 (appendix R). These figures need to be viewed with some caution as gambling and speculation which results in bankruptcy is an offence under bankruptcy law. Brading (1999) commented:

Paragraph 271(a) provides that gambling or speculation up to 2 years before the presentation of the petition is an offence if it “materially contributed to, or increased the extent of, his insolvency.” .... Section 271 of the *Bankruptcy Act* has a surprising effect. It takes behaviour which is legal, namely “gambling” or “speculation” and retrospectively makes that behaviour into a crime. Gambling or speculation by a bankrupt only becomes a crime following bankruptcy if it can be proven that it was “*rash and hazardous having regard to his financial position at the time and any other material circumstances.*”

While prosecutions are few in comparison with the numbers reporting gambling and speculation as the cause of their bankruptcy (see Brading 1999), it is likely that the possibility of prosecution results in significant under-reporting of gambling as a cause of bankruptcy.

### *What is the cost of bankruptcy proceedings?*

Bankruptcy can basically occur in two ways: as the result of a creditors’ petition, or as the result of a petition by the debtor. The vast majority of bankruptcies (93 per cent in 1997-98) are the result of a debtor’s petition, lodged with the ITSA (Insolvency and Trustees Service Australia). A creditor’s petition involves the costs of court proceedings.

The bankrupt’s estate will be managed by a trustee, which can be the ITSA. Some 95 per cent of bankruptcies in 1997-98 are managed by the Official Receiver, (Inspector General in Bankruptcy 1998). The ITSA’s fees are:

... the whole of your bankruptcy estate up to \$4,000. If your estate exceeds \$4,000 the fees are \$4000 plus a percentage on a sliding scale of moneys received in excess of \$4,000.

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This fee is only taken in estates where money is actually realised. All others are ‘free’ although there is a cost involved in terms of staff and administration. As most gambling related bankruptcies are ‘consumer bankruptcies’ it is likely that many do not attract a fee at all.

In their estimate of the costs of gambling-related bankruptcies in NSW, Dickerson et al (1998) used a cost of \$6,600 per court case.

### *How has the cost of gambling-related bankruptcy been calculated?*

The key data used to estimate the cost of gambling related bankruptcy are:

- the number of ‘gambling and speculation’ bankruptcies indicated by the official statistics (317); and
- a cost per bankruptcy of \$4000. While many bankruptcies will not involve this cost being borne by the person involved because insufficient money can be recovered, there is nonetheless a cost involved in the process and this should be considered in the estimates.

The total cost of gambling related bankruptcies is estimated in this way to be \$1.3 million each year.

Bankruptcy involves a range of other costs, and having been declared a bankrupt may well reduce earning capacity, or borrowing capacity into the future. The Commission has not attempted to estimate such future costs associated with having been declared bankrupt as a result of gambling.

### *Bad debts at bankruptcy*

The Commission’s surveys did not collect information on the level of bad debts at the time of bankruptcy. Nonetheless, it would be reasonable to expect the level of debt at bankruptcy to be at least as great as the average level of gambling-related debt at the time that problem gamblers seek treatment, and probably greater, as it is severe levels of debt that typically lead to bankruptcy.

- Ladouceur (1994) reported that problem gamblers in Gamblers Anonymous in Canada had debts at bankruptcy ranging from \$75 000 to \$150 000

As with other debt, bad debts represent a transfer from others to the gambler, rather than a net cost to society. The fact that the gambler may not subsequently get ‘value for money’ when consuming gambling products is accounted for in the analysis in appendix C and chapter 5, where the benefit that consumers gain from access to gambling products is reviewed and quantified.

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While most of the money involved with bad debts is a transfer within society rather than a net cost, there are nonetheless some real costs. Bad debts involve effort and resources to recover debts, and this cost would typically be included in the general cost of loans to other borrowers. The Commission has no basis for estimating the extent of this cost.

## **Productivity loss**

Problem gambling has a significant affect on all aspects of the problem gambler's life. This spills over into the work environment — time may be increasingly taken from work to gamble, and the depression that accompanies problem gambling can erode work performance. When Dickerson et al estimated the cost of problem gambling in NSW, the loss in work productivity was the largest single component of cost.

The Commission's *National Gambling Survey* indicated that some 94 300 people would have been less productive at work as a result of their gambling in the last 12 months. Some of this loss may be trivial. The survey indicated that lost productivity happened 'sometime to always' for 49 200 'often to always' for 7000 people.

In their responses to the *Survey of Clients of Counselling Agencies*, the gamblers indicated an average productivity loss of 7.9 per cent. This estimate is higher than those used elsewhere. For example, Dickerson et al (1998) assumed a productivity loss of 1 hour a week, a loss equivalent to 2.5 per cent of work time, while Ladouceur (1994) assumed a loss of 5 hours a month, a similar level of loss to that used by Dickerson et al. But these earlier estimates of the loss in productivity seem low. One hour a week of work time does not align with the comments that problem gamblers make about the extent of their obsession with gambling. In making its estimates of the loss in productivity, the Commission has used the average level reported by problem gamblers in its survey.

### *How has the cost of lost productivity been calculated?*

The key data used to estimate the cost of lost productivity due to problem gambling are:

- for a lower estimate, the number of people from the national survey reporting an adverse effect on job performance 'often to always' in the last 12 months — 7000 adults nationwide.

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- for a higher estimate, the number of people from the national survey reporting an adverse effect on job performance ‘sometimes to always’ in the last 12 months — 49 200 adults nationwide.
  - for the extent of productivity loss, the 7.9 per cent reported in the survey of problem gamblers in counselling; and
  - for the value of productivity the Commission has used average weekly earnings — equivalent to \$38 600 per person per year.

The total cost of lost productivity as a result of problem gambling is estimated to be \$21 million to \$150 million each year.

The question in the *National Gambling Survey* related to an adverse effect on *job* performance. While this is likely to pick up those who are employed and self-employed, those who are at home are unlikely to have responded to this question. Yet a reduction in productivity for those at home, bringing up families etc, is just as real a loss as the decline in productivity of those employed. Some 30 per cent of regular gamblers were not employed, and if they were included with the same level of productivity loss, this would increase the value of lost productivity by \$7 million to \$50 million a year.

While some of the loss in productivity may be carried by the problem gambler in the form of lower remuneration (for example if they are self employed), some will be carried by the employer in the form of lower profits, by other employees in the form of lower wages overall and by the taxpayer in the form of lower tax receipts. Exactly who bears the cost does not, however, affect the estimate of the total cost involved.

## **Job change (unemployment) as a result of gambling**

*How many gamblers have had to change jobs as a result of their gambling?*

The Commission’s national survey indicated that over 28 000 people have changed their job as a result of their gambling, and almost 5600 in the last 12 months. While the survey indicated that some 10 200 have been dismissed from their job at some time as a result of their gambling, no respondents reported this as having happened in the last 12 months, and thus no estimate has been made of the number for the population as a whole.

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### *What is the cost of job change?*

There are essentially three costs involved in a change in job. The first is the loss in income over the period of unemployment before a new job is found. The second is the financial cost of the job search. The third is the cost to the employer of finding and training a replacement.

The loss of income, however, is not borne fully by the unemployed. Of the gross income, that part which is paid in tax is lost to the government, and to the extent that the unemployed receives unemployment benefits, some part of the loss in after-tax income is also transferred to the government.

Most job change costs will be the same whether the job change is voluntary or involuntary. However, other costs may be different. Job search costs and the prospects of new employment may be better if the job change is voluntary, as it would be reasonable to presume that the employee has a chance to prepare for the change. Where job change is involuntary, job search costs for the employee may be higher and the prospects of re-employment lower as good references are unlikely to be provided. Alternatively, if timing is at the discretion of the employer, the employer's job change costs may be lower. The extent to which these vary, however, is difficult to determine, and in the absence of any data on this matter, the Commission has not attempted to make any estimate of the differences in the costs of job change depending on whether the change is voluntary or not, with the exception of differences in the rate of assistance provided by government.

The level of government assistance varies depending on whether the job change was voluntary or not. Where the job change was as a result of a resignation, the Newstart Allowance is discounted by 18 per cent for the first 26 weeks.

### *Income loss when unemployed*

For the Australian population as a whole, for any individual changing a job, the average duration of unemployment is some 6 weeks. However, this rate varies significantly. Some 50 per cent will find a job in a relatively short time (less than 2 weeks) and typically this does not result in the receipt of unemployment benefits. Some take longer to find a job and may receive unemployment benefits for a much longer period. The average duration of unemployment for any individual whose unemployment is greater than 2 weeks is some 11 weeks. In this study, the Commission has assumed that half of those who change their job have an average duration of unemployment of 11 weeks and receive unemployment benefits over 9 of those 11 weeks.

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The Commission has assumed that the pattern of job change for those changing jobs as a result of gambling is the same as that for the general population — an average period between jobs of 6 weeks. On the basis of average weekly earnings of \$743, this is a loss in income of some \$4300 per job change which, for 5600 people results in an estimated annual total cost of \$24 million.

#### *Cost of job search for the gambler*

The Commission has not come across any up-to-date information on the cost of job search for the employee. To calculate the cost, the Commission has used the estimate of \$2357 used by Dickerson et al (1998). This was reported as “approximately half of the cost reported by major job search firms.”

With an estimated 5377 people changing jobs as a result of their gambling in a year, job search by the employee represents a total cost of \$13 million.

#### *Cost of staff replacement for the employer*

Information on the cost of staff replacement for the employer has been equally hard to find, particularly as relates to Australia. Layard et al (1991) (p. 343) said:

... in the USA, the sum of hiring and firing costs for white collar workers totals between two weeks’ and two months’ pay, whereas for blue-collar workers they are around one-fifth as great. In European countries, the legislative framework is rather stricter so the equivalent costs would be considerably higher.

Holzer (1989) put the time cost associated with hiring and training new staff as follows:

- Formal hours of training (8.991);
- Informal hours of training by management (45.118);
- Informal hours of training by co-workers (38.768); and
- hours spent hiring (12.225).

The NORC study (Gerstein et al 1999) study commented:

Employers incur search and training costs assumed equal to 10 per cent of the annual salary for each employee replaced.

In this analysis, the Commission has similarly assumed that the employer search and replacement cost equals 10 per cent of annual salary (estimated on the basis of average weekly earnings), a cost per staff replacement of \$3862. With 5600 people being replaced in a year, this is a total cost to the employer of \$22 million.



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*Unemployment benefits are a transfer to the unemployed*

The payment of unemployment benefits to those who change jobs as a result of their gambling represents a transfer of some of the cost of being unemployed from the unemployed to the taxpayer. It does not represent an additional cost above what the Commission has already estimated the loss on income as a result of unemployment.

The Commission has assumed that the pattern of job change for those changing jobs as a result of their gambling is the same as that of the general population. The average length of unemployment is estimated to be some 6 weeks, with half having a period of unemployment of 2 weeks or less and are thus not eligible for unemployment benefits. The average period of unemployment of the remainder is estimated to be 11 weeks, 9 weeks of which would be eligible for unemployment benefits. The rate of unemployment benefit varies depending on whether the job change was voluntary or involuntary. For those who resigned, Newstart payments are 18 per cent lower for the first 26 weeks. For those who were unemployed involuntarily, the full Newstart allowance is payable.

The Commission has estimated the amount of payment on the basis of eligibility for the Newstart allowance, partner allowance and rent assistance (a fortnightly payment of \$402) for those who are unemployed for greater than 2 weeks (half of the number who change jobs), and on the basis that they receive payments for 9 weeks.

The Commission estimates that the annual cost of unemployment benefits for gamblers who change their jobs as a result of their gambling is \$4.1 million. This compares with an estimated loss in income over the same period of \$24 million.

*Summary of key data used to estimate the cost of job change (unemployment) as result of gambling*

The key data used to estimate the cost of unemployment due to gambling activities:

- an estimated 5600 people changed jobs as a result of their gambling in the last 12 months;
- no people identified themselves as having been dismissed from their job as a result of their gambling in the last 12 months. This is certainly an understatement, but in the absence of any information on this matter, the Commission has not included any estimate in this area;
- an expected average length of unemployment of 6 weeks for each person changing jobs;

- 
- to estimate the income lost over the period of unemployment —average weekly earnings of \$743;
  - job search costs for the employee of \$2357;
  - staff replacement costs of \$3862 for the employer (10 per cent of annual average earnings);
  - average benefits of \$1482 per person from government for half the people who change jobs, (being 9 weeks of payment for half the people who change jobs, at a Newstart and rent assistance payment of \$402 per fortnight)

In this area, the Commission has not estimated a lower and higher cost estimate. Unlike other areas where the available information provided a basis for estimating a range of costs, this was not the case for job change. In summary, the Commission has estimated that job change as a result of gambling has, in each year:

- cost gamblers \$24 million in lost income;
- involved \$13 million in job search costs;
- cost employers \$22 million in staff replacement costs; and
- transferred \$4 million from taxpayers to those changing jobs via job start and related payments.

## **Crime and legal costs**

The *National Gambling Survey* asked a number of questions on the extent of illegal activities undertaken by gamblers as a result of their gambling activities. Based on their responses, it is estimated that Australia wide, 13 600 had bounced cheques deliberately, while 9700 committed other crime relating to their gambling activities. In total, an estimated 20 900 people are estimated to have committed some form of gambling related crime in the last year.

As with bad debts, the value of money or goods stolen is a transfer within society, rather than a net cost. The real cost of crime is the effort that society must take to protect property together with the costs of the criminal justice system.

The Commission has made an estimate of the value of the money and goods stolen as a result of gambling-related crime — a measure of the transfers — as well as estimates of some of the net costs to society in the form of police incidents, court appearances and jail terms as a result of gambling related crime.

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The Commission has not been able to estimate the private costs of gambling-related crime, such as the cost of protecting property, but such costs can be substantial. Walker (1997) commented:

Estimates provided by the Australian Security Industry Association Ltd (ASIAL) (personal communication) suggest that the industry was worth \$1250 million in 1991-92. This covers the principal areas of security industry activity; man-power (guards, surveillance, cash carrying etc), alarms (monitoring, responding etc) and electronics (access control, closed-circuit TV etc).

Information on the value of money obtained illegally was not obtained in the survey. More general information indicates that the average value of property stolen can be high. Walker (1996) reported the following estimates of the average property loss per incident:

- breaking and entering (commercial premises), Victoria: \$1786;
- breaking and entering (non-commercial premises), Victoria: \$2307;
- breaking and entering (commercial premises), National: \$1413;
- fraud and misappropriation (deception), Victoria: \$3225; and
- stealing from the person: \$500.

#### *How has the transfer as a result of crime been calculated?*

The key data used to estimate the extent of the transfer as a result of gambling-related crime by gamblers are:

- 9700 people committing a gambling related crime (other than fraudulent cheques) in the last 12 months;
- for a lower estimate, a value of money and goods stolen of \$500; and
- for a higher estimate, a value of money and goods stolen of \$3225.

This represents a transfer of some \$5 million to \$31 million a year. The Commission has not attempted to estimate what the cost of managing and responding to this level of crime, but some component of that cost will be included in the following estimates of the cost of police incidents, court appearances and jail terms resulting from gambling.

#### *The cost of police incidents*

On the basis of the *National Gambling Survey*, it is estimated that 6300 people were involved in an incident with the police as a result of their gambling activities in the last 12 months. Dickerson et al (1998) used a cost per police incident of \$510 and

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the Commission has used this estimate in its analysis. This gives a cost of \$3.2 million a year for Australia as a whole.

### *Court cases*

The national survey results indicate that over 13 100 people have been involved in a court case as a result of their gambling at some time in their lives, and that for 700 people this occurred in the last 12 months. In comparison with earlier work in Australia, this appears low for the nation as a whole. Dickerson et al (1998) estimated 815 court cases a year for New South Wales alone and, in addition, this number was drawn from the population of problem gamblers only.

The costs of court proceedings can vary widely, depending on the complexity of the case and the extent to which it is contested. Szabo (1997) said:

Contested cases involve two stages. The first is up to what is called the “pre trial hearing” at which directions are given. The second is the time after that hearing and up to the start of the final hearing. Costs for the first stage commonly range from \$3,000.00 to \$8,000.00 depending at which stage you settle. The second stage involves similar costs. Costs average around \$4,000.00 for each day the matter takes during the final hearing, including a barrister’s fee. Typically residence cases run for three to four days.

On this basis, full court proceedings would cost between \$23 000 and \$32 000.

Not all the cost is carried by the plaintiff in the case. In 1997-98 expenditure on courts amounted to \$452 million (all Australian courts except the High Court) (Steering Committee 1999). Court fees recovered from the plaintiffs represent 42 per cent of expenditure in 1997-98. With over 1.7 million cases initiated, the cost averages \$442 per case of which \$237 is carried by the taxpayer.

In their NSW study, Dickerson et al (1998) used an average court case cost of \$6600.

In this study, the Commission has used the following information:

- an annual number of gambling related court cases of 700; and
- a cost of \$8000 for each case.

On this basis, the court cases involving problem gamblers cost \$5.6 million per year.

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### *The cost of jail sentences*

Information on jail sentences as a result of problem gambling was available only from the *Survey of Clients of Counselling Agencies*. This survey indicated that 6.4 per cent of those surveyed had, at some time, faced a jail sentence as a result of their problem gambling. However, problem gamblers in counselling are not typical of the problem gambler generally. The prevalence of particular problems is likely to be greater for this group. Consequently, to provide a lower estimate of the cost, the prevalence rate from the survey of problem gamblers in counselling has been applied to the much smaller number of people scoring 10 or more on the SOGS, (46 800 people) rather than the estimated total population of problem gamblers (293 000 people). This results in an estimated 3000 people who had been incarcerated as a result of their gambling during the period of their gambling problems. Using an estimated duration for gambling of 8.9 years, and assuming that incarceration occurs only once in the problem gambling cycle, the Commission has estimated an annual rate of incarceration as the result of gambling at 336 nationally. This compares with an estimate in Dickerson et al (1998) of 136 for New South Wales.

Information from the literature on problem gambling indicates that gamblers are typically involved in non-violent crime, and as a consequence the length of jail sentence is expected to be low.

Ladouceur (1994) said:

As in other studies, the majority of offences committed by pathological gamblers in Quebec are non-violent.

Goodman (1995, p.52) said:

People who engage in crime to support their compulsive gambling behaviour generally have no prior record of criminal behaviour.

From data collected by the ABS (1997) on the expected time to serve of sentenced prisoners, the Commission has estimated that the average expected prison sentence for a non violent crime (fraud and misappropriation and other theft) is some 3.4 months. This is considerably less than the 1.5 years used by Dickerson et al in their 1998 estimates for NSW but, the Commission considers that the lower rate is more appropriate given nature of the crime typically involved.

The cost of prisons is \$52 983 per prisoner per year for Australia as a whole, based on average Australian data for 1997-98 on recurrent expenditure and user cost of capital per prisoner (Steering Committee 1999).

On the basis of the following data:

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- 336 people receiving a jail sentence as a result of their problem gambling per year;
  - an average sentence of 3.4 months; and
  - an average annual cost per prisoner of \$52 983;

the cost of prison terms relating to problem gambling is estimated to be \$5.1 million each year.

## **Personal and family costs**

Personal and family costs are amongst the hardest and most contentious to value against. Nonetheless, this is not a valid reason to avoid attempting to do so. Estimates, even those involving considerable judgment, can provide us with some idea of the extent of the cost involved. Leaving them out means that much of the, arguably more important, costs are ignored and an incorrect impression is given that the costs are minimal because they are not estimated. Not including such estimates, which in effect values the cost at zero is likely to involve greater error, even if there is a degree of uncertainty surrounding the estimate.

Measurement of these intangibles has concentrated on attempt to quantify the value of life. Typically they have been undertaken to estimate the costs and benefits of certain actions that will save or extend life. The two basic approaches to the valuation of life are the ‘human capital’ and the willingness to pay’ techniques, Single et al (1996) said:

The human capital approach estimates the discounted current value of the future stream of potential earnings of the victim. This approach undervalues life since it takes no account of the value of life to the victims over and above their earnings loss. ... The willingness to pay approach studies what people would be willing to pay for relatively small changes in the risk of death and from these figures produces estimates of the value of life. While this technique appears to have a much sounder theoretical basis, there still remain considerable difficulties in the accuracy and consistency of estimates using this approach.

These estimates can give values for the human life in the millions of dollars, but the Commission is reluctant to use such estimates in this contentious area. Consequently, more conservative values for a range of emotional costs associated with problem gambling have been used in these estimates.

The personal and family costs associated with problem gambling are most commonly manifested in psychological ways — such as depression — rather than as a more easily identifiable physical harm. There is, nonetheless, some evidence of impact on the physical aspects of quality of life. Problem gamblers and their family

have a higher rate of suicides, for example. The NORC study (appendix K) in the US found that pathological gamblers reported poor or fair health at a much higher rate than would be expected for their population group without problem gambling.

Similar information has not been available from the Commission's surveys, and as a consequence, the impact on the physical health of problem gamblers has not been estimated.

### *How many gamblers report personal and family costs?*

The Commission's surveys have provided a range of information indicating the number of people reporting adverse personal and family impacts from their gambling activities (chapter 7). Some of the key impacts for which the Commission has made cost estimates are presented in table J.4 below.

**Table J.4 Estimated number of adults suffering adverse personal and family impacts from their gambling activities**

<i>Problem</i>	<i>In the last 12 months</i>	<i>Ever</i>
Break up of a relationship	39 200	59 500
Divorce and separation	3 200	na
Violence	na	13.1% of agency clients
Depression	205 900	289 900
sometimes to always	142 400	na
often to always	70 500	na
Thoughts of suicide	12 900	35 500
Attempted suicide	na	13.6% of agency clients
Moderate adverse effect on partner <sup>a</sup>	na	20.1% of agency clients
Major adverse effect on partner <sup>a</sup>	na	54.4% of agency clients
Moderate adverse effect on children <sup>a</sup>	na	18.8% of agency clients
Major adverse effect on children <sup>a</sup>	na	27.6% of agency clients
Moderate adverse effect on parents <sup>a</sup>	na	23.7% of agency clients
Major adverse effect on parents <sup>a</sup>	na	24.1% of agency clients

<sup>a</sup> Excluding those who answered 'not applicable'.

Source: Chapter 7.

While there are some direct financial costs that can be measured, such as the cost of separation or divorce, most of the cost can be seen as falling into the category 'pain and suffering'. This is much harder to put a dollar figure against.

### *How can we measure 'pain and suffering'?*

There are a range of compensation arrangements in the various States and Territories for the victims of crime. Victims compensation legislation in a number of

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states offer up to \$50 000 each for serious harm (Queensland offers up to \$75 000). Acute pain and suffering can also be compensated up to \$50 000. For example, the New South Wales *Victims Compensation Amendment Act* 1998, offers compensation to the level of:

- chronic psychological or psychiatric disorder that is moderately disabling, \$5000 to \$15 000; and
- chronic psychological or psychiatric disorder that is severely disabling, \$30 000 to \$50 000.

In a discussion paper on compensation, the ACT Government (Humphries 1997) reported that the median award value for psychological injuries in New South Wales and the ACT in 1995-96 was \$15 260. The discussion paper commented:

As would be expected, applicants whose psychological injury was caused by sexual assault receive relatively large awards (median of nearly \$30 000). Those whose psychological injury stems from assault generally receive lesser amounts (median \$14 150). (p.8)

In the US, the Department of Justice (1996) reviewed jury award for those suffering as a result of crime. The study reported the following amounts (in 1993 \$US):

- Child abuse: 52 371;
- Rape and sexual assault 81 400;
- Other assault or attempt with injury 19 300;
- Other assault or attempt without injury 1700;
- Robbery or attempt with injury 13 800;
- Robbery or attempt without injury 1300; and
- Burglary and attempt 300.

The study said:

For nonfatal injuries, the research team estimated value of pain, suffering, fear, and lost quality of life by analysing jury awards to crime victims and burn victims. ... This study ignored jury award for punitive damages and instead focused solely on that portion of the jury verdict designed to “compensate” the victim for pain, suffering, and lost quality of life. ... In this manner, the researchers were able to estimate what the average jury award for pain and suffering would be for the typical crime in the project’s data set. (p.15)

As with the information for Australia, rape and sexual assault and child abuse in the US results in the highest levels of payment.



Similarly, in a study of 843 awards for pain and suffering in the United States, Rodgers (1998) found the following range of values (table J.5).

**Table J.5 Awards for economic loss and pain and suffering, by injury category (1998 US dollars)**

<i>Range for economic losses<sup>a</sup></i>	<i>Mean economic loss</i>	<i>Mean pain and suffering</i>	<i>% of awards for pain and suffering</i>	<i>Number of cases</i>
	\$	\$	%	No.
Category 1	7 048	35 678	83.5	139
Category 2	17 709	49 889	73.8	362
Category 3	20 747	76 939	78.8	315
Category 4	39 437	315 410	88.9	27
Average	17 782	66 157	78.8	843

**a** Categories 1 to 4 relate to the severity of the injuries for which the awards were made, with category 1 being the least severe, and category 4 being the most severe.

Source: Rodgers (1998)

As can be seen from the table from Rodger's analysis, the value of awards for pain and suffering is consistently and substantially higher than the value of economic loss involved.

Pain and suffering awards or payments relate to the emotional impact of an injury suffered by the person involved. In this analysis, the Commission is attempting to place a dollar value against emotional distress caused by problem gambling where there is typically no direct 'injury' involved. Consequently, in estimating the cost for the emotional harm of divorce and separation, depression, violence, and suicide, the Commission has not used data on award payments. The estimates are based predominantly on the lower range of payments for victims compensation in use in New South Wales and Queensland, and previously in use in Victoria<sup>1</sup>. These are outlined in table J.6.

A degree of judgment is inevitable in choosing any number for the range of costs associated with a particular condition. The Commission has been conservative, using the higher of the two compensation schedules only in the few cases where the condition leads to thoughts of suicide and attempted suicide. The Commission considers that it is reasonable to presume that serious thoughts of suicide and attempted suicide represent more severe forms of depression and thus warrant imputing the higher cost. In making these estimates, it must be acknowledged that more people are involved than the problem gambler themselves. Family and friends are invariably caught up in the emotional damage that problem gambling generates.

<sup>1</sup> Victoria has replaced its compensation schedule with 10 free counselling sessions at a cost of some \$1040 per person.

As indicated in table J.6, where practical, the Commission has included estimates for the impact of some of these adverse consequences on family members.

**Table J.6 Range of values assigned to the emotional costs associated with problem gambling (dollars per person)**

<i>Adverse consequence identified</i>	<i>Lower cost</i>	<i>Higher cost</i>
	\$	\$
Emotional costs for the immediate family		
of moderate problem gamblers	ne	ne
of severe problem gamblers	5 000	15 000
Emotional costs for the parents		
of moderate problem gamblers	ne	ne
of severe problem gamblers	0	5 000
Relationship breakdown	5 000	15 000
Divorce or separation	15 000	30 000
Violence	5 000	15 000
Depression		
rarely to sometimes	ne	ne
often to always	5 000	15 000
Seriously thought of suicide	15 000	30 000
Attempted suicide		
for the gambler	30 000	50 000
for the immediate family	15 000	30 000
for the parents	0	5 000
Successful suicides	ne	ne

ne: not estimated.

### *Annual or lifetime costs*

In these estimates, the Commission has sought to estimate the cost of problem gambling in the single year 1997-98. The Commission has not attempted to estimate the net present value of adverse consequences that continue for a number of years as the result of an event that occurred in 1997-98.

This can be seen as assuming that the costs do not extend beyond 1997-98, or that, were the survey to be undertaken in the following year, those continuing to suffer from adverse consequences would be again identified and included in the relevant year. For some conditions such as depression and the general emotional distress for family members, this is a reasonable assumption as problem gambling episodes last for an average of almost 9 years. Thus, for these conditions, which comprise the bulk of the intangible costs, those suffering such costs would be included in data on prevalence in subsequent years.

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For ‘one-off’ events such as divorce or suicide where the consequences may be felt many years into the future, but where the event does not occur each year, the Commission is understating the costs by excluding the net present value of future distress or other costs.

### *An adjustment for ‘causality’*

As mentioned in section J.1, on the basis of the collective judgements of a number of prominent academics and researchers in the field of problem gambling in Australia, the Commission has made an adjustment for ‘causality’ in its estimates of the personal and family impacts of problem gambling by discounting by 20 per cent the number of people estimated to be affected by costs relating to adverse consequences in this broad category.

### *An adjustment for ‘double counting’*

In a number of instances, some adverse consequences are likely to occur to people who report other conditions. For example, those reporting that they are depressed as a result of their gambling may also report serious thoughts of suicide or attempted suicide. To avoid any double counting, the Commission has excluded more severe manifestations of a problem from estimates for the less severe condition. Estimates for a more severe manifestation of distress thus include all the associated problems leading to the reported condition. Thus:

- the numbers estimated for divorce and separation have been excluded from the number estimated for breakup of a relationship;
- the numbers estimated for thoughts of suicide have been excluded from the number estimated for depression; and
- attempted suicide numbers have been excluded from the numbers estimated for thoughts of suicide.

The same exclusions has been followed where the impact on family members has been estimated.

The following sections outline the method the Commission has used in each category, followed by a summary of the results for personal and family costs.

### *Emotional distress of family members*

Much of the burden of problem gambling falls on family members, and notwithstanding the views of some industry participants that such costs should be

seen as part of the informal contract system operating within the family, the Commission considers that they are of relevance when estimating the costs of the gambling industries to Australia. The *Survey of Clients of Counselling Agencies* provided some indication of the extent of the impact on other family members of more serious problem gambling (table J.7).

**Table J.7      Reported impact on others**  
(adjusted to exclude those reporting the question as not applicable)

	<i>Partner</i>	<i>Children</i>	<i>Parents</i>	<i>Friends</i>	<i>Colleagues</i>
	%	%	%	%	%
No effect at all	12.6	24.2	27.5	36.6	57.1
Minor adverse effect	9.9	28.0	22.3	26.8	16.7
Moderate adverse effect	20.1	18.8	23.7	18.7	10.1
Major adverse effect	54.4	27.6	24.1	16.5	11.9
Do not know	3.0	1.5	2.3	1.4	4.2
Total	100.0	100.0	100.0	100.0	100.0

Source: PC *Survey of Clients of Counselling Agencies*.

The Commission has measured the cost to family members as follows:

- distinguishing moderate from severe problem gamblers (163 400 and 129 300 respectively);
- excluding the number identified as reporting a breakup of a relationship (39 200), as the impact on partners is encompassed in that category;
- excluding the number reporting attempted suicide (2935) as the impact on families of this adverse consequence is estimated in that category;
- adjusting the resulting numbers by the ‘causality’ adjustment factor (80 per cent);
- multiplying the number of problem gamblers by the average family size (excluding the problem gambler) (2.3);
- multiplying the number of problem gamblers by the average number of parents identified in the survey (1.8);
- adjusting the number of immediate family members (74.5 per cent reported partners as suffering a moderate or major adverse affect); and
- adjusting the number of parents to exclude those where ‘no effect at all’ and ‘minor adverse effect’ were reported (47.8 per cent reported parents as suffering a moderate or major adverse effect)

This yields an estimated number of people in the immediate family adversely affected of 190 900 for the category of moderate problem gamblers and 151 100 for

severe problem gamblers. For parents, the numbers are 168 200 for moderate problem gamblers and 133 200 for severe problem gamblers.

In valuing the emotional distress caused to immediate family members, the Commission has used the range of numbers from the lower of the two compensation schedules — \$5000 to \$15 000. For parents, the range used is zero to \$5000. To be even more conservative, the Commission has applied dollar values only to the immediate families and parents of *severe* problem gamblers.

This generates a cost range of \$756 million to \$2.3 billion for the immediate family and zero to \$666 million for parents (table J.8).

**Table J.8 Estimates of emotional distress of family members**

	<i>Number of people affected</i>	<i>Per person cost assumption</i>		<i>Total cost</i>	
		<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
	Number	\$	\$	\$ million	\$ million
<i>Immediate family</i>					
Moderate	190 900	ne	ne	ne	ne
Severe	151 100	5,000	15 000	756	2 267
<i>Parents</i>					
Moderate	168 200	ne	ne	ne	ne
Severe	133 200	0	5 000	0	666

ne: not estimated.

Source: PC estimates

### *Financial costs of divorce or separation*

The national survey indicated that, Australia-wide, some 59 500 gamblers suffered a break up of a relationship as a result of their gambling, and that for an estimated 39 200, this occurred in the last 12 months. Of the 59 500 who suffered a relationship breakup, 42 600 are estimated to have led to divorce or separation. The survey did not ask participants whether this divorce or separation had occurred in the last 12 months. Appendix T discusses the numbers relating to divorce and separation in Australia, and identifies the likely number attributable to problem gambling to range between 1600 and 4000 divorces a year (and around double this number for divorces and separations combined). The Commission has taken the lower of these numbers as the basis for estimating the cost of divorce and separation. Thus, the number of divorces and separations, following the causality adjustment, amounts to 2560 in 1997-98.

For the vast majority of divorce proceedings the direct financial cost is low. Szabo (1997) said:

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Almost all divorce cases are uncontested and involve a simple procedure of filing and serving documents on the other party. There is a government filing fee of \$500.00. Standard legal fees charged are \$385.00 if there are no children under 18 years and \$514.00 if there are children. In addition are any necessary disbursements such as a process server's fee (about \$90.00) and the filing fee.

On this basis, the Commission has used a cost of divorce or separation of \$1100. With 2560 incidents in the last 12 months, this results in an estimated total annual financial cost of \$2.8 million nationally for divorce and separation as a result of gambling.

In offering this estimate, it is recognised that it is very conservative and that the financial cost of divorce and separation can extend well beyond the cost of the legal procedures involved. Professor Quiggin (sub. D269) commented:

In the case of divorce, the only financial costs measured here are the legal costs of obtaining a divorce. It is clear, however, that substantially greater financial costs arise from financial settlements associated with divorce, e.g. costs of enforcing child support orders, transactions costs of house sales and ownership transfers and so on. The set up and operation costs of separate households are substantial. More significantly, there is ample evidence suggesting long-term adverse impacts on children's educational outcomes arising from divorce, and this translates into lower earnings. Human capital models therefore imply a financial loss which in present value terms would surely exceed the \$30 000 upper bound used here [in the draft report for the emotional costs of divorce and separation], without even allowing for emotional costs.

### *Emotional costs of relationship breakdowns and divorce and separation*

The emotional cost of relationship breakdowns and particularly divorce and separation is, in many ways much more significant than the financial costs involved. And because other family members are involved, the number of people affected is greater.

### *Relationship breakdown*

The National Gambling Survey indicated that some 32 900 relationship breakdowns could be attributed to gambling in the last 12 months. In making the broad estimate of the impact on the immediate family earlier in this appendix, the Commission excluded the number of people estimated to have suffered a relationship breakdown. The cost of this breakdown is included in this section, with the exception of those that led to divorce and separation, which are dealt with in the next section.

The following data have been used to estimate the emotional cost of relationship breakdowns:

- 
- the number of relationship breakdowns attributed to gambling in the last 12 months (39 200);
  - less the number that led to divorce or separation (3200);
  - adjusted using the causality adjustment (80 per cent); and
  - then doubled to take account of the other party involved.

This results in an estimate of 57 600 people adversely affected by a relationship breakdown (excluding those involved in divorce and separation).

For a range of dollar values of the emotional distress caused by relationship breakdowns (other than divorce and separation), the Commission has used the range of numbers from the lower of the two compensation schedules — \$5000 to \$15 000.

This generates a lower estimate of the total costs of relationship breakdown of \$288 million and a higher estimate of \$864 million.

#### *Emotional cost of divorce and separation*

The following data have been used to estimate the emotional cost of divorce and separation:

- 3200 for the estimated number of divorce or separations resulting from gambling in the last 12 month (see above);
- adjusted using the causality adjustment (80 per cent);
- the average number of people in a household, based on survey results, of 3.3 people (including the gambler);
- for a lower estimate, a value of \$15 000 for each person affected; and
- for a higher estimate, a value of \$30 000 for each person affected as outlined above.

This results in an estimate of the annual cost of the emotional harm from divorce and separation resulting from gambling of \$126 million to \$253 million nationally.

#### *Violence*

Information on violence precipitated by problem gambling was only available from the survey of problem gamblers in counselling. This indicated that 13.1 per cent reported violence at some stage during their period of problem gambling. If this prevalence is applied to the number of people with a SOGS score of 10 or more, this indicates that nationally, some 6130 gamblers were involved in violence as a result

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of their gambling during the period of their gambling problem. Using the average period of problem gambling of 8.9 years, there were estimated of 689 incidents of gambling-related violence in a year, and 551 incidents after the 80 per cent causality adjustment.

To estimate a lower value for the harm caused, the Commission has used \$5000 per incident and for a higher estimate, the Commission has used \$15 000. This results in a total cost of \$2.8 million to \$8.3 million nationally.

### *Depression*

Many regular gamblers, and 96 per cent of problem gamblers in counselling reported suffering gambling-related depression at least some of the time. The *National Gambling Survey* indicates that some 49 400 people ‘often’ suffer from depression, and 21 200 are ‘always’ depressed in the last 12 months as a result of their gambling.

For those suffering depression ‘often’, the Commission has:

- taken the number of people estimated to suffer from depression ‘often’ (49 400);
- adjusted the number of gamblers using the causality adjustment (80 per cent); and
- for a lower estimate used a value of \$5000 each and for a higher estimate a value of \$15 000 each.

For those suffering depression ‘always’, the Commission has:

- taken the number of people estimated to suffer from depression ‘always’ (21 200);
- removed, from the number reporting that they were ‘always’ depressed, the number reporting serious thoughts of suicide (which are accounted for separately) (12 900).
- adjusted the number of gamblers using the causality adjustment (80 per cent); and
- for a lower estimate used a value of \$5000 each and for a higher estimate a value of \$15 000 each.

The range of values placed on depression based on the lower of the compensation schedules is — \$5000 dollars each as a lower estimate, and \$15 000 each for an upper estimate (table J.9).



**Table J.9 Estimates for depression, 1997-98**

	<i>Number of people (survey data)</i>	<i>Adjusted number of people<sup>a</sup></i>	<i>Per person cost assumption</i>		<i>Total cost</i>	
			<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
		Number	\$	\$	\$ million	\$ million
Rarely	63 500	50 800	ne	ne	ne	ne
Sometimes	71 900	57 520	ne	ne	ne	ne
Often	49 400	39 520	5 000	15 000	198	593
Always <sup>b</sup>	8 300	6 640	5 000	15 000	33	100
Total					231	692

<sup>a</sup> Includes causality adjustment. <sup>b</sup> Excludes those reporting suicide ideation.

Source: PC estimates

This results in an estimated range for the costs of gambling-related depression of \$231 million to \$692 million in a year.

Depression can also involve a range of medical costs, either directly or indirectly, by affecting the health of the sufferer. The Commission has not attempted to estimate any of these additional costs.

### *Suicides*

Thoughts of suicide and attempted suicides are considerably higher among the population of problem gamblers than for the population as a whole. This has been observed in other studies. In Canada, the National Council of Welfare (1996) said:

Suicide attempts among pathological gamblers occur much more frequently than among the general population. A Quebec study of college students found that 26.8 per cent of pathological gamblers had attempted suicide, compared to 7.2 per cent of college students with no gambling problems. Among a sample of Gamblers Anonymous members in the United States, it was found that 48 per cent had considered suicide and 13 per cent had attempted it. In fact, compared to other addictive disorders, the rate of attempted suicide is highest among pathological gamblers.

Lesieur (1992) was reported in Goodman (1994) as finding that pathological gamblers have a suicide rate five to ten times higher than the rest of the population. Lesieur (1998) has also found that spouses of problem gamblers have suicide attempt rates that are three times higher than those reported by the general population.

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### *Suicide ideation*

The Commission's *National Gambling Survey* indicated that some 12 900 gamblers seriously contemplated suicide last year as a result of their gambling problems.

In estimating the costs, as before, the Commission adjusted the number for causality and excluded people estimated to have attempted suicide as a result of gambling in the last 12 months. This results in an estimate of almost 8000 gamblers.

Drawing on the information on compensation payments available in Australia for psychological or psychiatric disorders, the Commission has placed a range of values on suicide contemplation and attempted suicide of \$15 000 (the upper lever of the lower range of compensation) for a lower estimate and \$30 000 (the lower bound of the higher range of compensation payments) for an upper estimate. It again considers these to be conservative.

This results in an estimated annual cost for those seriously contemplating suicide of \$120 million to \$239 million.

### *Attempted suicide*

Information on attempted suicides was not available from the *National Gambling Survey*, but the survey of problem gamblers in counselling indicated that 13.8 per cent had attempted suicide at some time in the course of their gambling problem. In Chapter 7, the Commission looks at the statistics concerning attempted suicides in Australia, and estimates that some 2935 suicides were attempted in 1997-98 as a result of gambling problems. Once adjusted for 'causality', this leaves 2348 suicide attempts. To place a cost on these attempts, including the associated depression leading up to the attempt, the Commission has used the range of compensations from the higher of the compensation schedules — \$30 000 to \$50 000.

This results in an estimated annual Australia-wide of \$70 million to \$117 million.

### *Impact on families of attempted suicide*

Attempted suicides have considerable impacts on family members. The Commission has estimated a cost for other family members and for parents of gambling related suicide attempts. The following information was used:

- 2348 suicide attempts (including the causality adjustment);
- 2.3 immediate family members affected (other than the gambler);
- 1.8 parents;

- a range of costs for the immediate family members of \$15 000 to \$30 000; and
- a range of costs for the parents of zero to \$5000 each.

This results in an estimate of costs for the immediate family of \$81 million to \$161 million, and an estimate of costs for the parents of zero to \$21 million.

In chapter 7 the Commission estimated that there could be 35 to 60 effective suicides annually as a result of problem gambling. The Commission has not attempted to measure the cost to the families of these suicides, though it would be substantial.

### *Summary of intangible estimates*

Table J.10 summarises the estimates of the intangible costs of problem gambling.

**Table J.10 Estimating the intangible costs associated with gambling, (1997-98)**

	<i>People<sup>a</sup></i>	<i>Per person cost assumption</i>		<i>Total cost</i>	
		<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
	No.	\$	\$	\$ million	\$ million
<i>Emotional distress of immediate family members<sup>a</sup></i>					
Moderate PGs	190 901	ne	ne	ne	ne
Severe PGs	151 129	5 000	15 000	756	2 267
<i>Emotional distress of parents<sup>b</sup></i>					
Moderate PGs	168 200	ne	ne	ne	ne
Severe PGs	133 200	0	5,000	0	666
<i>Breakup of a relationship<sup>c</sup></i>					
Gambler	28 800	5 000	15 000	144	432
Other party	28 800	5 000	15 000	144	432
<i>Divorce and separation</i>					
Gambler and family	12 107	15 000	30 000	182	363
<i>Violence</i>	551	5 000	15 000	2.8	8.3

**PG** problem gambler. **ne** not estimated. **a** Excludes breakdown of a relationship, divorce and separation and attempted suicide numbers who are estimated separately. **b** Excludes attempted suicide group who are estimated separately, and parents for whom the gambler reported 'no effect at all'. **c** Excludes divorce and separation numbers. **d** Excludes subsequent suicide groups. **e** Excludes attempted suicide group. All numbers include the causality adjustment.

Source: PC estimates.

Table J.10 **continued**

	<i>People<sup>a</sup></i>	<i>Per person cost assumption</i>		<i>Total cost</i>	
		<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
	No.	\$	\$	\$ million	\$ million
<i>Depression<sup>d</sup></i>					
Rarely to sometimes	108 320	ne	ne	ne	ne
Often to always	46 160	5 000	15 000	231	692
<i>Seriously thought of suicide<sup>e</sup></i>					
Gambler	7 972	15 000	30 000	120	239
<i>Attempted suicide</i>					
Gambler	2 348	30 000	50 000	70	117
Immediate family	5 377	15 000	30 000	81	161
Parents	4 212	0	5 000	0	21
<i>Effective suicides</i>	35 – 60	ne	ne	ne	ne

**PG** problem gambler. **ne** not estimated. **a** Excludes breakdown of a relationship, divorce and separation and attempted suicide numbers who are estimated separately. **b** Excludes attempted suicide group who are estimated separately, and parents for whom the gambler reported 'no effect at all'. **c** Excludes divorce and separation numbers. **d** Excludes subsequent suicide groups. **e** Excludes attempted suicide group. All numbers include the causality adjustment.

Source: PC estimates.

## Treatment and other costs

In addition to the costs borne by the problem gambler and his or her family, governments fund a range of services to assist problem gamblers. Chapter 16 reviews the provision of such services. The Commission estimated that in 1997-98, governments provided \$20 million for gambling counselling services throughout Australia.

Other costs that have not been estimated include the costs of treatment provided by a range of voluntary agencies, and non-government contributions to the cost of treatment. In addition, governments are increasingly funding research into gambling and problem gambling, together with information for the general community on the risks of problem gambling. These costs have also not been included in the Commission's estimates.

## Adding up the 'measurable' costs

In total, the above estimates of costs that problem gambling imposes annually amount to \$1.8 billion to \$5.6 billion (excluding the unmeasurable costs) (table J.11).

Transfers within society as a result of problem gambling are much smaller, at an estimated \$35 to \$62 million annually (table J.12).

**Table J.11 Costs of problem gambling**

	low	high
	\$m	\$m
<i>Financial</i>		
Bankruptcy	1.3	1.3
<i>Productivity and employment</i>		
Productivity loss at work	21	150
Productivity loss outside work	7.2	50
Job change		
earnings loss	24	24
employee job search	13	13
employer staff replacement cost	22	22
<i>Crime and legal</i>		
Cost of police incidents	3.2	3.2
Court cases	5.6	5.6
Jail costs	5.1	5.1
<i>Personal and family</i>		
Emotional distress of immediate family		
Moderate problem gamblers	ne	ne
Severe problem gamblers	756	2 267
Emotional distress of parents		
Moderate problem gamblers	ne	ne
Severe problem gamblers	0	666
Breakup of a relationship <sup>a</sup>	288	864
Financial cost of divorce	2.8	2.8
Emotional cost of divorce	126	253
Cost of violence	2.8	8.3
Depression <sup>b</sup>	231	692
Thought of suicide <sup>c</sup>	120	239
Attempted suicide	70	117
Impact on immediate family	81	161
Impact on parents	0	21
<i>Treatment costs</i>		
Gambling counselling services	20	20
<b>TOTAL OF ABOVE</b>	<b>1800</b>	<b>5586</b>

**a** Excluding those that lead to divorce or separation. **b** Excluding those reporting thoughts of suicide. **c** Excluding estimated attempted suicides.

Source: PC estimates.

**Table J.12 Value of annual transfers as a result of problem gambling**  
(\$ million, 1997-98)

	low	high
Debts	26	26
Unemployment payments	4.1	4.1
Value of money obtained illegally	4.9	31
<b>TOTAL</b>	<b>35</b>	<b>62</b>

Source: PC estimates.

## Social costs by mode of gambling

The social costs presented in table J.11 have been allocated to the different modes of gambling on the basis of significance of that mode in problem gamblers' expenditure (see chapter 5). Because gaming machines account for some 76 per cent of the total amount of money spent by problem gamblers in 1997-98, 76 per cent of the social costs have been allocated to that mode (table J.13).

**Table J.13 Social costs of gambling by mode of gambling (1997-98)**

	<i>Share of expenditure in that mode accounted for by problem gamblers</i>	<i>Expenditure by problem gamblers</i>	<i>Social costs of gambling</i>
	%	\$ million	\$ million
Wagering	33.1	529	267 — 830
Lotteries	5.7	68	34 — 106
Scratchies	19.1	47	24 — 74
Gaming machines	42.3	2 710	1 369 — 4 250
Casino gaming	10.7	96	48 — 150
Other	25.0	112	57 — 176
<b>All gambling</b>	<b>33.0</b>	<b>3 562</b>	<b>1 800 — 5 586</b>

Source: Commission estimates.