

# Counting the Cost

## Inquiry into the Costs of Problem Gambling

**Final Report  
December 2012**



Victorian  
**Competition & Efficiency**  
Commission

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The Victorian Competition and Efficiency Commission (VCEC), which is supported by a secretariat, provides the Victorian Government with independent advice on business regulation reform and opportunities for improving Victoria's competitive position.

VCEC has three core functions:

- reviewing regulatory impact statements, measuring the administrative burden of regulation and business impact assessments of significant new legislation
- undertaking inquiries referred to it by the Treasurer, and
- operating Victoria's Competitive Neutrality Unit.

For more information on the Victorian Competition and Efficiency Commission, visit our website at: [www.vcec.vic.gov.au](http://www.vcec.vic.gov.au)

## **Disclosure of interest**

The Commissioners have declared to the Victorian Government all personal interests that could have a bearing on current and future work. The Commissioners confirm their belief that they have no personal conflicts of interest in regard to this inquiry.





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13 December 2012

Mr Kim Wells MP  
Treasurer of Victoria  
1 Treasury Place  
MELBOURNE VIC 3002

Dear Treasurer

**VCEC Inquiry into the Social and Economic Costs of Problem Gambling**

In accordance with the terms of reference received by the Commission on 14 June 2012, we have pleasure in submitting the Commission's final report *Counting the Cost*.

Yours sincerely

A handwritten signature in black ink, appearing to read "Bill Mountford".

Bill Mountford  
Presiding Commissioner

A handwritten signature in black ink, appearing to read "M. Butlin".

Dr Matthew Butlin  
Chair



## Terms of reference

### Inquiry into The Social and Economic Costs of Problem Gambling in Victoria

I, Kim Wells MP, Treasurer of Victoria, pursuant to section 4 of the State Owned Enterprises (*State Body – Victorian Competition and Efficiency Commission*) Order ('the Order') hereby direct the Victorian Competition and Efficiency Commission ('the Commission') to conduct an inquiry into The Social and Economic Costs of Problem Gambling in Victoria.

## Background

The liberalisation of Victoria's gambling laws in the early 1990s resulted in the development of a substantial and important industry. Today, the gambling industry plays a significant role in the Victorian economy, contributing to employment, tourism, productivity, investment and state revenue.

It has been estimated that the net benefit to the community from Australia's gambling industry in 2008-09 ranged between \$3.7 and \$11.1 billion (Productivity Commission 2010). Given the relative size of our industry, Victoria's share of the net benefit is substantial.

There is, however, strong evidence that gambling can adversely affect some individuals, their families and friends, and communities. The number of people affected by problem gambling is likely to be significantly greater than the number of problem gamblers in Victoria. The impacts associated with problem gambling include health and emotional problems, family breakdown, financial hardship and gambling-related crime, all of which create significant costs for the individuals, the community, business and government at all levels.

While many of these costs are known, the full impact of problem gambling may not always be readily apparent. Government receives the financial benefit from the licensing and taxation of the gambling industry while the costs created by problem gambling are more widespread, falling on, amongst others, governments, community organisations, employers, families and individuals.

The Victorian Government has, therefore, committed to undertake an inquiry into the extent of the social and economic costs of problem gambling in Victoria.

The aim of this inquiry is to inform policy makers and the community about the true costs of problem gambling and where they fall. This will help ensure that government, the community and industry have the information and incentives necessary to reduce problem gambling, to develop harm reduction strategies that are based on robust evidence, targets and performance indicators, and thereby increase the net benefit from the conduct of gambling for all Victorians.

## Scope of the inquiry

The Commission is to inquire into and report on the economic and social costs of problem gambling in Victoria, including:

- a) the cost of providing direct services designed specifically for problem gamblers and their families and friends;
- b) any other indirect costs to the social welfare system;
- c) costs associated with impacts on mental and physical wellbeing for both individuals and the health system;
- d) costs to the justice system, including the cost of detecting, prosecuting and punishing gambling-related crime; and
- e) costs to business, including lost productivity and the impact of gambling-related crime.

The Commission, as it considers relevant and appropriate for the above scope of the inquiry, should have regard to:

- previous studies that have examined the costs of problem gambling, particularly the Productivity Commission's 2010 *Inquiry Report on Gambling*;
- the differential costs of problem gambling across geographical areas of Victoria, for example between metropolitan Melbourne and regional Victoria, or between local government areas; and
- the costs of problem gambling to all sectors of the community, including the gambling industry and the Commonwealth Government.

## Inquiry process

In undertaking this inquiry, the Commission is to have regard to its objectives and operating principles as set out in section 3 of the Order. The Commission must also conduct the inquiry in accordance with section 4 of the Order.

The Commission is to consult with the gambling industry, responsible gambling and welfare organisations, health and community groups, business and relevant Victorian and Commonwealth Government departments and agencies.

The Commission should draw on the knowledge and expertise of relevant Victorian Government departments and agencies, and may conduct special surveys or hold public hearings at its discretion.

The Commission is expected to produce the following documents:

- an issues paper at the beginning of the inquiry process;
- a draft report containing analysis and initial findings for public comment; and
- a final report after the receipt of public submissions to be provided to me as soon as possible, but not later than 6 months after receipt of these terms of reference.

KIM WELLS MP  
Treasurer

Received: 14 June 2012

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## Abbreviations

ABS	Australian Bureau of Statistics
ACG	Allen Consulting Group
AGC	Australasian Gaming Council
AHURI	Australian Housing and Urban Research Institute
AIHW	Australian Institute of Health and Welfare
APS	Australian Psychological Society
ATM	Automatic Teller Machine
BIA	Business Impact Assessment
CALD	Culturally and Linguistically Diverse
CPGI	Canadian Problem Gambling Index
CPI	Consumer Price Index
CSF	Community Support Fund
DALY	Disability-Adjusted Life Years
DH	Department of Health (Vic)
DHS	Department of Human Services (Vic)
DOJ	Department of Justice (Vic)
DSM	Diagnostic and Statistic Manual of Mental Disorders
EGM	Electronic gaming machine
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs (Cth)
GH	Gambler's Help
IGB	Inspector-General in Bankruptcy
ITSA	Insolvency Trustee Service Australia
LGA	Local government area
MAV	Municipal Association of Victoria
MCC	Moreland City Council
Metro	Metropolitan
NGS	National Gambling Survey
NODS	National Opinion Research Centre Diagnostic and Statistical Manual of Mental Disorders Screen
NORC	National Opinion Research Centre (US)
NSW	New South Wales
NT	Northern Territory
OESR	Office of Economic and Statistical Research
PC	Productivity Commission
PDRSS	Psychiatric Disability Rehabilitation and Support Services
PGSI	Problem Gambling Severity Index

RIS	Regulatory Impact Statement
SAAP	Supported Accommodation Assistance Program
SACES	South Australian Centre for Economic Studies
SCCA	Survey of Clients of Counselling Agencies
SEIA	Social and Economic Impact Assessment
SEIFA	Socio-Economic Indexes for Areas
SOGS	South Oaks Gambling Screen
US	United States
VAGO	Victorian Auditor-General's Office
VCAT	Victorian Civil and Administrative Tribunal
VCEC	Victorian Competition and Efficiency Commission
VCGLR	Victorian Commission for Gambling and Liquor Regulation
VGS	Victorian Gambling Study
VGSI	Victorian Gambling Screen instrument
VLGA	Victorian Local Governance Association
VRGF	Victorian Responsible Gambling Foundation

# Glossary

<b>Causality</b>	The extent to which an impact can be attributed to problem gambling as opposed to other conditions.
<b>Comorbidity</b>	The occurrence of more than one condition or disorder at the same time.
<b>Counterfactual</b>	The extent to which an impact would have occurred in the absence of gambling.
<b>Direct costs</b>	Costs directly associated with preventing or addressing the harms associated with problem gambling. These include the costs of treatment services and expenditure on problem gambling-related policy, regulatory, research and education programs and strategies.
<b>Economic impacts</b>	The use of resources as a result of, or in response to, the harms of problem gambling, and the financial harms suffered by gamblers and their family and friends. These are tangible impacts which are primarily monetary in nature.
<b>Electronic gaming machine</b>	Machines used for gaming purposes (sometimes referred to as poker machines or 'pokies').
<b>Excess expenditure</b>	Any gambling expenditure in excess of the normal level of gambling expenditure.
<b>Expenditure</b>	The net amount lost (that is, the amount wagered less the amount won) by people who gamble.
<b>False negative</b>	Survey respondents incorrectly identified as not being problem gamblers.
<b>False positive</b>	Survey respondents incorrectly identified as being problem gamblers.
<b>Gambling</b>	Staking money on uncertain events driven by chance. The key gambling activities are electronic gaming machines, table games, racing, lotteries and sportsbetting.
<b>Gaming</b>	All legal forms of gambling other than wagering — including gaming machines, table games and lotteries.
<b>Incidence</b>	The number of new cases of problem gambling developed over a fixed period. A measure of flow, rather than stock.
<b>Indirect costs</b>	The costs incurred as a result of problem gambling, not specifically directed at preventing or addressing problem gambling. These include justice, health and human services costs.

<b>Normal gambling expenditure</b>	A level of expenditure where gamblers are not driven by compulsion, assumed to be equal to the average expenditure by non-problem gamblers.
<b>Problem Gambling Severity Index</b>	A nine-item diagnostic instrument that is used to determine whether a respondent is a problem gambler.
<b>Prevalence</b>	The total number of problem gamblers in a population. A measure of stock, rather than flow.
<b>Problem gambling</b>	Difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community. (SACES 2005a, i)
<b>Screening</b>	Asking questions of persons about their gambling behaviour, to identify problem gambling cases for more detailed assessment and possible treatment.
<b>Service mapping</b>	A summary of service delivery — including patterns of use and demand, and client pathways into, across and out of services — used to examine inter- and intra-service relationships.
<b>Social impacts</b>	The wellbeing impacts of problem gambling, for example, the impact of depression. These impacts are primarily non-monetary in nature.
<b>Wagering</b>	Legal gambling on racing and sports.

## Key messages

There are a number of obstacles to quantifying the true social and economic costs of problem gambling:

- there are significant data gaps, methodological issues and a lack of consistency among existing data sources
- many of the costs are intangible and difficult to value
- problem gambling is often closely associated with other mental and physical issues, raising the question of causality.

Taking into account these obstacles, the Commission estimates that the social and economic costs of problem gambling in Victoria were likely to be between \$1.5 billion and \$2.8 billion in 2010-11.

- The vast majority of the quantifiable costs come from two sources: costs associated with excess gambling expenditure by problem gamblers (\$1 billion to \$1.4 billion); and the intangible costs associated with impacts on mental wellbeing for problem gamblers and their families (\$400 million to \$1.2 billion).
- A relatively small proportion of the population — around 30 000 problem gamblers and their families — therefore bear the majority of the costs.

Victorian Government spending on problem gambling is also significant. Direct and indirect costs to the Victorian Government, including costs of treatment services and costs to the health, human service and justice systems were estimated to be between \$74 million and \$147 million in 2010-11.

There is limited information on the geographical distribution of problem gambling costs. Local characteristics may drive differences in the prevalence of problem gambling and therefore costs of problem gambling across geographical regions.

- In metropolitan regions, the number of electronic gaming machines, the level of total expenditure, and measures of socioeconomic disadvantage align with problem gambling prevalence rates. However, the same observation cannot be made consistently across regional Victoria.

To improve the information base for policy development, decisions on industry regulation and targeting of service delivery, the Commission recommends the Victorian Government articulate its priorities for problem gambling-related research, focusing on the following areas:

- better identification of people in the health, social welfare and justice systems who have gambling problems through improved screening of clients
- better understanding the nature and extent of harms suffered by problem gamblers and their families through targeted studies of problem gamblers
- evaluating the effectiveness of measures designed to reduce harms from problem gambling, including treatment programs and regulatory measures.



# **1 Report into the Social and Economic Costs of Problem Gambling**

## **1.1 Context and why this inquiry is important**

### **1.1.1 Gambling has costs and benefits to society**

The liberalisation of Victoria's gambling laws in the early 1990s resulted in substantial growth in gambling expenditure and the gambling industry. The expansion in gambling activity has generated benefits and costs for the Victorian economy and community. Some of the benefits include the enjoyment derived by consumers of gambling services, the creation of tourist attractions and funds generated for public and community services.

At the same time, gambling can adversely affect some individuals. 'Gambling becomes problematic when it harms the gambler, their family and friends and/or the community' (VAGO 2010, 5). A characteristic of people with gambling problems is that they spend more on gambling than they intended. But it's not just about money losses — problem gamblers can suffer from health issues, find it difficult to hold down a job, and struggle to maintain relationships. Effects can also be felt by family members, friends, businesses, the community and government at all levels.

The impacts of problem gambling are recognised in the *Gambling Regulation Act 2003* (Vic), which seeks to minimise the harm caused by problem gambling and accommodate those who gamble without harming themselves or others (s.1.1.(2)(a)).

### **1.1.2 The research and evidence base on costs is incomplete**

There has been significant public debate about the true costs of problem gambling and where they fall. The Productivity Commission's (PC's) 1999 and 2010 reports into gambling remain the definitive contributions to the literature on gambling, and the impacts of problem gambling in Australia (although they do not identify Victorian-specific impacts) (PC 1999; PC 2010).

However, information on the costs of problem gambling in Victoria is fragmented and incomplete. A recent Victorian Auditor-General's Office (VAGO) report found that 'unlike other public health issues such as alcohol abuse, problem gambling is a relatively new field and lacks a substantial evidence base' (VAGO 2010, 13).

The Commission is not aware of any recent Victorian-specific cost estimates, and the costs to the community, including to the Victorian Government, are not well understood. This is despite 40 per cent of all government-commissioned Australian research into gambling focusing on understanding the 'impacts' and the 'nature and extent of gambling' since 2000 (PC 2010, 18.16).

It is against this background that in July 2012, the Victorian Government directed the Victorian Competition and Efficiency Commission (the Commission) to undertake an inquiry into the social and economic costs of problem gambling in Victoria. The Commission has provided Victorian-specific cost estimates of the impact of problem gambling and has suggested priorities for research related to the social and economic costs of problem gambling.

### 1.1.3 Why better information is needed

There are a number of possible policy, regulatory and service delivery-related uses of information regarding the costs of problem gambling.

For the Victorian Government, possible uses of information include:

- establishing appropriate regulation for the gambling industry, including effective harm minimisation policies, and enabling better informed decisions by relevant regulators
- delivering efficient and effective treatment services for individual gamblers and their family members
- understanding how problem gambling contributes to costs on the health, social welfare and justice systems.

For not-for-profit organisations, possible uses include understanding the impact of problem gambling on demand for their emergency relief services, and better integrating these services with problem gambling treatment services.

For local governments, possible uses include:

- developing submissions to the regulator regarding the local impacts of electronic gaming machine (EGM) applications
- administering planning regulations related to applications for EGM venues
- developing local policies and initiatives to address problem gambling.

## 1.2 The Commission's terms of reference

The stated aim of the inquiry is to inform policy makers and the community about the true costs of problem gambling and where they fall. The terms of reference require the Commission to inquire and report on the social and economic costs of problem gambling in Victoria, including:

- the cost of providing direct services designed specifically for problem gamblers and their families and friends
- any other indirect costs on the social welfare system
- costs associated with impacts on mental and physical wellbeing for both individuals and the health system
- costs to the justice system, including the cost of detecting, prosecuting and punishing gambling-related crime
- costs to business, including lost productivity and the impact of gambling-related crime.

In addition, the Commission was asked to consider the geographic distribution of costs and the costs to all sectors of the community, including the gambling industry and the Commonwealth Government.

In line with its terms of reference, the Commission has not measured the benefits of gambling. These include the gambling industry's contribution to employment, tourism, productivity, investment and State revenue. The Commission can therefore make no comment on the net costs or benefits of gambling in Victoria. The Commission notes the

PC's finding that the net benefit to the community from Australia's gambling industry in 2008-09 ranged between \$3.7 billion and \$11.1 billion (PC 2010, 6.1).

## 1.2.1 Structure of the Report

The report sets out the context to the inquiry and summarises the Commission's approach and its key insights and observations. The report includes appendices which outline in detail the Commission's framework (appendix B) and provide insights into the differential costs of problem gambling across geographic areas of Victoria (appendix I). Other appendices outline data and methodologies for estimating the following cost categories:

- Costs to the State, local and Commonwealth governments directly associated with problem gambling (appendix C). This expenditure is focused on preventing or addressing the harms associated with problem gambling and includes the costs of treatment services and expenditure on problem gambling-related policy, regulatory, research and education programs and strategies.
- Victorian Government indirect health and human services sector costs (appendix D). This expenditure is not specifically directed at preventing or addressing problem gambling, but rather is incurred as a result of problem gambling.
- Victorian Government indirect costs to the justice system, including the cost of detecting, prosecuting and punishing gambling-related crime (appendix E).
- The cost of impacts on mental and physical wellbeing for problem gamblers and their families (appendix F).
- Costs to business, including costs of lost productivity at work, gambling-related crime and regulatory costs (appendix G).
- Costs associated with excess expenditure by problem gamblers (appendix H).
- Other costs, including job change costs, productivity losses outside work, and the costs of bankruptcy (appendix J).

Appendix A summarises the inquiry process leading up to the report.

## 1.3 The Commission's framework

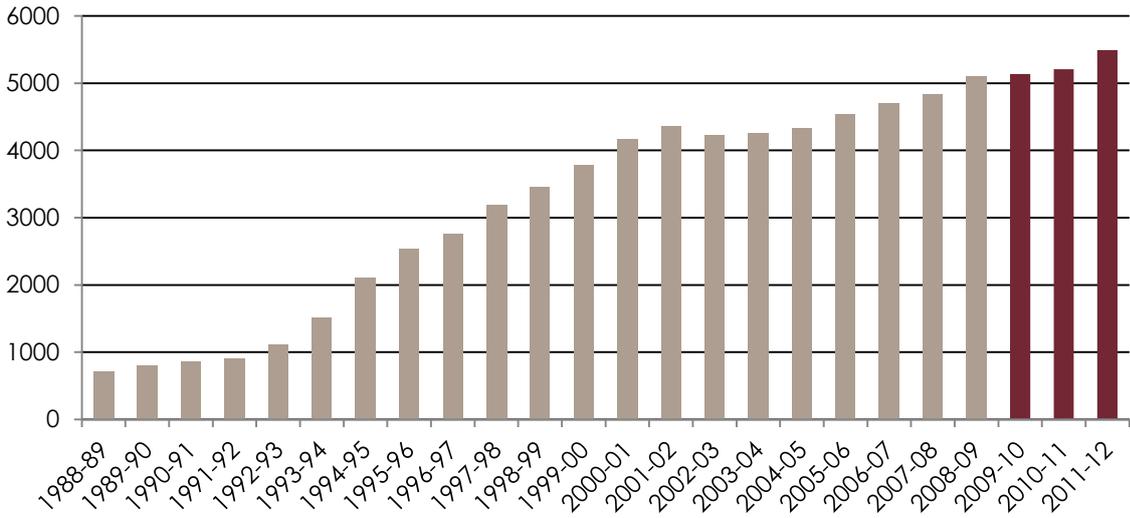
The Commission's analysis is based on taking a 2010-11 'snapshot' of the Victorian gambling industry. Gambling is defined as an entertainment activity based on 'staking money on uncertain events driven by chance, with the potential to win more than staked' (PC 2010, 1.4). Gambling expenditure in Victoria was approximately \$5.2 billion in 2010-11 and \$5.5 billion in 2011-12 (figure 1.1).<sup>1</sup> The Victorian gambling industry is maturing, reflecting a stabilisation in EGM expenditure (VCGLR, sub. 25, p. 4). EGMs account for around half of gambling expenditure, while casino gaming accounts for around 25 per cent (VCGLR, sub. 25, p. 4).<sup>2</sup>

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<sup>1</sup> Gambling expenditure is the net amount lost (that is, the amount wagered less the amount won) by people who gamble.

<sup>2</sup> VCGLR data shows that EGM expenditure for the period July 2012 to October 2012 is approximately \$60 million lower than the corresponding 2011 period (VCGLR 2012d).

**Figure 1.1 Victorian nominal gambling expenditure (\$ million)**



Note: Data for 2009-10, 2010-11 and 2011-12 is from VCGLR expenditure data.

Sources: OESR 2011; VCGLR 2010; VCGLR 2011b; VCGLR 2012a.

The PC noted that ‘different gambling forms pose varying risks for people, with gaming machines posing the greatest problems’ (PC 2010, 5.22). However, the gambling industry is changing in ways that are likely to impact future cost estimates and could change this situation. In particular, internet and interactive gambling (mobile phone, wireless devices and interactive television) are fast growing forms of gambling (Gainsbury and Blaszczynski 2011, 2). The total expenditure on online gambling (legal and illegal) in Australia in 2010 was approximately \$1.6 billion (DBCDE 2012, 27).

While expenditure on online gambling is increasing, the research literature is unclear whether online gambling creates more problems or if it is simply another choice of gambling form (a substitute) that is more appealing to existing problem gamblers (DBCDE 2012). In particular, it is unclear whether problem gamblers gamble online and exacerbate existing problems, or whether particular factors, such as availability, use of credit and speed of play, lead to new and additional gambling problems.

As noted, the Commission's estimates are at a point in time (in this case, cost estimates for 2010-11). The Commission understands that costs and harms incurred while people are gambling problematically can continue even after they stop gambling. The Commission acknowledges that costs from problem gambling accrue over time. However, it has not found data, or been able to devise an appropriate methodology with which to estimate these costs over time.

**1.3.1 The Commission’s approach to estimating costs**

The Commission found that there is no single accepted best method for estimating the social and economic costs of problem gambling. The method chosen depends on the purpose of the exercise and the availability of data, as well as judgements about the extent and valuation of intangible impacts. There are also different views from the problem gambling literature and inquiry participants on the best method for calculating the costs of problem gambling.

The Commission has used the impacts identified by the PC as a foundation for its framework in this study (PC 1999). The Commission also identified some additional

impacts based on costs listed in the terms of reference and from information in submissions and consultations.

This approach involved estimating the monetary cost associated with each identified harm of problem gambling, whilst seeking to adjust for factors such as causality and the counterfactual. These costs were then summed across the range of harms. The costs of government programs and services incurred as a result are also included. The Commission faced a number of challenges in arriving at its estimates and these are outlined in box 1.1.

The Commission has sought to provide Victorian-specific cost estimates of the impact of problem gambling on different groups using relatively recent Victorian data sets. In particular, the Commission has drawn extensively on the Victorian Gambling Study<sup>3</sup> (VGS) and unpublished Gambler's Help data (DOJ 2009b). Wherever possible, the Commission has sought to be 'internally consistent' through the use of a small number of relatively robust data sets and the adoption of a common methodology for measuring costs across categories. Where Victorian data were not available or suitable, the Commission drew from the PC's gambling surveys (PC 1999). The key exception to this approach was in estimating costs to the health and human service systems, where data gaps are most prevalent. For these types of costs, the Commission relied upon aggregate expenditure figures to inform cost estimates.

### **Box 1.1 Challenges in estimating the costs of problem gambling**

As noted by Clubs Australia, there are challenges that need to be addressed to arrive at a robust set of cost of problem gambling estimates:

- Lack of sufficiently reliable data — regarding the prevalence of problem gambling and its impacts on different groups.
- The issue of causality — taking into account the extent to which various adverse impacts can be attributed to gambling problems as opposed to other factors such as comorbidities.
- A framework for the taxonomy and measurement of costs — there is no consensus on how best to categorise and measure impacts, including overcoming disagreements about the definition of private and social costs and the valuation of intangible costs.
- Establishment of a valid counterfactual — provides policy makers with information about the extent to which social costs can be reasonably addressed through policy interventions.

These, and other conceptual issues, are discussed in appendix B.

*Source: Clubs Australia, sub. 12, p. 7.*

Figure 1.2 illustrates the Commission's cost framework. In responding to the terms of reference, the Commission defined economic and social impacts in the following terms.

Economic impacts reflect the use of resources as a result of, or in response to, the harms of problem gambling, and the financial harms suffered by gamblers and their family and

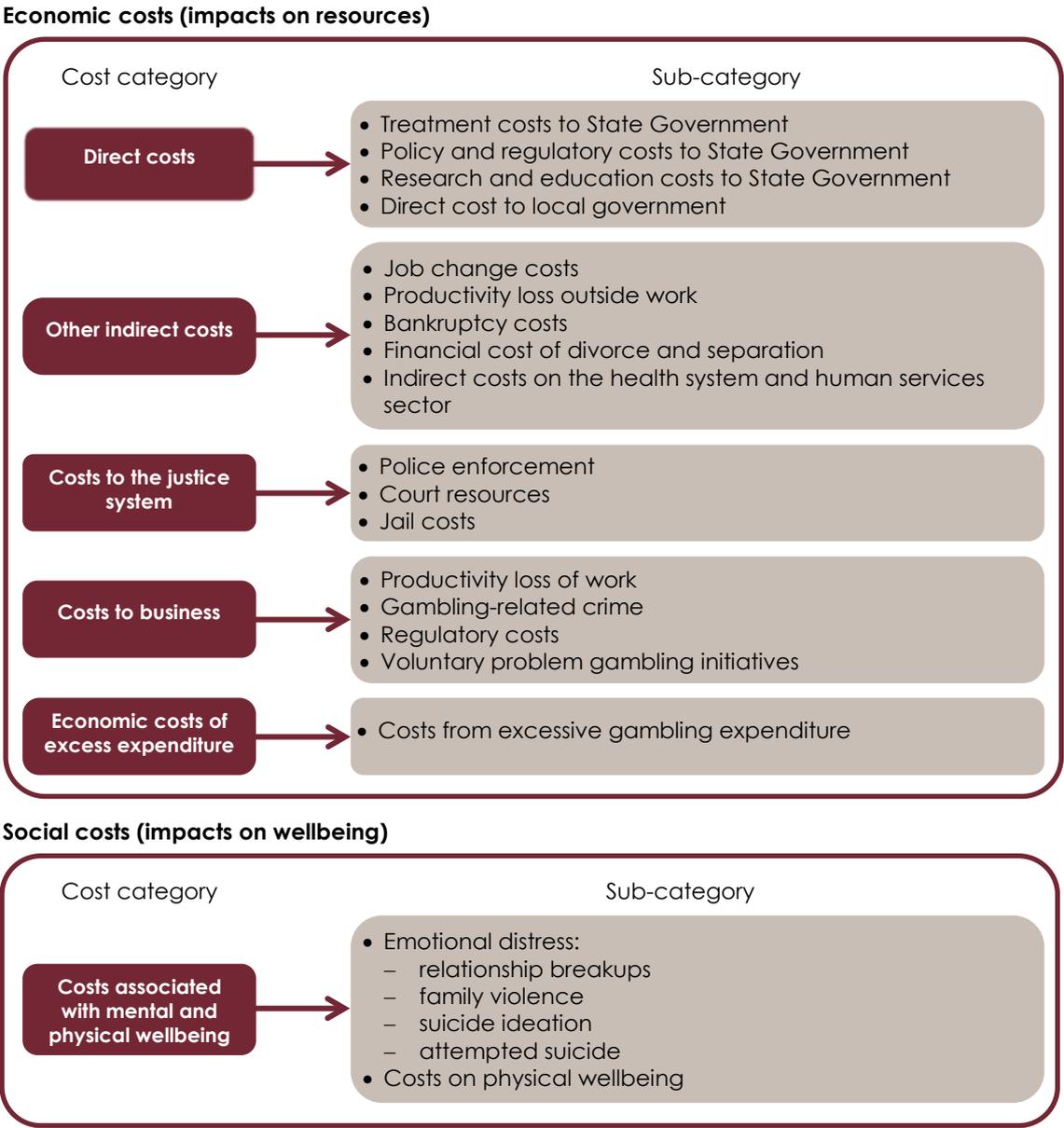
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<sup>3</sup> The VGS had 15 000 participants. The sample was stratified to reflect the adult population across each of the eight Victorian government regions. Data was weighted to ensure that the sample was as close to the Victorian population as possible. Tests of statistical significance were conducted and 95 per cent confidence intervals reported. For example, the 95 per cent confidence interval for the 'problem gambler' risk category was reported at 0.55 to 0.90 (DOJ 2009b, 28).

friends. These are tangible impacts which are primarily monetary in nature. While there is some argument about the appropriate use of these impacts in policy analysis, and the most appropriate way to calculate them, they do have a clear monetary value and valuation is (relatively) straightforward compared to the valuation of social impacts.

Social impacts refer primarily to the wellbeing impacts of problem gambling, for example, the impact of depression. As these impacts are primarily non-monetary in nature, imputing a monetary value to these social costs is both technically challenging and controversial (Corangamite Shire Council, sub. 19; Clubs Australia, sub. 12; Australasian Gaming Council, sub. 28). Notwithstanding these controversies, under the Commission's terms of reference, it is necessary to make a judgement about the monetary value of these impacts. Furthermore, from a policy perspective, the core issue for wellbeing is not necessarily the valuation, but the number of persons impacted.

**Figure 1.2 Cost framework: cost categories and sub-categories**



Source: Commission analysis.

### 1.3.2 Defining and measuring the prevalence of problem gambling

Information on the prevalence of problem gambling and its associated impacts in the Victorian community is a key input to the Commission's approach to estimating the costs of problem gambling.

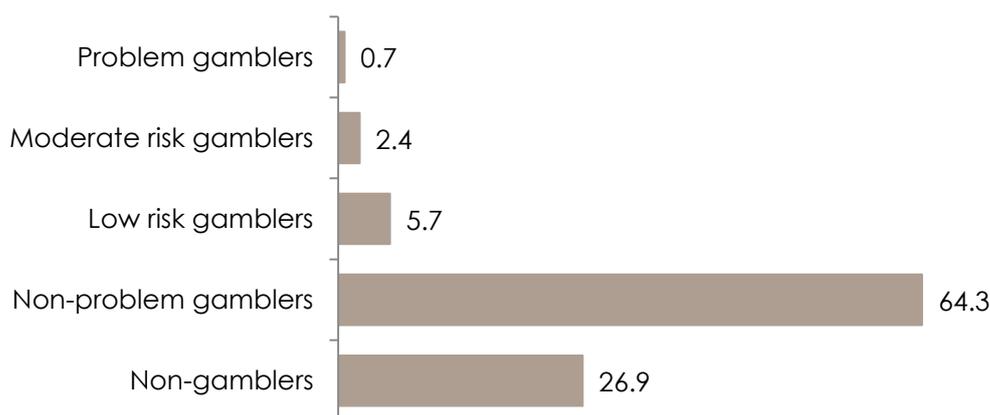
The Commission adopted the national definition of problem gambling for the purposes of the inquiry:

Problem gambling is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community. (SACES 2005a, i)

Consistent with this definition, the VGS found that 0.7 per cent of Victorian adults (or just over 30 000 people) are 'problem gamblers', defined as those 'who have experienced adverse consequences and may have lost control of their behaviour' (DOJ 2009a, 1). A further 2.4 per cent are moderate risk gamblers, who may or may not have experienced these consequences (figure 1.3).

Maribyrnong City Council noted that 'both gender and age are important in determining the social and economic costs of problem gambling and determining how to better tailor programs and services to assist problem gamblers' (sub. DR37, p. 2). Of those classified as problem gamblers, around 66 per cent were male and 34 per cent were female (DOJ 2009b). However, women are more than twice as likely as men to present to problem gambling counselling services due to concerns arising from the impact of another person's gambling, most notably their partner (DOJ 2007, 121). The highest percentage of problem gamblers were recorded in the 35-49 age group (around 32 per cent) and the 50-64 age group (27 per cent) (DOJ 2009b).

**Figure 1.3 Prevalence of problem gambling in Victorian adults (per cent)**



Source: DOJ 2009b.

While the prevalence rates are now four years old and may have fallen in line with international trends (box 1.2), the Commission considers these to be the best estimates available.

## Box 1.2 Trends in problem gambling prevalence rates

A recent meta-analysis of 202 prevalence surveys found a general downward trend over the past decade in the prevalence rate of problem gambling in Australian states and territories, the United States and Canada (Volberg 2012). The meta-analysis identified likely causes of this decline include:

- increased population awareness of potential harms
- decreased population participation in major traditional forms of gambling, for example, EGMs
- removal of problem gamblers from the pool due to severe adverse consequences (bankruptcy, imprisonment, suicide)
- increased industry and/or government efforts to provide gambling more safely, enact prevention programs and provide treatment
- the increasing age of the population.

Sources: Volberg 2012, 7; Australasian Gaming Council, sub. 28.

The Commission noted that problem gambling is not a behaviour that is confined to those clinically defined as problem gamblers. However, the Commission also noted the extent of harm suffered by different at-risk groups is uncertain, particularly for those categorised as low risk and moderate risk gamblers (Clubs Australia, sub. 12). Accordingly, the Commission focused on estimating the cost of harms to the 'problem gambler' group, rather than to all 'at-risk' groups. In some cases, this approach reflects practicalities imposed by data availability. In other cases, it reflects a cautious approach by the Commission to estimating costs (given inherent uncertainties and data limitations). Inclusion of all at-risk gamblers would result in higher cost estimates. This approach also means that for some categories, such as treatment costs to government, estimated costs will encompass all gamblers seeking treatment, irrespective of whether they are defined as problem gamblers.

## 1.4 Key observations and insights

The Commission found there are a number of obstacles to quantifying the true social and economic costs of problem gambling:

- There are significant data gaps, methodological issues and a lack of consistency among existing data sources. For example, there are gaps in survey data and a general lack of screening for problem gambling amongst users of health and social welfare services.
- Many of the costs are intangible and difficult to estimate and value.
- Problem gambling is often closely associated with other mental and physical issues, raising the question of causality due to comorbidities. Comorbidity is the occurrence of more than one condition/disorder simultaneously (AIHW 2012a).

As a result, the Commission's estimates are indicative and inherently imprecise, and as such they should be treated with a high degree of caution, particularly if they are to be used as an input for policy analysis. Sensitivity analysis of estimates (through the use of a low and high range) has been conducted where possible.

Taking into account these obstacles, the Commission has estimated the social and economic costs of problem gambling in Victoria at between \$1.5 billion (low estimate) and \$2.8 billion (high estimate) in 2010-11.

- Social costs are estimated at between \$400 million and \$1.2 billion.
- Economic costs are estimated at between \$1.1 billion and \$1.6 billion.

Table 1.1 summarises the Commission's estimates. Further detail on cost estimates are in the relevant appendices.

**Table 1.1 Estimated economic and social costs of problem gambling (2010-11, \$ million)**

Cost	Low	High
<b>Economic costs</b>		
Victorian Government policy, regulatory, research and education and treatment services costs (appendix C)	42	42
Victorian Government health and human service costs (appendix D)	6	79
Victorian Government justice system costs (appendix E)	26	26
Productivity loss at work (appendix G)	6	39
Economic costs of excess expenditure (appendix H)	1000	1400
Job change costs (appendix J)	12	12
Productivity losses outside work (appendix J)	2	14
Bankruptcy (appendix J)	0.5	6
Financial costs of divorce and separation (appendix J)	1	1
Local government costs (appendix C)	0.35	0.7
<b>Total economic costs (a)</b>	<b>1100</b>	<b>1600</b>
<b>Social costs</b>		
Emotional distress to gamblers (appendix F)	60	120
Emotional distress to immediate family members (appendix F)	340	960
Emotional distress to parents (appendix F)	Zero	160
<b>Total social costs (b)</b>	<b>400</b>	<b>1200</b>
<b>Total economic and social costs (a + b)</b>	<b>1500</b>	<b>2800</b>

Note: Values may not equate due to rounding.

Source: Commission analysis.

By means of comparison, the PC estimated that in 2008-09, the total cost of problem gambling in Australia were between \$4.7 billion and \$8.4 billion (PC 2010, 6.39). With Victoria accounting for around one quarter of the Australian population, the implied per capita share attributed to Victoria by the PC's estimates is approximately \$1.2 billion to \$2.1 billion.

The Commission received a range of views from stakeholders regarding its cost estimates presented in the draft report (box 1.3)

### **Box 1.3 Feedback about the Commission's draft report cost estimates**

The Commission received feedback on the estimates in its draft report from a number of organisations:

- Clubs Australia stated that 'due to false positives it is likely that the prevalence of problem gambling in Victoria has been overestimated and that the inclusion of private intangible costs in the estimates are neither policy-relevant nor objectively quantifiable in monetary terms' (sub. DR34, p. 5).
- The Municipal Association of Victoria broadly supported the Commission's approach, while noting that the Commission did not cost harms incurred by those who are not categorised as problem gamblers (sub. DR35, p. 1).
- The Victorian Inter-Church Gambling Taskforce also believed that the 'Commission has underestimated some of the costs associated with problem gambling in Victoria, by only considering the costs in some areas that relate to those classified as problem gamblers' (sub. DR38, p. 1).
- Maribyrnong City Council highlighted the impact of problem gambling on local communities, as well as on problem gamblers and their families (sub. DR37, p. 1).
- The Victorian Responsible Gambling Foundation noted that 'quantifiable costs should be seen as a subset of the wider category of harms experienced by problem gamblers, affected others and broader society' (sub. DR39, p. 4).
- The Australasian Gaming Council noted that the Commission has 'taken a balanced and open approach in detailing the many obstacles and data gaps encountered ...' (sub. DR40, p. 1).

Sources: *Various submissions.*

#### **1.4.1 The costs of problem gambling fall mainly on individual gamblers and their families**

The Commission's estimates suggest that most of the costs fall on a relatively small proportion of the Victorian population, namely individual gamblers and their families. The vast majority of the quantifiable costs come from two sources:

- (1) Costs associated with excess expenditure by problem gamblers (0.7 per cent of the adult population or around 30 000 persons (DOJ 2009b)). These are estimated at between \$1.0 billion and \$1.4 billion in 2010-11 and account for around 50 per cent to 65 per cent of the total social and economic costs. These costs are sensitive to assumptions made about the share of gambling expenditure accounted for by problem gamblers (appendix H).
- (2) Impacts on mental wellbeing to problem gamblers and their families (around 30 000 gamblers and around 60 000 family members). These are estimated at between \$400 million and \$1.2 billion, accounting for around 25 per cent to 40 per cent of the total social and economic costs. The large range is driven by considerable uncertainty over the valuation of intangible impacts, rather than by the population size (appendix F).

## **1.4.2 The costs of problem gambling to the Victorian Government are significant**

The Commission's estimates suggest that the costs of problem gambling to the Victorian Government are significant, at between \$74 million and \$147 million in 2010-11.

- Direct costs to the Victorian Government are estimated at approximately \$42 million in 2010-11 (appendix C). These mainly represent the costs of treatment services and expenditure on problem gambling-related policy, regulatory, research and education programs and strategies.
- Indirect costs to the Victorian Government fall on the health and human service systems and are estimated at between \$6 million and \$79 million (appendix D). This estimate, amongst other things, is likely to reflect expenditure on mental health, social housing and homelessness services. Overall, a very small share of health and social welfare service expenditure is likely to be linked to problem gambling. The impact of problem gambling as a driver of service demand is also likely to vary across regions due to differences in problem gambling prevalence rates across Victoria (appendix I).
- Indirect costs also fall on the Victorian justice system and were estimated at approximately \$26 million (appendix E).

## **1.4.3 Observations on the geographic distribution of the costs of problem gambling**

While information gaps prevented a detailed breakdown of the costs of problem gambling at the regional and local levels, the Commission's analysis of the geographical distribution of problem gambling highlighted two issues:

- (1) Local characteristics may drive differences in the prevalence of problem gambling and therefore costs of problem gambling across geographical regions. For example, in metropolitan regions, the number of EGMs, the level of total expenditure, and measures of socio-economic disadvantage align with problem gambling prevalence rates. However, the same observation cannot be made consistently across regional Victoria.
- (2) Use of Gambler's Help services by region do not reflect differences in prevalence rates across regions, except for the North and West Metro region.

Appendix I outlines the Commission's analysis of regional and metropolitan impacts.

## **1.4.4 Problem gambling produces income transfers within society**

The Commission's aggregate cost estimates do not include the value of transfers<sup>4</sup> (or redistributions) within society as a result of problem gambling. These are estimated at between around \$8 million to \$43 million, consisting of:

- bad debts (between around \$3 million to \$37 million)

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<sup>4</sup> A transfer or redistribution of money from one group in society to another does not lead to an overall increase or decrease in costs or benefits when considered from the viewpoint of society as a whole (Victorian Government 2011, 83).

- unemployment benefits paid by the Commonwealth Government (approximately \$0.6 million)
- gambling-related crime on business (between \$4 million to \$5 million).

## 1.5 Limitations of the Commission's approach

Due to the obstacles identified in section 1.4, the Commission has not been able to estimate all of the costs listed in its cost framework. The principal gaps are:

- Direct costs of problem gambling to the Commonwealth Government and not-for-profit organisations (appendix C).
- Costs of problem gambling on physical wellbeing (appendix F).
- Costs to business from problem gambling related regulation, and from voluntarily implementing responsible gambling measures (appendix G).

The Commission's analysis is also subject to other limitations, related to a reliance on secondary data sources, data gaps and methodological issues.

### 1.5.1 The Commission has not undertaken primary research

During consultations, some participants advised the Commission that the best way to approach the terms of reference was to conduct a full-scale survey of the Victorian population to collect updated prevalence data, track expenditure and impacts, and understand government service delivery pathways used by gamblers. The Australasian Gaming Council noted that:

... to establish the cost of problem gambling with any academic rigor the Victorian Competition and Efficiency Commission's (VCEC) inquiry may well need to be informed by the establishment of quantitative and qualitative data collection instruments specifically designed to provide further up to date statistics that realise a robust and reliable assessment. (sub. 28, p. 6)

Due to the short duration of this inquiry and the existence of other ongoing Victorian studies (namely the VGS) this suggestion could not be pursued. Similarly, it was not possible to undertake any other primary research, such as surveying gamblers and the Commission has relied mainly on secondary sources and existing (including unpublished) datasets.

### 1.5.2 There are considerable gaps in existing data sets

The Commission's analysis was further hampered by two gaps in the existing data sets related to:

- (1) the lack of screening for problem gambling
- (2) limitations of aspects of secondary data sources.

#### Lack of screening for problem gambling

Population estimates used to calculate the impact of problem gambling on service delivery costs were limited by the general lack of screening of high-risk clients for problem gambling. During consultations, Commonwealth and State government agencies in the health and human service sectors advised that they did not maintain

records of use of their services as a result of problem gambling. Not-for-profit service delivery agencies made similar observations.

Some exceptions were identified, for example, a recent study of Alfred Hospital mental health patients (presenting to emergency departments or assessed by a Crisis Assessment and Treatment Team) found that 17.2 per cent had a gambling problem (De Castella et al. 2011, 16). The Commission recognises that screening high-risk clients for problem gambling may be difficult due to the social stigma with which it is associated (Relationships Australia, sub. 18). Potential screening methods and tools are discussed in section 1.6.1.

### **Limitations of aspects of secondary data sources**

The Commission found that no single Victorian data source was completely suited to the analytical framework used by the Commission to estimate costs. For example, while useful for estimating some individual populations, the VGS did not:

- ask a full set of specific harm-based questions, for example, regarding the impact of gambling at or outside work
- ask specific questions about the monetary impact of problem gambling on gamblers and/or their family and friends, and as such was not suited to estimating the unit cost of impacts of problem gambling
- explicitly seek to establish the direction of causation between harms and gambling activity; for example, whether gambling lead to depression or vice versa (DOJ 2009b).

The Commission understands that prevalence surveys such as the VGS are not necessarily designed to assist in estimating the costs of problem gambling. However, in the absence of other types of surveys, such as longitudinal surveys that track impacts on problem gamblers over time, prevalence surveys can be an important source for understanding costs.

### **1.5.3 Some reported impacts could not be quantified**

Submissions to the inquiry raised other impacts of problem gambling, such as impacts on childhood development, indirect costs to private sector health, welfare and church organisations, costs of housing instability (and loss of housing) and costs of food insecurity. Appendix B provides a full list of impacts identified by submissions. While some participants provided a range of qualitative and quantitative research supporting the existence of these impacts, such research did not provide guidance on a generally accepted methodology to estimate impacts, nor how to generalise them to the Victorian population and/or regions. As such, while the Commission acknowledges that these impacts may exist, they have not been estimated.

## **1.6 Priorities for future research related to the costs of problem gambling**

The terms of reference state that the inquiry will help ensure government, community and industry has the information necessary to reduce problem gambling and develop harm reduction strategies, thereby increasing the net benefit from the conduct of gambling for all Victorians. Many submissions to the inquiry also expressed an interest in better understanding the costs associated with problem gambling, including in relation to decisions regarding approval of the location of gambling activities.

The Commission found many data gaps and issues in measuring the aggregate costs of problem gambling. The Commission's draft report canvassed a number of means of addressing these deficiencies, including through:

- developing a framework for defining and measuring the costs of problem gambling
- improving the design of prevalence studies to ask a consistent set of harm-based questions, control for causality and capture local impacts where possible.

The Commission is not convinced that improving aggregate social and economic cost estimates should be a priority for future research, as:

- some issues, such as causality and comorbidities, would likely remain unresolved
- judgements will still need to be made regarding the monetary value of intangible impacts
- aggregate cost estimates are of limited value in assisting the Victorian Government and other groups in society to prevent and respond to the harms from problem gambling.

The Commission's inquiry found there has been significant Victorian Government expenditure on problem gambling-related research. While this research has been developed under a broad 'public health' approach,<sup>5</sup> research has been undertaken without a clear statement of priorities from the Victorian Government to guide this work.<sup>6</sup>

The Commission notes that the recent establishment of the Victorian Responsible Gambling Foundation (VRGF) provides an opportunity for the Victorian Government to articulate its priorities for problem gambling-related research. The VRGF's Strategic Business Plan for 2012-13 refers to establishing 'an overarching research agenda with high strategic relevance for the Foundation' (VRGF 2012, 13).

The Commission received a variety of responses from stakeholders to its draft priorities for future research associated with the costs of problem gambling (box 1.4).

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<sup>5</sup> Public health approaches to problem gambling focus on harm minimisation and attempt to understand the factors that influence behaviour (VAGO 2010, 11).

<sup>6</sup> Between 2007-08 and 2010-11 the Responsible Gambling Ministerial Advisory Council recommended priority areas to the Minister for Gaming, with grant rounds focusing on accessibility to gambling products, emerging technologies, and youth and gambling (VAGO 2010, 17).

## Box 1.4 Participants thoughts on research priorities

The Commission invited feedback about future research priorities associated with the costs of problem gambling. The feedback received included:

- Clubs Australia believed that research should seek to address the impact of false positives on prevalence rates, examining issues of causality, creating a valid counterfactual and establishing a framework for dealing with private intangible costs (sub. DR34, p. 6).
- The Victorian Inter-Church Gambling Taskforce stated that 'the priority for research funding should be on measures that prevent problem gambling from developing.' This includes research on measures around making informed decisions, product safety features, gambling staff intervention and the design of gaming venues (sub. DR38, p. 1).
- The Victorian Responsible Gambling Foundation supported 'better identification of problem gambling issues across service delivery sectors and the need to systematically evaluate the effectiveness of problem gambling treatment services'. It disagreed with the Commission's suggestion that 'improving the design of prevalence studies will create a sound fact base for understanding the costs of problem gambling' (sub. DR39, p. 3).
- The Australasian Gaming Council's view was that 'future efforts must focus on development of a suitable framework to address evidentiary gaps and an understanding of where resources may be best placed'. It also stated that 'measures implemented to assist problem gamblers must be backed by efficacy and evaluation of measures ... should be instituted ...' (sub. DR40, p. 2).

Sources: Various submissions.

The Commission considers that priorities for future research should be guided by the principle of what action can be taken at the margin to reduce costs in a manner that produces a net benefit to society. That is, interventions where the marginal costs of an intervention to reduce the harm from problem gambling (for example, administrative and compliance costs; and costs on recreational gamblers) do not outweigh their marginal benefits (measured in terms of reduced harm and associated cost to society). The PC noted that 'measures aimed at addressing adverse impacts of legalised gambling need to be balanced against the sizeable benefits of gambling for recreational gamblers and the industry' (PC 2010, 3.1).

There is also a need to improve the information base regarding problem gambling to support policy development — including better informed regulatory decisions — and targeting of service delivery.

Reflecting the need for clearer Victorian Government priorities for problem gambling-related research and stakeholder feedback, the Commission considered the nature of such priorities. Three priority areas are:

- (1) Better identification of problem gambling prevalence for high-risk groups through focused screening, to improve treatment outcomes and more effectively target support services.
- (2) Better identification of harms and the causes of harms associated with problem gambling through specific studies of problem gamblers.
- (3) Greater evaluation of the effectiveness of measures designed to reduce harms from problem gambling, including treatment programs and regulatory measures.

## 1.6.1 Screening and identification of high-risk groups

Screening for problem gambling in high-risk groups involves asking questions of persons about their gambling behaviour in order 'to identify problem gambling cases (for more detailed assessment and possible treatment)' (PGRTC 2012, 35).

The Commission found there is a general lack of screening for problem gambling in high-risk groups, such as those presenting to health services with anxiety, depression and drug and alcohol use (PC 2010, 7.14–16). Some exceptions were identified, including screening for problem gambling in community health and welfare services as part of the Victorian Government's Primary Care Partnerships (PCP) Strategy<sup>7</sup> (VRGF, sub. DR39, p. 6).

Better matching of high-risk groups with appropriate problem gambling treatment services and other support services would enhance treatment outcomes and potentially:

- (1) Improve understanding about how problem gambling contributes to costs on the health, social welfare and justice systems.
- (2) Reduce service delivery costs to governments in the longer term. For example, increasing awareness of the nature and extent of problem gambling-related crime could mean the justice system could be more effective in addressing it. Over time, this could impact positively on costs through a reduction in the level of recidivism, through directing effective services to incarcerated problem gamblers.

More widespread screening of high-risk groups would not be costless. For example, in regard to general practitioner visits, popular diagnostic tools for problem gambling, such as the Canadian Problem Gambling Index, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for pathological gambling, and the South Oaks Gambling Screen, are considered 'too time consuming for routine use in primary care practice' (Thomas, Piterman, and Jackson 2008, 136).

However, more cost-effective approaches may be available. The PC previously recommended providing a 'one-item screening test, ... for optional use by health professionals and counsellors' (PC 2010, 7.27). This recommendation was also recently supported by the Commonwealth Parliamentary Joint Select Committee on Gambling Reform (Parliamentary Joint Select Committee on Gambling Reform 2012, 175).

The Commission notes that there have been a variety of screening tools used and recommended for use in the health system, and that evidence on their effectiveness is somewhat mixed (box 1.5).

Some other important considerations in the use of screening tools include:

- screening in primary health care services serves as a principal means of indicating a possible problem rather than proving that it exists (VRGF, sub. DR39, p. 5)
- different types of problem gambling screening may be undertaken at different agencies depending on the context and personal circumstances of the individual presenting. For example, 'the depth of questioning and the order of questions

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<sup>7</sup> PCPs are funded by the Victorian Government to improve access to services and continuity of care for people through improved service coordination, as well as chronic disease prevention, integrated health promotion, and partnership development (DH 2012). One aim of PCPs is to connect Gambler's Help services and health and community agencies in tackling the burden of problem gambling (DH 2011).

asked of someone presenting at a mental health clinic seeking emergency relief or undertaking a correctional order, will differ' (VRGF, sub. DR39, p. 6)

- where screening tools are used, it is important that information is recorded by agencies in a timely and effective manner, and that the information is available for use in research activities (subject to meeting privacy and other legal requirements).

### **Box 1.5 Some evidence regarding screening tools and the health system**

A 2008 report found that a one-item screening test 'Have you ever had an issue with your gambling?' closely predicts answers to the full Canadian Problem Gambling Index (Thomas, Piterman, and Jackson 2008, 136). Accordingly, the report recommended:

- screening for patients with anxiety and depressive symptoms or high drug or alcohol use, because of the high rates of comorbidity of these conditions
- those who screen positive should be referred for further assessment and treatment by appropriately trained specialist practitioners in problem gambling (Thomas, Piterman, and Jackson 2008, 136).

A variation of the one-item screen was tested by Queensland researchers in 2010 (Rockloff et al. 2011). The question asked was: 'In the past twelve months, have you ever had an issue with your gambling?'. However, this screen showed a very high percentage of false negatives, indicating that almost 80 per cent of positively identified problem gamblers from the Problem Gambling Severity Index (PGSI) refused to admit to having "issues with their gambling" in the past 12 months. The researchers identified:

... the need to find alternatives to relying on gamblers to identify themselves as having gambling problems. People with gambling problems appear to be unable or unwilling to directly admit to having issues with their gambling, despite the evidence of gambling related symptom revealed by the PGSI. (Rockloff et al. 2011, 707)

The Commission also noted there are various other screening guidelines and tools available and in use, for example:

- The Problem Gambling Research and Treatment Centre<sup>8</sup> has developed a *Guideline for Screening, Assessment and Treatment in Problem Gambling*, which provides 'recommendations to guide practice, patient and policy decisions for the screening, assessment and treatment of problem gambling' (PGRTC 2012, 15). The Guideline recommends that adults with a high risk of mental health problems be screened and assessed for problem gambling using a validated measurement tool or tools.
- A study of Alfred Hospital mental health patients used a specifically designed four-item problem gambling screen for initial screening. Subsequent screening was conducted with the Massachusetts Gambling Screen (De Castella et al. 2011).

Sources: De Castella et al. 2011; Rockloff et al. 2011; Thomas, Piterman, and Jackson 2008; PGRTC 2012.

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<sup>8</sup> The Problem Gambling Research and Treatment Centre is a partnership between the Victorian Government and Monash and Melbourne Universities (PGRTC 2012).

## 1.6.2 Improving understanding of the nature and extent of harms

There is limited information on the nature and extent of harms suffered by problem gamblers. This type of information is needed to support future policy decisions and evaluations of harm minimisation measures, including industry regulation and treatment services.

A variety of methods are available to better understand the nature and extent of harms and their associated costs. The Commission's draft report, for example, suggested improving the design of prevalence surveys as a means of better understanding harms and costs. This would require prevalence surveys asking a consistent set of harm-based questions and attempting to control for causality.

In response to the draft report, the VRGF commented that:

Measuring costs incurred by problem gambling is more efficiently and effectively done via collecting data from identified populations of problem gamblers. This is because prevalence studies, which survey the whole population, actually only capture a small number of problem gamblers. (sub. DR39, p. 5)

The VRGF also advised it is considering the following approaches, amongst others, for identifying harms and the causes of harms associated with problem gambling:

- surveying persons in treatment for problem gambling
- targeted surveys of gamblers attending gaming venues or using online gambling services
- interview-based research focused on problem gamblers or gamblers in at-risk groups (sub. DR39, p. 5).

## 1.6.3 Evaluation of harm minimisation measures

The Commission, as well as previous reviews, identified a need for more research into the efficiency and effectiveness of measures that aim to reduce harms from problem gambling, including counselling and treatment services and regulatory and non-regulatory initiatives.

### Evaluation of counselling and treatment services

The Commission found that in 2010-11 the Victorian Government directly spent approximately \$20 million on treatment services (appendix C). However, there has been little research into the effectiveness of treatment services in Australia (PC 2010, 18.33; Donald Smith, sub. 36, p. 1).

Some recent steps have been taken to address the lack of research on the effectiveness of treatment services. For example, a 2008 review of the Victorian problem gambling treatment service system resulted in a revised model for treatment services and performance management and reporting framework, including the introduction of client outcome measures (VRGF, sub. DR39, p. 7). The VRGF also advised that it is:

... in the process of commissioning the next major review of its problem gambling treatment services to inform decisions about the future direction of the service system beyond 2013-14. (sub. DR39, p. 7)

The primary benefit of this type of research would appear to be in improving treatment outcomes for problem gambling, and therefore reducing the severity of gambling-related harm (and costs) for people accessing treatment services.

If this type of research involved collection of data on contacts with Gambler's Help, and other services, the results would assist the Victorian Commission for Gambling and Liquor Regulation (VCGLR) in undertaking socioeconomic impact assessments and administering the 'no net detriment' test for certain EGM applications (VCGLR, sub. 25). The VCGLR noted that 'access to consistent and reliable information on contacts to all professional help services used by problem gamblers would be valuable' (sub. 25, p. 40).

### **Evaluation of regulatory and non-regulatory policies**

The magnitude of the Commission's estimates also suggest that continued research into effective regulatory (and non-regulatory) harm minimisation measures is warranted. A recent VAGO report also found a lack of systematic impact assessment and evaluation of regulatory harm minimisation measures (VAGO 2010). Some exceptions include evaluations of self-exclusion programs and the impact of regional caps on EGMs, and the current evaluation of the ban on automatic teller machines in gaming venues (DOJ 2012).

Evaluation of harm minimisation measures needs to be informed by an understanding of:

- The nature and extent of harms and associated costs from problem gambling (section 1.6.2).
- The extent to which the 'cost of the problem' can feasibly be reduced through a policy intervention. That is, what are the potential 'avoidable costs'. These are 'costs which are potentially amenable to public policy initiatives and behavioural changes' (Collins, Lapsley, and University of NSW 2008).
- The extent to which policy measures may reduce the benefits to society from gambling.

#### **Recommendation 1**

That the Victorian Government articulate a statement of priorities for problem gambling-related research, with the objectives of:

- identifying cost-effective actions that will reduce the impacts of problem gambling
- supporting better informed decision-making by relevant regulators.

The statement of priorities should include a focus on the following areas:

- better identification of problem gambling prevalence for high-risk groups through screening, to improve treatment outcomes and more effectively target support services
- better understanding the nature and extent of harms suffered by problem gamblers and their families through targeted studies of problem gamblers
- greater evaluation of the effectiveness of measures designed to reduce harms from problem gambling, including treatment programs and regulatory measures.

## 1.7 Concluding remarks

The Commission found that the costs of problem gambling to problem gamblers, their families and the Victorian Government are likely to be significant, notwithstanding significant measurement challenges.

While further research on aggregate costs would help improve the precision of the Commission's estimates, greater value could be achieved for society by focusing future research on actions that will reduce costs in a manner that produces a net benefit to society, and that contributes to improved regulatory decision-making. Greater screening for problem gambling, evaluation of harm minimisation measures and specific studies of the harms incurred by problem gamblers are likely to generate this value. Coordination across a number of Victorian Government agencies is likely to be required to determine how best to efficiently and effectively progress work in these areas.

# Appendix A: Consultation

## A.1 Introduction

The Victorian Competition and Efficiency Commission (the Commission) received the terms of reference to undertake an inquiry into the social and economic costs of problem gambling in Victoria on 14 June 2012. In keeping with its usual process to consult extensively during public inquiries, the Commission advertised the inquiry in *The Age* on 25 July 2012. The Commission also published an issues paper in July 2012, which outlined:

- the scope of the inquiry
- how to make a submission
- the Commission's consultation process
- the inquiry timetable.

The issues paper invited participants to register an interest in the inquiry and to make submissions. The Commission received 53 registrations of interest. Thirty-two written submissions were received before the release of the draft report, and a further eight were received after the release of the draft report (section A.2).

The Commission consulted extensively (including meetings, visits and telephone discussions) with Commonwealth, State and local government departments and agencies, businesses, academics, associations and individuals (section A.4). For the first time in one of its public inquiries, the Commission also engaged with inquiry participants through Facebook and Twitter. In November 2012, following the release of the draft report, the Commission held a roundtable to discuss research priorities for problem gambling in Victoria. Roundtable participants included academics, and other experts from the not-for-profit sector, the gambling industry and government (section A.3).

The Commission thanks those people and organisations that participated in its consultation process and made a submission to the inquiry. The Commission appreciates the quality of the submissions, reflecting the thought and effort which has been put into their preparation.

The Commission took account of the *Charter of Human Rights and Responsibilities Act 2006* (Vic) and considers that this report is consistent with the human rights set out in the Charter.

## A.2 Submissions

The Commission received 40 submissions (table A.1). All submissions that are public documents can be viewed on the Commission's website ([www.vcec.vic.gov.au](http://www.vcec.vic.gov.au)).

**Table A.1 Submissions received**

No.	Participant	No.	Participant
1	Brian and Nina Earl	2	Hobsons Bay City Council
3	City of Greater Dandenong	4	Emerald Club for Hope & Outreach Inc and St Mark's Anglican Church, Emerald
5	Pokieact.org	6	Mornington Peninsula Shire
7	University of Ballarat	8	Symplan
9	Chrysalis Insight	10	Betfair
11	Yarra Ranges Council	12	Clubs Australia
13	Moreland City Council	14	Victorian Local Governance Association
15	City of Greater Bendigo	16	St Luke's Anglicare
17	Sportsbet	18	Relationships Australia
19	Corangamite Shire Council	20	Great South Coast Group
21	City of Boroondara	22	City of Monash
23	City of Whittlesea	24	Victorian Responsible Gambling Foundation
25	Victorian Commission for Gambling and Liquor Regulation	26	Victoria Legal Aid
27	Victorian Inter-Church Gambling Taskforce	28	Australasian Gaming Council
29	Municipal Association of Victoria	30	Brimbank City Council
31	Frankston City Council	32	Confidential submission
DR33	Mary Rimmington	DR34	Clubs Australia
DR35	Municipal Association of Victoria	DR36	Donald Smith
DR37	Maribyrnong City Council	DR38	Victorian Inter-Church Gambling Taskforce
DR39	Victorian Responsible Gambling Foundation	DR40	Australasian Gaming Council

### A.3 Roundtable

The Commission held a roundtable following the release of the draft report to discuss research priorities for problem gambling in Victoria. Roundtable participants are listed below (table A.2)

**Table A.2 Research agenda roundtable**

Participant	Organisation
Nadine Grinblat	Australasian Gaming Council
Prof. Shane Thomas	Problem Gambling Research and Treatment Centre
Prof. Alun Jackson	Problem Gambling Research and Treatment Centre
Dr Matthew Butlin	Victorian Competition and Efficiency Commission
Bill Mountford	Victorian Competition and Efficiency Commission
Dr Mark Zirnsak	Victorian Inter-Church Gambling Taskforce
Dr Santina Perrone	Victorian Responsible Gambling Foundation
Tony Phillips	Victorian Responsible Gambling Foundation

## A.4 Stakeholder consultations

The Commission consulted with academics, businesses, industry associations and key interest groups, and drew on the knowledge and expertise of Victorian, Commonwealth and local government departments and agencies. In total the Commission met, had email correspondence or conducted telephone discussions, with around 40 organisations and individuals (table A.3).

**Table A.3 Consultation participants**

Organisation or Individual	Organisation or Individual
Alberta Gambling Research Institute: • Professor Robert Williams	Allen Consulting Group
Australasian Gaming Council	Australian Leisure and Hospitality Group
City of Greater Dandenong	Community Clubs Association of Victoria
Crown Melbourne Limited	Department of Families, Housing, Community Services and Indigenous Affairs (Cth)
Department of Health (Vic)	Department of Human Services (Vic)
Department of Justice (Vic)	Gemini Research: • Dr Rachel A. Volberg
Minister for Gaming	Monash Alfred Psychiatry Research Centre: • Professor Jayashri Kulkarni
Monash University: • Dr Charles Livingstone • Professor Paula Lorgelly • Dr Samantha Thomas	Moreland City Council
Municipal Association of Victoria	North East Primary Care Partnership

**Table A.3 Consultation participants (cont.)**

Organisation or Individual	Organisation or Individual
Problem Gambling Foundation of New Zealand	Problem Gambling Research and Treatment Centre: <ul style="list-style-type: none"> <li>• Professor Shane Thomas</li> <li>• Professor Alun Jackson</li> </ul>
Productivity Commission	Relationships Australia (Victoria)
Southern Cross University: <ul style="list-style-type: none"> <li>• Dr Sally Gainsbury</li> </ul>	Swedish National Institute of Public Health: <ul style="list-style-type: none"> <li>• Professor Ulla Romild</li> </ul>
Sydney University: <ul style="list-style-type: none"> <li>• Professor Alex Blaszczyński</li> <li>• Dr Clive Allcock</li> </ul>	The Salvation Army
Turning Point Alcohol and Drug Centre	University of Adelaide: <ul style="list-style-type: none"> <li>• Associate Professor Paul Delfabbro</li> </ul>
University of Ballarat: <ul style="list-style-type: none"> <li>• Professor John McDonald</li> <li>• Ms Deborah Greenslade</li> </ul>	Victorian Commission for Gambling and Liquor Regulation
Victorian Council of Social Services	Victorian Inter-Church Gambling Taskforce
Victorian Local Governance Association	Victorian Responsible Gambling Foundation

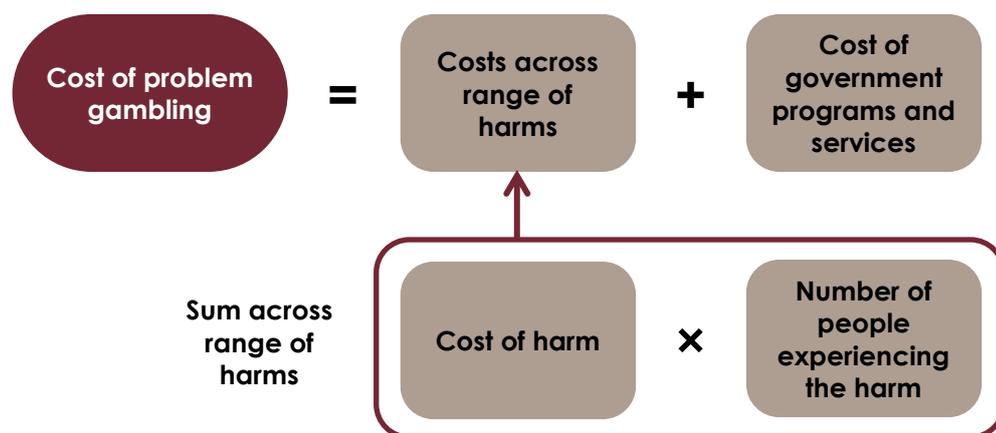
## Appendix B: The Commission's framework

### B.1 Introduction

As noted in the terms of reference, this inquiry is intended to inform policy makers and the community about the true costs of problem gambling and where they fall. There are a number of challenges in doing this. Various participants commented that these costs are not well understood. In addition, the question of how to measure the costs of problem gambling is an issue of considerable debate, as indicated by the wide range of views among participants.

This appendix sets out the Commission's framework to estimate the social and economic costs of problem gambling in Victoria. A prevalence-based approach has been developed and applied to estimate many of these costs, as illustrated in figure B.1. In essence, the approach estimates the monetary cost associated with each identified harm of problem gambling, whilst seeking to adjust for factors such as causality and the counterfactual. These costs are then summed up across the range of harms. The costs of government programs and services are also included.

**Figure B.1 The Commission's approach to estimating the costs of problem gambling<sup>a</sup>**



Note: <sup>a</sup> This diagram is a stylised representation of the prevalence-based approach, abstracting from a number of complexities. These complexities are discussed later in this appendix.

Source: Commission analysis.

The Commission's framework is informed by a range of previous studies, particularly the Productivity Commission (PC) reports which compiled estimates of gambling costs for Australia and several studies which used the PC methodology to examine the impacts of gambling in South Australia and Tasmania (PC 1999; PC 2010; SACES 2006; ACG, PGRTC & SRC 2011). The Commission has sought to build on this previous work.

This appendix outlines key elements of the Commission's framework to cost estimation, which include:

- defining problem gambling (section B.2)
- identifying the impacts of problem gambling (section B.3)
- determining the costs of these impacts (section B.4)

- measuring the prevalence of problem gambling and its impacts (section B.5).

Section B.6 describes the general assumptions and key data sources used to compile the cost estimates.

## B.2 Defining problem gambling

An important step in any method seeking to measure the costs of problem gambling is to define the term 'problem gambling'. This is because different definitions of problem gambling will affect estimates of its prevalence and associated costs.

Participants recognised the difficulties in defining problem gambling (Greater Dandenong City Council, sub.3, p. 1; pokieact.org, sub.5, p. 1). For example, according to pokieact.org, 'problem gambling can not be easily defined' (sub.5, p. 1). While there are numerous definitions in the research literature, most definitions are based on one or more of the characteristics identified by the PC (box B.1) and can be classified under one of the following approaches:

- Economic approach — as an economic activity, gambling becomes a 'problem' when such activities result in financial problems. In this context, gambling activities are often referred to as 'excessive gambling'.
- Medical approach — problem gambling is characterised by a set of dysfunctional behaviours such as a preoccupation with gambling, a need to bet more money more frequently, restlessness or irritability when attempting to stop, and 'chasing losses'.
- Continuum approach — gambling behaviour lies on a range from non-gamblers and recreational gamblers, where there are no adverse impacts, through to problem gambling resulting in negative consequences.
- Harm-based approach — gambling becomes a 'problem' once it gives rise to harm to the individual and/or other parties (SACES 2005a, i).

There are advantages and disadvantages of adopting any single approach in terms of measuring the costs of problem gambling. For example, the medical approach may allow for ease of measurement of prevalence through clinical diagnosis. However, there is also a risk of underestimating the number of problem gamblers by omitting those who suffer gambling-related problems but do not fall within the clinical criteria. Greater Dandenong City Council argued that problem gambling should 'not be defined by narrow clinical criteria, but by the broader experience of adverse effects by gamblers, their dependents, and the wider community' (sub. 3, p. 1).

The various trade-offs between these different approaches were considered in substantial depth in a study commissioned by Gambling Research Australia. It subsequently endorsed the following national definition:

Problem gambling is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community. (SACES 2005a, i)

The Victorian Government has adopted this national definition (Victorian Government 2009, 32). The costs of problem gambling identified in the terms of reference for this inquiry are encompassed by the national definition. The Commission has therefore adopted this definition for the purposes of this inquiry. An advantage of adopting the national definition is that it will facilitate comparability with other Australian studies on the costs of problem gambling.

### **Box B.1 The Productivity Commission's characterisation of problem gambling**

While the Productivity Commission did not formally define problem gambling, it cited characteristics commonly identified among problem gamblers, including:

- personal and psychological characteristics, such as difficulties in controlling expenditure, anxiety, depression or guilt over gambling
- gambling behaviours, such as chasing losses, spending more time or money on gambling than intended and failed attempts to stop gambling
- interpersonal problems, such as gambling-related arguments with family members, friends and work colleagues, and relationship breakdown
- job and study problems, such as poor work performance, lost time at work or studying, and resignation or sacking due to gambling
- financial effects, such as large debts, unpaid borrowings, and financial hardship for the individual or family members
- legal problems, such as misappropriation of money, passing bad cheques, and criminal behaviour due to gambling.

Source: PC 1999, 6.4.

## **B.3 Identifying the impacts of problem gambling**

While the national definition of problem gambling mentions 'adverse consequences', it does not identify or list specific consequences (or impacts). A key question, therefore, is what are the impacts of problem gambling? In the Commission's view, these impacts include the harms suffered and the responses to these harms in terms of prevention and treatment services.

### **B.3.1 Lack of an agreed framework**

Despite numerous studies on the impacts of gambling in Australia and overseas, the Commission has found that there is no universally agreed definition of harm or framework for assessing impacts. The South Australian Centre for Economic Studies (SACES) noted that, while there has been considerable discussion about harm minimisation, there seem to be few definitions of gambling-related harms (SACES 2005a). Moreover, while the Australian Psychological Society (APS) Gambling Working Group described some of the harms of problem gambling (box B.2), it noted the lack of an operational definition of harm (APS Gambling Working Group and Giese 2010, 21).

## Box B.2 Harms of problem gambling

Gambling can give rise to different types and levels of harm. The most obvious harm is financial, and this is related to many of the other harms. In addition to financial impacts, problem gambling has been linked to psychological harm, with those engaging in problem gambling also experiencing depression, self-harm, suicidal ideation and engagement in other behaviours which compromise their wellbeing.

Problem gambling can have significant effects on many aspects of the gambler's life, including their relationships and employment. Many problem gamblers report relationship and family difficulties or having lost or jeopardised relationships as a result of gambling.

While less well understood, problem gambling has been linked to poor employment outcomes, with those affected by problem gambling taking time off work to gamble, losing their jobs due to gambling, or using their workplace to commit crimes to fund their gambling.

Sources: APS Gambling Working Group and Giese 2010, 13; APS Public Interest Team 2012, 3.

There are several existing frameworks for assessing the social and economic impacts of gambling. Some of these include:

- *The Socio-Economic Impact of Gambling Framework* (Anielski and Braaten 2008)
- *The Social and Economic Impacts of Gaming: A Framework for Research* (Boreham et al. 2002)
- *Assessment of the Social Impacts of Gambling in New Zealand* (CSHORE 2008)
- *Social and Economic Impact Assessment Framework for Electronic Gaming Machines* (Inner Northern Working Group on Gambling 2011).

There is also the PC approach to assessing the costs and benefits of gambling in Australia (PC 1999; PC 2010). Commenting on the PC approach, Clubs Australia noted that the lack of any robust pre-existing frameworks led to the development of an original framework that was widely considered a new benchmark in the reporting of the costs and benefits of gambling (sub. 12, p. 8).

Reviews of the research literature have found that studies have identified different sets of impacts and used different ways of categorising or grouping the impacts. A recent review stated that:

... frameworks aim to measure, through quantitative indicators, the positive and negative effects across a range of domains: while some are restricted to social and economic domains, others extend to consider the health, education, employment, tourism, legal, and cultural domains. To date, no single framework has been universally adopted. (University of Ballarat, sub. 7, att. 4, p. 7)

Similarly, another review reported considerable controversy over the appropriate theoretical and methodological approach to studying gambling impacts and, despite many studies in this area, that there is still no agreed approach for assessing the socioeconomic impacts (Williams, Rehm, and Stevens 2011, 10). This view was echoed by several participants (for example, see AGC, sub. 28, p. 21).

### B.3.2 Framework used in this study

The Commission has used the impacts identified by the PC as a foundation for the framework in this study (PC 1999). The Municipal Association of Victoria (MAV) argued that there is considerable merit in basing the calculation of costs on the PC framework, subject to refinement (sub. 29, p. 4). Several other participants, while noting limitations to the PC's approach, indicated that it was an appropriate starting point (pokieact.org, sub. 5, p. 1; Clubs Australia, sub. 12, p. 8; Moreland City Council, sub. 13, p. 4; City of Whittlesea, sub. 23, p. 4; Victorian Inter-Church Gambling Taskforce, sub. 27, p. 4).

The Commission also identified some additional impacts based on the costs listed in the terms of reference and information in submissions and consultations. Participants provided numerous examples of the impacts of problem gambling in Victoria (table B.1). These examples generally cluster around several broader types of impacts: financial; mental health; physical health; crime; community; and service delivery. The issue of comorbidities is discussed in section B.5.4.

**Table B.1 Impacts of problem gambling indicated in submissions and consultations<sup>a</sup>**

Type of impact	Examples
Financial	Money losses, electronic gaming machine (EGM) losses, money lost to EGMs, excess expenditure, no money left, financial problems, financial hardship, foregone expenditure, unpaid bills, credit card debt, debts, family neglect, food shortages, lack of food security, loss of employment, job loss, job change, reduced work productivity, decreased attendance at work, absenteeism, housing instability, mortgage defaults, loss of assets and wealth, repossessions, bankruptcy, diminished standard of living
Mental health	Addiction, lying, deception, loneliness, crying, obsessive compulsive disorder, shame, humiliation, embarrassment, stigma, loss of self-esteem, anxiety, stress, depression, strain on personal relationships, loss of trust, personal trauma, family neglect, child abuse, child neglect, family distress, family conflict, family violence, family breakup, divorce, undermines family cohesion, breakdown of relationships, loss of partner, marital or family discord, thoughts of suicide, psychological distress, psychiatric hospital admission
Physical health	Poorer household nutrition, poor health, general ill health, alcohol and substance abuse, family violence, child abuse, child neglect, self-harm, hospital admission, attempted suicide, actual suicide
Crime	Petty theft, stealing money, fraud, financial embezzlement, deceptive or criminal actions to obtain money, family violence, child abuse, criminal offences, increased crime rates, increase in local crime
Community	Loss of social capital and community character, diminished trust and social participation, reduced volunteerism, homelessness, damage to social cohesion, diminished social existence, major social dislocation, decreased contributions to charity, withdrawal from social activities, breakdown in community values and society

**Table B.1 Impacts of problem gambling indicated in submissions and consultations<sup>a</sup> (cont.)**

Type of impact	Examples
Service delivery	Treatment services, addiction counselling, relationship counselling, financial counselling, housing assistance, emergency relief, material aid services, community services, loads on charities, welfare services, social support services, medical services, drug and alcohol dependency services, pastoral services, coronial services, police services, legal services, legal assistance, loads on the criminal justice system, planning services, consultant services, assessing gaming applications, assessing planning permit applications, policy development

Notes: <sup>a</sup> These examples were taken directly from submissions and consultations and are in participants' own words. Some of the examples listed are similar but expressed in somewhat different ways. Some of the examples could fit into multiple categories.

Sources: Various submissions; consultations (appendix A).

While there was substantial agreement among participants about many of the impacts to be included — as indicated by table B.1 — some participants suggested a number of additional impacts that were not included by the PC when estimating the costs of problem gambling to the Australian community. These additional impacts included:

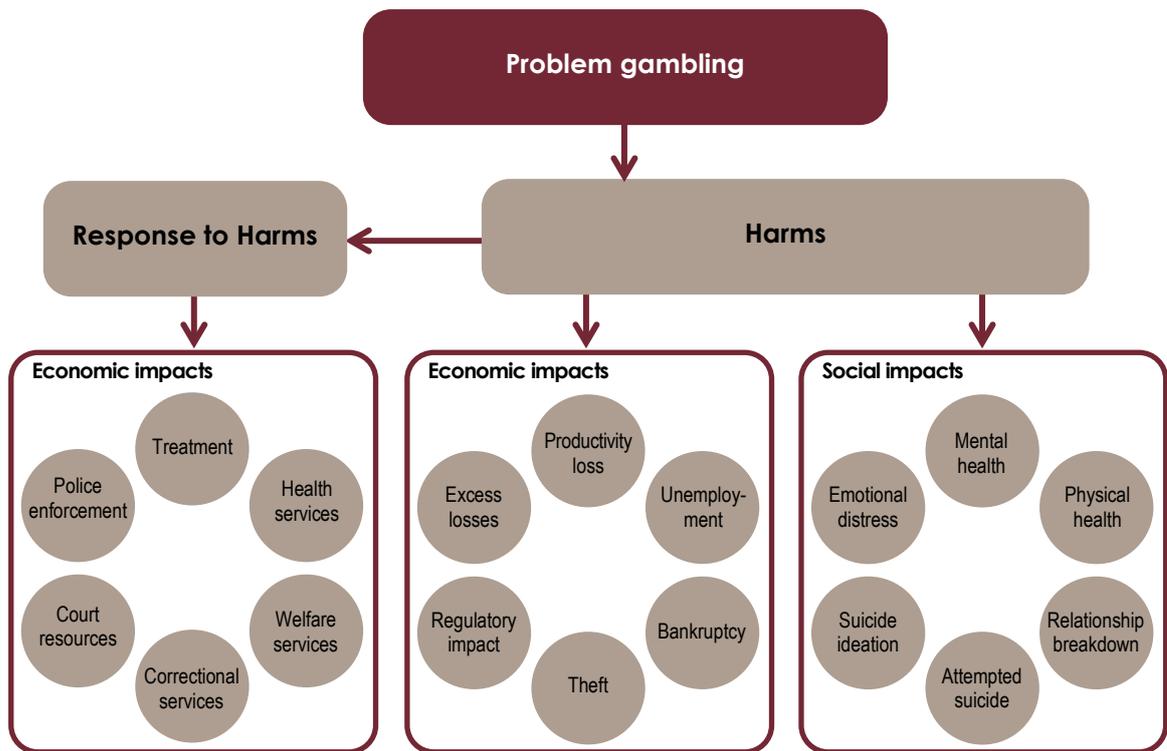
- financial impacts such as indebtedness, food insecurity, housing instability and displaced economic activity and employment
- physical health impacts including poor health, self-harm and suicide
- crime impacts such as workplace fraud and theft
- community impacts such as homelessness and damage to social cohesion and community wellbeing
- impacts on service delivery including increased demands on health, welfare, community and local government services.

In determining which additional impacts to include, the Commission was largely guided by the terms of reference and data availability.

Figure B.2 illustrates the Commission's conceptual mapping of the impacts of problem gambling. In responding to the terms of reference, the Commission has defined social and economic impacts as follows:

- Social impacts refer primarily to the health and wellbeing impacts of problem gambling. These may be considered to be the more intangible impacts (social costs are the monetised value of these impacts).
- Economic impacts refer to the financial harms suffered by problem gamblers and others and the use of resources in mitigating the harms of problem gambling. These are often the more tangible impacts of problem gambling (economic costs are simply the monetary value of these impacts).

**Figure B.2 Mapping the impacts of problem gambling**



Notes: Economic impacts refer to impacts on resources; social impacts refer to impacts on wellbeing.

Source: Commission analysis.

## B.4 Determining the costs of these impacts

### B.4.1 Framework for costing impacts

The Commission's framework categorises the costs of problem gambling by:

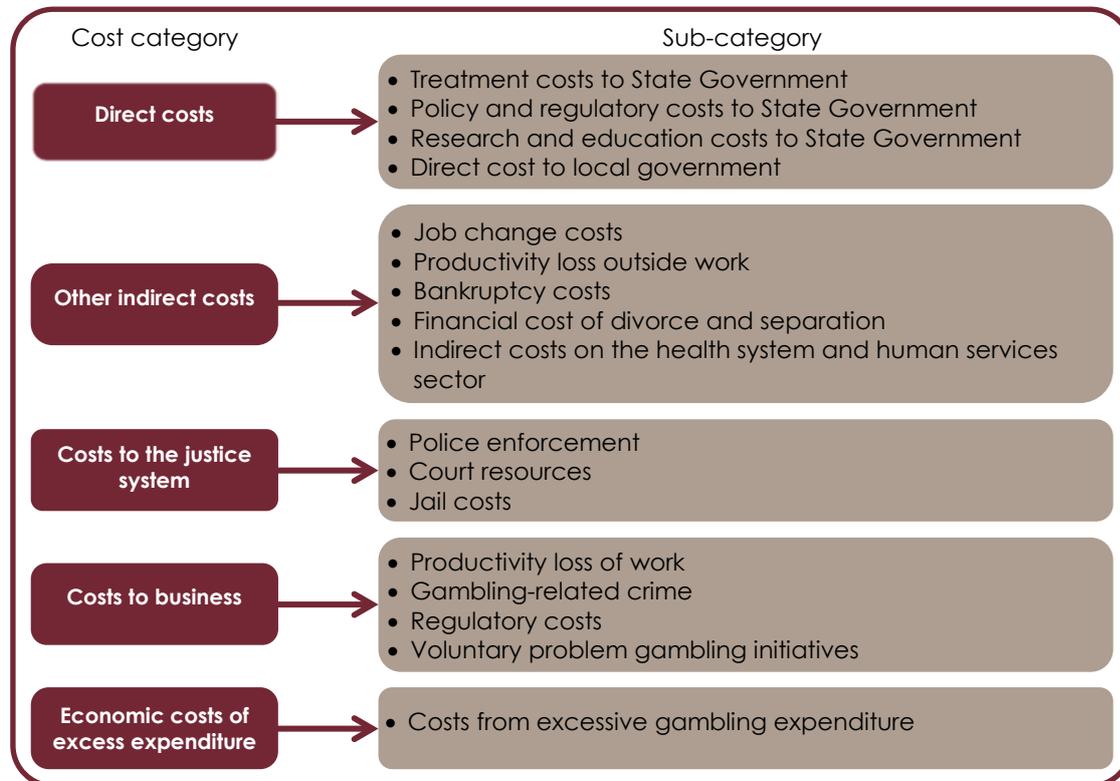
- type of impact (such as those mapped in figure B.2 above)
- the party who bears the cost (problem gamblers and other parties).

#### Cost by type of impact

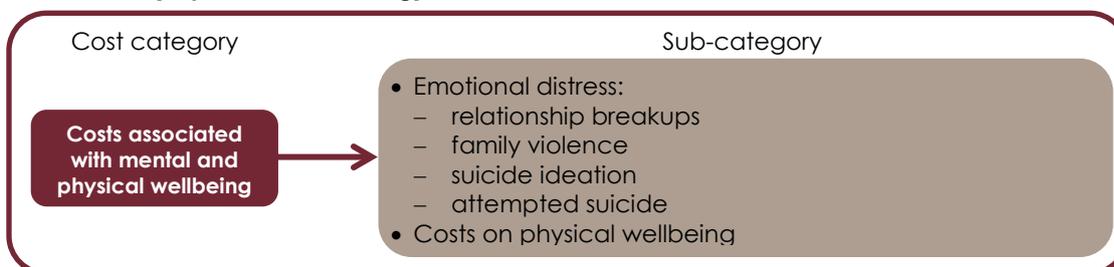
The Commission's framework divides costs into social and economic costs (figure B.3). The cost categories are largely based on the costs identified in the terms of reference. The sub-costs are informed by the PC's 1999 report, the Commission's own research and information from submissions and consultations.

**Figure B.3 Cost framework: cost categories and sub-categories**

**Economic costs (impacts on resources)**



**Social costs (impacts on wellbeing)**



Source: Commission analysis.

**Cost by affected party**

Many participants noted that the impacts of problem gambling are not confined to gamblers. The Victorian Responsible Gambling Foundation (VRGF) commented that problem gambling often impacts on the wellbeing of those around the problem gambler — those affected may include family, friends and employers (sub. 24, p. 4). Submissions provided a range of estimates on the number of people affected by a problem gambler:

- The University of Ballarat stated that, on average, the lives of six other people are adversely affected by every problem gambler (sub. 7, att. 7, p. 2).
- Chrysalis Insight stated that seven to 10 other people are indirectly affected by every problem gambler (sub. 9, p. 2).
- Relationships Australia stated that studies indicate that, for every problem gambler, 10-16 others may be affected (sub. 18, p. 3).

In considering who bears the costs of problem gambling, the Commission has focused on the key relationships that gamblers have with others in the community (figure B.4).

**Figure B.4 Problem gambler’s impacts on others: main types of relationship**



Source: Adapted from Laslett et al. 2010, 5.

The Commission recognises that community organisations bear costs in providing counselling, health and social support services to problem gamblers and their significant others (St Luke’s Anglicare, sub. 16, p. 8; Great South Coast Group, sub. 20, p. 4; Victorian Inter-Church Gambling Taskforce, sub. 27, p. 1). The costs to not-for-profit organisations are discussed in appendix C.

## **B.4.2 Determining unit costs**

Another key input to cost estimation is the unit cost that applies to the impacts of problem gambling. Various participants noted the challenges in quantifying the true costs of problem gambling. The City of Monash stated:

... it is exceptionally difficult for Council to place an exact dollar value on the impact that problem gambling has on services, business and community, as this information is not readily available. (sub. 22, p. 1)

### **Valuing economic impacts**

Determining the value of unit costs for the economic impacts of problem gambling is typically more straight forward than for social impacts. For financial impacts such as unemployment and bankruptcy, there are market-based transactions or publicly-determined fees, charges or payments which can be used to estimate unit costs. Subsequent appendices discuss in more detail the estimation and sources of these unit costs. The unit cost values represent averages, with actual values likely to vary for individuals and with differing circumstances.

## Valuing social impacts

There are, however, major challenges in determining the unit costs for social impacts, particularly for the emotional or psychological harms to problem gamblers and their families, parents and friends. Similar challenges arise when evaluating health and wellbeing impacts in other contexts — for example, valuing the health and environmental impacts of transport congestion.

One of the difficulties is the lack of market-based valuations of social impacts. For instance, Corangamite Shire observed that:

The health and social repercussions from sociopathic problem gamblers and the hurt caused to family and friends is difficult to quantify in cost.  
(sub. 19, p. 1)

Commenting on the PC analyses, Clubs Australia expressed concern about the 'speculative way in which monetary values have been assigned to intangible concepts such as "emotional stress"' (sub. 12, p. 25). Clubs Australia did not include the costs of emotional harm in its estimates of the costs of problem gambling for Victoria because it considered them private intangible costs to which it is not possible to objectively assign monetary values (sub. 12, p. 20). Similarly, the Australasian Gaming Council (AGC) argued that monetary estimates of the cost for intangibles are likely to be somewhat unreliable (sub. 28, p. 22).

There is significant debate in the research literature about how to treat the social costs of gambling, such as emotional distress. A recent review of gambling studies found that some studies have ignored or excluded such impacts (Williams, Rehm, and Stevens 2011). The risk with this approach, if applied to problem gambling, is that it is incomplete and would under-estimate the true costs. The University of Ballarat argued that the intangible nature of many harms cannot be a justification for excluding these impacts from this inquiry (sub. 7, att. 4, p. 2).

Notwithstanding these controversies, under the Commission's terms of reference, it is necessary to make a judgement about the monetary value of these impacts.

While assigning dollar values to economic and social impacts makes it possible to gauge their relative size and aggregate costs, there is uncertainty around the valuation methods used to compile some of these cost estimates. For some purposes, the valuation of impacts may be less of an issue than having reliable data on where problem gamblers are located. This may be the case, for example, for the purpose of targeting services to help problem gamblers and their families.

### B.4.3 Some specific issues around costs

As noted, there is substantial debate over what costs should be included in estimates of the social and economic costs of problem gambling. Decisions about the scope of costs to be included affect the overall magnitude of the costs of problem gambling. Some key questions arise regarding how to treat:

- costs that fall on problem gamblers
- excessive expenditure by problem gamblers
- local business and employment impacts
- fixed versus variable costs.

## Costs that fall on problem gamblers

A matter of contention is whether to include the costs that fall on problem gamblers (also known as internal or private costs). The PC and studies on the impacts of gambling in South Australia and Tasmania included significant elements of these internal costs (PC 1999; PC 2010; ACG, PGRTC & SRC 2011; SACES 2006). The PC included these costs because it had:

... serious reservations about the extent to which problem gamblers are aware of the true costs and benefits of gambling ... More importantly, for many problem gamblers, it is questionable whether they are spending money on gambling in a 'voluntary' way, exercising the 'consumer sovereignty' that would normally be assumed to apply. (PC 1999, 9.6)

The AGC, however, stated that various writers have significant reservations regarding the PC's rationales for the inclusion of the costs falling on problem gamblers (sub. 28, p. 22). Clubs Australia argued that the private intangible costs borne by individuals and families as a result of problem gambling should not be included in social cost estimates (sub. 12, p. 20). This view aligns with some researchers, who argue that many items included in some previous cost studies of gambling are not costs to society (D. M. Walker and Barnett 1999, 184; D. M. Walker 2007, 617).

Whilst recognising this debate, the Commission — in accordance with its terms of reference — has identified, measured and reported on the costs of problem gambling to various groups in the community, including problem gamblers.

## Excessive gambling expenditure

Excessive gambling expenditure (also known as excess loss) arises when problem gamblers' expenditure on gambling is at levels that cause financial and other harms to themselves, their families and the community. However, there are questions about whether the consumer loss associated with this excessive expenditure should be included in estimates of the social and economic costs of problem gambling.

Some studies have explicitly included the consumer loss associated with excessive gambling expenditure in their cost estimates (SACES 2006; PC 2010). In other studies, the consumer losses have been taken into account when calculating the benefits of gambling; that is, the losses were subtracted from the benefits (PC 1999; ACG, PGRTC & SRC 2011).

The PC argued that the usual assumption that gambling expenditure confers benefits is not warranted for problem gamblers, given the presence of widespread harms and control problems among that group (PC 2010, 6.35). The PC's report assumed — as it did in its 1999 report — that problem gamblers still receive a consumer surplus (satisfaction) associated with part of their expenditure (the level of spending characteristic of recreational play), but it treated the residual or the excessive expenditure as a cost.

Because the Commission is reporting costs to different groups in the community, it has estimated and reported the economic cost associated with the excessive gambling expenditure of problem gamblers.

## Local business and employment impacts

Another key question raised in consultations and submissions is whether the inquiry would examine the costs associated with the displacement of economic activity, particularly employment, when a new gaming venue opens or expands its number of

machines. Numerous participants, mainly councils, commented on the business and employment impacts of gambling in their local government areas (Yarra Ranges Council, sub. 11, pp. 5-6; Moreland City Council, sub. 13, p. 5; City of Boroondara, sub. 21, p. 3; City of Whittlesea, sub. 23, p. 6; Brimbank City Council, sub. 30, p. 6). The MAV noted that the impact on local business of proposed and existing gaming venues is of particular interest to local government (sub. 29, p. 4).

The view that the gambling industry may have a negative economic impact on a particular community was examined in a study on the impacts of electronic gaming machines (EGMs) in Bendigo (Pinge 2008). This study used an input-output model to demonstrate that, as gaming is a relatively capital intensive industry, a shift in spending from retail/accommodation/cafes towards gaming results in a fall in employment in the national/state or regional economy.

A 2005 SACES study of Victorian and Western Australian gambling concluded that 3.2 jobs were created for every million dollars of EGM gambling expenditure, compared with 8.3 jobs per million services from sales of beverage and 20.2 jobs for every million dollars spent on meals and food (SACES 2005b, 47). This study cautioned that data on job intensity underestimates the contribution of gambling to employment. This is because revenue earned from gambling, particularly EGMs, has enabled many venues to improve their facilities and services in other areas of the venue, which has in turn increased patronage and thus employment in other areas (SACES 2005b, 50–51). SACES also found that the introduction of EGMs in Victorian hotels and clubs was associated with a rise in employment in the order of 5000 to 10 000 jobs (SACES 2005b, iii).

These studies, however, are of a partial nature; that is, they do not take into account second-round or economy-wide impacts, such as employees moving to other industries within the region. In its studies, the PC found that from an economy-wide perspective, the employment impact of gambling is neutral, in that those employed in gambling would be employed elsewhere were the gambling industry smaller (PC 1999, 5.30; PC 2010, 6.28).

While acknowledging concerns about employment impacts, the Commission considers that these impacts are only relevant to this inquiry to the extent that problem gambling expenditure, rather than total gambling expenditure, affects economic activity. The Commission agrees with the PC's findings that, from a community perspective, the overall impact of gambling — and by extension problem gambling — on employment is likely to be neutral in the long-run.

### **Fixed versus variable costs**

The AGC argued that, unless there is evidence of a proportionally greater demand being placed on services by problem gambling, accounting for costs where services are fixed will likely result in an over-estimation of the costs attributed to problem gambling (sub. 28, p. 28).

Some researchers have previously discussed the issue of fixed and variable costs. According to the *2009 Australasian Gambling Review*, it may be potentially misleading to argue that the cost of providing services to problem gamblers is necessarily in proportion to the prevalence rate. This is because, for many government services, employees will be paid a salary to work as counsellors and police officers, and this will occur irrespective of the number of cases or clients that are processed. The *Australasian Gambling Review* argued that, unless government increases funding, extra demand for services will otherwise be met by existing resources being used more intensively such as counsellors working longer hours or devoting less time per client (Delfabbro, Le Couteur, and IGASA 2009, 227–228).

In response to the Commission's draft report, the Victorian Inter-Church Gambling Taskforce commented that from the perspective of community service agencies, potential impacts of problem gambling on government-funded community services include staff working longer unpaid hours, staff providing less support per client, and increasing the waiting time for potential clients to access services (sub. DR38, p. 2).

The Commission notes that, since gambling was liberalised in Victoria 20 years ago, it would be reasonable to expect that government services have responded, at least to some degree, to emerging needs for services over this time. Taking a medium-to-longer-run perspective, many of these costs could be viewed as variable.

## **B.5 Measuring the prevalence of problem gambling and its impacts**

The community-wide prevalence of problem gambling is generally measured by survey responses to gambling screens; that is, short sets of questions used to identify and categorise gamblers into discrete groups. The main issues in measuring prevalence include:

- reliance on gambling screens which have limitations
- frequency, size and consistency of prevalence surveys
- harms experienced by different categories of gamblers
- controlling for causality and the counterfactual.

### **B.5.1 Gambling screens and their limitations**

While a range of gambling screens is available, the main screening tools that have been used to measure the prevalence of problem gambling in Victoria and Australia in the past 10–15 years include:

- the South Oaks Gambling Screen (SOGS): a 20-item instrument that is used to determine whether a respondent is a problem gambler
- the Problem Gambling Severity Index (PGSI): a nine-item diagnostic instrument that is used to determine whether a respondent is a problem gambler<sup>1</sup> (box B.3)
- the National Opinion Research Centre Diagnostic and Statistical Manual of Mental Disorders (DSM) Screen (NODS): an instrument that is used to measure lifetime problem gambling (PGRTC 2012).

The SOGS was used in the PC's *National Gambling Survey* and some Victorian prevalence surveys (PC 1999). The SOGS is based on the DSM and was initially designed to screen psychiatric patients for gambling problems (Victorian Government 2009, 32). Studies have identified deficiencies in the SOGS, including generating false positives when used in population surveys (SACES 2005a, xii). Another study concluded that the SOGS was an unsatisfactory instrument to measure the prevalence of problem gambling in the general population and recommended that the screen be replaced in future Victorian and Australian population surveys (Wenzel et al. 2004).

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<sup>1</sup> The PGSI is a subset of the Canadian Problem Gambling Severity Index (Holtgraves 2009, 106).

### **Box B.3 The Problem Gambling Severity Index**

The Problem Gambling Severity Index instrument asks — in the last 12 months how often have:

- (1) You bet more than you could really afford to lose?
- (2) You needed to gamble with larger amounts of money to get the same feeling of excitement?
- (3) You gone back another day to try and win back the money you lost?
- (4) You borrowed money or sold anything to get money to gamble?
- (5) You felt that you might have a problem with gambling?
- (6) You felt that gambling has caused you health problems, including stress and anxiety?
- (7) People criticised your betting or told you that you have a gambling problem, whether or not you thought it was true?
- (8) You felt your gambling has caused financial problems for you or your household?
- (9) You felt guilty about the way you gamble or what happens when you gamble?

The standard response categories (with scoring in parentheses) are: never (0), sometimes (1), most of the time (2), almost always (3). The cut-off scores are: 0 = non-problem gambler, 1–2 = low risk gambler, 3–7 = moderate risk gambler, 8–27 = problem gambler.

*Source: GRA 2010, 57.*

The PGSI was developed as a more appropriate diagnostic tool for use in prevalence surveys of the general population. The PGSI has become the benchmark index in Canada for collecting information on gambling habits and problem gambling symptoms. It is also used in Australia, Great Britain, Iceland and Norway (Currie, Casey, and Hodgins 2010, 6).

### **Problem Gambling Severity Index categories**

The gambler categories under the PGSI include:

- Problem gamblers (PGSI score 8 or higher): are defined by the PGSI as those who have experienced adverse consequences as a result of their gambling and may have lost control of their behaviour. Involvement in gambling may be at any level but is likely to be heavy.
- Moderate risk gamblers (PGSI score 3–7): are those who have responded 'never' to most of the indicators of behavioural problems in the PGSI but are likely to score on one or more 'most of the time' or 'always' responses. This group may or may not have experienced adverse consequences from gambling.
- Low risk gamblers (PGSI score 1–2): this group of gamblers is unlikely to have experienced any adverse consequences from gambling and will have answered 'never' to most of the indicators of behavioural problems in the PGSI.
- Non-problem gamblers (PGSI score 0): these respondents have responded 'never' to all of the indicators of behavioural problems. This group may still be frequent gamblers with heavy involvement in gambling in terms of time and money, but will not have experienced any adverse consequences (DOJ 2009a).

Most states and territories in Australia have adopted the PGSI as the standard measure of problem gambling in their prevalence studies and research programs (Jackson et al. 2010). It has been used in most Australian prevalence surveys since the early 2000s, including Victorian prevalence surveys (section B.5.2). Thus, using the PGSI enables consistent comparisons over time and with other jurisdictions.

While some participants and researchers have raised various issues with the PGSI (discussed below), it generally performs better than other screens (GRA 2010, 56). One study compared the PGSI, the SOGS and the Victorian Gambling Screen instrument (VGSi), concluding that the PGSI was the superior screen with the best measurement properties (Wenzel et al. 2004). Some participants considered that the PGSI was appropriate for this kind of study (Moreland City Council, sub. 13, p. 6; Relationships Australia, sub. 18, p. 2).

### **Some issues regarding the Problem Gambling Severity Index**

Although the PGSI has become the standard measure of problem gambling in Australia, there are a number of concerns relating to the screen. The key ones include:

- conceptual issues with the PGSI
- the risk of false positives and false negatives
- modifications to the PGSI screen.

#### *Conceptual issues*

The PGSI has been criticised for lacking a clear theoretical foundation and not being sufficiently aligned with the national definition of problem gambling. One study has argued that the PGSI items are derived from an addictions conceptualisation of pathological gambling, and are not necessarily reflective of the harms oriented concept of problem gambling. This study argued that results obtained using the PGSI will not adequately capture the notion of harm that underpins current definitions of problem gambling (Svetieva and Walker 2008). The AGC also commented that, while some PGSI questions may serve to illustrate the occurrence of harm, others may be more problematic (sub. 28, p. 19).

While noting these types of conceptual concerns, a recent analysis of Australian gambling research observed that, in practice, the PGSI may be reasonably successful in identifying which people in the population are most likely to be experiencing harm, even if the measure contains few harm-based questions. Moreover, the review stated that there is little doubt that the PGSI generally performs well as a psychometric instrument (GRA 2010, 56).

#### *False positives and false negatives*

Clubs Australia raised the issue of false positives (survey respondents incorrectly identified as problem gamblers) and false negatives (survey respondents incorrectly identified as not being problem gamblers) that could arise from applying the PGSI screen. Clubs Australia contended that there is a high propensity for false positives (sub. 12, pp. 13-15).

Gambling screens, such as the PGSI and others, may involve misclassification errors among different risk groups. While a number of misclassification errors are possible, those of most concern relate to false positives and false negatives as defined above. If false positives predominate, this would push the prevalence rate above its true rate.

Conversely, if false negatives predominate, this would depress the measured rate of problem gambling below the true rate.

In a detailed analysis of this issue, the PC presented evidence which suggested that false positives are not a major issue when identifying the prevalence of severe problems (PC 2010). As discussed in section B.5.3, the Commission decided to base its cost estimates on the problem gambler category, which is at the severe end of the PGSI categories. This should reduce the likelihood of false positives.

*Modifications to the Problem Gambling Severity Index screen*

The AGC noted that an amended PGSI screen has been used in Victoria, following the approach used in Queensland (sub. 28, p. 19). Rather than using the standard response categories, the 2003 and 2008 Victorian prevalence surveys used a modified form of response categories and scoring (table B.2).

**Table B.2 Response categories and scoring, Problem Gambling Severity Index**

Standard PGSI		Modified PGSI	
Response	Score	Response	Score
Never	0	Never	0
Sometimes	1	Rarely	1
Most of the time	2	Sometimes	1
Almost always	3	Often	2
—	—	Always	3

Source: Jackson et al. 2010.

According to a 2010 study, the addition of 'rarely' to the low risk category and the conversion of 'almost always' to 'always' — as done in the majority of Australian prevalence surveys — may fundamentally change the psychometric properties that were established for the PGSI. The study's authors noted that they had never seen a convincing evidence-based rationale for these modifications (Jackson et al. 2010).

The PC's analysis suggests that the modified PGSI screen has under-estimated the number of problem gamblers by a relatively small margin, while over-estimating the number of moderate risk gamblers (PC 2010, 5.11).

**B.5.2 Frequency, size and consistency of prevalence surveys**

Surveys have been the primary method for collecting information on the prevalence of problem gambling in the Victorian community. While there was a series of surveys in the 1990s, the two most recent large-scale surveys for Victoria include:

- *A Study of Gambling in Victoria: Problem Gambling from a Public Health Perspective*, which was prepared for the Department of Justice (DOJ 2009b). From here on, this will be referred to as the Victorian Gambling Study (VGS).
- The *2003 Victorian Longitudinal Community Attitudes Survey*, which was prepared for the Victorian Gambling Research Panel (McMillen et al. 2004). This was the

eighth in a series of community attitudes surveys. It will be referred to as the 2003 Victorian prevalence survey.

National prevalence surveys include the PC's *National Gambling Survey* and *Survey of Clients of Counselling Agencies* (PC 1999). Key features of the Victorian and PC surveys are summarised in table B.3.

**Table B.3 Key prevalence surveys, Victoria and Australia**

	DOJ	McMillen et al	PC – NGS	PC – SCCA
<b>Jurisdiction</b>	Victoria	Victoria	Australia	Australia
<b>Year</b>	2008	2003	1999	1999
<b>Sample size</b>	15 000	8479	10 600	404
<b>Sub-sampling</b>	Gamblers in past 12 months	Regular gamblers	Regular gamblers	Problem gamblers seeking help
<b>Survey method</b>	Telephone questionnaire	Telephone questionnaire	Telephone questionnaire	Face-to-face interviews
<b>Gambling screens</b>	PGSI, NODS	SOGS, PGSI & VGSI	SOGS, HARM	SOGS
<b>Harm-based questions</b>	Yes	Yes	Yes	Yes

Notes: DOJ = Department of Justice; NGS = National Gambling Survey; SCCA = Survey of Clients of Counselling Agencies; HARM = self-assessed indicator of significant adverse impacts on the life of the gambler.

Sources: DOJ 2009b; McMillen et al. 2004; PC 1999.

The Commission used data from these surveys to (1) estimate the number of gamblers by risk category and (2) estimate the prevalence of harms among gamblers. That said, the Commission identified several issues relating to prevalence surveys, including:

- survey frequency
- sample size and structure
- sub-sampling, non-participation and contact method
- consistency of harm-based questions.

### Survey frequency

Prevalence surveys that are conducted regularly provide more current information on the prevalence of problem gambling. State-wide prevalence surveys have been conducted less frequently in the 2000s, compared to the 1990s. The VGS provides the latest prevalence data for Victoria based on a representative sample (DOJ 2009b). More recent prevalence data are available from *The Victorian Gambling Study: A Longitudinal Study of Gambling and Public Health – Wave Two Findings*, but the sample is not representative (DOJ 2011a).

This raises the issue of the appropriate frequency of prevalence surveys for the purposes of estimating the number of gamblers at risk and the prevalence of harms from problem gambling. Clubs Australia noted that the most recent estimate of the problem gambling prevalence rate is now more than four years old (sub. 12, p. 16). Commenting

on additional responsible gambling measures, Sportsbet proposed that comprehensive and robust national problem gambling prevalence surveys be undertaken annually (sub. 17, p. 5).

While the Commission would have preferred to have had access to more recent data on prevalence rates, it considered that the data in the VGS to be the best estimates currently available. The Commission also notes that, as gambling markets mature, as reflected in slower growth in gambling expenditure, this maturation may have implications for prevalence rates.

### **Sample size and structure**

Sample size and structure are major factors that affect the reliability and representativeness of prevalence estimates. Larger and well-stratified samples will generally produce more robust estimates. Large sample sizes were used in the VGS and the 2003 Victorian prevalence survey. For example, the VGS interviewed a total of 15 000 respondents across the state (table B.3). The sample was stratified to reflect the adult population in each of eight Victorian government regions across Victoria (DOJ 2009b, 8).

The confidence that can be placed on survey results generally declines as the data are disaggregated into more detailed groups or by geographic area (GRA 2010). Regarding questions on the specific harms of gambling, the sample sizes are generally smaller (compared with the sample size for the overall prevalence rate), resulting in larger standard errors and wider confidence limits.

Many participants, mainly councils, pointed to the need for local-area data (for example, see Victorian Local Governance Association, sub. 14, p. 6). In the case of prevalence rates of problem gambling at the local government, statistical district or postcode level, it is not possible to obtain reliable estimates from the VGS. To obtain such estimates would require a very large sample state-wide survey, supplementary or special surveys focusing on selected geographic areas, and/or rotational survey strategies. Such options, however, involve costs and would need to be considered in the Government's priorities for problem gambling research.

### **Sub-sampling, non-participation and contact method**

There are several issues around sub-sampling, non-participation and the method of contacting survey respondents that could result in under-estimation of the number of problem gamblers in the adult population.

Some prevalence surveys — such as the PC's *National Gambling Survey* and the 2003 Victorian prevalence survey — do not ask all respondents to complete the entire survey questionnaire (PC 1999; McMillen et al. 2004). The 2003 Victorian prevalence survey identified regular gamblers (those who gambled at least weekly or 52 times a year) and then asked these respondents more specific questions about their gambling (McMillen et al. 2004). There have been concerns that such sub-sampling might not capture infrequent gamblers who have a gambling problem or 'binge' gamblers. In a 2007 survey, the PGSI screen was administered to the total adult population being surveyed rather than restricting it to regular gamblers. It estimated that 1.4 per cent of the population were classified as problem gamblers, which is significantly higher than the rates from the 2003 and 2008 Victorian prevalence surveys (Jackson et al. 2010).

Prevalence estimates may also be affected by low or non-participation by problem gamblers in sample surveys. Some gamblers may not participate or, when they do, they may minimise the extent of their gambling due to the embarrassment and stigma

attached to problem gambling. Numerous participants observed that shame, humiliation and stigma are associated with problem gambling (University of Ballarat, sub. 7, att. 4, p. 1; St Luke's Anglicare, sub. 16, p. 8; Relationships Australia, sub. 18, p. 3; Great South Coast Group, sub. 20, p. 2; City of Boroondara, sub. 21, p. 1). Previous research has found that people with gambling problems tend to minimise or conceal these problems, by not responding to surveys or providing less than candid responses (Greater Dandenong City Council, sub. 3, p. 2).

Another issue is that surveys which have used fixed or landline phone numbers (known as 'single frame' surveys) to contact respondents, may have under-estimated gambling prevalence rates. A recent study reported that it is likely that a large proportion of the gambling population (12.2 per cent of non-problem gamblers and 25.3 per cent of problematic gamblers) would not be represented in research findings if a single frame survey is used instead of a dual-frame survey (that is, fixed and mobile phone) (Jackson et al. 2012).

### Consistency of harm-based questions

While gambling screens, such as the PGSI, enable the classification of gamblers into different categories, relying on these screens alone may not cover the full range of relevant harms experienced by problem gamblers. The PGSI covers a small number of behaviours and harms (table B.4). Consequently Victorian and Australian prevalence surveys have usually asked a range of additional questions about behaviours and harms. It is these harm-based questions that are critical to estimating the costs of problem gambling under a prevalence-based approach.

All the prevalence surveys listed in table B.4 asked questions relating to the adverse impacts of gambling. For instance, the 2003 Victorian prevalence survey asked questions about some personal impacts of gambling, such as whether gambling had resulted in the breakdown of personal relationships or whether gambling had adversely affected their work performance (McMillen et al. 2004).

**Table B.4 Harm-based questions linked to gambling, selected harms, prevalence surveys**

	DOJ	McMillen et al	PC – NGS	PC – SCCA
<b>Bankruptcy</b>	No	Yes	Yes	Yes
<b>Changed jobs</b>	No	Yes	Yes	Yes
<b>Relationship break-up</b>	No <sup>a</sup>	Yes	Yes	No
<b>Depression</b>	Yes <sup>b</sup>	Yes	Yes	Yes
<b>Considered suicide</b>	No <sup>c</sup>	Yes	Yes	Yes
<b>Trouble with police</b>	No <sup>d</sup>	Yes	Yes	Yes

Notes: DOJ = Department of Justice; NGS = National Gambling Survey; SCCA = Survey of Clients of Counselling Agencies. **a** The NODS included a question on whether gambling had caused serious or repeated problems in a gambler's relationships with family and friends, but it did not specifically ask whether gambling resulted in relationship break-up. **b** The survey asked a question about which factors (including depression) had triggered larger than usual spending on gambling, but this question related only to binge gambling. **c** The question asked of moderate-risk and problem gamblers was 'In the last 12 months, have you considered taking your own life?', but did not link the harm to gambling. **d** While the survey did not ask whether gambling had led to trouble with police, it did ask whether gambling led the respondent to doing anything technically against the law.

Sources: DOJ 2009b; McMillen et al. 2004; PC 1999.

The set of harm-based questions has varied across previous prevalence surveys. For example, while the 2003 Victorian prevalence survey asked whether gambling had resulted in bankruptcy, the VGS did not ask a similar question (table B.4). This also creates a lack of comparability over time.

The Commission was unable to use data from the VGS to examine a number of harms because either (1) a question was not asked on that particular harm or (2) a question was asked but phrased in such a way that made it unusable for the purpose of cost estimation. In many cases, the question did not link the harm to gambling, so it is possible that the harm was caused by factors other than gambling. This issue particularly affects estimates of mental and physical wellbeing costs (appendix F), and could be considered in the design of future prevalence surveys.

### **B.5.3 Harms experienced by different categories of gamblers**

A key research question is whether to measure harms among problem gamblers (based on the PGSI category) or more broadly across all at-risk gamblers (that is, low-risk, moderate-risk and problem gamblers). Participants' views on this question were sharply divided. According to Clubs Australia, some researchers have created the concept of people being 'at-risk' of becoming problem gamblers that is underpinned by the inaccurate belief that there is some orderly and inevitable transition between recreational gambling and problem gambling:

... we are concerned that some groups have resorted to merging the 'at risk' and problem gambler categories and labelling the resultant group 'problem gamblers' in an attempt to exaggerate the scope of gambling problems. (sub. 12, p. 17)

AGC argued that the costs applied to problem gambling are most reliably assessed as the harms experienced by those defined as problem gamblers (PGSI 8+) (sub. 28, p. 19).

At the same time, numerous participants argued that all at-risk gamblers or the harms experienced by those gamblers should be included in cost calculations. For example, the VRGF noted that harms may also be experienced by gamblers not clinically assessed as problem gamblers (sub.24, p. 4). Along similar lines, many other participants argued that low-, moderate- and high-risk gamblers should be included when calculating costs (pokieact.org, sub. 5, p. 1; Mornington Peninsula Shire, sub. 6, p. 2; University of Ballarat, sub.7, att. 4, p. 1; Moreland City Council, sub.13, p. 6; VLGA, sub. 14, p. 6; City of Whittlesea, sub. 23, p. 5; Victorian Inter-Church Gambling Taskforce, sub. 27, p. 4).

The Commission recognises that many 'at-risk' gamblers will not become problem gamblers and longitudinal survey data indicate that only a small proportion do (DOJ 2011a). There are also uncertainties regarding the extent of harm suffered by different at-risk groups, particularly those categorised as low risk and moderate risk gamblers.

As such, the Commission has focused on estimating the cost of harms to the problem gambler group, rather than to all at-risk groups. In response to the Commission's draft report, the Victorian Inter-Church Gambling Taskforce stated that the 'Commission has underestimated some of the costs associated with problem gambling in Victoria, by only considering costs in some areas that related to those classified as problem gamblers'(sub. DR38, p. 1). At the same time, the Taskforce acknowledged that in many areas quantifying harm to moderate risk gamblers would be 'very difficult' (sub. DR38, p. 1).

In some cases, the Commission's approach has been driven by data availability. In other cases, it reflects a cautious approach to estimating costs given inherent uncertainties and data limitations. Inclusion of at-risk gamblers in all cost categories would result in higher cost estimates. Nevertheless, for some categories, such as treatment costs to government, estimated costs will encompass all gamblers seeking treatment, irrespective of whether they are defined as problem gamblers.

#### **B.5.4 Comorbidities, causality and the counterfactual**

An important issue affecting cost estimation is how to attribute costs to problem gambling when problem gamblers may have multiple disorders or comorbidities. In the VGS, problem gamblers reported significantly higher rates of mental and physical health conditions than non-problem gamblers (DOJ 2009b, 18). International evidence also indicates that problem gamblers experience high levels of other comorbid mental and physical health disorders (Lorains, Cowlshaw, and Thomas 2011, 106; Morasco et al. 2006, 980).

These comorbidities raise the issue of causality; that is, do these comorbidities cause problem gambling or does problem gambling cause the comorbidities? Some participants acknowledged the difficulties in determining the direction of causation. Moreland City Council pointed to the difficulty in disentangling the cause and the symptom (sub. 13, p. 7). Relationships Australia stated that:

It has been our experience over time that a significant number of presentations involve co-morbidities. There is little evidence, other than anecdotal, to support any hypothesis on cause and effect. (sub. 18, p. 2)

While St Luke's Anglicare identified some possible triggers for problem gambling (such as grief, isolation and depression), it noted that sometimes it is difficult to ascertain whether the issues in people's lives lead to problem gambling or if the gambling led to the issues (sub. 16, p. 7). Clubs Australia, in both its original submission and submission to the draft report, combined the findings of two North American studies to suggest that:

... 75 per cent of the emotional stress experienced by problem gamblers is likely to pre-exist their problem gambling and therefore cannot be attributed a cost of problem gambling. (sub. DR34, p. 13)

The Commission understands that research into problem gambling and comorbidities suggests the degree to which problem gambling is a manifestation or a trigger for them varies, so generalisations are hard to make. In its submission to the draft report, the VRGF held a similar view regarding the issue of causality:

Specifically, measurement of problem gambling costs faces a chicken and egg dilemma: does problem gambling precede other co-morbid conditions, such as depression, criminal behaviour or drug abuse, or result from the existence of these issues? The existing research is divided on this question, which makes it difficult to quantify cost in a universal manner. (sub. DR39, p. 6-7)

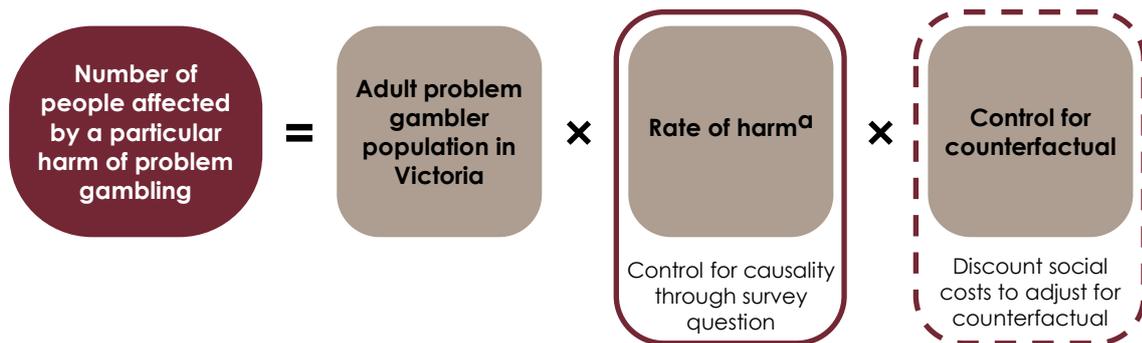
#### **Controlling for causality**

If causality is not taken into account, costs would be over-estimated. According to a 2007 review of methodological issues, some studies have attributed the full costs of multiple disorders to problem gambling, even when there are other problematic behaviours (D. M. Walker 2007, 617). Clubs Australia argued that the PC failed to establish the proper causal relationships between problem gambling and the various

cost domains, which they argued resulted in grossly inflated cost estimates (sub. 12, p. 22).

For many harms or impacts, the Commission has sought to take account of causality by using the results of survey questions which directly linked the harm to gambling (figure B.5). The 2003 Victorian prevalence survey and the PC's surveys phrased many of their questions in this way (McMillen et al. 2004; PC 1999). A possible weakness of this approach is that the responses may be affected by self-reporting bias; that is, respondents may under- or over-estimate the adverse impacts of gambling.

### Figure B.5 Controlling for causality and the counterfactual



Note: <sup>a</sup> The rate of harm for the relevant problem gambler group.

Source: Commission analysis.

### Controlling for the counterfactual

To estimate the costs of problem gambling, costs in the reference year (that is, 2010-11) are compared to costs in an alternative or 'counterfactual' scenario. While review studies indicate that the counterfactual is important, they often provide little or no guidance on what the counterfactual should be (Williams, Rehm, and Stevens 2011; D. M. Walker 2003). Clubs Australia contended that zero problem gambling is not a valid counterfactual (sub. 12, p. 23).

However, according to a 2007 report, the counterfactual normally takes the form of a theoretical situation of no gambling, non-problem gambling or normal gambling depending on the problem being investigated (May-Chahal 2007). In another study, the counterfactual was described as a scenario in which gambling activity occurs under different policy settings and/or environmental factors — or not at all (CSHORE 2008).

In this inquiry, the Commission has measured the costs of problem gambling using the following scenarios:

- The current situation — gambling occurs under current policy and environmental settings in Victoria with some gamblers experiencing gambling problems. Problem gambling is reflected in measured prevalence rates.
- The counterfactual scenario — gambling occurs under alternative policy and environmental settings in Victoria with no gamblers experiencing problem gambling.

The Commission recognises that the counterfactual is not realistic, noting that counterfactuals in many cost studies are hypothetical in nature.

During the PC's 1999 inquiry into gambling, a number of industry participants highlighted that many harms relating to wellbeing, such as divorce and separation, would occur even in the absence of gambling. To take this issue into account, the PC relied on judgements from a number of academics and researchers that about 15 to 20 per cent of harms would have occurred in the absence of gambling. As such, the PC applied a 20 per cent discount to the number of individuals estimated to be affected by a harm (PC 1999, 9.8–9.9).

The Commission has applied the same adjustment (20 per cent discount) to its estimates of social costs (appendix F). The feasibility of applying a more sophisticated adjustment procedure was investigated, but a paucity of data precluded its application.

## B.6 General assumptions and data sources

The Commission's cost estimates are underpinned by a number of general assumptions, and based on a wide range of data sources.

### B.6.1 General parameters and assumptions

Under a prevalence-based approach, the costs of problem gambling are estimated for a given year. In this report, the cost estimates refer to the financial year 2010-11. There are several parameters and assumptions that apply across many cost categories. The number of problem gamblers in Victoria has been estimated using the prevalence rate from the VGS and Australian Bureau of Statistics demographic data (table B.5).

**Table B.5 General parameters**

Parameter	Estimate	Date	Source
Adult population in Victoria <sup>a</sup>	4 316 224	30 June 2011	ABS 2012a
Prevalence rate for problem gamblers in Victoria (%) <sup>b</sup>	0.7	July–October 2008	DOJ 2009b
Problem gamblers in Victoria <sup>b</sup>	30 200 <sup>c</sup>	30 June 2011	ABS 2012a; DOJ 2009b
Inflation	All Groups Consumer Price Index, Melbourne	1997-98 to 2010-11	ABS 2012b

Notes: <sup>a</sup> Population aged 18 and over. <sup>b</sup> Based on PGSI category. <sup>c</sup> Assumes no change in the prevalence rate since 2008. Values may not equate due to rounding.

Sources: ABS 2012a; DOJ 2009b; ABS 2012b.

Where unit cost data apply to earlier years, these values have been converted to 2010-11 prices using the All Groups Consumer Price Index (CPI) for Melbourne (ABS 2012b).

Specific parameters and assumptions relating to particular cost categories are discussed in subsequent appendices. The reliability of cost estimates, including the underlying data and assumptions, are also discussed. In many cases, low and high estimates have been developed.

## B.6.2 Data sources

The key data and information sources used in this study include:

- submissions to, and consultations with, the Commission
- gambling expenditure data
- prevalence and longitudinal surveys
- administrative databases and reports
- research literature.

### Submissions and consultations

Through its consultation program, the Commission sought information, data, examples, and studies from people and organisations interested in this inquiry. It received 40 submissions from participants and met with around 40 individuals and organisations, including Victorian and Commonwealth government (departments and agencies), local government, businesses and industry groups, researchers and academics (appendix A). The Commission used this information to develop and test its analytical framework and cost estimates.

### Gambling expenditure data

The Commission used gambling expenditure data from the *Australian Gambling Statistics* publication, which is produced by the Office of Economic and Statistical Research in cooperation with state and territory governments (OESR 2011). The Victorian Commission for Gambling and Liquor Regulation also provided data on gambling expenditure on EGMs by local government area in Victoria. These data were used for descriptive and analytical purposes in this report, including to estimate excessive spending on gambling and the associated consumer loss.

### Prevalence and longitudinal surveys

As the Commission has applied a prevalence-based approach, data from prevalence surveys are critical to estimating the social and economic costs of problem gambling. The main prevalence surveys used by the Commission were outlined in section B.5.2, and are the key sources for prevalence data by gambler categories. They also provide data, to varying degrees, on the prevalence rates of particular harms among gamblers. As noted, the Commission was unable to use many of the harm-based questions in the VGS because they did not link the harm to gambling.

Another data source was *The Victorian Gambling Study: A Longitudinal Study of Gambling and Public Health – Wave Two Findings* (DOJ 2011a), which re-surveyed about 5000 respondents from the Wave One survey; that is, the VGS. This longitudinal study enables changes in the gambling status and behaviour of respondents between different waves to be examined.

### Administrative databases and reports

Further key sources of data on problem gamblers include administrative databases and reports. The VRGF provided the Commission with de-identified data regarding Gambler's Help (GH) services that are funded by the Victorian Government. The database contains information on people (including gamblers and affected others such as partners, family and friends) who sought help for gambling-related issues at GH.

Most of the gamblers in the database are likely to be problem gamblers, although it is not a representative sample of problem gamblers in the Victorian population.

The database provides information on the demographic characteristics of the gamblers and affected others that sought help from GH services. It also contains de-identified client-level information on location, type of gambling activity, amount of money lost, and various indicators of psychological wellbeing, work and social adjustment, and alcohol and drug use.

In addition, the Commission was provided with data on Department of Human Services client services. This data was used to analyse the geographic distribution of the costs of problem gambling (appendix I).

## Research literature

The research literature on gambling is vast. The Commission relied on several recent literature reviews including the *Australasian Gambling Review and Analysis of Australian Gambling Research* (Delfabbro, Le Couteur, and IGASA 2009; GRA 2010). It also used recent international reviews, including the meta-analysis *The Social and Economic Impacts of Gambling*, which reviewed more than 490 studies of which about 290 were empirical investigations (Williams, Rehm, and Stevens 2011).

A number of studies in the public health literature were also relevant to developing the Commission's framework. Some of these included *The Costs of Tobacco, Alcohol and Illicit Drug Abuse to Australian Society in 2004/05*, *The Range and Magnitude of Alcohol's Harms to Others*, and *The Economic Impact of Youth Mental Illness and the Cost Effectiveness of Early Intervention* (Collins, Lapsley, and University of NSW 2008; Laslett et al. 2010; Access Economics 2009). The Commission used numerous other studies relevant to estimating particular types of costs. These are cited in subsequent appendices and listed in the references.

## B.7 Conclusion

There are diverse views among participants and the research literature about how best to measure the social and economic costs of problem gambling. To estimate these costs and answer the terms of reference the Commission has needed to make a number of methodological choices despite a lack of consensus and clear guidance on many of these issues in the research literature and public discourse.

In the absence of a universally accepted framework for examining the social and economic costs of problem gambling, the Commission has developed a framework building on and refining the PC approach (PC 1999). Many of the impacts identified by participants are encompassed by this framework. There is, however, significant controversy over which costs should be included in this framework.

In addition, opinion is sharply divided on whether to include all at-risk gamblers or only problem gamblers in estimating the cost of harm. Because of data issues and uncertainties over the harms experienced by low and moderate risk gamblers, the Commission has based its cost estimates primarily on the problem gambler category. There are also major challenges in determining the unit costs of social impacts, accounting for causality and setting the appropriate counterfactual scenario.

The Commission's efforts to develop current and robust cost estimates have been impeded by the frequency and design of Victorian prevalence surveys. State-wide prevalence surveys have been conducted less frequently in the 2000s, compared to the 1990s. If more up-to-date cost estimates are desired by government, state-wide

prevalence surveys will need to be conducted more frequently (for example, once every 3–5 years).

Another barrier to cost estimation is that Victorian prevalence surveys have not asked a consistent set of harm-based questions and, in many cases, have not phrased questions in a manner to control for causality. This has severely limited the usefulness of these surveys for cost estimation purposes. Time and resource constraints precluded the Commission from conducting a new state-wide prevalence survey. An alternative means of identifying harms and the causes of harms associated with problem gambling is to undertake specific studies of problem gamblers, ideally of a quantitative nature.

## Appendix C: Direct costs

### C.1 Introduction and summary of findings

The terms of reference require the Commission to report on the cost of providing direct services to problem gamblers and their families and friends.

This appendix considers the direct costs of problem gambling to the Victorian Government, Commonwealth Government, local governments, not-for-profit organisations and individuals. Direct costs reflect expenditures focused on preventing or dealing with the harms associated with problem gambling. These include the costs of treatment services and expenditure on problem-gambling related policy, regulatory, research and education programs and strategies. Indirect costs to the Victorian Government mainly reflect costs to the health and human service systems (appendix D) and costs to the justice system (appendix E).

The Commission found that the direct cost to the Victorian Government of problem gambling was approximately \$42.1 million in 2010-11, of which \$20 million was for services to problem gamblers and their family and friends. This estimate is informed by judgements made by the Department of Justice (DOJ) and the Victorian Commission for Gambling and Liquor Regulation (VCGLR) about the amount of their policy and regulatory costs that can be attributed to addressing problem gambling, as distinct from other objectives such as ensuring probity and fairness of gambling activities.

For local government direct costs, the Commission focused on the cost of responding to applications for increases in the number of electronic gaming machines (EGMs). This issue was raised by a number of participants (section C.3). The Commission was provided with estimates by local government of the cost of responding to EGM applications, funding research and promoting alternatives to gambling. These costs are also difficult to attribute solely to problem gambling, rather than gambling more generally. The Commission estimated local government costs directly attributable to problem gambling, rather than gambling more generally, were at least \$0.35 million, with an upper bound of \$0.7 million, in 2010-11 (table C.1).

The Commission found limited cost information on direct costs to the Commonwealth Government in 2010-11. It was able to estimate some future Commonwealth Government spending on financial counselling services for problem gamblers. The Commission assumed a per capita distribution of this funding to Victoria of 25 per cent, resulting in a per annum spend of approximately \$1.6 million in future years (section C.4.3).

### C.2 State of knowledge

Previous studies have identified similar elements of direct services costs (or 'treatment costs') for problem gambling (PC 1999; ACG, PGRTC & SRC 2011). These include:

- community education programs
- telephone gambling helplines
- professional counselling and treatment services
- research (PC 1999, 17.2).

The VCGLR distinguished between preventative and consequential costs to government resulting from problem gambling:

Preventative costs to government involve the development and implementation of measures or initiatives designed to prevent or reduce problem gambling. The preventative costs incurred by government could be considered by the VCEC as costs relevant to its inquiry as they are incurred by government as a result of the existence of problem gambling behaviour. Consequential costs involve dealing with problem gamblers and problem gambling behaviour... (sub. 25, p. 8)

## C.3 Participant views

Submissions received by the Commission regarding direct costs of problem gambling focused on the costs incurred by local government to address gambling, and problem gambling, in their municipality.

The main issue raised was that introducing EGMs in a local area would 'increase the incidence of problem gambling' and therefore councils were required to respond to EGM expansion applications with research and evidence to that effect (Yarra Ranges Council, sub. 11, p. 4). Box C.1 summarises these views.

### Box C.1 Local government costs — participant views

#### *Research and policy development*

Local governments have funded research on the extent and effect of problem gambling on their community and development of local gambling policies.

- Between January 2011 and July 2013 the City of Boroondara will spend at least \$24 500 monitoring and reviewing its gaming policy (sub. 21, p. 2).
- Moreland City Council's research and policy costs are over \$103 000 including social and planning policy development, demographic and local research and staff development (sub. 13, p. 8).

#### *Promoting alternatives to gambling*

Some Councils fund social alternatives to gambling to provide the community with avenues to participate in activities other than electronic gaming machine (EGM) gambling. For example, Moreland City Council provides three programs at a cost of approximately \$135 000 per year (sub. 13, p. 8).

#### *Responding to applications for the expansion of gaming activity*

Under the *Gambling Regulation Act 2003* (Vic), councils may oppose EGM approval applications by 'addressing the economic and social impact of the proposal for approval on the well-being of the community ...' (MAV, sub. 29, p. 6).

- A survey of 36 councils conducted by the Municipal Association of Victoria (MAV) found over the past five years:
  - The cost per submission to the Victorian Commission for Gambling and Liquor Regulation (VCGLR) ranged from \$1000 to \$285 000. The average cost was \$27 630 per submission<sup>a</sup>.
  - The cost of participating in VCGLR proceedings ranged from \$10 000 to \$220 000. The average cost was \$37 203 per proceeding.
  - The average cost of an appeal against a VCGLR ruling was \$63 750 per appeal (MAV, sub. 29, p. 8).
- Corangamite Shire expects to spend \$40 000 producing a planning scheme amendment 'to protect vulnerable areas from an influx of EGM's' (sub. 19, p. 1).

### **Box C.1 Local government costs — participant views** (cont.)

- City of Monash has spent over \$220 000 (plus approximately \$65 000 of staff time) opposing two recent applications for EGM increases (sub. 22, p. 2).
- Yarra Ranges Council expects to spend approximately \$60 800 to \$84 200 preparing a response to an EGM application including producing a Social and Economic Impact Assessment (SEIA) and community survey (sub. 11, pp. 5, 9).
- Moreland City Council estimated the cost per EGM application was between \$106 000 and \$126 000 including a SEIA, community survey, expert evidence and hearing costs (sub. 13, p. 9).

Note: <sup>a</sup> According to the MAV, this figure is likely to be 'somewhat greater' as many responses did not factor in officer time (sub. 29, p. 8).

Sources: Various submissions.

## **C.4 The Commission's approach and calculations**

### **C.4.1 Victorian Government direct costs**

The Commission has characterised Victorian Government direct costs of problem gambling as including:

- the costs of strategies and programs explicitly aimed at addressing problem gambling, including the costs of treatment programs. It also includes the costs of research (including a research contribution to Gambling Research Australia, salaries and on-costs for DOJ's Office of Gaming and Racing strategy and research teams) and education programs.
- other regulatory and policy costs related to minimising the harm from problem gambling. The Commission notes the difficulty in attributing these costs to problem gambling as distinct from other objectives, such as ensuring probity and fairness of gambling activities.

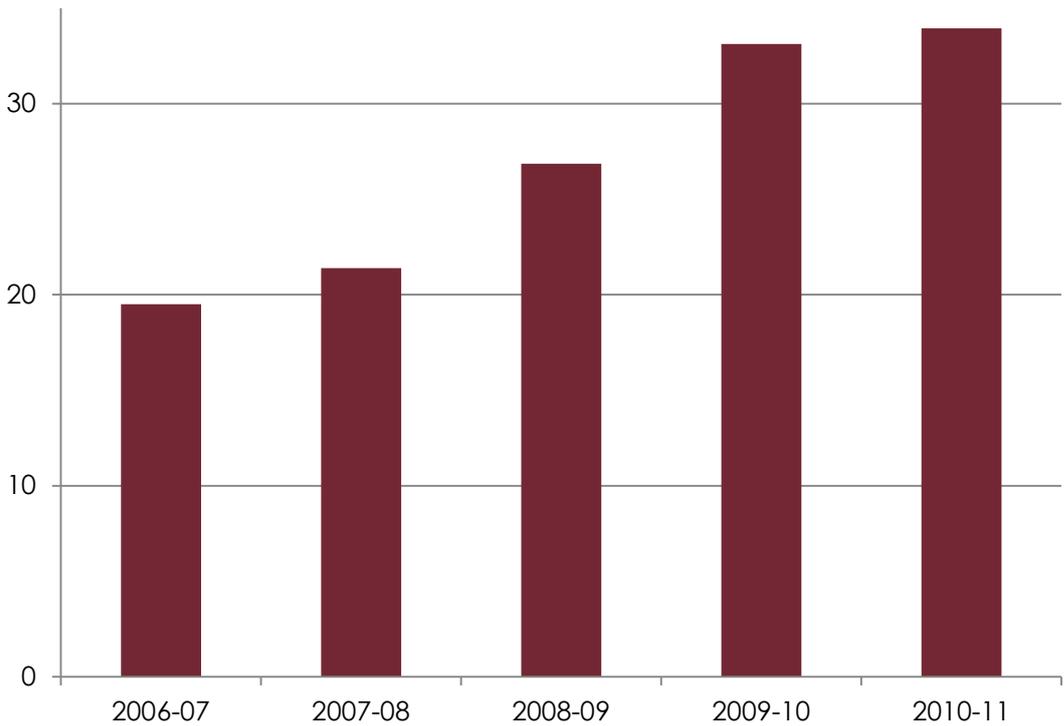
#### **Strategies and programs aimed at addressing problem gambling**

The Productivity Commission noted 'the primary responsibility for the provision of help services for problem gamblers rests with state and territory governments' (PC 1999, 17.2). In 2006 the Victorian Government implemented a five-year strategy to tackle problem gambling. The program, *Taking Action on Problem Gambling*, combined public health, social regulation and consumer protection approaches and had seven priority areas:

- (1) building better treatment services
- (2) ensuring a more socially responsible gambling industry
- (3) promoting healthy communities
- (4) protecting vulnerable communities
- (5) improving consumer protection
- (6) enhancing the regulator
- (7) fostering gambling research (DOJ 2006, 12).

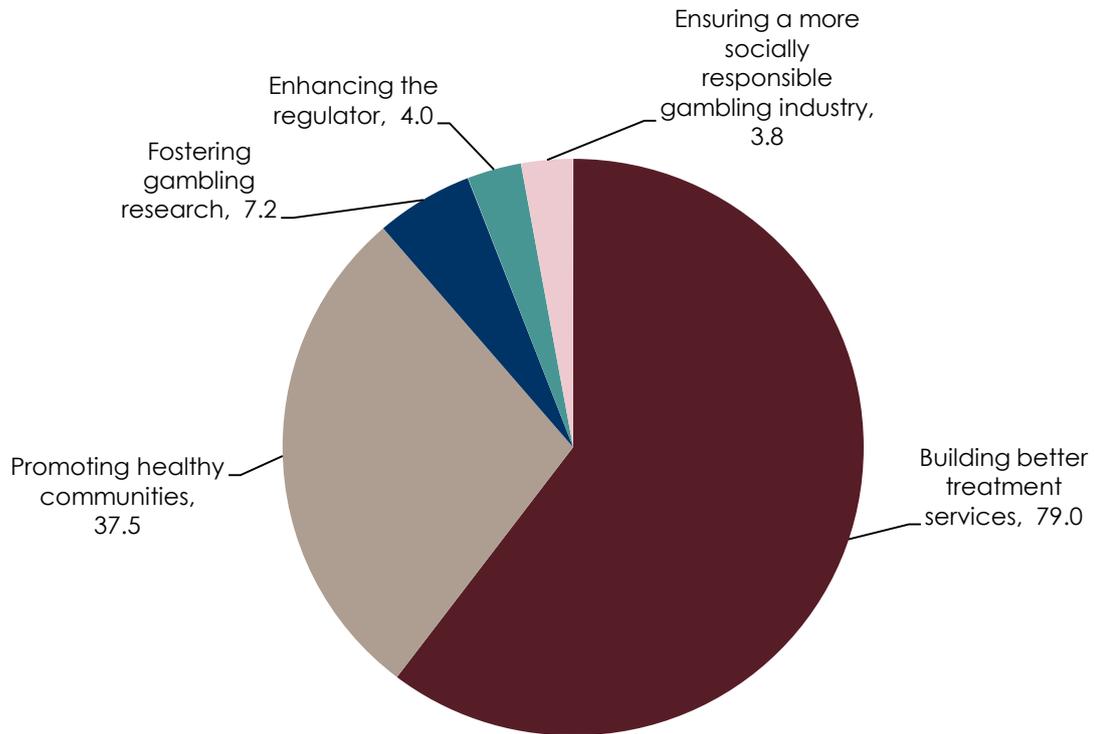
Under *Taking Action on Problem Gambling* over \$132 million was spent funding problem gambling treatment and prevention services, including approximately \$35 million in 2010-11 (figure C.1). Much of the expenditure under the program was concentrated in treatment services to problem gamblers, including Gambler's Help Services, Primary Care Partnerships, Problem Gambling Services for Culturally and Linguistically Diverse and Indigenous Communities, Problem Gambling and Mental Health, Problem Gambling Needs analysis and Self-Exclusion programs. Figure C.2 provides a breakdown of total program expenditure by initiative.

**Figure C.1 Taking Action on Problem Gambling expenditure (2006-07 to 2010-11, \$ million)**



Sources: Victorian Government 2009; DTF 2009; DTF 2010; DTF 2011.

**Figure C.2 Government investment in *Taking Action on Problem Gambling* (2006-07 to 2010-11, \$ million)**



Source: DOJ 2006, 42.

The *Taking Action on Problem Gambling* strategy was funded under the Community Support Fund (CSF). The CSF is, in turn, derived from 8.33 per cent of the net cash balance from gaming machines in Victorian hotels (approximately 10 per cent of all gaming revenue received by the Victorian Government). The funding process is illustrated in figure C.3.

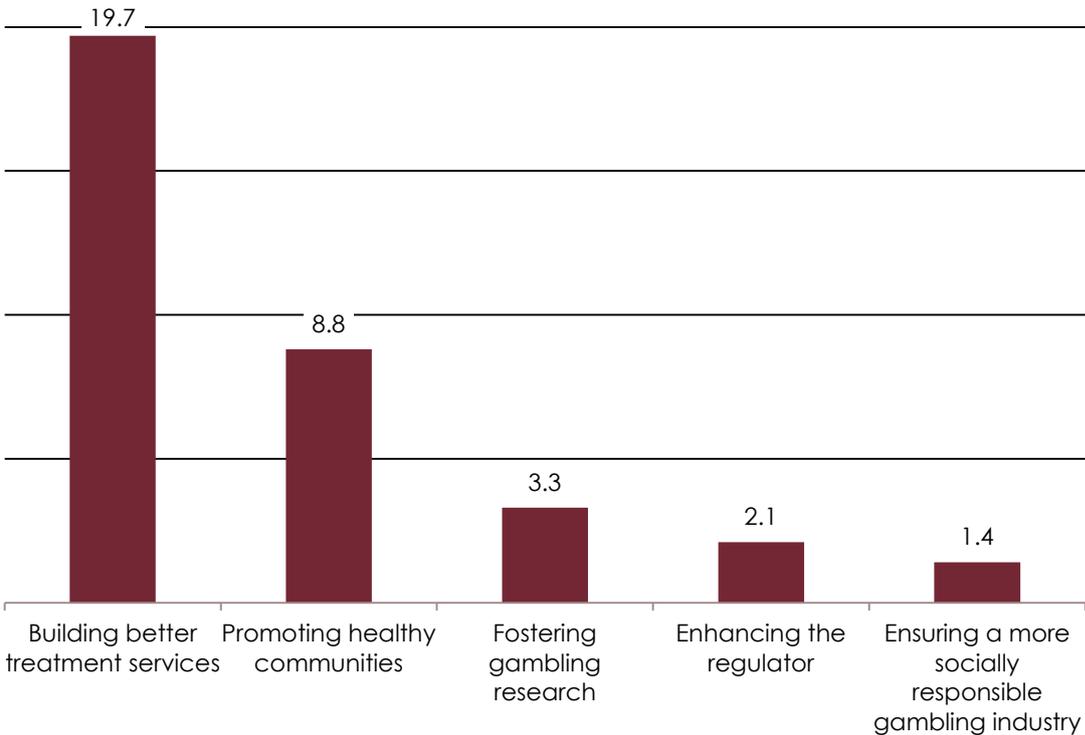
**Figure C.3 *Taking Action on Problem Gambling* funding process (2010-11)**



Sources: VLGA, sub. 14, p. 3; VCGLR 2012b; DTF 2011; Robinson 2010.

A breakdown of expenditure in 2010-11 on *Taking Action on Problem Gambling* shows the majority of expenditure (approximately \$20 million) was allocated to treatment services (figure C.4).

**Figure C.4 Taking Action on Problem Gambling estimated expenditure (2010-11, \$ million)**



Source: Robinson 2010.

**Other Victorian Government policy and regulatory costs**

DOJ advised the Commission that its policy costs related to problem gambling were approximately \$1.7 million in 2010-11.<sup>1</sup>

In addition, the VCGLR<sup>2</sup> estimated that the total cost of its activities to regulate problem gambling in 2010-11 was approximately \$5.1 million. This represented approximately 25 per cent of salary and on-costs incurred. Cost categories related to its compliance and audit functions, gambling premises and gambling product approvals, licensing operations and strategic and legal support. As some of this cost was likely to be recovered from the gambling industry through regulatory fees and charges, the \$5.1 million expenditure is likely to be the upper-most cost to the Victorian Government.

**Establishment of the Victorian Responsible Gambling Foundation**

In July 2012, the Victorian Government established the Victorian Responsible Gambling Foundation (VRGF). The VRGF's objectives are to reduce the prevalence of problem gambling and the severity of harm related to gambling, and to foster responsible gambling. \$150 million has been allocated to the VRGF to fund its activities from 2011-12 to 2014-15 (DTF 2011, 1). As the Commission's estimates are for 2010-11, the cost of the VRGF's outputs have not been included in total cost estimates.

<sup>1</sup> This includes an allocation for corporate overheads.

<sup>2</sup> The VCGLR was the Victorian Commission for Gambling Regulation in 2010-11.

## C.4.2 Local government costs

While councils do not generally fund problem gambling treatment programs directly, some reported they incur costs in addressing issues associated with problem gambling (MAV, sub. 29, p. 8). Some councils also levy differential rates on gaming venues. This income has funded problem gambling prevention strategies within the local community (Moreland City Council, sub. 13, p. 2).

The main direct costs identified by local councils were:

- research and policy development
- promoting alternatives to gambling
- responding to applications for the expansion of gaming activity (table C.1).

The evidence of councils' expenditure on research and policy development, and promoting alternatives to gambling, suggests that their overall expenditure is small and is directed primarily at dealing with gambling generally, not just problem gambling. For these reasons, the Commission has only considered the costs of responding to applications for the expansion of gaming activity.

That said, in considering the costs of responding to applications the Commission acknowledges the same difficulty in separating the costs councils incur in response to problem gambling from the costs councils incur in response to gambling more generally. For example, local expenditure impacts on business and local unemployment do not generally emanate from problem gambling (appendix B).

Given the lack of data to apportion the costs to local government between problem gambling and gambling costs more generally, the Commission's draft report apportioned 50 per cent of councils' gaming application costs to problem gambling (with the remainder apportioned to gambling more generally).

The Commission examined the cost of responding to applications for the expansion of gaming activity by analysing VCGLR hearings in 2010-11. This was used to establish the number of matters councils responded to. The Commission then multiplied the number of council participations by the average process cost.<sup>3</sup> This suggested a total cost to local government of approximately \$690 000. Attributing 50 per cent of this cost to problem gambling results in a total cost of \$345 000 in 2010-11 (table C.1).

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<sup>3</sup> Average process costs taken from MAV survey of local governments (MAV, sub. 29, p. 8).

**Table C.1 Local government cost of responding to gaming machine applications (2010-11)**

Process	Number (a)	Unit cost (b)	Sub-cost (a x b)
Submission to VCGLR	10	\$27 630 <sup>a</sup>	\$276 300
VCGLR hearing attendance	6	\$37 203	\$223 218
VCAT appeal	3	\$63 750	\$191 250
<b>Sub-total</b>			<b>\$690 786</b>
<b>50 per cent allocation of costs to problem gambling</b>			<b>\$345 393</b>

Notes: VCAT = Victorian Civil and Administrative Tribunal. <sup>a</sup>Average cost of submissions to VCGLR may be understated as it may not include staff costs.

Sources: MAV, sub. 29, p. 8; VCGLR 2012c; VCGLR 2011a.

In response to the Commission's draft report, the Municipal Association of Victoria (MAV) submitted that the Commission had 'considerably underestimated the direct costs experienced by local councils' in the EGM application process (sub DR35, p. 2). MAV noted that council staff costs can be equivalent to the cost of legal and consultant fees, and stated that:

Councils participating in the application process generally do so because of their concern about the costs of gambling to their local community. Although this highlights issues round the conflation of gambling related harm and problem gambling, we submit that it is reasonable to attribute all such costs to the effects of gambling problems. (sub. DR35, p. 2)

To account for this information, the Commission has revised its estimate of local government direct costs to range from a lower bound of \$0.35 million to an upper bound of \$0.7 million. The cost estimates highlight the variability across councils. Some councils incur high costs of around \$60 000 in responding to Victorian Civil and Administrative Tribunal applications (table C.1) whereas others incur no or very low costs.

### **C.4.3 Commonwealth Government direct costs**

The Commission found limited information on direct costs of problem gambling to the Commonwealth Government in 2010-11. The Commonwealth Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) advised that the 'costs attributed to problem gambling from a Commonwealth perspective are primarily associated with health care, housing, homelessness and other welfare services' (FaHCSIA 2012). Indirect costs of problem gambling are discussed in appendix D. In its submission to a recent Senate inquiry on problem gambling, FaHCSIA noted that the Commonwealth funded financial counselling and support services, online gambling help services, family relationship services and research programs into problem gambling prevention, often in conjunction with state governments (FaHCSIA 2012, 12). However, costs of these initiatives were not estimated in the submission.

The Commission was able to estimate some future Commonwealth Government spending on financial counselling services for problem gamblers. FaHCSIA informed the Commission that it has allocated \$25.6 million over four years nationally for these services, although the distribution of this funding across Australia has not been finalised. The Commission assumed a per capita distribution to Victoria of approximately 25 per cent, resulting in a per annum spend of approximately \$1.6 million in future years.

#### **C.4.4 Costs to not-for-profit organisations and individuals**

Some not-for-profit organisations receive funding from the Victorian Government to deliver problem gambling treatment programs. In addition, the Commission acknowledges that some spending on treatment and prevention programs may be generated by these organisations through their own fundraising capabilities. However, given the lack of data on not-for-profits' expenditure on problem gambling services, the Commission has assumed that the vast majority of not-for-profits' costs are covered by State funding.

In addition, some individuals fund treatment services for problem gambling, such as through private counselling, psychiatrists, psychologists, or doctors. The Commission has not found any specific information relevant to these groups and has therefore not calculated the direct financial cost to individuals.

#### **C.5 Limitations of the Commission's analysis**

The available evidence, although incomplete, provides an indicative quantum of the direct costs that governments expend on problem gambling. However, the efficiency and effectiveness of this expenditure has not been systematically evaluated. The Commission has suggested this type of evaluation as a priority for future research (section 1.6.3).

Submissions highlighted large variations in the costs to local government of problem gambling. Some councils undertake a number of programs related to problem gambling while others only incur costs responding to EGM applications. Councils' expenditures are also driven by the likelihood of contesting applications from gaming venue operators. These issues have made it difficult for the Commission to produce a robust state aggregate of costs to local government.



## **Appendix D: Health and human service system costs**

### **D.1 Introduction and summary of findings**

The terms of reference require the Commission to examine the costs of problem gambling associated with impacts on mental and physical wellbeing for both individuals and the health system. This appendix considers costs to the health and human service systems, whereas appendix F examines the social costs related to impacts on the wellbeing of individuals.

A number of health and human service costs incurred by the Victorian Government appear to be associated with problem gambling, for example, costs to mental health, public housing, homelessness, child protection and disability services. There is substantial evidence linking problem gambling to impacts on mental and physical wellbeing (appendix F), and subsequent demands on the health system. Problem gambling can also lead to additional demand for government housing and homelessness services. For example, excessive gambling losses can reduce a household's ability to meet mortgage repayments, possibly resulting in a loss of accommodation.

The Commission's draft report highlighted the lack of data about the use of the health and human service systems related to problem gambling. This is linked to the lack of systematic screening of clients for problem gambling. As such, the Commission's draft report did not attempt to measure costs of problem gambling to the health and human service systems as they cannot be estimated with any great reliability.

Feedback on the Commission's draft report included views from participants that these costs were significant. Accordingly, for its final report, the Commission has made a number of simplifying assumptions using a 'top-down' approach to provide an indication of the likely magnitude of these costs. The Commission's estimates are indirect and imprecise, but they suggest the cost of problem gambling on the Victorian health and human service systems was not less than \$6 million and not more than around \$79 million in 2010-11.

To test the reasonableness of this range, the Commission used a 'bottom-up' approach to estimate costs in two health and human service delivery areas likely to be impacted by problem gambling. These were homelessness services (estimated at between \$0.2 million and \$2 million in 2010-11) and mental health sector costs (estimated at between \$4 million and \$31 million in 2010-11).

### **D.2 State of knowledge**

There is little quantitative evidence on problem gambling-related health and human services costs, as persons accessing these services are generally not screened by government agencies for gambling-related problems. As a result, it is unknown if a person seeking public housing or seeing a general practitioner is doing so as a result of problems with their gambling. In addition to this, there is a social stigma attached to problem gambling, which makes persons seeking these services reluctant to identify gambling as the cause. Work by the Australian Institute of Health and Welfare (AIHW) has provided some (limited) information on the demand for homelessness services associated with problem gambling (AIHW 2009; AIHW 2012b). The Commission has used this information in its estimate (section D.4.2).

In its draft report, the Commission also noted the lack of data regarding the relationship between health costs and problem gambling. The situation has not changed since 1999, where the Commonwealth Department of Health and Ageing noted in its submission to the Productivity Commission's gambling inquiry that:

No attempt has been made to estimate the health costs flowing from gambling related problems. Such costs are commonly regarded as falling on State and Territory social programs. Costs to Commonwealth, State and Territory, and private health funding are generally overlooked and there is no way of tracking these costs. There is no Medicare item for 'problem gambling'. Hence, the claims of General Practitioners and private psychiatrists give no indication when patients are seeking help for health problems related to gambling or when hospital services are accessed by attempted, or completed suicides relating to problem gambling. (DoHA 1999, iii-iv)

The results of an evaluation of a small-scale research project undertaken by St Luke's Anglicare and local health services illustrate how clients of Gambler's Help (GH) services interact with the health and human service systems. The evaluation constructed service maps<sup>1</sup> to track the use of health and emergency relief services by GH clients, with the results reinforcing the development of the Department of Justice's *Problem Gambling Operational Guidelines* (box D.1) (DOJ 2011b, 9, 48).

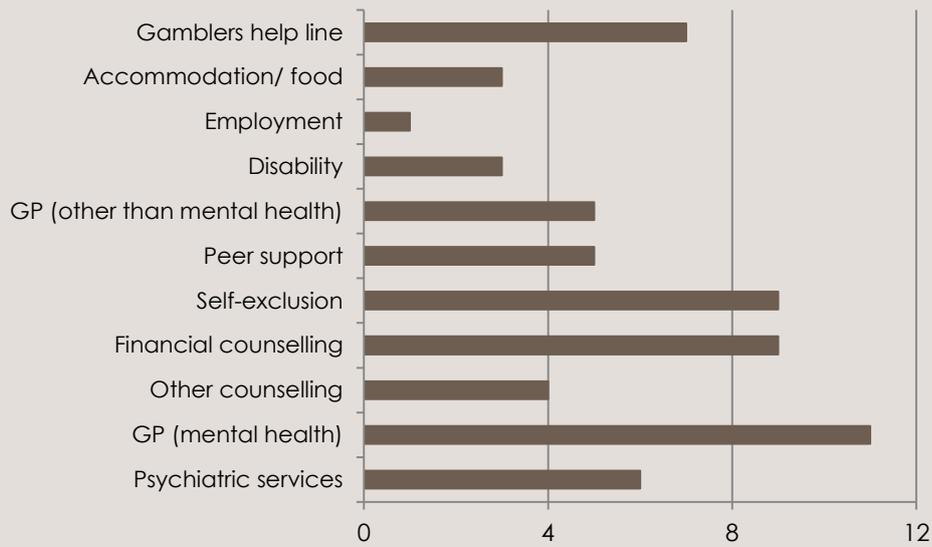
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<sup>1</sup> Service mapping involves developing a summary and graphical representation of service delivery. An auditing process is applied to highlight strengths and weaknesses of key service delivery processes, including referral pathways, service delivery processes, funding, organisation philosophies and culture and provide data for evaluation (PGRTC 2011).

## Box D.1 Health and human services used by problem gamblers: a case study

In 2010-11, the Problem Gambling Research and Treatment Centre undertook an evaluation of a trial model of care and treatment for clients who experience mental health and problem gambling issues. The evaluation report included service maps for 21 Gambler's Help service in two regional cities. The number of clients accessing a range of services is shown in figure D.1.

Figure D.1 Service use by Gambler's Help clients



A review of the service maps for all 21 clients revealed:

- A majority of clients had been in contact with their general practitioner and mental health services.
- A majority of clients did not disclose their gambling problem to either of these services.
- No clients were screened for problem gambling by health and human services at any point.
- Clients generally had a long history as clients of multiple services, with some clients using a range of services for over 10 years.

Source: PGRTC 2011, 14-15.

## D.3 Participant views

Several inquiry participants noted the potential impacts of problem gambling on the health and human services sector:

- The University of Ballarat considered that problem gambling adds to the demand for support services provided by health, welfare and church groups. It also suggested that costs of problem gambling are being diverted to the Commonwealth Government through Medicare, the Pharmaceutical Benefits Scheme and Centrelink services (sub. 7, att. 4, pp. 2-6).
- The Mornington Peninsula Shire noted 'costs to non-gambling support services such as emergency relief and material aid agencies' (sub. 6, p. 2).

- The City of Boroondara suggested that 'the costs of social and financial support provided through local social support agencies to people affected by problem gambling be included, as well as those provided through gambling-specific services' (sub. 21, p. 2).
- The City of Whittlesea provides a range of direct services through the Commonwealth Government's Home and Community Care program, and considered that demand for these services may be associated with problem gambling (sub. 23, p. 4).
- The Victorian Inter-Church Gambling Taskforce noted that the costs of housing stress and increased homelessness due to problem gambling have not been soundly quantified (sub. 27, p. 2).

Some quantitative evidence on service demand was provided by St Luke's Anglicare, who reported the results of its research into problem gambling and the use of emergency relief services in Bendigo. Eighteen per cent of clients reported they were seeking support because somebody in their household may have a problem with gambling (St Luke's Anglicare 2012, 6).

In correspondence to the inquiry, the Commonwealth Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) reported that Commonwealth costs are associated with health care, housing, homelessness and other welfare services. FaHCSIA noted that it can be hard to gain a clear picture of the magnitude of these costs, as problem gambling is often not self-disclosed by affected individuals.

## **D.4 The Commission's approach and calculations**

### **D.4.1 Health and human service systems costs**

To provide an indicative range of potential costs of problem gambling to the Victorian health and human service systems, the Commission adopted a top-down approach. This involved:

- analysing relevant health and human service outputs from the Victorian budget and identifying those which were likely to be associated with problem gambling (table D.1)
- making assumptions about the number of problem gamblers using the health and human service systems as a consequence of their gambling.

The total cost of outputs potentially associated with problem gambling was approximately \$12.4 billion in 2010-11. The apportionment of this cost to problem gambling was informed by the number of problem gamblers who could have accessed the health and human service systems, based on their estimated prevalence in the Victorian population.

**Table D.1 Potential links to problem gambling (2010-11)**

Department of Human Services	Department of Health
Specialist Support and Placement Services	Admitted Services
Statutory Child Protection Services	Non-Admitted Services
Family and Community Services	Emergency Services
Youth Justice Custodial Services	Ambulance Emergency Services
Community-Based Services	Ambulance Non-Emergency Services
Housing Support and Homelessness Assistance	Psychiatric Disability Rehabilitation and Support Services
Social Housing	Clinical Care
Concessions to Pensioners and Beneficiaries	Community Health Care
Community Participation	Small Rural Services – Acute Health
	Health Protection
	Health Advancement
	Drug Treatment and Rehabilitation

Source: Commission analysis based on Victorian Government 2012.

Based on a number of assumptions, and slightly different methodologies, the Commission estimated an upper and lower bound of problem gambling-related health and human service costs to the Victorian Government. The lower bound was estimated at approximately \$6 million and the upper bound at approximately \$79 million in 2010-11 (table D.2).

The critical assumptions underlying the estimates are:

- For the low estimate, all problem gamblers who have incurred mental wellbeing costs (as estimated in appendix F) are assumed to have had some contact with the health and human service systems. This group of problem gamblers is assumed to impose costs on the health and human service systems in proportion to their representation in the Victorian population. That is, they represent 0.05 per cent of the Victorian population and thus 0.05 per cent of health and human service system costs.<sup>2</sup> In other words, a problem gambler is no more or less complex to assist in the health and human service than any other person.
- For the high estimate, the population of problem gamblers, as estimated in the Victorian Gambling Study (VGS), are all assumed to have had some contact with the health and human service systems, adjusting for the counterfactual (DOJ 2009b). Problem gamblers are assumed to impose costs on the health and human service systems in proportion to their representation in the Victorian population. That is, they represent 0.56 per cent of the Victorian population and thus 0.56 per cent of health and human service system costs.<sup>2</sup>

<sup>2</sup> This is a simplifying assumption, as, in reality, not all people in the Victorian population access the health or human service systems. Given the lack of available data, this is a notional allocation.

**Table D.2 Health and human service system costs (2010-11)**

Variable	Calculation	Value	Comment
Total health/human services expenditure (including capital costs) <sup>a</sup>	a	\$14.0 billion	DH and DHS total expenditure, excluding areas unrelated to problem gambling (Victorian Government 2012). Capital costs based on the 2012 <i>Report on Government Services</i> (SCRGSP 2012).
Victorian adult population	b	4.3 million	As at 30 June 2011 (ABS 2012a).
Problem gamblers with wellbeing issues	c	2000	Number of problem gamblers who use DH and DHS services due to their gambling. Commission estimate derived from appendix F, excluding problem gamblers suffering emotional costs from divorce and separation events.
Sub total	$d = c / b$	0.05%	Estimated share of Victorian population presenting with problem gambling-related conditions using DH and DHS services.
<b>Cost to the health and human service systems (low estimate)</b>	<b><math>e = a \times d</math></b>	<b>\$6.5 million</b>	
Problem gamblers	f	0.7%	Based on the VGS (DOJ 2009b).
Counterfactual adjustment	g	0.80	Based on the assumption that 20% of gamblers would experience a wellbeing consequence even in the absence of gambling (appendix F).
Sub total	$h = f \times g$	0.56%	
<b>Cost to the health and human service systems (high estimate)</b>	<b><math>i = a \times h</math></b>	<b>\$78.6 million</b>	

Notes: Values may not equate due to rounding. <sup>a</sup> The capital expenditure adjustment was assumed to be the same as the relationship between capital and recurrent expenditure across all initiatives in the health and human service portfolios.

Source: Commission analysis.

## D.4.2 Reasonableness test

The Commission tested the reasonableness of its top-down estimates (table D.2) by using a bottom-up approach to estimates costs for two specific health and human service areas, namely homelessness and mental health.

## Cost to homelessness services

The Supported Accommodation Assistance Program (SAAP) funds homelessness services for delivery by a number of not-for-profit agencies. The program is jointly funded by State and Commonwealth Governments. In 2010-11, Victorian SAAP recurrent funding was approximately \$110 million, comprising \$85 million (or around 80 per cent of total funding) from the Victorian Government and \$25 million from the Commonwealth (SCRGSP 2012, 17.7).

There were a total of 82 100 support periods<sup>3</sup> in Victoria in 2010-11 (AIHW 2011, 19). A 2008 study by the Australian Housing and Urban Research Institute (AHURI) estimated that the unit cost of SAAP support periods in Western Australia was \$4625 per client and \$3023 per support period in 2005-06 (Flatau et al. 2008, 8).

To estimate the number of homelessness support periods associated with problem gambling, the Commission used, for the:

- low estimate — the proportion of support periods delivered to clients who cite problematic gambling as their primary reason for seeking help<sup>4</sup> (0.1 per cent) (AIHW 2012b, 44)
- high estimate — the proportion of support periods delivered to clients who experience gambling-related issues (0.8 per cent) (AIHW 2009, 6).

Applying AHURI's unit cost estimates to the support periods identified by AIHW produces an estimated cost of homelessness services due to problem gambling of between around \$0.3 million and \$2.3 million (table D.3).

Based on the Victorian Government's funding share of the SAAP, the cost to the Victorian Government of homelessness associated with problem gambling was estimated at between around \$0.2 million and \$1.8 million in 2010-11.

**Table D.3 Cost of homelessness services, 2010–11**

Variable	Calculation	Low	High	Data source
Number of support periods	a	82 100	82 100	AIHW 2011
Proportion of support periods delivered to problem gamblers	b	0.1%	0.8%	AIHW 2009
Unit cost per support period	c	\$3495	\$3495	Flatau et al. 2008
Total cost of support periods delivered to problem gamblers in Victoria	$d = (a \times b \times c)$	\$0.3 million	\$2.3 million	
Victorian share of SAAP funding	e	80%	80%	SCRGSP 2012
Total cost to Victorian Government	$f = (d \times e)$	\$0.2 million	\$1.8 million	

Notes: Unit cost inflated to 2010-11 prices. Values may not equate due to rounding.

Source: Commission analysis.

<sup>3</sup> A support period is a period of assistance that a client receives from a support agency. A client can have multiple support periods per year.

<sup>4</sup> May also include family members of problem gamblers.

## *Sensitivity analysis of homelessness costs*

A sensitivity analysis of homelessness costs was undertaken using unpublished GH service data. This dataset showed that 0.8 per cent of problem gamblers in treatment reported homelessness. Applying this rate to the estimated Victorian problem gambler population results in around 250 Victorian homeless problem gamblers. Multiplying this population by \$5347, the estimated unit cost per SAAP client,<sup>5</sup> results in a total cost estimate of \$1.3 million, compared with the estimated range of \$0.2 million to \$1.8 million (table D.3) (Flatau et al. 2008).

## **Cost to the mental health sector**

There were approximately 74 000 patients who accessed mental health care in Victoria in 2010-11, including 'inpatient, community-based residential and ambulatory services which treat and support people with a mental illness and their families and carers' (Victorian Government 2012, 129). Total Victorian Government output expenditure on the public mental health system was approximately \$1.0 billion in 2010-11 (Victorian Government 2012, 130).

The Commission estimated the cost incurred in the mental health system attributable to problem gambling may have been in the range of \$4.5 million to \$30.7 million in 2010-11 (table D.4). The Commission's calculations of costs of problem gambling associated with the mental health sector are based on the following approach.

The estimated population of problem gamblers was derived as follows:

- for the low estimate, GH service data shows that 1.2 per cent of clients had been referred to GH from a public mental health service. Extrapolating this to the broad problem gambler population, approximately 370 individuals may have accessed public mental health services due to problem gambling. This estimated population was then adjusted to reflect the counterfactual assumption (appendix F)
- for the high estimate, the number of problem gamblers identified in appendix F as experiencing emotional issues. This excludes those experiencing emotional distress as a result of divorce or separations.

The unit cost of total mental health expenditure includes capital costs amounting to 13 per cent of recurrent spending (section D.4.1).

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<sup>5</sup> The unit cost per SAAP was estimated as \$4625 in 2005-06, and inflated to 2010-11 prices (Flatau et al. 2008, 8; ABS 2012b).

**Table D.4 Cost of problem gambling to the Victorian mental health sector (2010-11)**

Description	Calculation	Low estimate	High estimate	Comment
Problem gamblers potentially accessing mental health services	a	370	2000	Low estimate from unpublished GH service data. Extrapolated to the problem gambler population from the VGS (DOJ 2009b). High estimate is total identified in appendix F, excluding problem gamblers suffering emotional costs from divorce and separation events.
Counterfactual adjustment	b	80%		20 per cent of gamblers would experience a wellbeing consequence in the absence of gambling (appendix F). High estimate is already adjusted in appendix F.
Sub total	$c = a \times b$	293	2000	
All clients who received public mental health services (including problem gamblers)	d	74 000		Based on client numbers in the 2012-13 Victorian budget (Victorian Government 2012, 129-130).
Sub total	$e = c / d$	0.39%	2.66%	
Government expenditure on the mental health sector (including capital costs)	f	\$1.2 billion		Expenditure provided in the 2012-13 Victorian budget. (Victorian Government 2012, 130). Capital cost was based on the ratio between capital and recurrent expenditure in the 2012 <i>Report on Government Services</i> (SCRGSP 2012).
<b>Total cost of problem gambling on the Victorian mental health sector</b>	<b><math>g = e \times f</math></b>	<b>\$4.5 million</b>	<b>\$30.7 million</b>	

Note: Values may not equate due to rounding.

Source: Commission analysis.

## D.5 Limitations of the Commission's analysis

The Commission's estimates of costs to the health and human service systems are indicative and should be treated with caution. A lack of systematic screening, the presence of comorbidities, and the difficulty in attributing causality has led the Commission to use a variety of indirect approaches and datasets to illustrate the potential impacts of problem gambling on the health and human service systems.

As discussed in the main report, the accuracy of cost estimates could be improved by:

- Screening clients of health and human services for problem gambling — population estimates used to calculate the impact of problem gambling on service delivery costs were limited by the general lack of screening of clients.
- Surveying and tracking problem gamblers over time regarding their use of health and human services — this allows for the identification of causal pathways relating to apparent adverse outcomes of problem gambling (PC 1999, 7.9).

# Appendix E: Costs to the Victorian justice system

## E.1 Introduction and summary of findings

The terms of reference require the Commission to report on the costs of problem gambling on the Victorian justice system, including the costs of detecting, prosecuting and punishing crimes committed by individuals. The impact of gambling-related crime on business is examined in appendix G.

Using the Victorian Gambling Study (VGS), and the Productivity Commission's (PC's) 1999 gambling inquiry, the Commission estimated that the cost of problem gambling on the Victorian justice system was about \$26 million in 2010-11. These costs were distributed across the justice system as follows:

- \$1.7 million on the police
- \$1.5 million on the courts
- \$23.1 million on corrections.

These estimates are based on a range of data sources and assumptions as outlined in section E.3. Limitations and potential future research directions are discussed in section E.4.

## E.2 State of knowledge

### Gambling and crime

The links between gambling and crime are examined extensively in a range of literature (ACG, PGRTC & SRC 2011; Bellringer et al. 2009; PC 1999; Centre for Criminology and Criminal Justice 2000; Crofts 2003; Grinols and Mustard 2006; Williams, Rehm, and Stevens 2011). For example, gambling is found to influence crime rates in several ways:

- Gambling offers opportunities for certain crimes such as money laundering, loan sharking and race fixing.
- Gambling activities can be associated with venues that serve alcohol and may consequently contribute to alcohol-related crimes.
- Problem gambling may lead some people to commit crimes, such as fraud and theft, to support their gambling.
- Allowing people to gamble can reduce the incidence of illegal gambling.

### Problem gambling and crime

While gambling and crime may be linked in several ways, the Commission's focus is on problem gambling and crime.

The PC suggested that when problem gamblers face mounting financial pressures, obtaining funds to continue feeding their gambling addiction can become a primary driver for these gamblers. Once 'legal sources of gambling funds are exhausted, problem gamblers may then resort to illegal activities to obtain money' (PC 1999, 7.59).

Empirical literature regarding the nature and significance of the links between problem gambling and crime is ambiguous. Some empirical studies have failed to find a strong

link between problem gambling and increased crime rates (Williams, Rehm, and Stevens 2011, 46). However, others have reported 'strong and robust evidence of a positive and significant link between gaming expenditure and crime (in particular, income generating crime) in Victoria' (Wheeler, Round, and Wilson 2010, 65–66; Williams, Rehm, and Stevens 2011, 45). Inquiry participants expressed a range of views about the links between problem gambling and crime, with some suggesting the two are strongly linked and others indicating the evidence is mixed (box E.1).

The conflicting evidence and views reflect deficiencies in the evidence base. For instance, difficulties exist in determining the extent of gambling-related crime, as many gambling-related offences may not be reported or detected, particularly where offences are committed against family members. Also, objective data on criminal offences reported through gambling-related surveys are limited, as many studies rely on self-reported data of questionable accuracy.

A study by the Centre for Criminology and Criminal Justice, for example, found that the available information in the police and court systems was not able to provide clear links between the crime and gambling problems, however, 'there is a considerable amount of anecdotal and other evidence ... that indicates that there may be significant levels of gambling related crime' (Centre for Criminology and Criminal Justice 2000, i). The Commission understands that Corrections Victoria does not currently screen for gambling problems or refer problem gamblers to treatment services.

Even where problem gambling is detected in the justice system, to estimate costs 'a valid link between gambling and crime' must be established (D. M. Walker 2006, 15). Those studies that do produce justice system statistics in an attempt to demonstrate a link between problem gambling and crime encounter complex questions of causation. It is not always clear whether an individual's problematic gambling caused them to commit a crime, or if criminals deviate to gambling naturally. This 'issue of causation is potentially vexing, and a knowledge of the underlying psychopathology is required to reveal whether individuals who commit crimes have a propensity for gambling, or whether gambling generates criminal activity' (Wheeler, Round, and Wilson 2011, 318).

## Box E.1 Participant views

Participant views were generally focussed on identifying that some individuals suffering from problem gambling may turn to crime. For example:

- 'Less people exposed to the risk of gambling addiction ... results in ... less crime ... committed to support addiction' (Nina and Brian Earl, sub. 1, p. 2).
- Losing money can result in wider societal costs, which include 'legal and policing expenses stemming from family violence and gambling-related crime' (Greater Dandenong City Council, sub. 3, p. 9).
- Drawing on local accounts from court judges, police, experts, and gamblers, 'there is now much evidence of gambling-related crime' (Emerald Club for Hope & Outreach Inc and St Mark's Anglican Church, sub. 4, p. 32).
- 'Gaming had the second highest level of correlation with crime' and is therefore a key consideration of social planning (Yarra Ranges City Council, sub. 11, pp. 7, 9).
- Problem gambling has 'a wide range of correlated negative impacts including: increased crime rates (possibly to provide money for gambling or to cover debts as a result of gambling)...' (St Luke's Anglicare, sub. 16, p. 6).
- '... committing a gambling-related offence appears to be positively associated with the severity of gambling issues' (VRGF, sub. 24, p. 5).
- Problem gambling is 'a significant issue and cause of criminal offences. Anecdotally we consider that problem gambling is the third most significant factor in offending ...' (Victorian Legal Aid, sub. 26, p. 1).
- Problem gambling affects individuals and families through 'involvement in criminal activity, especially financial crimes, to provide money for gambling' (Victorian Inter-Church Gambling Taskforce, sub. 27, p. 4).
- The link between gambling and crime found in a recent study is 'a concern to councils' (Municipal Association of Victoria, sub. 29, p. 9).

However, some participants questioned this link:

- Anecdotal evidence questions the link between crime and problem gambling, as does broader research on the impact of gambling on crime rates. 'Further systematic research is required before the impacts of problem gambling on crime can be properly accounted for' (Clubs Australia, sub. 12, p. 26).
- 'How problem gambling may be held to impact on the number and severity of crime(s) ... is [a question] to which current Victorian research does not provide clear answers.' (Australasian Gaming Council, sub. 28, p. 39).

Sources: Various submissions.

## E.2.1 Approaches to measuring costs to the justice system

The PC used survey data collected as part of its *National Gambling Survey* to identify the potential extent of illegal activities committed as a result of problem gambling. The PC also provided data on the rate of offending, and contact with the police, court and prison system from its *Survey of Clients of Counselling Agencies*. The *National Gambling Survey* data were used to estimate a total cost of police incidents, court appearances and jail terms as a result of problem gambling-related crime in Australia of \$13.9 million in 1997-98 (PC 1999, 9.11).

The Allen Consulting Group (ACG) took a similar approach to the PC in estimating the cost of problem gambling in Tasmania. ACG used data from the PC's *Survey of Clients of Counselling Agencies* and applied it to the Tasmanian population. A major point of difference was that in addition to 'problem gamblers', half the 'moderate-risk gamblers' were used in calculating the number of people who imposed costs on the justice system as a result of their problem gambling. Through this adjustment, and by converting the PC's estimate of cost per incident/case to 2011 prices, ACG estimated that the cost of police incidents, court appearances and jail terms as a result of gambling-related crime in Tasmania were \$2.4 million in 2011 (ACG, PGRTC & SRC 2011, 162–163).

### **E.3 The Commission's approach and calculations**

The Commission estimated the total cost to the justice system due to problem gambling in Victoria was approximately \$26 million in 2010-11, and comprised the cost to the police, court, and corrections systems (box E.2). The Commission's approach was similar to that of the PC's 1999 approach (PC 1999).

The Commission's calculations to derive these estimates are set out in table E.1.

#### **Box E.2 Definitions**

##### ***Police system cost***

The Commission defines a police incident as an 'occurrence of a crime event, such as a break-in, attempted break-in, theft of a motor vehicle, or act of robbery, assault or sexual assault' (ABS 2011a, Glossary). Therefore, police system costs include time spent reporting and investigating incidents and preparing cases for court. Furthermore, the Commission's estimates include all recurrent and police capital costs.

##### ***Court system cost***

The main costs faced by the court system are staff costs relating to a range of activities from managing cases and court facilities, to security, library services, transcript services, and ongoing management of the operations of the courts. These costs were all relevant for the Commission's estimate of court resource costs incurred through problem gambling behaviour.

##### ***Corrections system cost***

While the corrections system incorporates a range of custodial establishments, it generally includes, 'prison custody, periodic detention, and a range of community corrections orders and programs for adult offenders (for example, parole and community work orders)' (SCRGSP 2012, 8.1). Limited data exist on the relationship between problem gambling and the corrections system. The Commission focussed on prison system costs, given they account for about 94 per cent of the total costs of the corrections system (SCRGSP 2012).

**Table E.1 Cost of problem gambling to the Victorian justice system (2010-11)**

Description	Calculation	Value	Comment
<b>Police system</b>			
Rate of police incidents	a	5.5%	Proportional approach based on PC data (table E.2).
Number of problem gamblers	b	30 200	Based on the VGS (DOJ 2009b).
Cost per police incident	c	\$1000	Based on the PC's report on government service costs (box E.3).
<b>Total police system cost</b>	<b>a x b x c</b>	<b>\$1.7 million</b>	
<b>Court system</b>			
Rate of court cases	d	4.8%	Proportional approach based on PC data (table E.2).
Cost per court matter	e	\$1000	Based on court costs described in the Victorian budget (box E.3).
<b>Total court system cost</b>	<b>d x b x e</b>	<b>\$1.5 million</b>	
<b>Corrections system</b>			
Rate of corrections system utilisation	f	1.9%	Proportional approach based on PC data (table E.2).
Average sentence	g	4 months	Based on a review of recent crime studies (box E.4).
Cost per prisoner per month	h	\$9900	Based on the PC's report on government service costs (box E.3).
<b>Total corrections system cost</b>	<b>f x b x g x h</b>	<b>\$23.1 million</b>	

Note: Values may not equate due to rounding.

Source: Commission analysis.

## Estimating the population

As there was no Victorian data on the number of problem gamblers who had contact with the Victorian justice system, the Commission drew on two sets of data to estimate the magnitude of the link between problem gambling and crime. The Commission found two comparable data points from these data sets that estimated the link between problem gambling and crime:

- (1) The PC found 5.6 per cent of individuals, per annum, had committed a crime as a result of their gambling (PC 1999, H.5).
- (2) The VGS found 15.2 per cent of problem gamblers, per annum, said 'their gambling led them to do something that is technically against the law' (DOJ 2009b, 217, 307).

The PC also presented specific rates for individuals who had contact with the police system (2.1 per cent), the court system (1.8 per cent) and the prison system (0.7 per cent). The VGS did not have this information.

The Commission assumed that despite the PC data being dated, the ratio between the rate of offence and rate of contact with the police system, and subsequently, the court and prison systems, was constant over time.

The Commission applied these ratios to the VGS rate of offending (15.2 per cent) to determine the rates of contact with police, courts and the prison system in Victoria (table E.2).

**Table E.2 Estimating the rate of contact with the justice system in Victoria related to problem gambling**

	PC study	Calculation	VGS
Had committed a crime as a result of their gambling	5.6%		15.2%
			<b>Commission's estimated rates</b>
Had experienced a problem with police because of their gambling	2.1%	$(2.1 / 5.6) \times 100 = 36.5\%a$	$15.2 \times 36.5\% = 5.5\%$
Had an appearance in court on criminal charges because of their gambling	1.8%	$(1.8 / 2.1) \times 100 = 86.3\%b$	$5.5 \times 86.3\% = 4.8\%$
Had been given a prison sentence because of their gambling	0.7%	$(0.7 / 1.8) \times 100 = 40.5\%c$	$4.8 \times 40.5\% = 1.9\%$

Notes: Values may not equate due to rounding. <sup>a</sup> This implies that 36.5 per cent of crimes committed as a result of gambling were subsequently investigated by police. <sup>b</sup> This implies that 86.3 per cent of crimes investigated by police resulted in court appearances. <sup>c</sup> This implies 40.5 per cent of court appearances resulted in a prison sentence.

Sources: PC 1999, H.5, 7.61; DOJ 2009b, 307.

## Calculating the unit cost

The Commission used long run averages based on aggregate expenditure and volumes to estimate unit costs for police, the courts and the corrections system. These may under or overstate the actual costs of the justice system in dealing with problem gambling-related cases (box E.3).

### Box E.3 Unit costs

#### *Cost per police incident*

A 1998 report estimated that the cost of a police incident in New South Wales was \$510 in 1996-97, based on industry estimates (Dickerson et al. 1998, 77). This type of information is not readily available in Victoria for 2010-11, so the Commission collected information on the cost of police incidents from official government sources.

According to the Productivity Commission's (PC's) *Report on Government Services 2012*, the 'real recurrent expenditure (including user cost of capital, less revenue from own sources and payroll tax)' spent on police services in Victoria in 2010-11 was \$1.9 billion (SCRGSP 2012, 6.9). To determine the number of total police incidents, the Commission used Australian Bureau of Statistics crime statistics that suggested there were about 1.9 million police incidents in Victoria in 2010-11 (ABS 2011a, DO006, Table 2). The Commission then divided the total police services cost by the number of incidents to derive an estimated average cost per police incident of approximately \$1000.

#### *Cost per court case*

The PC's *Report on Government Services 2012* indicates the real net recurrent costs of criminal courts in Victoria (SCRGSP 2012). However, this excludes capital costs. The Australian Institute of Criminology estimated the average expenditure per lodgement in 2007-08 in the magistrates court (\$393), intermediate courts (\$7020), and supreme courts (\$13 927) nationally (Australian Institute of Criminology 2012). However, once again, this does not include capital costs.

To obtain an average cost, the Commission used information in the 2012-13 Victorian state budget on the cost of courts in 2010-11 and divided this by the number of matters dealt with in all courts (Victorian Government 2012, 186-190). Court costs were \$419.9 million and there were 393 506 matters dealt with in these courts. This results in an average cost per matter of just over \$1000.

#### *Cost per prisoner*

The PC — in its *Report on Government Services 2012* — estimated the cost of the prison system in Victoria in 2010-11 was \$325.62 per prisoner per day (SCRGSP 2012, 8.26). The Commission multiplied this by 365 to obtain a cost of \$118 851 per annum (or \$9900 per month).

## Average prison sentence

The Commission drew on several recent studies that looked at average sentences in cases involving fraud and property crime related to problem gambling. The average duration of sentences for crimes committed as a result of problem gambling was four months (box E.4).

### **Box E.4     Calculating the average prison sentence**

Crimes generally linked to problem gambling include theft, fraud, embezzlement, deception and corruption (Bellringer et al. 2009). However, it is difficult to define the average prison sentence for these types of crimes, as the range can be quite broad. For example:

- One study found that for fraud crimes of up to \$50 000, the average 'length of sentences after taking into account mitigating factors' was four months. However, this rose to 10 months for crimes of up to \$100 000 (Warfield 2011, 14).
- A 2012 New South Wales Bureau of Crime Statistics and Research report found the mean minimum prison sentence for non-aggravated theft in 2009-10 was 10.3 months, with a median of nine months (Ringland 2012, 4).
- A study of 181 criminal cases found that the average amount defrauded in Victoria between 2008 and 2010 was \$640 000, and the average prison sentence was over two years (Warfield 2011, 13-14).

As the evidence is inconsistent, to be cautious, the Commission has opted to use four months, representing the lower end of estimates on sentence lengths.

## **E.4     Limitations of the Commission's analysis**

The Commission's estimates of costs to the justice system were hampered by a lack of screening of justice clients for problem gambling. Focused screening of clients for problem gambling could improve treatment outcomes and more effectively target support services. Over time, this could also impact positively on costs through a reduction in the level of recidivism.

In this study, the Commission sought to overcome information gaps by drawing on the PC's 1999 gambling study and making assumptions on its comparability with the VGS, and the Victorian cohort of problem gamblers.

Other data limitations are related to the unit costs of each incident and the average prison sentence of problem gambling offenders. The assumptions the Commission made in its analysis impact significantly on the total cost estimated. For example, if a less cautious 10 month sentence were applied, based on the average for non-aggravated theft, corrections costs would rise to \$99 000 per prisoner and the total costs associated with the corrections system would increase to nearly \$58 million.

# Appendix F: Mental and physical wellbeing costs

## F.1 Introduction and summary of findings

This appendix estimates the social costs related to the wellbeing of individuals.

There is substantial evidence linking problem gambling to a number of adverse impacts on mental wellbeing such as depression and suicide ideation (PC 1999, 7.13–7.24). Problem gambling has also been associated with individuals experiencing deterioration of physical health such as hypertension and liver problems (Morasco et al. 2006, 978). The wellbeing impacts of problem gambling extend beyond the individual gambler and may also fall on their family and friends. A number of studies have found that problem gambling has contributed to arguments between family members, relationship breakups (including divorce and separation), child neglect, and domestic violence (Delfabbro, Le Couteur, and IGASA 2009, 103–105). Several inquiry participants also noted the link between problem gambling and wellbeing impacts.<sup>1</sup>

The Commission has estimated wellbeing costs under two broad categories:

- (1) the emotional distress to gamblers, including the impact of depression, suicide, relationship breakdown and family violence
- (2) the emotional distress to immediate family members (spouse and children) and parents.

Due to data limitations, the Commission:

- has relied on somewhat dated and non-Victorian specific data for some of its estimates
- was unable to quantify physical wellbeing costs due to problem gambling.

The Commission estimated the value of total wellbeing costs due to problem gambling in Victoria to be between \$400 million and \$1.2 billion in 2010–11, comprising:

- emotional distress to gamblers, from \$60 million to \$120 million
- emotional distress to immediate family members and parents, from \$340 million to \$1.1 billion.

## F.2 State of knowledge

Several controversies and limitations are associated with estimating wellbeing costs (appendix B). The two key issues are:

- (1) disagreement about the relevance of wellbeing costs to policy development
- (2) difficulties in measuring the value of wellbeing costs due to:

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<sup>1</sup> See, for example, Relationships Australia (sub. 18), Municipal Association of Victoria (sub. 29), Greater Dandenong City Council (sub. 3), Emerald Club for Hope and Outreach and St. Mark's Anglican Church, Emerald (sub. 4), University of Ballarat (sub. 7), Victorian Inter-Church Gambling Taskforce (sub. 27), and Chrysalis Insight (sub. 9).

- the establishment of causality
- the need to assign a monetary value to intangible impacts.

Notwithstanding these controversies, under the Commission's terms of reference, it is necessary to make a judgement about the value of these impacts. Furthermore, from a policy perspective, the core issue for wellbeing is not necessarily the valuation, but the number of persons impacted, their location, and the capacity to address these costs in a way that increases the net benefit of gambling in Victoria.

The most widely cited study in Australia of wellbeing costs due to problem gambling was conducted by the Productivity Commission (PC) in its 1999 report (PC 1999). The Allen Consulting Group (ACG) used a modified PC approach to estimate wellbeing costs due to gambling in Tasmania (ACG, PGRTC & SRC 2011). A distinctively different method, involving regression analysis, was utilised by the United States National Opinion Research Centre (NORC) as part of a study of gambling (Gerstein et al. 1999). These methods are briefly discussed in following sections.

## F.2.1 Productivity Commission approach

The PC used survey data to estimate the population of gamblers reporting a wellbeing impact due to problem gambling (PC 1999). The population estimate was multiplied by a relevant monetary value to provide a total cost for each wellbeing impact.

The key data and assumptions used by the PC to estimate wellbeing costs are outlined in box F.1.

### Box F.1 Key Productivity Commission data and assumptions in estimating wellbeing costs

In its 1999 inquiry into gambling, the Productivity Commission (PC) used two surveys, the *National Gambling Survey* and the *Survey of Clients of Counselling Agencies*, to estimate wellbeing costs. The main distinction between these surveys is that the *National Gambling Survey* targeted 'regular gamblers' whereas the *Survey of Clients of Counselling Agencies* focused on problem gamblers receiving counselling services.

The PC used the following key assumptions to estimate wellbeing:

**Causality:** To establish the direction of causality, the PC's surveys asked questions that attributed impacts on wellbeing to gambling. Where an impact was reported, the PC accepted the respondent's judgement that impacts were a result of their gambling.

**Counterfactual:** The PC drew on judgements from a number of academics and researchers that about 15 to 20 per cent of impacts would have occurred in the absence of gambling. As such, the PC applied a 20 per cent discount to the estimated number of individuals reporting an impact.

**Annual rates of consequence:** Rates of impact on wellbeing from the *Survey of Clients of Counselling Agencies* were only available for the period where individuals experience gambling problems. To convert these to annual rates, the PC divided them by the average length of gambling problems of 8.9 years.

**Value of intangible wellbeing impacts:** The PC used compensation schedules from New South Wales and Queensland to value intangible impacts on wellbeing. The PC made judgements relating to the severity of each impact, ranging from most severe (suicide) to least severe (relationship breakup) and applied a commensurate value from the compensation schedules.

## Box F.1 Key Productivity Commission data and assumptions in estimating wellbeing costs (cont.)

**Double counting:** In a number of situations, a specific impact represents an extreme example of a broader category. To avoid double counting in these situations, numbers in the broader category exclude the more extreme impact. For example, the number of people included in the estimated cost of depression excludes the estimated number reporting suicide ideation.

Source: PC 1999.

### F.2.2 Allen Consulting Group approach

In its 2011 Tasmanian study, ACG followed the PC's approach to estimate wellbeing costs, with the following modifications:

- ACG only used data from the PC's *Survey of Clients of Counselling Agencies*, arguing the PC's *National Gambling Survey* of regular gamblers is likely to be out-dated given harm minimisation policies implemented since 1999.
- ACG assumed rates of impact on wellbeing from the PC's *Survey of Clients of Counselling Agencies* applied to problem gamblers and to 50 per cent of moderate-risk gamblers (ACG, PGRTC & SRC 2011; PC 1999).

ACG estimated total wellbeing costs in Tasmania were between \$43 million and \$129 million in 2011 (ACG, PGRTC & SRC 2011, 167).

### F.2.3 United States National Opinion Research Centre approach

In 1999, NORC conducted a gambling impact study for the United States using a substantially different approach to the PC and ACG (Gerstein et al. 1999). The study involved a survey where respondents were asked questions on whether they had suffered an impact irrespective of their gambling behaviour. The difference between the rates of impact reported by problem and pathological gamblers compared to non-problem gamblers were used to estimate the costs of problem gambling.

The NORC study did not estimate the intangible costs associated with wellbeing. However, it does provide an alternative method to estimate costs, particularly in establishing causality. Although differing in approach, the PC and NORC approaches derived some broadly comparable rates of impact such as for divorce, bankruptcy and arrest.

## F.3 The Commission's approach and calculations

The Commission has broadly followed the PC approach to estimate wellbeing costs. The remainder of this section describes the Commission's data sources, assumptions and conclusions (including the underlying calculations).

### F.3.1 Data and assumptions

The Commission identified two different data sets to estimate wellbeing costs: the PC's *Survey of Clients of Counselling Agencies* and the Victorian Gambling Study (VGS) (DOJ 2009b; PC 1999). Table F.1 compares the key characteristics of each data set in estimating wellbeing costs of problem gambling.

**Table F.1 Comparing data sets for estimation of wellbeing costs**

	Attribution	Geography	Breadth
<i>Survey of Clients of Counselling Agencies</i> (PC 1999)	Wellbeing impacts are attributed to problem gambling	Information related to impacts on wellbeing is not Victoria-specific	A number of costs of impacts on wellbeing can be estimated, such as depression and suicide
Victorian Gambling Study (DOJ 2009b)	The driver of impacts on wellbeing is generally not identified	All information related to wellbeing is Victoria-specific	A very limited number of costs of impacts on wellbeing can be estimated

Sources: Commission analysis of PC 1999 and DOJ 2009b.

The Commission's estimates of wellbeing costs due to problem gambling are primarily based on the PC's *Survey of Clients of Counselling Agencies*. This data set was used due to its benefits with respect to attribution and breadth (table F.1). However, the VGS has been used to:

- estimate the number of problem gamblers in Victoria
- provide a partial sensitivity analysis (discussed in section F.3.3).

In addition to the PC's key assumptions (box F.1), the Commission has also assumed that rates of impact on wellbeing from the PC's *Survey of Clients of Counselling Agencies* apply to the estimated Victorian problem gambler group. The Commission considers this approach to provide a reasonable basis for estimating total wellbeing costs due to problem gambling in Victoria. This is in line with the ACG approach (ACG, PGRTC & SRC 2011).

In response to the Commission's draft report, Clubs Australia raised concern about this assumption:

Clubs Australia recommends that the calculation of the wellbeing costs be revised such that incidence rates for the adverse impacts of problem gambling derived from surveys of clinical populations are only [be] applied to the number of Victorian problem gamblers currently in treatment. (sub. DR34, p. 12)

The Commission notes that the application of rates of impact from surveys of gamblers in treatment to the entire problem gambler group may result in an overestimation of wellbeing costs for the problem gambler group specifically, as clients in treatment may experience relatively greater harms.

However, for the purpose of estimating total wellbeing costs of problem gambling in Victoria, restricting impact rates to clients in treatment, without separately measuring wellbeing costs to others impacted by problem gambling, would likely result in an underestimation of total wellbeing costs. This issue was also noted by the PC:

A ... problem derives from measuring the costs of problem gambling only for those identified as problem gamblers, using screening devices such as SOGS [South Oaks Gambling Screen]. This assumes that the rest of the

population does not suffer from any adverse consequences from their own gambling. (PC 1999, J.2)

This issue was also raised in submissions to the draft report. For example, the Municipal Association of Victoria stated:

Although problem gamblers and their families and other associates will undoubtedly experience harm associated with gambling, it is clear (as the Productivity Commission also concluded) that a significant proportion of the harm associated with gambling is borne by those who are not categorised as problem gamblers. Even a moderate level of harm incurred by a relatively large number of people will produce significant aggregate levels of harm. (sub. DR35, p. 1)

The Commission has not identified a suitable dataset to separately estimate wellbeing costs for non-clients. As such, the Commission considers its methodology to be a reasonable representation of the total wellbeing costs in Victoria as a result of problem gambling. Sensitivity analysis in section F.3.3 supports this view.

### F.3.2 Conclusions

The Commission estimated the value of total wellbeing costs due to problem gambling in Victoria to be between \$400 million and \$1.2 billion in 2010-11 (table F.2).

**Table F.2 Estimated wellbeing costs due to problem gambling in Victoria (2010-11, \$ million)**

Cost type	Lower estimate	Upper estimate
	(\$ million)	
<b>Cost to gamblers</b>		
Emotional distress from divorce and separation	15	30
Emotional distress from family violence	3	8
Emotional distress from attempted suicides	16	26
Emotional distress from suicide ideation	26	52
Emotional distress from depression	0.5	1
<b>Total cost of emotional distress to gamblers (a)</b>	<b>60</b>	<b>120</b>
<b>Cost to immediate family members</b>		
Emotional distress from divorce and separation	35	70
Emotional distress from attempted suicides	18	36
Other emotional distress	280	850
<b>Total cost of emotional distress to immediate family members (b)</b>	<b>340</b>	<b>960</b>
<b>Cost to parents</b>		
Emotional distress from attempted suicides	Zero	5
Other emotional distress	Zero	150
<b>Total cost of emotional distress to parents (c)</b>	<b>Zero</b>	<b>160</b>
<b>Total wellbeing costs due to problem gambling in Victoria (a+b+c)</b>	<b>400</b>	<b>1200</b>

Note: Values may not equate due to rounding.

Source: Commission analysis.

The cost of emotional distress to immediate family members and parents accounts for up to 90 per cent of total wellbeing costs due to problem gambling. The key drivers of total wellbeing costs are:

- the number of family members experiencing emotional distress
- the monetary value assigned to intangible impacts on wellbeing
- the counterfactual adjustment (box F.1).

### **F.3.3 Sensitivity analysis**

The Commission has undertaken a sensitivity analysis using two other data sets:

- (1) Using data primarily from the VGS, the Commission estimated wellbeing costs of problem gambling in Victoria were between \$370 million and \$1.3 billion in 2010-11. This represents a variance of less than 10 per cent when compared to the Commission's estimates based primarily on the PC's Survey of Clients of Counselling Agencies. However, as noted in table F.1, the VGS lacked data to estimate the costs of specific impacts on wellbeing such as depression and suicide.
- (2) The Commission also estimated wellbeing costs by scaling the ACG results for total wellbeing costs in Tasmania to reflect Victoria's higher population. The result was wellbeing costs of problem gambling between \$470 million and \$1.4 billion (ACG, PGRTC & SRC 2011). These costs were up to 20 per cent greater when compared to the Commission's estimates based primarily on the PC's Survey of Clients of Counselling Agencies. The variance is likely to reflect the inclusion of moderate-risk gamblers in the ACG study.

## **F.4 Limitations of the Commission's analysis**

The Commission's analysis suggests that wellbeing costs are a significant proportion (up to 43 per cent) of the total social and economic costs of problem gambling in Victoria. However, the Commission's estimates are indicative and were limited by a number of factors:

- Data — wellbeing cost estimates are based on the assumption that rates of impact from the PC's *Survey of Clients of Counselling Agencies*, applied to the problem gambler group, approximates total wellbeing costs in Victoria due to problem gambling. Data limitations also precluded estimating costs of all wellbeing impacts such as physical health deterioration.
- Causality — establishing a causal link between problem gambling and wellbeing impacts was difficult given the presence of comorbidities and the potential for self-reporting bias in survey data (appendix B).
- Monetary values — assigning a monetary value to wellbeing impacts required a degree of judgement given their intangible nature. General limitations and difficulties in assigning monetary values to wellbeing impacts are outlined in appendix B. Specific limitations of compensation schedules used in the Commission's estimate and potential alternatives are discussed in box F.2.

## Box F.2 Valuing emotional distress

To estimate the monetary value of intangible wellbeing impacts, the Commission used compensation schedules from the Productivity Commission, converted to 2010-11 prices (PC 1999). However, the Commission recognised that the primary purpose of statutory compensation schemes in Australia are to act as assistance 'buffers' rather than to provide full compensation for impacts on wellbeing. For example, the *Victims of Crime Assistance Act 1996* (Vic) states that awards of financial assistance to victims of crime are not intended to reflect the level of compensation to which victims of crime may be entitled at common law or otherwise (s.1(3)).

Accordingly, the Commission sought to find an alternative proxy for the monetary value of intangible wellbeing impacts. The Commission identified two potential alternatives that may be more relevant:

- (1) **Damages awarded in common law claims.** The purpose of such claims is to provide pecuniary compensation for a harm a person has suffered arising from a tort or breach of contract. The intention is to place a claimant in the same position, as far as money can, as if he or she had not suffered the harm. This approach provides an estimate of the monetary value that would return an individual to the state they were in before they suffered the harm. However, these monetary values may not be relevant for intangible impacts on wellbeing as many harms in common law claims arise from physical injuries.
- (2) **Using Disability Adjusted Life Years (DALYs) and a value of life approach.** DALYs are used to estimate in life years, the loss incurred from suffering a certain mental or physical injury. For example, the DALY of a broken wrist may be 0.18, suggesting the sufferer has lost '18 per cent of a year of healthy life' (Access Economics 2004, 19). The value of a life year is then used to convert the loss to a dollar value, which is \$27 180 per sufferer, per annum, based on the Australian Government's Office of Best Practice Regulation statistical value of a life year of \$151 000 (OBPR 2008, 1). DALYs provide a clear method to determine the costs of harm based on the impact on an individual's quality of life. However, a degree of subjectivity is required in determining key inputs, such as the value of a life year.

Sources: OBPR 2008; Access Economics 2004; Commission analysis.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11)**

	Calculation	Lower estimate	Upper estimate	Comment
<b>Emotional distress from divorce and separation to the gambler</b>				
Estimated number of problem gamblers in Victoria	a	30 200		Estimated number of problem gamblers in Victoria obtained from the VGS (DOJ 2009b).
Annual rate of divorce and separation due to problem gambling	b	2.9%		The PC provided a rate of divorce and separation (26%) for the period of gambling from the <i>Survey of Clients of Counselling Agencies</i> . This was annualised by dividing by the average period of gambling (8.9 years) (PC 1999, 9.9).
Counterfactual adjustment	c	80%		PC assumption that 20% of gamblers would experience a wellbeing consequence even in the absence of gambling (PC 1999, J.6–J.7).
Estimated number of problem gamblers reporting divorce and separation due to problem gambling	$d = a \times b \times c$	710		
Monetary value of divorce and separation	e	\$21 500	\$43 000	The PC assumption from compensation schedules (\$15 000 to \$30 000) converted to 2010-11 prices (PC 1999, J.31).
<b>Estimated cost of emotional distress from divorce and separation</b>	<b><math>f = d \times e</math></b>	<b>\$15 million</b>	<b>\$30 million</b>	
<b>Emotional distress from family violence to the gambler</b>				
Estimated number of problem gamblers in Victoria	a	30 200		See above.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Annual rate of family violence due to problem gambling	b	1.5%		The PC provided a rate of family violence (13.1%) for the period of gambling from the <i>Survey of Clients of Counselling Agencies</i> . This was annualised by dividing by the average period of gambling (8.9 years) (PC 1999, 9.9).
Counterfactual adjustment	c	80%		See above.
Estimated number of problem gamblers reporting family violence due to problem gambling	$d = a \times b \times c$	360		
Monetary value of family violence	e	\$7200	\$21 500	The PC assumption from compensation schedules (\$5000 to \$15 000) converted to 2010-11 prices (PC 1999, J.32).
<b>Estimated cost of emotional distress from family violence to the gambler</b>	<b><math>f = d \times e</math></b>	<b>\$3 million</b>	<b>\$8 million</b>	
<b>Emotional distress from attempted suicide to the gambler</b>				
Estimated number of problem gamblers in Victoria	a	30 200		See above.
Annual rate of attempted suicides due to problem gambling	b	1.5%		The PC provided a rate of attempted suicide (13.6%) for the period of gambling from the <i>Survey of Clients of Counselling Agencies</i> . This was annualised by dividing by the average period of gambling (8.9 years) (PC 1999, 9.9).
Counterfactual adjustment	c	80%		See above.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	$d = a \times b \times c$	370		
Monetary value of attempted suicides	e	\$43 000	\$72 000	The PC assumption from compensation schedules (\$30 000 to \$50 000) converted to 2010-11 prices (PC 1999, J.34).
<b>Estimated cost of emotional distress from attempted suicides to the gambler</b>	<b><math>f = d \times e</math></b>	<b>\$16 million</b>	<b>\$26 million</b>	
<b>Emotional distress from suicide ideation to the gambler</b>				
Estimated number of problem gamblers in Victoria	a	30 200		See above.
Annual rate of suicide ideation due to problem gambling	b	6.5%		The PC provided a rate of suicide ideation (57.8%) for the period of gambling from the <i>Survey of Clients of Counselling Agencies</i> . This was annualised by dividing by the average period of gambling (8.9 years) (PC 1999, 9.9).
Counterfactual adjustment	c	80%		See above.
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	d	370		See above. The estimated number of problem gamblers reporting attempted suicide has been removed from this calculation to avoid double counting.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Estimated number of problem gamblers reporting suicide ideation due to problem gambling	$e = (a \times b \times c) - d$	1200		
Monetary value of suicide ideation	f	\$21 500	\$43 000	The PC assumption from compensation schedules (\$15 000 to \$30 000) converted to 2010-11 prices (PC 1999, J.34).
<b>Estimated cost of emotional distress from suicide ideation to the gambler</b>	<b><math>g = e \times f</math></b>	<b>\$26 million</b>	<b>\$52 million</b>	
<b>Emotional distress from depression to the gambler</b>				
Estimated number of problem gamblers in Victoria	a	30 200		See above.
Annual rate of depression due to problem gambling	b	6.8%		The PC provided a rate of depression (60.1%) for the period of gambling from the <i>Survey of Clients of Counselling Agencies</i> . This was annualised by dividing by the average period of gambling (8.9 years) (PC 1999, 9.9).
Counterfactual adjustment	c	80%		See above.
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	d	370		See above. The estimated number of problem gamblers reporting attempted suicide has been removed from this calculation to avoid double counting.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Estimated number of problem gamblers reporting suicide ideation due to problem gambling	e	1200		See above. The estimated number of problem gamblers reporting suicide ideation has been removed from this calculation to avoid double counting.
Estimated number of problem gamblers reporting depression due to problem gambling	$f = (a \times b \times c) - d - e$	60		
Monetary value of depression	g	\$7200	\$21 500	The PC assumption from compensation schedules (\$5000 to \$15 000) converted to 2010-11 prices (PC 1999, J.32).
<b>Estimated cost of emotional distress from depression to the gambler</b>	<b><math>h = f \times g</math></b>	<b>\$0.5 million</b>	<b>\$1 million</b>	
<b>Emotional distress from divorce and separation to immediate family members</b>				
Estimated number of problem gamblers reporting divorce and separation due to problem gambling	a	710		See above.
Average family size excluding the problem gambler	b	2.3		The PC indicated that a problem gambler's average family has 3.3 members (including the gambler) (PC 1999, J.5).
Estimated number of immediate family members experiencing emotional distress from divorce and separation due to problem gambling	$c = a \times b$	1600		

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Monetary value of divorce and separation	d	\$21 500	\$43 000	The PC assumption from compensation schedules (\$15 000 to \$30 000) converted to 2010-11 prices (PC 1999, J.36).
<b>Estimated cost of emotional distress from divorce and separation to immediate family</b>	<b>e = c x d</b>	<b>\$35 million</b>	<b>\$70 million</b>	
<b>Emotional distress from attempted suicides to immediate family members</b>				
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	a	370		See above.
Average family size excluding the problem gambler	b	2.3		See above.
Estimated number of immediate family members experiencing emotional distress from attempted suicides due to problem gambling	c = a x b	850		
Monetary value of attempted suicides	d	\$21 500	\$43 000	The PC assumption from compensation schedules (\$15 000 to \$30 000) converted to 2010-11 prices (PC 1999, J.36).
<b>Estimated cost of emotional distress from attempted suicides to immediate family</b>	<b>e = c x d</b>	<b>\$18 million</b>	<b>\$36 million</b>	
<b>Other emotional distress to immediate family members</b>				

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Estimated number of problem gamblers in Victoria	a	30 200		See above.
Counterfactual adjustment	b	80%		See above.
Estimated number of problem gamblers reporting divorce and separation due to problem gambling	c	710		See above. The estimated number of problem gamblers reporting divorce and separation has been removed from this calculation to avoid double counting.
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	d	370		See above. The estimated number of problem gamblers reporting attempted suicide has been removed from this calculation to avoid double counting.
Average family size excluding the problem gambler	e	2.3		See above.
Proportion of partners suffering a moderate to major impact	f	75%		The PC indicated about 74.5% of partners suffered a moderate to major adverse impact as a result of problem gambling (PC 1999, J.28).
Estimated number of immediate family members experiencing emotional distress due to problem gambling	$g = (a \times b - c - d) \times e \times f$	40 000		
Monetary value of other emotional distress to immediate family	h	\$7200	\$21 500	The PC assumption from compensation schedules (\$5000 to \$15 000) converted to 2010-11 prices (PC 1999, J.36).

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
<b>Estimated cost of other emotional distress to immediate family</b>	<b><math>i = g \times h</math></b>	<b>\$280 million</b>	<b>\$850 million</b>	
<b>Emotional distress from attempted suicides to parents</b>				
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	a	370		See above.
Average number of parents	b	1.8		The PC indicated that the average number of parents among problem gamblers is 1.8 (PC 1999, J.28).
Estimated number of parents experiencing emotional distress from attempted suicides due to problem gambling	$c = a \times b$	670		
Monetary value of attempted suicides	d	Zero	\$7200	The PC assumption from compensation schedules (Zero to \$30 000) converted to 2010-11 prices (PC 1999, J.36).
<b>Estimated cost of emotional distress from attempted suicides to parents</b>	<b><math>e = c \times d</math></b>	<b>Zero</b>	<b>\$5 million</b>	
<b>Other emotional distress to parents</b>				
Estimated number of problem gamblers in Victoria	a	30 200		See above.
Counterfactual adjustment	b	80%		See above.

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
Estimated number of problem gamblers reporting attempted suicides due to problem gambling	c	370		See above. The estimated number of problem gamblers reporting attempted suicide has been removed from this calculation to avoid double counting.
Average number of parents	d	1.8		See above.
Proportion of parents suffering a moderate to major impact	e	48%		The PC indicated about 47.8% of parents suffered a moderate to major adverse impact as a result of problem gambling (PC 1999, J.28).
Estimated number of parents experiencing emotional distress due to problem gambling	$f = (a \times b - c) \times d \times e$	20 500		
Monetary value of other emotional distress to parents	g	Zero	\$7200	The PC assumption from compensation schedules (Zero to \$5000) converted to 2010-11 prices (PC 1999, J.36).
<b>Estimated cost of other emotional distress to parents</b>	<b>h = f x g</b>	<b>Zero</b>	<b>\$150 million</b>	
<b>Estimated total cost of emotional distress to gamblers</b>				
		<b>\$60 million</b>	<b>\$120 million</b>	
<b>Estimated total cost of emotional distress to immediate family members and parents</b>				
		<b>\$340 million</b>	<b>\$1.1 billion</b>	

**Table F.3 Estimated wellbeing costs due to problem gambling in Victoria (2010-11) (cont.)**

	Calculation	Lower estimate	Upper estimate	Comment
<b>Estimated total wellbeing costs in Victoria</b>		<b>\$400 million</b>	<b>\$1.2 billion</b>	

Note: Values may not equate due to rounding.

Source: Commission's analysis.



## Appendix G: Costs to business

### G.1 Introduction and summary of findings

The terms of reference for the inquiry require the Commission to report on the costs of problem gambling to business. The Commission identified the following key sub-costs in this category:

- The costs of productivity loss borne by employers in the form of lower profits. These were estimated at between \$6 million and \$39 million in 2010-11. The costs of productivity loss outside work are detailed in appendix J.
- The impact of problem gambling-related crime on business, as estimated by the value of money or goods stolen. This transfer was estimated at between \$4 million and \$5 million. The costs to the justice system of problem gambling are detailed in appendix E.

The Commission also attempted to consider costs to business from problem gambling-related regulation, and from voluntarily implementing responsible gambling measures. However, the Commission did not find sufficient data to estimate these types of costs.

A number of submissions also raised the issue of the impact of gambling expenditure on existing businesses. For example, Moreland City Council suggested the Commission measure the displacement of expenditure within the local economy away from non-gaming businesses (sub. 13). As discussed in appendix B, the Commission has not included in its framework the impacts of problem gambling on local business. As noted by the Productivity Commission (PC), the long-run economy-wide impact of an expansion in gambling activity is likely to be neutral (PC 2010). An examination of the short-run impact on local business is also better suited to a broader study of gambling impacts, rather than problem gambling, given difficulties in attributing impacts to problem gambling per se.

### G.2 Costs of productivity loss to business

One of the consequences of problem gambling is taking time away from the workplace to gamble. In addition, work performance can be impacted by problem gambling-related issues such as depression and substance abuse.

#### G.2.1 State of knowledge

The PC estimated productivity loss at work from problem gambling in Australia in the range of \$21 million to \$150 million (PC 1999). The PC's methodology involved estimating:

- the number of people reporting an adverse effect on job performance over a 12-month period — the PC reported that 7000 persons had experienced lost productivity 'often to always' (used for the lower bound estimate) while 49 200 had experienced lost productivity 'sometime to always' (upper bound estimate)
- the extent of productivity loss — estimated at around eight per cent through its *Survey of Clients of Counselling Agencies*
- the value of productivity — using average weekly earnings as a proxy.

There is limited literature about the impact of problem gambling on work productivity:

- A Canadian review found only a small number of studies had attempted to quantify the impacts on work productivity of problem gambling. For example, a 2007 US study of casino gambling in Iowa estimated a cost of lost productivity per pathological gambler of \$734 (Williams, Rehm, and Stevens 2011, 105–106).
- Reviewing the PC's 1999 work, an Australasian Gaming Review report noted that employees may compensate for lost time by working more productively or intensively, or there may be others in the workplace who compensate for a colleague who does not appear happy or productive at work (Delfabbro, Le Couteur, and IGASA 2009).
- In its 2011 study of the Tasmanian economic and social costs of problem gambling, the Allen Consulting Group (ACG) applied the PC's methodology to estimate a productivity loss at work of between \$1.1 million and \$7.7 million (ACG, PGRTC & SRC 2011, 161).

## G.2.2 Participant views

Clubs Australia noted that:

In our view, there has not been sufficient research surrounding the impacts of problem gambling on productivity or employment to ascertain any reliable estimates. (sub. 12, p. 26)

Adapting the PC's methodology and its own estimate of the number of problem gamblers in Victoria, Clubs Australia estimated the total loss of productivity at work to be between \$5.4 million and \$38.1 million.

While some other submissions cited the impact of problem gambling on work productivity as an important issue (for example: University of Ballarat, sub. 7; Moreland City Council, sub. 13; St Luke's Anglicare, sub. 16; Nina and Brian Earl, sub. 1; City of Whittlesea, sub. 23), none of these submissions proposed a specific alternative methodology to that used by the PC.

## G.2.3 The Commission's approach and calculations

The Commission has assumed that the costs of lost productivity are carried by the employer in the form of lower profits. In practice, some of the productivity loss may be carried by gamblers in the form of lower remuneration (if they are self-employed), by other employees in the form of lower wages overall and by the taxpayer in the form of lower receipts. Exactly who bears the cost does not affect the estimate of the total cost (PC 1999).

The Victorian Gambling Study (VGS) did not specifically ask participants about the impact of gambling on their work productivity. It did ask participants whether gambling had caused them problems with school, with a job, or had caused them to miss out on a job or a career opportunity. In total, only a very small number (5 out of 500 or around 1 per cent) of low-risk, moderate-risk and problem gamblers indicated a positive response to this question (DOJ 2009b). This suggests only a very small number of Victorians, between 130 persons and 2300 persons, have experienced a loss of productivity at work as a result of problem gambling.

Given that the VGS's question was only loosely related to productivity losses at work, the Commission has relied instead upon the PC and ACG methodologies, updating estimates to reflect Victorian-specific prevalence data and recent unit cost data.

The results of the Commission's analysis are summarised in table G.1. The total estimates of the loss range from \$5.6 million to \$38.8 million. This large range is driven by uncertainty over the extent of the impact on productivity. The results are broadly similar to those reported by Clubs Australia (sub. 12).

**Table G.1 Costs of productivity loss to business (2010–11)**

Variable	Calculation	Low	High	Data sources
Number with reduced productivity at work	a	1100	7600	PC 1999; ACG, PGRTC & SRC 2011; DOJ 2009b
Productivity loss	b	7.9%	7.9%	PC 1999
Average weekly earnings – annualised	c	\$64 472	\$64 472	ABS 2012c
<b>Total</b>	<b>a x b x c</b>	<b>\$5.6 million</b>	<b>\$38.8 million</b>	

Notes: Number with reduced productivity at work calculated based on around 4 per cent of regular gamblers reporting reduced productivity 'often to always' (lower bound estimate), while around 25 per cent reported reduced productivity 'sometimes to always' (upper bound estimate).

Source: Commission estimates based on PC 1999; ACG, PGRTC & SRC 2011 methodologies.

## G.3 Cost of problem gambling-related crime on business

In line with the PC, the Commission has provided an estimate of the value of money or goods stolen from business as a result of problem gambling (PC 1999). Appendix E focuses on the costs to the justice system of problem gambling-related crime, and includes an overview of the literature regarding crime and problem gambling.

The Commission has followed the PC approach in treating costs to business of gambling-related crime as a transfer, rather than a net cost to society (PC 1999). The thief 'who steals \$100 is better off by that amount, cancelling out the \$100 loss incurred by the victim' (J. R. Walker 1997, 72:72:2). However, in their examination of the costs of crime, some criminologists and sociologists treat this loss as a cost to society, given that the transfer is unwanted by the victim (Rollings 2008; Mayhew 2003; J. R. Walker 1997).

### G.3.1 State of knowledge

The PC made the following assumptions to estimate the value of gambling-related crime:

- 9700 people committed a gambling-related crime (other than fraudulent cheques) in the previous 12 months
- for a lower estimate, a value of money or goods stolen of \$500
- for a higher estimate, a value of money and goods stolen of \$3225 (PC 1999).

The PC estimated that the total cost of problem gambling-related crime to Australian businesses was between \$5 million to \$31 million per year (PC 1999).

### G.3.2 The Commission's approach and calculations

The Commission's approach involves:

- estimating the proportion of problem gambling-related crime against business using the VGS and recent Victorian crime statistics
- updating the PC's estimate of the average value of goods or services stolen, using data from costs of crime studies.

The VGS asked moderate-risk and problem gamblers whether their gambling led them to do something (of any nature) that is technically against the law in the previous 12 months. Around 15 per cent of problem gamblers and around 3 per cent of moderate-risk gamblers reported that their gambling led to doing something against the law (DOJ 2009b). Based only on the responses of problem gamblers (estimated population 30 200), this suggests that at least 4500 crimes were committed as a result of problem gambling across Victoria in 2010-11.

The Commission has also attempted to estimate the number of problem gambling-related crimes that affect business, rather than households. Two types of crimes that are likely to be associated with theft from business are burglaries and deception. A recent report on the cost of crime in Victoria reported that in 2009-10:

- approximately 37 per cent of reported burglaries were committed against non-residential (business) properties
- there were around 19 000 reports of deception<sup>1</sup> (Smyth 2011) with around 45 per cent of deceptions occurring at retail locations and a further 38 per cent occurring at 'other locations', which included wholesale, manufacturing and agricultural locations (Victoria Police 2011).

The Commission assumed that of the estimated 4500 problem gambling-related crimes, around 40 per cent were against business. This results in an estimate of around 1800 problem gambling-related crimes against business in 2010-11.

The Commission is not aware of any studies that specifically estimate the value of money obtained illegally from Victorian gambling-related crime. Data on the average property loss per incident show a range of possible proxies:

- A 2008 study reported an average national cost of burglary (across residential and non-residential properties) of \$2900 in 2005 dollars. This included loss of property, as well as costs of lost output and intangible costs (Rollings 2008).
- A 2011 study estimated Victorian property loss and damage from burglary at around \$2100 for non-residential property, and the direct cost of deception in Victoria at \$16 800 per incident in 2009-10 (Smyth 2011).
- A 2008 study estimated the unit cost of property fraud at \$21 500 in 2005 dollars (Rollings 2008).

Based on these studies, the Commission cautiously assumed:

- for a lower estimate of unit costs, a value of money and goods stolen of \$2100

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<sup>1</sup> Deception is a broad category including offences such as obtaining property by deception, obtaining financial advantage by deception, making false documents, false accounting and imposition (Commonwealth benefit/money) (Victoria Police 2010, 34).

- for a higher estimate of unit costs, a value of money and goods stolen of \$3000.

The range was used to derive a total cost to Victorian business of problem gambling-related crime of between \$3.8 million to \$5.4 million per annum. Table G.2 summarises the Commission's estimates.

**Table G.2 Cost of problem gambling-related crime to business (2010–11)**

Variable	Calculation	Low	High	Data sources
Number of problem-gambling related crimes	a	1800	1800	DOJ 2009b; Victoria Police 2011
Value of money and goods stolen per incident	b	\$2100	\$3000	Smyth 2011; Rollings 2008
<b>Total</b>	<b>a x b</b>	<b>\$3.8 million</b>	<b>\$5.4 million</b>	

Source: Commission estimates based on PC 1999 and various sources.

## G.4 Regulatory costs of problem gambling to business

The Commission sought to identify the costs to business of complying with a range of regulations aimed at minimising the harm caused by problem gambling to society. If there was no problem gambling, some regulatory costs currently imposed on the gambling industry by Victorian gambling regulation could potentially be reduced. Regulatory costs to business have not been examined in other studies of the social and economic costs of problem gambling.

### G.4.1 State of knowledge

A number of conceptual issues make it difficult to determine the regulatory costs to business of problem gambling:

- The general prohibition of gambling in Victoria, unless otherwise authorised under the *Gambling Regulation Act 2003* (Vic), makes it difficult to distinguish between the costs of regulation aimed at regulating gambling activity (aimed at ensuring probity, integrity and fairness) and the cost of regulation aimed at addressing the harm caused by problem gambling. Box G.1 provides examples of key regulations aimed at addressing problem gambling.
- Some regulations have not had cost impacts quantified through the regulatory impact statement (RIS) process. These include regional caps, municipal limits and bet limits, which were issued through Ministerial Direction (a form of subordinate legislation that was not subject to the RIS process prior to 1 July 2011).
- Other regulations have been examined through the Business Impact Assessment (BIA) process, with cost impacts not publicly released. For example, in 2007-08, the Commission assessed a BIA for the *Gambling Legislation Amendment (Problem Gambling and Other Measures) Bill* (Vic) (VCEC 2009).

### **Box G.1 Key regulatory actions aimed at addressing problem gambling**

Some of the key regulatory actions taken to protect vulnerable communities and improve consumer protection in Victoria include:

- regional caps on electronic gaming machines (EGMs) to limit access to gambling opportunities in vulnerable communities
- setting a maximum density for all other local government areas of 10 EGMs per thousand adults (with some exceptions)
- a 'no net detriment test' such that the Victorian Commission for Gambling Regulation must not approve an application unless it is satisfied that approval will not lead to a net social and economic detriment to the local community
- requiring venue operators to conduct self-exclusion programs
- a prohibition on automatic teller machines in gaming venues.

Sources: Victorian Government 2009; VCGLR, sub. 25.

Another insight into the costs of problem gambling-related regulation to business is available through the 2005 RIS into the *Gambling Regulation Regulations 2005*, prepared by the Victorian Department of Justice (DOJ 2005). Of the regulations examined the following appear to be primarily aimed at problem gambling: clocks on new electronic gaming machines (EGMs), lighting in new gaming venues, replacement of printed information, electronic information, publication of notices and display of notices. These costs were estimated at approximately \$18 million over 10 years in 2005 dollars.

The Commission has not included these regulatory costs in its estimates. The Commission believes it is unlikely that the costs of this regulation were still relevant in 2010-11, given that:

- the major cost item, electronic information on EGMs, costing \$16.2 million, had to be implemented by 1 January 2008
- recurrent costs of this and other cost items are likely to be negligible. For example, EGMs now have built in clocks, and capital expenditure associated with lighting upgrades will have been spent to comply with the regulations. It is also not clear how any depreciation of capital expenditure can be taken into account in cost estimates.

### **G.4.2 Participant views**

In relation to regulatory costs, the Australasian Gaming Council noted that:

The compliance costs associated with Victoria's detailed regulatory framework are significant and costs in these areas are under-researched. (sub. 28, p. 14)

The Victorian Commission for Gambling and Liquor Regulation (VCGLR) listed over 30 specific licence obligations in relation to problem gambling that are likely to impose costs on individual venue operators, including the costs of administering the Responsible Gambling Code of Conduct and self-exclusion programs, and the costs of staff completing a Responsible Service of Gaming training course (sub. 25). The VCGLR also identified costs incurred by the casino licensee, public lottery licensees, wagering and betting licensee, bookmakers, the keno licensee and some minor gaming operators.

### **G.4.3 The Commission's approach and calculations**

The Commission has not found sufficient data to estimate the costs to business of complying with problem gambling-related regulation, such as regulatory requirements governing the distribution of EGMs.

## **G.5 Other costs to business**

In addition to regulatory harm-minimisation measures, business may also incur voluntary costs through implementing responsible gambling initiatives. The VCGLR referred to these costs as 'self-initiated' costs to business, running a business in a way that benefits the community and maintains profits (sub. 25 p.8). For example, Crown Casino's responsible gambling initiatives include the Play Safe limits program (a pre-commitment program), on-site responsible gambling psychologists and referral to external help services (Crown Melbourne Limited 2010).

Submissions from the wagering industry provided information on their responsible gambling initiatives, such as account limits and self-exclusion facilities (Betfair, sub. 10; Sportsbet, sub. 17). Sportsbet considered that regulatory costs on business of responsible gambling initiatives should not be included 'in data which quantifies the social and economic costs of problem gambling in Victoria' (sub. 17 p. 6). Sportsbet noted that:

As with many businesses, Sportsbet strives to be a responsible corporate citizen with a sustainable business model and implementing these measures is an integral part of this. (sub. 17, p. 6)

Due to the limited data available on the costs of these voluntary measures, and the difficulty of attributing these costs to problem gambling, the Commission did not attempt to estimate these types of costs.

## **G.6 Limitations of the Commission's analysis**

The Commission identified that regulation aimed at reducing the costs of problem gambling has not always been subject to systematic impact assessment and post-implementation evaluation. Such analysis would be helpful in better understanding the nature and extent of regulatory costs to business and the wider community. In this regard, the Commission notes that the Department of Justice is currently evaluating the effectiveness of the ban on automatic teller machines (ATMs) in gaming venues, including the costs and unintended consequences of removing ATMs from venues (DOJ 2012). This type of evaluation needs to be undertaken for all major harm-minimisation regulatory initiatives, in particular, to support decision-making on industry regulation.



# Appendix H: Economic costs of excess gambling expenditure

## H.1 Introduction and summary of findings

This appendix focuses on excessive gambling expenditure by problem gamblers and the associated economic costs to the Victorian economy.

In its 1999 gambling inquiry, the Productivity Commission (PC) characterised the economic costs of excessive gambling expenditure as:

... a measure of the extent to which problem gamblers do not get value-for-money for their spending. Another way of looking at this is to say that the economy is using resources to produce a good whose 'true' value to consumers ... is less than the cost of the resources being used. (PC 1999, C.23)

On this basis, the Commission estimated the economic cost of excessive gambling expenditure in Victoria at between \$1 billion and \$1.4 billion in 2010-11. These estimates are based on a range of data sources and technical assumptions, and are inherently imprecise.

## H.2 State of knowledge

The PC's 1999 inquiry report has been used as the benchmark for estimating excessive gambling expenditure and the associated economic cost (PC 1999).

The PC methodology compares the 'normal' level of gambling expenditure with estimates of expenditure by problem gamblers (identified through the use of the South Oaks Gambling Screen) (PC 1999). It should be noted that the measure of 'normal' expenditure, both in concept and as estimated, is likely to be generally less than the amount that gamblers can afford to pay. Excessive expenditure is the difference between the 'normal' level of expenditure and the estimated expenditure of problem gamblers.

Under the PC's framework, not all excess expenditure is considered a cost of problem gambling. To account for the benefits associated with excess expenditure, the PC method uses a series of consumer surplus calculations to convert excess expenditure into an economic cost.

Although the concept of consumer surplus (which underpins the PC method) is well established in the economics literature, the PC method has received some criticism. One study argued that the methodology rests on a number of assumptions that do not hold in gambling markets (such as rational behaviour by market participants and knowledge of the price and quality of services traded) (Dollery and Storer 2007, p. 10). Clubs Australia also argued that many of the assumptions used in the PC's 1999 and 2010 modelling were invalid (sub. 12).

Whilst noting these criticisms, the Commission observes that the PC method has been used in a number of studies since 1999 — such as the recent study on the economic and social impacts of gambling in Tasmania — and there does not appear to be a demonstrably superior approach to estimating the significant economic costs of excess expenditure (ACG, PGRTC & SRC 2011).

## H.3 Participant views

Numerous participants commented on the financial losses due to gambling or problem gambling and its associated impacts. Brian and Nina Earl contended that 'gambling losses are enormous' (sub. 1, p. 2). Many councils reported gambling expenditure on electronic gaming machines (EGMs) in their local areas (Hobsons Bay City Council, sub. 2; Greater Dandenong City Council, sub. 3; Yarra Ranges Council, sub. 11; Moreland City Council, sub. 13; Corangamite Shire Council, sub. 19; City of Boroondara, sub. 21; City of Monash, sub. 22; City of Whittlesea, sub. 23; Brimbank City Council, sub. 30; Frankston City Council, sub. 31; Mary Rimington, sub. DR 33).

The Victorian Responsible Gambling Foundation observed that financial losses may result in hardship and consequential harm:

... they [problem gamblers] continue to incur unsustainable financial losses across time. Over time these losses may exacerbate, or cause further problems in their lives and the lives of those around them ... (sub. 24, p. 4)

Clubs Australia argued that, 'for a small minority of people, excessive gambling causes harm, for themselves and for their families' (sub. 12, p. 4).

In its submission, pokieact.org urged the Commission to consider the cost to Victoria of expenditure on gambling, including the economic cost of gambling expenditure by problem gamblers (sub. 5). The Municipal Association of Victoria also discussed the proportion that problem gamblers contribute to poker machine revenue (sub. 29).

While useful in a general sense, none of these submissions provided advice on how to estimate excess gambling expenditure. In response to the draft report, however, Clubs Australia did suggest amendments to the Commission's methodology, which are discussed in section H.5.

## H.4 The Commission's approach and calculations

The Commission has applied the PC method, with some modifications, to estimate excessive gambling expenditure<sup>1</sup> and the associated economic cost. As such, this appendix should be read in conjunction with the method documented in detail in the PC's 1999 inquiry report (PC 1999).

The key steps in the method are:

- Calculate total gambling expenditure by problem gamblers (section H.4.1). This is estimated at approximately \$1.5 billion in 2010-11, based on:
  - for each gambling activity, estimate the share of total gambling expenditure by Problem Gambling Severity Index (PGSI) category of gambler using self-reported expenditure data (the gambling activities are EGMs, table games, racing, sportsbetting and lotteries (OESR 2011). The PGSI categories are problem gamblers, moderate risk gamblers, low risk gamblers and non-problem gamblers (DOJ 2009b)).
  - for each gambling activity, multiply the estimated expenditure share by actual expenditure

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<sup>1</sup> All references to gambling expenditure in this appendix refer to domestic gambling expenditure in Victoria, including expenditure on electronic gaming machines, table games, racing, sportsbetting and lotteries.

- sum the results across all gambling activities to obtain total gambling expenditure.
- Calculate normal gambling expenditure per gambler for each gambling activity (section H.4.2). Total normal gambling expenditure across all gambling activities for problem gamblers was estimated to be approximately \$55 million in 2010-11.
- Deduct normal expenditure from total gambling expenditure for problem gamblers to estimate the excessive spend (section H.4.3). On this basis, total excessive gambling expenditure was estimated at about \$1.4 billion in 2010-11.
- Convert excess expenditure into an economic cost (section H.4.3).

In developing its estimates, the Commission relied upon data from the Victorian Gambling Study (VGS) and the *Australian Gambling Statistics* publication (DOJ 2009b; OESR 2011).

In line with the framework outlined in appendix B, the Commission has not included any estimates for costs arising from excessive expenditure by low and moderate risk gamblers. This is broadly in line with the PC.

## **H.4.1 Calculating total gambling expenditure by problem gamblers**

As noted, the first step in the Commission's analysis was to estimate total gambling expenditure by problem gamblers. This required deriving expenditure shares by PGSI category for each gambling activity based on self-reported VGS data. The assumptions about expenditure shares are a key driver of estimates of economic costs from excess expenditure.

### **Estimating expenditure shares**

The PC derived expenditure shares using a number of methods and data sources in order to triangulate on a reliable estimate (PC 2010). Several participants have cited and used the PC results (pokieact.org, sub. 5; City of Boroondara, sub. 21; City of Monash, sub. 22; MAV, sub. 29; Frankston City Council, sub. 31).

Commenting on the expenditure shares in the PC's 2010 draft report, KPMG Econtech argued that the triangulation of the results of different methods and datasets is not without risks. KPMG Econtech expressed concerns about limitations in the PGSI methodology, reliability of prevalence survey data, transparency in the PC's calculations and method, and use of a simple averaging approach (KPMG Econtech 2009). In addition, the Australasian Gaming Council (AGC) argued that 'many of the individual findings triangulated to achieve results were weakened by inadequacies in the data available' (sub. 28, p. 8).

The VGS is the best available Victorian dataset for estimating expenditure shares by PGSI category. The VGS does however, have some significant limitations (DOJ 2009b). For example, the questionnaire only asked gamblers about which single activity they spent the most money on in the past 12 months from the date of the survey. Therefore, the data did not capture all gambling expenditure. The responses are also subject to self-reporting bias — most likely to result in under-reporting, according to previous research (Williams and Wood 2004; Worthington et al. 2007).

The key steps adopted by the Commission to estimate expenditure shares are set out below using EGMs as an example:

- (1) Estimate the average EGM expenditure per gambler for each PGSI category using self-reported VGS data.
- (2) Use this figure to estimate the total EGM expenditure by PGSI category.
- (3) Sum (2) across PGSI categories to estimate total EGM expenditure in Victoria and then calculate the share of this total for each PGSI category.

Table H.1 presents the Commission's estimated expenditure shares for each PGSI category in relation to EGMs, which largely drive the estimates of excessive gambling expenditure. The Commission's results indicate that problem gamblers account for 35 per cent of total EGM expenditure. This result drives estimates of excess expenditure, because EGM expenditure accounts for about 66 per cent of total gambling expenditure.

Using the method described above, different expenditure shares were estimated for the other gambling activities — table games, racing, sportsbetting and lotteries.

**Table H.1 Expenditure shares, electronic gaming machines (2010-11)**

Problem Gambling Severity Index category	%
Problem gambler	35
Moderate risk gambler	19
Low risk gambler	16
Non-problem gambler	30

Note: Estimates rounded to nearest whole number.

Source: Commission analysis based on DOJ 2009b.

### Using expenditure shares to estimate total expenditure by problem gamblers

The estimated expenditure shares and total actual expenditure are used to estimate total expenditure by problem gamblers on each gambling activity. For example, the calculation used to estimate total expenditure on EGMs by problem gamblers is outlined in table H.2.

**Table H.2 Estimating total expenditure on electronic gaming machines by problem gamblers (2010-11)**

	Calculation	Value
Total actual expenditure on EGMs (\$ million)	a	3300
Estimated problem gambler share of EGM expenditure (per cent)	b	35
<b>Estimated total expenditure on EGMs by problem gamblers (\$ million)</b>	<b>c = a x b</b>	<b>1140</b>

Notes: Values may not equate due to rounding.

Sources: OESR 2011; and Commission analysis.

Repeating this process for all other gambling activities and summing the results, the Commission estimated total gambling expenditure for problem gamblers in 2010-11 was about \$1.5 billion. This implies that on average, problem gamblers spend about \$49 000 per annum on all gambling activities. This result is largely driven by the assumptions regarding expenditure shares, which the Commission tested using sensitivity analysis (section H.5).

## H.4.2 Calculating 'normal' gambling expenditure

The normal level of gambling expenditure can be interpreted as a level of expenditure where gamblers are not driven by compulsion. The PC estimated the normal level of gambling expenditure using information on the level of spending by recreational gamblers (PC 1999).

In its calculations, the Commission has assumed that the normal level of gambling expenditure is the average expenditure (per gambler) by non-problem gamblers. The Commission tested the sensitivity of its final estimates to this assumption (section H.5).

The Commission's method for estimating normal expenditure by problem gamblers on EGMs is summarised in table H.3. The key steps are:

- (1) Estimate total EGM expenditure of non-problem gamblers by multiplying their estimated share of EGM expenditure by total EGM expenditure in Victoria.
- (2) Divide this by the estimated number of non-problem gamblers using EGMs to get the 'normal' level of expenditure per gambler.
- (3) Apply this spend to problem gamblers using EGMs to estimate the total 'normal' EGM expenditure of problem gamblers.

**Table H.3 Estimating normal expenditure by problem gamblers on electronic gaming machines (2010-11)**

	Calculation	Value
Estimated non-problem gambler expenditure share of EGM expenditure (per cent)	a	30
Total actual expenditure on EGMs in Victoria (\$ million)	b	3300
Estimated number of non-problem gamblers using EGMs	c	685 000
Estimated non-problem gambler expenditure per gambler on EGMs (\$)	$d = (a \times b) \div c$	1430
Estimated number of problem gamblers using EGMs	e	27 500
<b>Estimated normal expenditure by problem gamblers on EGMs (\$ million)</b>	<b><math>f = d \times e</math></b>	<b>39</b>

Note: Values may not equate due to rounding.

Source: Commission's estimates based on DOJ 2009b.

Repeating this process for each gambling activity and summing the results, the Commission estimated total normal expenditure by problem gamblers was about \$55 million in 2010-11.

### **H.4.3 Calculating the economic cost of excess expenditure**

As noted earlier, any gambling expenditure in excess of the normal level does not represent value-for-money for the problem gambler. The excessive gambling expenditure by problem gamblers in Victoria was estimated at about \$1.4 billion in 2010-11. This represents about 28 per cent of total domestic gambling expenditure in Victoria (estimated at about \$4.9 billion in 2010-11).

The PC method highlighted that not all excessive expenditure should be considered an economic cost, given that problem gamblers still derive a degree of benefits from their excess expenditure. As such, the economic cost of excess expenditure was defined as:

The difference between the value of spending on gambling in excess of the 'normal' level and the satisfaction gained from this 'excess' spending ...  
(PC 1999, C.23)

The PC measured the benefits to problem gamblers of their excess expenditure using the concept of consumer surplus.<sup>2</sup> The Commission estimated that the total benefit from excess expenditure across all gambling activities ranged from approximately \$16 million to \$27 million.

To obtain the economic cost, the Commission deducted this benefit from total excessive gambling expenditure. This results in an economic cost of approximately \$1.4 billion, which is largely equivalent to excessive gambling expenditure.

## **H.5 Sensitivity analysis**

The Commission conducted sensitivity analysis on the two key drivers of its cost estimates, namely:

- expenditure shares, in particular, for the problem gambler category
- the level of normal expenditure for problem gamblers.

### **H.5.1 Expenditure shares**

There has been substantial debate concerning the share of gambling expenditure accounted for by problem gamblers. The PC examined this issue extensively using various datasets on EGM expenditure, and concluded that the 'overall evidence for a large expenditure share seems robust and persuasive' (PC 2010, 5.33). Given this debate, the Commission conducted sensitivity analysis using the PC's lower and upper estimates of expenditure shares (table H.4).

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<sup>2</sup> Consumer surplus measures the gain to consumers from paying less for a good than they are willing to pay. Measuring consumer surplus relies on estimates of price and income elasticities, which were obtained from the PC's 1999 report (PC 1999). Income shares were also required for this calculation and were estimated using Commission estimates of gambling expenditure by PGSI category and Australian Bureau of Statistics disposable income data (ABS 2011b).

**Table H.4 Expenditure shares, electronic gaming machines, Productivity Commission estimates (per cent)**

PGSI category	Lower estimate	Upper estimate
Problem gambler	22	60
Moderate risk gambler	20	12
Low risk gambler	21	12
Non-problem gambler	37	16

Note: The PC's methods for estimating these shares are outlined in its 2010 inquiry report.

Source: PC 2010.

The sensitivity analysis indicated that there is a wide range between the lower and upper estimates of economic cost. The upper estimate (\$2.2 billion) is more than twice the level of the lower estimate (\$1 billion).

To test the applicability of the PC expenditure-share data to Victoria, the Commission examined de-identified client-level data on money lost on gambling from Gambler's Help (GH) services database. The analysis involved:

- excluding outlier data points which represent extreme money losses in a fortnight (such as \$500 000) relative to the overall distribution
- converting money lost in a 'regular' fortnight into an annual figure for each gambling activity
- deriving the expenditure share corresponding with the self-reported annual money loss figure.

The findings from this analysis suggested that the average gambling losses per problem gambler implied by the upper estimate (\$76 000) appear implausible given it is substantially higher than both self-reported average expenditure per gambler (\$25 000) from GH data, and also average household disposable income (\$49 000). As such, the Commission has not used the upper expenditure share of 60 per cent in its results.

### **Expenditure shares and self-reported client data**

In response to the Commission's draft report, Clubs Australia submitted that, with respect to deriving expenditure shares:

... [a] more prudent approach would be to utilise the average annual expenditure per problem gambler reported by clients of treatment services. (sub. DR34, p. 8)

Using New South Wales client data and Victorian prevalence and expenditure data, Clubs Australia estimated annual expenditure per problem gambler of \$28 100 and an associated expenditure share of 16.3 per cent (sub. DR34, p. 8).

In forming its estimates, the Commission considered using Victorian-equivalent client data from GH to estimate excess expenditure. However, unlike the VGS and the PC survey data, the client data do not provide sufficient information to distinguish between the different PGSI categories — non-problem gambler, low risk gambler, moderate risk and problem gambler. Clients may come from across PGSI categories, with the majority

likely to be in the problem gambler category. Even if all clients were assumed to be problem gamblers, the Commission would have to impute expenditure shares for each category to estimate excess expenditure. The Commission is not aware of a robust method for imputing these shares.

### H.5.2 Normal expenditure

In its draft report, the Commission based its estimate of normal gambling expenditure on the average expenditure of non-problem gamblers. Clubs Australia, in its submission to the draft report, suggested that a more appropriate proxy would be to use:

... the unit record data from the most recent Victorian prevalence study to calculate the average expenditure [per] person for a sample of high frequency recreational gamblers ... (sub. DR34, p. 10)

To test the impact of assumptions regarding normal expenditure on excess losses, the Commission conducted sensitivity analysis using average expenditure from the 'regular non-problem gambler' and the low risk gambler groups.

The results of this analysis are summarised in table H.5.

**Table H.5 Sensitivity analysis of normal expenditure (\$ million)**

Normal expenditure assumption	Estimated normal expenditure for problem gamblers	Estimated economic cost of excess expenditure
Non-problem gambler (draft report)	55	1400
Regular non-problem gambler	60	1390
Low risk gambler	140	1280

Source: Commission analysis.

The results show that estimating normal expenditure based on average expenditure of:

- regular non-problem gamblers reduces estimates of economic costs by less than one per cent
- low risk gamblers reduces estimates of economic costs by approximately 10 per cent.

### H.5.3 Conclusions arising from sensitivity analysis

The results of the sensitivity analysis suggest that the key driver of excess expenditure under the Commission's methodology is expenditure shares, particularly for problem gamblers. Assumptions related to normal expenditure appear to have a relatively small impact on aggregate costs associated with excess expenditure.

The Commission notes, however, that normal expenditure calculations are dependent on assumptions regarding expenditure shares. Different expenditure shares will influence the relative importance of normal expenditure on economic cost. For example, a lower expenditure share for problem gamblers, and an equivalent offsetting increase in expenditure shares for non-problem gamblers, will increase the assumed normal level of expenditure and thus reduce excess expenditure.

In incorporating this analysis and taking into account that the VGS provides the best available data, the Commission has reported the following range for the economic cost of excess expenditure:

- a lower estimate of \$1 billion which is based on the PC's expenditure shares (the lower estimate in table H.4)
- an upper estimate of \$1.4 billion which is based on the Commission's estimated expenditure shares (table H.1).

## **H.6 Limitations of the Commission's analysis**

As noted above, estimates of excessive gambling expenditure of problem gamblers and their associated economic cost are particularly sensitive to changes in expenditure shares by gambler type. The Commission estimated expenditure shares based on survey data that are self-reported and incomplete, which introduces some uncertainty around the estimates.

Another limitation is that the Commission's analysis is based on average rather than individual-level data. The AGC expressed concern that the PC method did not demonstrate an understanding that gamblers may, within a carefully considered budget, still evidence a high spend that remains consistent with personal means and wholly recreational play (sub. 28, p. 41). Clubs Australia, in response to the draft report, also supported this view and suggested the Commission's estimates incorporate the PC finding that:

... only 50 per cent of problem gamblers in Victoria often or always bet more than they can afford. (sub DR34, p. 10)

The Commission notes that individual-level data could add a degree of robustness to estimates of consumer loss associated with excess expenditure, but this level of data is currently unavailable.

With respect to individual spending capacity, the Commission's methodology for estimating the cost of excess expenditure implies that beyond a level of 'normal' expenditure, gamblers do not gain value-for-money for their spending. Even if some gamblers have the capacity to spend beyond this normal amount, there is still considered to be an economic cost.



# Appendix I: Regional and metropolitan impacts

## I.1 Introduction and summary of findings

The terms of reference for the inquiry require the Commission to consider the costs of problem gambling across geographical areas, for example, between metropolitan (metro) and regional Victoria or between local government areas (LGAs).

Understanding regional and metro impacts of problem gambling are potentially useful to:

- the Victorian Government for directing problem gambling treatment services into areas of greatest need, targeting harm-minimisation policies and administering regulations governing the distribution of electronic gaming machines (EGMs)
- local governments for assessing planning permits for EGM venues, developing local gambling policies and making submissions to the regulator regarding certain EGM applications.

While information gaps prevented a detailed breakdown of the costs of problem gambling at the regional and local levels, the Commission's analysis of the geographical distribution of problem gambling suggested:

- Local characteristics may drive differences in prevalence rates and therefore costs of problem gambling across geographical regions. For example, in metro regions, EGM expenditure and distribution, and levels of socioeconomic disadvantage align with problem gambling prevalence rates. However, the same observation cannot be made consistently across regional Victoria.
- Use of Gambler's Help (GH) services do not reflect differences in prevalence rates across regions, except for the North and West Metro region.

## I.2 Participant views

A number of participants noted the lack of available information on the local impacts of problem gambling, and that identifying such impacts can be costly (box I.1).

The Victorian Commission for Gambling and Liquor Regulation (VCGLR) submission presented a breakdown of various EGM statistics at the LGA level, including data on the distribution of, and expenditure on, EGMs, and contacts to GH services (sub. 25). The Municipal Association of Victoria (MAV) submission also provided analysis of the links between problem gambling prevalence and EGM expenditure (sub. 29). In considering the impacts of problem gambling across geographical areas, the Commission drew on these submissions, as well as data from the Victorian Gambling Study (VGS) and unpublished data provided by the Victorian Responsible Gambling Foundation (VRGF) (DOJ 2009b).

## Box I.1 Participant views on metropolitan and regional impacts

Participant views focussed on two broad issues:

- (1) That there is a lack of information needed to determine the local impacts of gambling, including problem gambling.
  - Hobsons Bay Council noted that data is needed 'to help protect areas where it would not like to see EGMs [electronic gaming machines] introduced or increased' (sub. 2, p. 2).
  - Moreland City Council (MCC) argued that the 'burden of proof falls to local government and to the community, in order to prove a venue will not be detrimental to the community, without available data' (sub. 13, p. 4).
  - The City of Boroondara stated that information 'would assist Council redevelop its Gaming Policy and assess any future gaming applications' (sub. 21, p. 2).
  - The City of Greater Bendigo noted that there is 'no clear local evidence or local data on problem gambling, including the number of people and the affect on the individual, families and the community' (sub. 15, p. 1).
  - The Victorian Local Governance Association (VLGA) noted that 'councils experience difficulty presenting evidence on the suitability of gaming machines in a suburb' (sub. 14, p. 7).
  - The Australasian Gaming Council noted there is a lack of adequate data at 'an aggregate, regional or local level' to measure the socioeconomic impacts of problem gambling (sub. 28, pp. 23-24).
- (2) Collecting information relevant to identifying local impacts is costly and beyond the existing resources of local bodies, such as councils.
  - MCC submitted that data gathering at the local level 'can be an expensive and detailed process' (sub. 13, p. 4).
  - The VLGA argued that the capacity of local governments to gather local information on problem gambling requires 'greater support from the Victorian Government' (sub. 14, pp. 6-7).
  - The Great South Coast Group noted that local governments have limited powers and capacity to address impacts from problem gambling (sub. 20, p. 1).
  - The City of Whittlesea noted that as the 'onus of proof falls to local communities, NGOs and local government ... significant resources are required' to collect appropriate evidence (sub. 23, p. 3).
  - Brimbank City Council identified that sufficient resources are needed 'to establish ... a system of sustainable indicators concerning the extent of problem gambling' for councils to access (sub. 30, p. 2).

Sources: *Various submissions.*

## I.3 The Commission's approach and observations

The Commission generally focussed its analysis on the eight Victorian government regions to ensure adequate aggregation and comparison, given small sample sizes in available data.

The Commission's analysis was limited by two major data gaps:

- (1) While data are available for the geographical distribution of EGM expenditure, they are not available for other types of gambling. The VCGLR advised that it does not currently collect expenditure data by LGA for wagering and sports betting, lotteries and keno (sub. 25).
- (2) While data are available on differences in prevalence rates across regions, data are not available on the distribution of rates of impact from problem gambling or their unit cost. For example, disaggregated data on mental and physical wellbeing costs by region is not available.

### I.3.1 Prevalence of problem gambling

#### Prevalence at a regional level

Table I.1 presents prevalence rates of gambling from the VGS across the eight Victorian government regions. Prevalence rates were estimated using the Problem Gambling Severity Index (PGSI) (appendix B). The Commission makes the following observations from these data:

- Prevalence of problem gamblers varies across regions in metro areas from 0.3 per cent to 1.2 per cent and in regional areas from 0.1 per cent to 0.8 per cent. Prevalence is highest in the North and West Metro region (1.2 per cent).
- Regional Victoria recorded a higher proportion of gamblers than metro Victoria, however, had broadly lower 'at-risk' rates relative to metro areas.

**Table I.1 Problem Gambling Severity Index rates by region (per cent)**

	Non-gamblers	Non-problem gamblers	Low-risk gamblers	Moderate-risk gamblers	Problem gamblers
Barwon S/W	20.4	72.3	5.1	1.8	0.4
Grampians	20.1	70.8	5.6	3.4	0.1
Loddon Mallee	18.8	72.0	6.1	2.3	0.8
Hume	18.5	73.8	5.5	1.9	0.4
Gippsland	21.6	70.9	5.2	1.8	0.5
Eastern Metro	31.7	61.9	4.4	1.8	0.3
North & West Metro	29.2	60.2	6.8	2.7	1.2
Southern Metro	28.0	63.0	5.6	2.6	0.8

Note: Rates are from 2008 but are assumed to be unchanged and representative of 2010-11 rates.

Source: DOJ 2009b, 58.

## Prevalence at a local level

While there is evidence that prevalence rates vary across regional and metro areas, it may also be possible that prevalence rates vary within smaller populations such as municipal areas, which is of particular interest to councils.

In 2011, Moreland City Council (MCC) conducted its own survey of problem gambling prevalence (The Social Research Centre 2011). The survey estimated the prevalence of problem gambling using the PGSI with a representative sample of 601 persons. The survey found similar prevalence rates to the VGS, including those disaggregated to the relevant local government region of North and West Metro (table I.2).

**Table I.2 Problem gambling prevalence rates – Moreland City Council and the Victorian Gambling Study surveys**

Study	Number	Non %	Low %	Moderate %	Problem %
MCC sample (2010-11)	601	92	5.3	1.7	0.9
VGS (2008)	15 000	91	5.7	2.4	0.7
VGS (2008) – North & West Metro region	4 402	89	6.8	2.7	1.2

Notes: 'Number' refers to the number of surveyed individuals; 'Non' is an aggregate of the non-gambler and the non-problem gambler categories; 'low' refers to low-risk gamblers; 'moderate' refers to moderate-risk gamblers; and 'problem' refers to problem gamblers. Values may not equate due to rounding.

Sources: *The Social Research Centre 2011, 4; DOJ 2009b, 54, 58.*

While these studies highlight differing rates of problem gambling across local areas, it is likely that local conditions influence these results. For example, the MCC study concluded 'that EGMs are more accessible than in some other areas because there are so many venues with machines along Sydney Road' (The Social Research Centre 2011, 77). The Commission considers these local characteristics further in the next section.

### 1.3.2 Local characteristics and their impact on problem gambling

The MCC study pointed to a number of factors that could drive differences in the rates of problem gambling at more local levels. These include the concentration of Culturally and Linguistically Diverse individuals and different concentrations of gambling opportunities. The MCC study suggested that 'the high incidence of CALD (Culturally and Linguistically Diverse) individuals in Moreland could lead to higher levels of problem gambling' (The Social Research Centre 2011, 77).

In regard to local socioeconomic indicators, a study by the City of Greater Dandenong found:

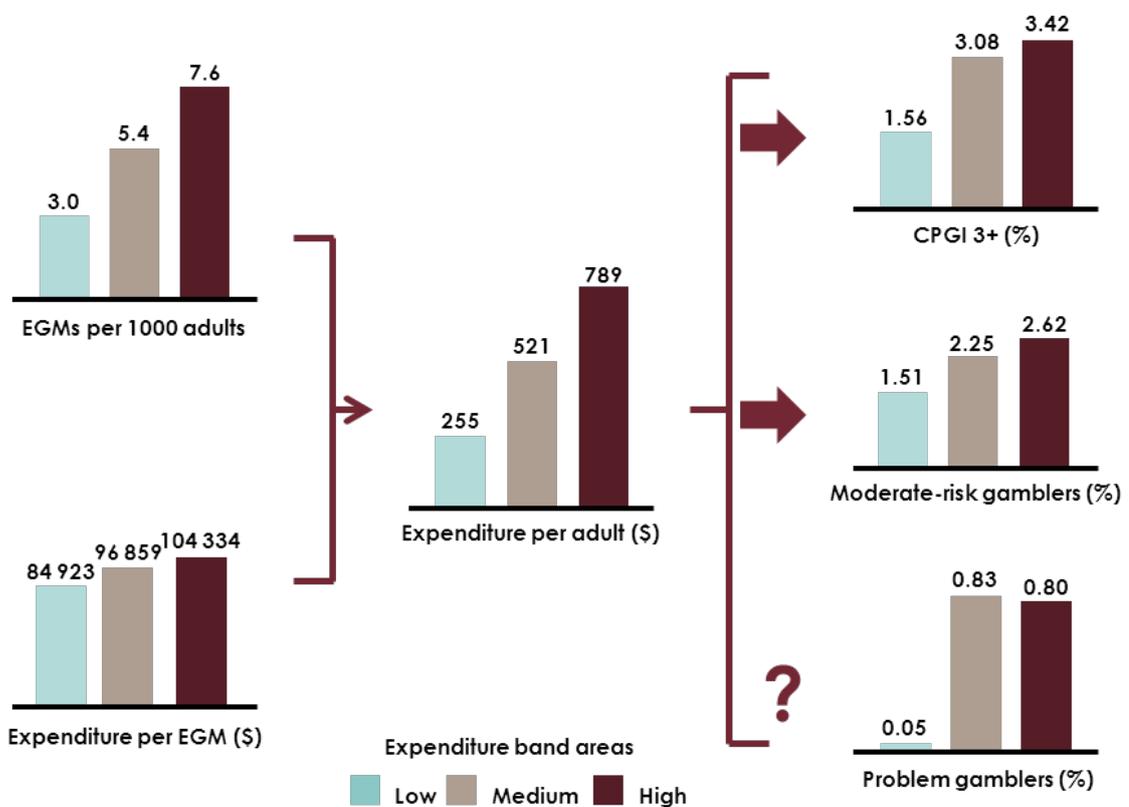
... average EGM losses per adult among the four metropolitan municipalities which recorded the lowest median individual incomes ... were ... three times the corresponding figure ... for the four municipalities with the highest median incomes. (sub. 3, p. 6)

MAV suggested that problem gambling prevalence rates correspond with levels of spending (sub. 29). MAV presented evidence of a correlation between the number of gamblers classified as moderate-risk and problem gamblers on one hand, and the:

- concentration of EGMs (EGMs per 1000 adults) (0.94)
- EGM expenditure per adult (0.95)
- expenditure per EGM (0.98).

MAV suggested lower expenditure-band areas correspond with lower rates of problem gambling. Figure I.1 shows the pattern between EGM expenditure and concentration, and problem gambling. While there appears to be a clear pattern between expenditure-band areas and moderate-risk gamblers, this link is not so clear for the problem-gambler group.

**Figure I.1 The link between EGM expenditure and problem gambling (2008-09)**



Note: CPGI 3+ includes both moderate-risk and problem gamblers.

Source: Adapted from MAV, sub. 29, p. 12.

The Commission undertook a similar analysis of potential links between problem gambling and local differences in expenditure on EGMs, concentration of EGMs and Socio-Economic Indexes for Areas (table I.3).

**Table I.3 Regional and metro area indicators with relative rankings in parenthesis (2010-11)**

	Problem gamblers (%)	Average net expenditure (\$)	Expenditure/income ratio (%)	EGMs per 1000	SEIFA score
<b>Regional Victoria</b>					
Loddon Mallee	0.8 (1)	330 (3)	2.0 (3)	4.6 (3)	935 (1)
Gippsland	0.5 (2)	617 (1)	3.9 (1)	7.8 (1)	946 (3)
Barwon	0.4 (3)	445 (2)	2.8 (2)	7.1 (2)	972 (5)
Hume	0.4 (3)	279 (5)	1.7 (5)	4.6 (3)	955 (4)
Grampians	0.1 (5)	284 (4)	1.8 (4)	4.2 (5)	937 (2)
<b>Metro</b>					
North & West	1.2 (1)	707 (1)	4.9 (1)	6.4 (1)	1014 (1)
Southern	0.8 (2)	582 (2)	3.8 (2)	5.8 (2)	1038 (2)
Eastern	0.3 (3)	564 (3)	3.2 (3)	5.7 (3)	1065 (3)

Notes: 'Average net expenditure' is the average expenditure on EGMs per person over 18 years of age; 'Expenditure/income ratio' presents average expenditure on EGMs as a ratio of average incomes; 'EGMs per 1000' is the number of EGMs per 1000 people over 18 years of age; 'SEIFA score' refers to the Socio-Economic Indexes for Areas which provides 'a method of determining the level of social and economic well-being in each region' (ABS 2008). A higher score corresponds to higher levels of relative wellbeing.

Sources: Commission analysis from data provided by the VCGLR; DOJ 2009b.

These results are not conclusive, however, they do support the existence of a relationship between higher prevalence rates of problem gambling in metro areas and a:

- higher concentrations of EGMs
- higher average net and relative expenditure on EGMs
- higher level of relative socioeconomic disadvantage.

This was particularly so for the North and West Metro region. The results for regional Victoria were more inconsistent. For example, there was a mixed relationship between the higher prevalence rate in the Loddon Mallee region and local indicators.

These results are broadly consistent with a recent review of the geographical impacts of gambling:

Geographical analysis of the relationship between the density of EGMs, net expenditure and problem gambling prevalence rates consistently show greater densities to be associated with greater expenditure and a larger proportion of problem gamblers. EGMs tend to be most strongly concentrated in areas with greater social disadvantage, but this may only be because hotels and clubs have traditionally been more concentrated in poorer areas. (Delfabbro, Le Couteur, and IGASA 2009, 7)

Furthermore, a recently published study on the relationship between disadvantage and harm from EGMs supported the Commission's observations:

... 40% of the apparent effect of disadvantage is explained by the density of EGMs. The vulnerability surface reflects socioeconomic patterns across Melbourne. EGM vulnerability is clustered ... High levels of EGM density in disadvantaged areas are contributing to a disproportionate share of EGM losses in already disadvantaged neighbourhoods. (Rintoul et al. 2012, 1)

Together these studies point to a number of potential drivers of the prevalence of problem gambling at a local level. Unfortunately, there is little data on whether the costs associated with an individual's problem gambling also vary at this level. This is an area where better information would no doubt assist the work of the VCGLR.

## 1.4 Direct and indirect government service costs

The Commission identified two additional methods of analysing the geographic distribution of the costs of problem gambling:

- (1) analysis of data on the use of financial and problem gambling counselling services
- (2) comparison of Department of Human Services (DHS) client locations with indicators of gambling activity.

Statistics relating to GH services (de-identified to comply with privacy requirements) are presented in table I.4 for 2011-12. These data provide a mixed picture on the geographical distribution of problem gambling costs:

- The proportion of people accessing GH services in each Victorian government region was somewhat similar, except for North and West Metro, which was much higher. This is likely to be related to the higher rate of problem gambling in this region (1.2 per cent) (DOJ 2009b).
- On average, a higher proportion of the population accessed GH services in regional Victoria than metro areas and yet they have a lower rate of problem gambling overall.

**Table I.4 Gambler's Help service contacts by Victorian government region (2011-12)**

	Number of GH contacts	Share by region (%)	Number of GH contacts per 100 000 adults
Barwon	226	6.5	78
Grampians	219	6.3	126
Loddon Mallee	226	6.5	92
Hume	184	5.3	87
Gippsland	196	5.6	96
Eastern Metro	516	14.8	64
North & West Metro	1358	38.9	101
Southern Metro	565	16.2	54
	1051 (regional) 2439 (metro)	100	96 (regional average) 73 (metro average)

Source: Commission analysis based on unpublished GH services data provided by the VRGF.

There are a number of inconsistent results in the GH services data that make it difficult to draw conclusions beyond these high-level observations. In its submission, the VCGLR noted that only 5 to 10 per cent of problem gamblers seek professional help through GH and identified that:

Access to consistent and reliable information on contacts to all professional help services would be valuable. (sub. 25, p. 40)

In regard to indirect costs on the human services sector, DHS advised the Commission in correspondence that it does not currently record information on the gambling behaviour of clients. As such, the association between problem gambling and DHS service demand is unknown. In order to explore this possible connection, gambling as a presenting issue for clients of DHS services would need to be identified and recorded in the DHS data systems. DHS noted that:

Although there may be some level of spatial correlation between locations of gambling venues and some local government areas of DHS clients, due to the lack of information on whether there is actually any association between gambling and DHS clients, this is inconclusive and further research would be required.

## **I.5 Conclusions and limitations of the Commission's analysis**

On the basis of the information available to the Commission, the costs of problem gambling are difficult to disaggregate geographically across the State. That said, some aspects of problem gambling can be compared, particularly gambling prevalence and the distribution of government services.

There are three pieces of information needed on a regional basis to robustly estimate the geographical distribution of the costs of problem gambling:

- (1) prevalence rates
- (2) rates of consequence
- (3) unit costs.

Regarding prevalence rates, the Commission noted that the prevalence of problem gambling is highest in the North and West Metro region. Accordingly, the use of GH services is also much greater in this region.

Data gaps meant that the Commission was not able to provide regional-level cost estimates of specific impacts of problem gambling, for example, impacts to mental wellbeing. Furthermore, a lack of systematic screening of DHS clients for problem gambling meant that only limited insights could be gained on the geographic distribution of human service costs.

The Commission also found that local characteristics are likely to play a role in the geographical distribution of problem gambling costs across Victoria. For example, the Commission found that in metro Victoria, EGM expenditure and distribution, and levels of disadvantage align with problem gambling prevalence rates. However, as noted above, the distribution of gambling venues, also reflects their introduction into established hotels and clubs that have tended to exist in more concentrated areas of social disadvantage (Delfabbro, Le Couteur, and IGASA 2009, 245).

Better understanding the distribution of impacts across regional and metro areas could be useful to the VCGLR, to inform decision-making on applications from venues to introduce or expand EGM gambling.

## Appendix J: Other indirect costs

### J.1 Introduction and summary of findings

This appendix considers a number of other indirect costs of problem gambling identified by the terms of reference and the Commission. The following indirect costs are examined:

- Job change costs (unemployment) as a result of gambling, either as a result of voluntary or involuntary change. These are tangible costs, including earnings losses and job-search costs for problem gamblers, and staff replacement costs for employers. These are estimated at approximately \$12 million in 2010-11, excluding transfer payments (section J.2).
- Productivity losses outside work for those gamblers who were not employed. These reflect the monetary value of the reduction in productivity for those gamblers not employed. These are estimated at between \$2 million and \$14 million in 2010-11 (section J.3). The impact on productivity loss at work for gamblers is discussed in appendix G.
- Costs of bankruptcy and bad debts. These costs are estimated at between \$0.5 million and \$6 million for bankruptcy and between \$3 million to \$37 million for bad debts (a transfer from others to the gambler) in 2010-11 (section J.4).
- Financial costs of divorce and separation. These costs are estimated at approximately \$1 million in 2010-11 (section J.5).

### J.2 Costs of job change

Problem gambling can lead to gamblers having to change jobs. The Victorian Gambling Study (VGS) found that problem gamblers had a higher rate of reported troubles with 'work boss or superiors' (DOJ 2009b, 16).

#### J.2.1 State of knowledge

The Productivity Commission (PC) included the costs of job change in its estimate of the national social costs of problem gambling. It identified three costs of job change:

- (1) Loss of income over the period before a new job is found. Some of this loss of income is borne by the Commonwealth Government in the form of unemployment benefits and lost tax revenue. The PC estimated the cost of lost income at \$24 million, with a transfer of \$4 million from taxpayers in the form of unemployment benefits.
- (2) Financial cost of searching for a new job to the gambler was estimated at \$13 million.
- (3) The cost to the employer of finding and training replacement staff was estimated at \$22 million (PC 1999, J.18).

The key assumptions made by the PC in developing its estimates are outlined in box J.1.

## Box J.1 Key Productivity Commission assumptions for costs of job change

The Productivity Commission (PC) used the following key assumptions for estimating the costs of job change:

- 5600 people changed jobs as a result of their gambling in the previous 12 months (based on the results of the PC's *National Gambling Survey*).
- No people identified themselves as having been dismissed from their job as a result of their gambling in the last 12 months.
- The expected average length of unemployment was six weeks for each person changing jobs.
- Average weekly earnings were used to estimate the income lost over the period of unemployment.
- Job search costs to the employee were based on an estimate of costs reported by major job-search firms.
- Staff replacement costs were estimated at 10 per cent of annual salary.
- Half of the people who changed jobs were assumed to receive unemployment benefits. The payment of unemployment benefits was considered a transfer from the taxpayer to the unemployed.

Source: PC 1999, J.17, J.18.

A 2009 review of the problem gambling literature noted that 'current research suggests that (when averaged across different studies) approximately 20 per cent of problem gamblers in community studies, and 50 per cent in treatment services experience disruptions to their work as a result of gambling' (Delfabbro, Le Couteur, and IGASA 2009). However, the same review also cautioned that:

It does not always follow that spending time gambling during work necessarily leads to a decline in work output. The same employees might compensate for this lost time by working more quickly or more intensively, perhaps after hours. Alternatively there may be others in the workplace who compensate for a colleague who does not appear to be happy or productive at work. (Delfabbro, Le Couteur, and IGASA 2009, 228)

In a 2011 study, the Allen Consulting Group (ACG) estimated the costs of job change as a result of problem gambling in Tasmania at \$2.5 million (ACG, PGRTC & SRC 2011). ACG applied prevalence rates from the PC's 1999 *Survey of Clients of Counselling Agencies* (SCCA) to all problem gamblers and half of the moderate-risk gamblers identified in the Tasmanian prevalence survey (ACG, PGRTC & SRC 2011).

A major United States study of gambling impacts found that problem and pathological gamblers had higher rates of job loss than low-risk or non-gamblers — 10.8 per cent and 13.8 per cent compared to rates of 5.8 per cent and 5.5 per cent respectively. The study also assumed that 'employers incur search and training costs assumed equal to 10 per cent of the annual salary for each employee replaced' (Gerstein et al. 1999, 44).

## J.2.2 Participant views

Some submissions provided qualitative views on the impact of problem gambling on employers and work colleagues. For example:

- The University of Ballarat noted its research team had found ‘... effects on workplace relationships with effects such as the loss of trust and relationship breakdown impacting negatively on work colleagues’ (sub. 7, p. 5).
- The City of Greater Bendigo highlighted the impact of ‘lost employment opportunities’ from problem gambling (sub. 15, p. 1).

Industry submissions noted the lack of research and evidence regarding problem gambling and job change. Clubs Australia commented that in its view ‘there has not been sufficient research surrounding the impacts of problem gambling on productivity or employment to ascertain any reliable estimates’ (sub. 12, p. 26). Adapting the PC’s methodology and its own estimate of the number of problem gamblers in Victoria, Clubs Australia estimated the total loss of productivity at work to be \$5.4 million for Victoria (sub. 12, p. 29).

The Australasian Gaming Council (AGC) noted that:

Evidence concerning job change or loss as a result of gambling activity is not well researched in Victoria and up-to-date data sources specifically addressing this topic are scarce. (sub. 28, p. 33)

The AGC also noted the results from a 2006 Victorian study of the Clients of Problem Gambling Services which reported that ‘very few of the respondents mentioned that their problem gambling had any major impact on their employment’ and ‘in many cases employment remained the last bastion of “normality” in many respondents lives’ (AGC, sub. 28, p. 34).

## J.2.3 The Commission’s approach and calculations

As a first step in estimating the Victorian costs of job change, the Commission examined the VGS. However, this study was not useful because it had some basic methodological shortcomings for this purpose:

- The VGS did not specifically ask gamblers whether they had changed jobs as a result of their gambling. The most relevant question asked gamblers whether gambling had caused them problems with school, with a job, or had caused them to miss out on a job or a career opportunity. Only two problem gamblers out of the sample indicated a positive response to this question, resulting in a very small population estimate of around 130 problem gamblers.
- The VGS asked participants a general question about whether they had troubles with their ‘work boss or superiors’ and had experienced ‘major changes in living conditions’. However, the direction of causation — did problem gambling lead to these outcomes or vice-versa? — was not established (DOJ 2009).

Reflecting the lack of recent evidence for Victoria, the Commission adapted the PC and ACG approaches to estimating the costs of job change, using the best available Victorian data. In accordance with the PC approach, only a single estimate (rather than a high and low estimate) of costs of job change has been made (PC 1999).

The resulting estimates are summarised in table J.1, and key assumptions are outlined below:

- The number of problem gamblers who changed jobs as a result of their gambling was derived using annualised prevalence rates from the PC's *Survey of Clients of Counselling Agencies*, applied to the total number of problem gamblers identified in the VGS. This resulted in a population estimate of approximately 600 persons.
- The average duration of unemployment was assumed to be two months, with half of the unemployed eligible for unemployment benefits. This is considered a transfer.
- Average adult Victorian monthly earnings were estimated at \$5373.

The Commission estimates the cost of job change as a result of problem gambling at approximately \$12 million (excluding transfers) in 2010-11.

**Table J.1 Costs of job change calculations (2010-11)**

Variable	Calculation	Value	Data source
<b>Loss of income</b>			
Number changed jobs	a	600	DOJ 2009b; PC 1999
Average duration of unemployment — months	b	2	OECD 2012
Average weekly earnings — monthly	c	\$5373	ABS 2012c
<b>Sub-total</b>	<b>a x b x c</b>	<b>\$6.4 million</b>	
<b>Job search costs</b>			
Cost of job search	d	\$3398	PC 1999; ACG, PGRTC & SRC 2011
<b>Sub-total</b>	<b>a x d</b>	<b>\$2.0 million</b>	
<b>Employer costs</b>			
Employer staff replacement costs as percentage of salary	e	10%	PC 1999
Average weekly earnings annualised	f	\$64 472	ABS 2012c, 24
<b>Sub-total</b>	<b>a x e x f</b>	<b>\$3.9 million</b>	
<b>Unemployment benefits (transfer)</b>			
Proportion of job changes eligible for unemployment benefits	g	50%	PC 1999
Monthly cost of unemployment benefits	h	\$979	DHS 2012
<b>Sub-total</b>	<b>a x b x g x h</b>	<b>\$0.6 million</b>	
<b>Total (including transfers)</b>		<b>\$13 million</b>	

Note: Values may not equate due to rounding.

Source: Commission analysis.

## **J.3 Productivity losses outside work**

This section examines the negative impacts on productivity from problem gambling for those who are not employed. The PC considered that a reduction in productivity for those at home, bringing up families, students and volunteers was as real as the decline in productivity of those employed (PC 1999, J.14).

### **J.3.1 State of knowledge**

The Commission found very little empirical evidence on the impact of productivity loss for gamblers who are not employed.

In its estimates, the PC first relied upon the same assumptions it made for calculating the value of lost productivity at work, estimated at between \$21 million and \$150 million in 1997-98 (appendix G). The PC then used data on the number of regular gamblers who were not employed (estimated from surveys at 30 per cent), and assumed they suffered a similar level of productivity loss outside of work. This resulted in an estimate of lost productivity valued at \$7 million to \$50 million per year (PC 1999, J.14).

In its study of the impacts of gambling in the Northern Territory (NT), ACIL Tasman updated the PC's estimates for more recent cost- and NT-specific prevalence data (ACIL Tasman 2006). The ACG study of Tasmanian gambling impacts did not estimate productivity losses outside work (ACG, PGRTC & SRC 2011).

Adapting the PC's methodology and using its own estimate of the number of problem gamblers in Victoria, Clubs Australia estimated the total loss of productivity outside work at between \$1.6 million and \$11.4 million (sub. 12, p. 29).

Given the limited information available, the Commission has relied upon updating the PC's methodology with available Victorian data.

### **J.3.2 The Commission's approach and calculations**

The key assumption for estimating productivity losses outside of work is the number of Victorian problem gamblers who are not employed. The VGS surveyed respondents on their employment status, asking whether they were in full- or part-time employment, unemployed or not in the workforce. Of the problem gambler segment, 31 per cent reported they were not in the workforce while 6.2 per cent reported they were unemployed (DOJ 2009b, 88).

Analysis of the unpublished Gambler's Help (GH) services database for 2011-12 also shows a relatively high proportion of gamblers seeking help as not employed.

- Of those gamblers receiving problem gambling counselling through GH services, approximately 33 per cent reported not being in paid work or unemployed.
- Of those gamblers receiving financial counselling through GH services, 47 per cent reported not being in paid work or unemployed.

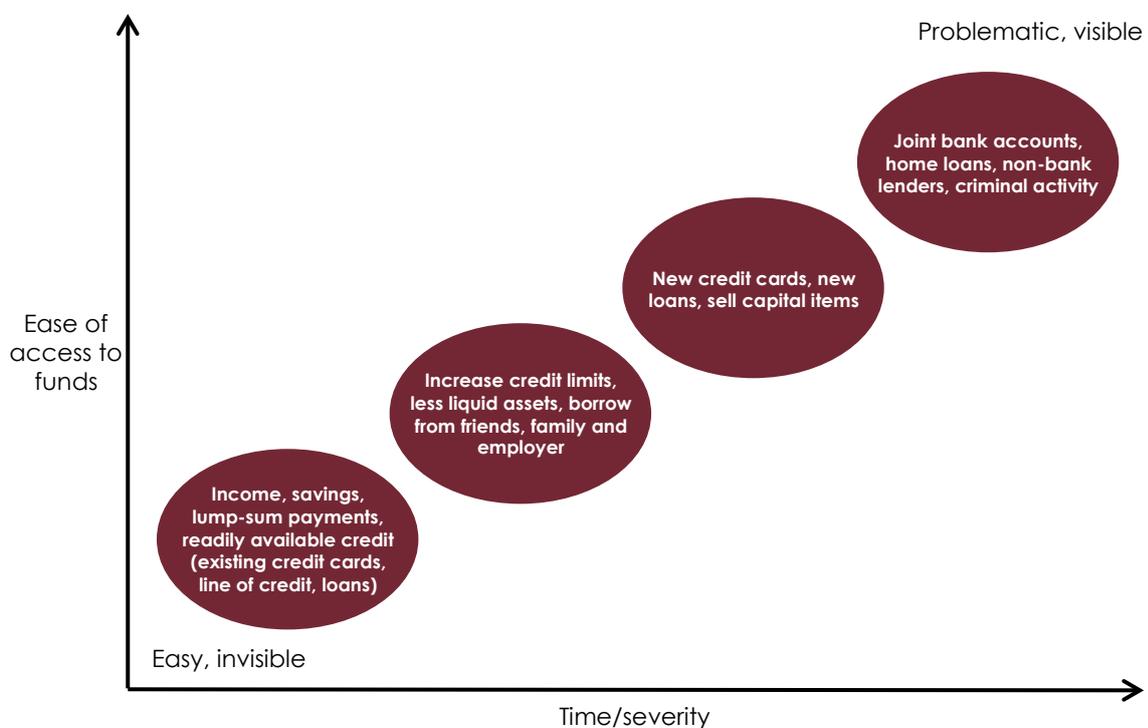
Based on the VGS and GH service data, the Commission has assumed that around 35 per cent of Victorian problem gamblers were not employed in 2010-11. In appendix G, the Commission has estimated a productivity loss at work for problem gamblers from approximately \$6 million to \$39 million in 2010-11. Assuming there are an additional 35 per cent not in work, the estimate for lost productivity outside work is around \$2 million to \$14 million in 2010-11. Including moderate-risk and low-risk gambler population estimates would result in a higher range of cost.

## J.4 The costs of bankruptcy

Another economic impact of problem gambling is bankruptcy (appendix B). Problem gambling often causes financial distress. Large money losses by problem gamblers — whether sporadically or over a sustained period of time — can deplete an individual's or household's financial resources and, in severe cases, lead to bankruptcy. The South Australian Centre for Economic Studies discussed the gambling problem timeline (figure J.1), illustrating the path, in terms of financial activity, from controlled non-problematic gambling to the point at which there are serious problems. These may be characterised by any combination of serious financial difficulty, bankruptcy, health problems, relationship breakdown, and criminal activity to access funds (SACES 2010).

Bankruptcy caused by problem gambling can result in a range of costs to different groups in the community. The costs estimated in this appendix are administrative costs to government and unpaid debts to business, family and friends.

**Figure J.1 The gambling problem timeline**



Source: Adapted from SACES 2010.

### J.4.1 State of knowledge

A major review of studies on the economic and social impacts of gambling reported that bankruptcies had 'been studied more than any other index of problem gambling, with the large majority of studies finding that bankruptcy increased following the introduction of casinos and/or multiple forms of gambling' (Williams, Rehm, and Stevens 2011, 43). These studies were mostly North American in origin.

There has been comparatively little research on personal bankruptcy in Australia (Morrison 2009). A recent Australian study, for example, examined trends in personal insolvency including bankruptcies and debt agreements (Ramsay and Sim 2009). Among the small number of Australian studies in this area, the PC analysis is the most relevant for this inquiry because it focuses on bankruptcies due to gambling and is

empirically based (PC 1999). The recent study on the economic and social impacts of gambling in Tasmania applied the PC approach to estimate the costs of gambling-related bankruptcy (ACG, PGRTC & SRC 2011).

## J.4.2 Participant views

Several participants noted that problem gambling can lead to financial problems, gambling debts and bankruptcy. The City of Boroondara reported that people presenting to GH services had financial issues such as exceeding credit card limits, unpaid bills and school fees, mortgage defaults and small businesses in financial difficulty (sub. 21, p. 1). In addition, Victoria Legal Aid stated that:

We frequently see clients who struggle to meet their basic needs and are facing gambling debts, other civic debts and infringements. (sub. 26, p. 1)

Relationships Australia described case studies of problem gamblers who had incurred large debts — one of whom 'now faces a bankruptcy notice and the potential loss of his house' (sub. 18, p. 4).

## J.4.3 The Commission's approach and calculations

The Commission's approach to estimating the costs of bankruptcy is largely informed by the PC's method (PC 1999). This involves developing estimates of:

- the number of bankruptcies due to gambling
- the costs of administering bankruptcies caused by gambling
- the value of unpaid gambling-related debts at bankruptcy.

### Number of bankruptcies due to gambling

There are several key information sources on the number of bankruptcies due to gambling in Australia:

- personal insolvency statistics collected and published by the Commonwealth Inspector-General in Bankruptcy (IGB) and Insolvency Trustee Service Australia (ITSA) (ITSA 2012a)
- survey-based bankruptcy rates estimated in the 2003 Victorian prevalence survey (McMillen et al. 2004)
- survey-based bankruptcy rates estimated by the PC from its *National Gambling Survey* and *Survey of Clients of Counselling Services* (PC 1999).

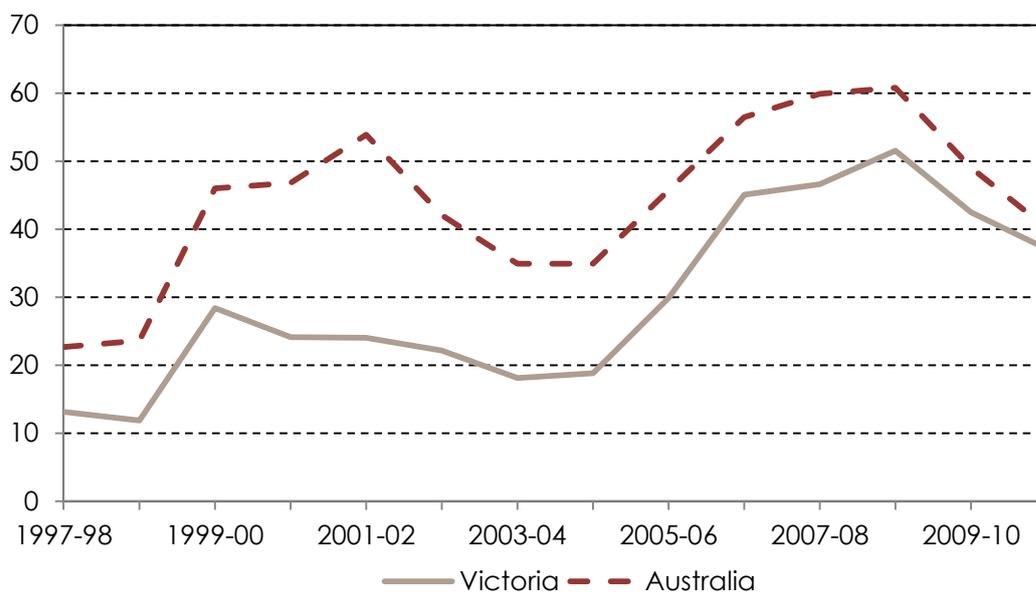
The VGS asked several questions relating to respondents' financial situation, but did not ask more specific questions about bankruptcy (DOJ 2009b). This limited the usefulness of this survey in relation to estimating gambling-related bankruptcy costs.

Statistics on bankruptcies in Australia (and its states and territories) are collected and reported by the IGB and ITSA. The data are collected by cause, including bankruptcy due to 'gambling or speculation'. In 2010-11 there were 160 bankruptcies in Victoria due to gambling or speculation, representing about 3.4 per cent of total bankruptcies in Victoria (ITSA 2011a). These figures include business and non-business related bankruptcies.

Although the bankruptcy rate due to gambling or speculation has fluctuated over the past decade, in recent years it has been four to five times higher than in the late 1990s

(figure J.2). The fluctuations may reflect the business cycle. Previous research has found that the rate of bankruptcy in Australia is related to economic conditions (Ralston, Mason, and Kumar 2001, 6).

**Figure J.2 Bankruptcy due to gambling or speculation, Victoria and Australia, number per million<sup>a</sup>**



Note: <sup>a</sup> Bankruptcy rate is the number of bankruptcies (business and non-business related) divided by the adult population (aged 18 and over).

Sources: ABS 2012a; ITSA 2011a.

There are two issues which affect the reliability of official bankruptcy statistics:

- (1) the statistics include bankruptcies from multiple causes
- (2) likely under-reporting of bankruptcy caused by gambling.

### *Bankruptcies due to multiple causes*

The AGC observed that the official data on bankruptcies create issues of causality by aggregating reasons for bankruptcy in data collection and reporting:

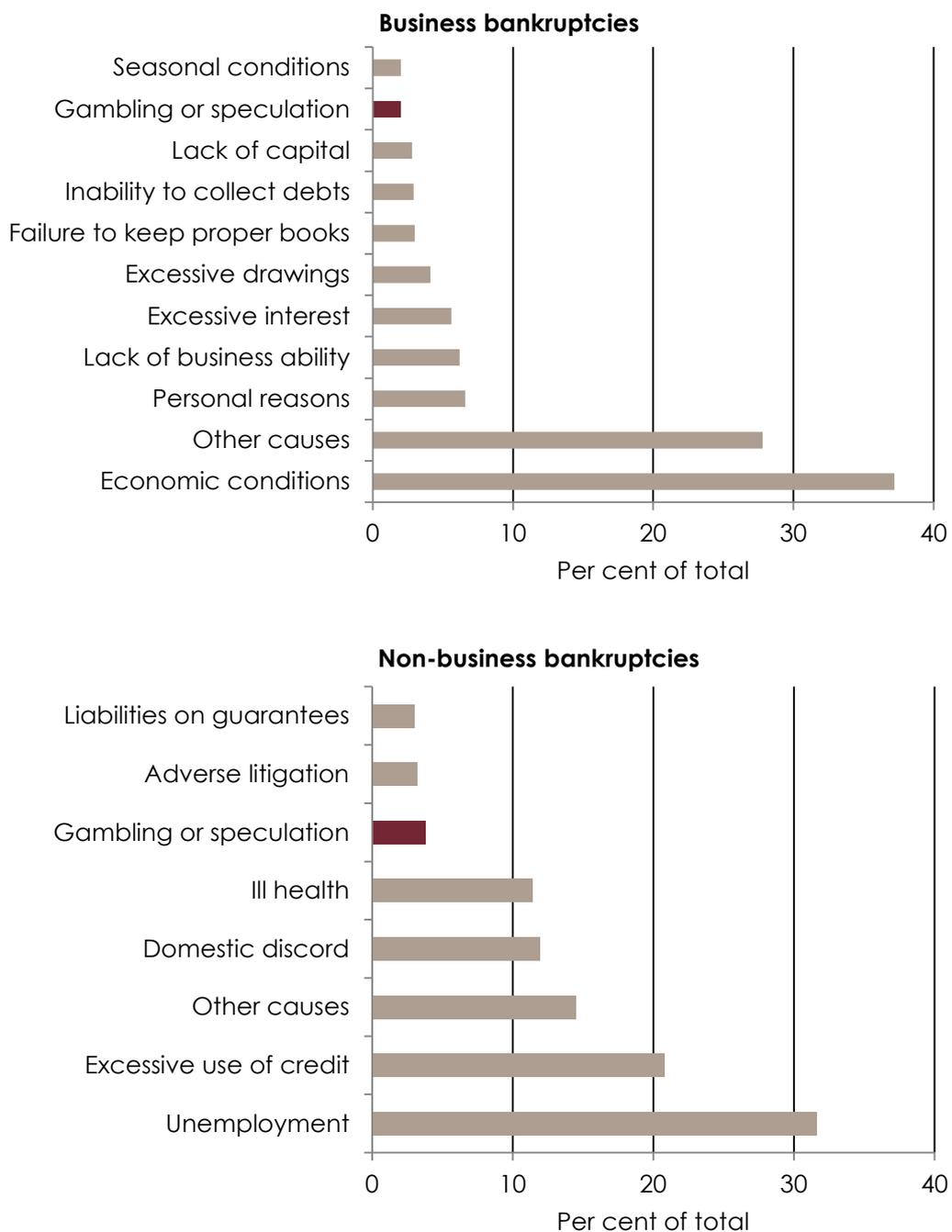
Attributions of causality in bankruptcy are confounded by the fact that ITSA statistics, while differentiating between business and non-business bankruptcies and bankruptcies by cause by jurisdiction, do not separate bankruptcies reported as attributable to 'speculation' from those attributed to 'gambling'. (sub. 28, p. 42)

The Commission recognises that official statistics may include some bankruptcies due to speculation (such as those caused by failed investments in risky ventures or assets), so it is not possible to establish the respective contributions of gambling and speculation. That said, there are also reasonable grounds to suspect that bankruptcies due to gambling are significantly under-reported in official statistics (discussed below).

### Under-reporting of bankruptcies

According to official statistics, bankruptcies due to gambling or speculation have accounted for a small percentage of total bankruptcies in Victoria (two per cent of business bankruptcies and 3.8 per cent of non-business bankruptcies) (figure J.3). The major self-reported causes of bankruptcy in Victoria in 2010-11 were economic conditions for business bankruptcies, and unemployment and excessive use of credit for non-business bankruptcies. It is worth noting that 'other causes or causes not stated' accounted for about 17 per cent of total bankruptcies.

**Figure J.3 Bankruptcies by cause, Victoria (2010-11)**



Source: Adapted from ITSA 2011a.

However, there are a number of reasons official statistics may be under-reporting the number of bankruptcies caused by gambling or speculation. As noted earlier, there is a social stigma attached to problem gambling which may make people reluctant to self-identify it as a cause (University of Ballarat, sub. 7; St Luke’s Anglicare, sub. 16; Relationships Australia, sub. 18; Great South Coast Group, sub. 20; City of Boroondara, sub. 21).

In addition, it is an offence for a person who, up to two years prior to presentation of the petition which led to their bankruptcy:

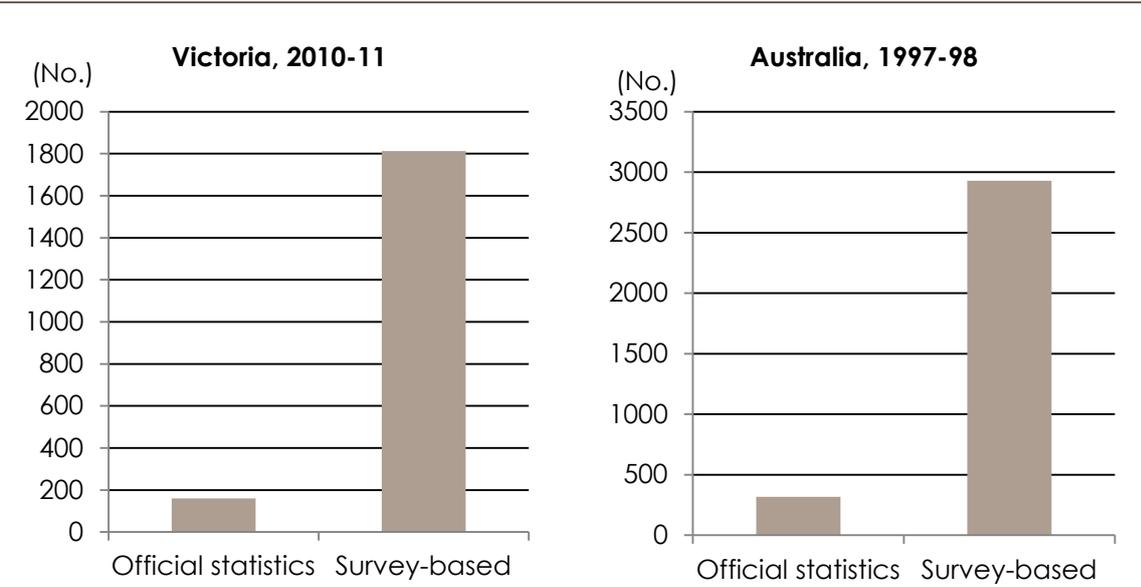
... materially contributed to, or increased the extent of, his or her insolvency ... by gambling or by speculations that, having regard to his or her financial position at the time and any other material circumstance, were rash and hazardous, being gambling or speculations not connected with a trade or business carried on by him or her ... (*Bankruptcy Act 1966 (Cth), s 271(a)*)

It is also an offence for a person, between the presentation of the petition and the date of bankruptcy to have lost any of his or her property by gambling or speculation that is rash and hazardous (s 271(b)). These offences are punishable by imprisonment up to 12 months. That said, the provisions have rarely been used and ITSA has published a policy statement announcing that it will not refer a case for prosecution under s 271 where it appears that the debtor could be classified as having been a problem gambler and has not engaged in any associated criminal activity to finance their gambling habit (ITSA 2012b).

Although this information should assuage concerns about prosecution, this assumes gamblers are well informed about policy and law. In reality it is likely that, to minimise or eliminate the risk of prosecution, some people would report another cause or not state the specific cause of their bankruptcy.

One way to gauge the potential extent of under-reporting is by comparing official bankruptcy statistics with estimated bankruptcies based on prevalence rates from Victorian and national surveys (figure J.4).

**Figure J.4 Official and estimated bankruptcies due to gambling or speculation**



Sources: ITSA 2011a; McMillen et al. 2004; PC 1999.

The left panel in figure J.4 shows official statistics on bankruptcies due to gambling or speculation in Victoria and estimated bankruptcies based on the rate of bankruptcy caused by gambling (among problem gamblers) from the 2003 Victorian prevalence survey (McMillen et al. 2004). The survey-based estimate is about 11 times greater than the official statistic.

The right panel of figure J.4 shows a similar picture for Australia. The estimated bankruptcies, based on a prevalence rate from the PC's *National Gambling Survey*, is about nine times higher than the official statistic. This estimate is based on the prevalence rate for bankruptcy among problem gamblers. The PC expressed caution about both the official statistics (potential under-reporting) and the prevalence rates derived from its surveys (statistical reliability) (PC 1999).

The Commission considers there is a high probability that official statistics under-estimate the true number of gambling-related bankruptcies. Given the available data, it is not possible to accurately gauge the extent of under-estimation. In these circumstances, the Commission developed low and high estimates for bankruptcies due to gambling in Victoria using:

- for the low estimate, official statistics on bankruptcies due to gambling or speculation in Victoria
- for the high estimate, the prevalence rate from the 2003 Victorian prevalence survey.

The Commission has made no adjustments for the impact of the business cycle on bankruptcy rates.

### **Cost to administer bankruptcies**

There are costs to the Commonwealth Government in administering bankruptcies. Most bankruptcies are managed by ITSA. The fee paid to ITSA in administering a bankruptcy is currently \$3200 plus a percentage of the recovered monies (ITSA 2011b). This fee is only taken in estates where money is actually realised. In most cases, bankrupts have no funds to pay these costs.

The Commission has estimated that the cost to the Commonwealth of administering gambling-related bankruptcies in Victoria ranges from \$0.5 million to \$5.8 million in 2010-11.

To obtain the lower estimate, the Commission multiplied the official number of bankruptcies (160) by the cost of administering or processing a bankruptcy (\$3200) (table J.2). To obtain the upper estimate, the Commission applied the prevalence rate for bankruptcy caused by gambling (6.0 per cent for problem gamblers) from the 2003 Victorian prevalence survey to the estimated number of problem gamblers in Victoria (30 200). This number was then multiplied by \$3200.

**Table J.2 Cost to administer gambling-related bankruptcies in Victoria (2010-11)**

Variable	Calculation	Low	High	Data sources
Number of bankruptcies	a	160	1800	ABS 2012a; DOJ 2009b; ITSA 2011a; McMillen et al. 2004
Cost per bankruptcy	b	\$3200	\$3200	ITSA 2011b
<b>Total</b>	<b>a x b</b>	<b>\$0.5 million</b>	<b>\$5.8 million</b>	

Note: Values may not equate due to rounding.

Source: Commission estimates based on PC 1999 and ACG, PGRTC & SRC 2011 methodologies.

### Unpaid debts at bankruptcy

Problem gamblers often accumulate gambling-related debts, which in some cases can lead to bankruptcy due to an inability to service or repay debts. Data on gambling-related debts were collected for clients presenting to problem gambling counselling services in Victoria in the late 1990s. The average level of gambling-related debt was reported to be \$14 140 in 1997-98 (Jackson et al. 2000). In 2010-11 prices, this equates to \$20 419. The Commission has used this figure as the average unpaid debt at bankruptcy due to gambling. The national profile of bankrupts in 2011 shows that the majority had unsecured debts of \$20 000 or more (ITSA 2012c).

To obtain the lower estimate, the official number of bankruptcies (160) was multiplied by the estimated average gambling-related debt per problem gambler (\$20 419) (table J.3). To obtain the upper estimate, the Commission applied the prevalence rate for bankruptcy (6.0 per cent) from the 2003 Victorian prevalence survey to the estimated number of problem gamblers in Victoria (30 200). This number was then multiplied by \$20 419.

The Commission estimated the value of unpaid debts due to gambling-related bankruptcy in Victoria to range from \$3.3 million to \$37.0 million in 2010-11. The unpaid gambling debts are likely to be owed to business (mainly financial services businesses) and family and friends. As such, these costs are considered to be transfers from other groups in society to gamblers (PC 1999).

**Table J.3 Unpaid debts due to gambling-related bankruptcy, Victoria (2010-11)**

Variable	Calculation	Low	High	Data sources
Number of bankruptcies	a	160	1800	ABS 2012a; DOJ 2009b; ITSA 2011a; McMillen et al. 2004
Gambling debt per problem gambler	b	\$20 419	\$20 419	ABS 2012b; Jackson et al. 2000
<b>Total</b>	<b>a x b</b>	<b>\$3.3 million</b>	<b>\$37.0 million</b>	

Note: Values may not equate due to rounding.

Source: Commission estimates based on PC 1999 and ACG, PGRTC & SRC 2011 methodologies.

## J.5 Financial cost of divorce and separation

In line with the PC, the Commission has provided an estimate of the financial cost of divorce and separation as a result of problem gambling. Appendix F focuses on the psychological impact of divorce and separation, and includes an overview of the literature regarding the link between problem gambling and divorce and separation.

### J.5.1 State of knowledge

The PC made the following assumptions to estimate the direct financial cost of divorce and separation due to problem gambling:

- 2560 divorces and separations attributable to problem gambling
- a unit cost of \$1100 comprised of a \$500 government filing fee, \$514 for standard legal fees and \$90 for disbursement fees (PC 1999).

The PC estimated the total annual financial cost of divorce and separation due to problem gambling as \$2.8 million nationally in 1997-98 (PC 1999).

### J.5.2 The Commission's approach and calculations

The Commission's estimate of the total financial cost of divorce and separation in Victoria as a result of problem gambling was \$1 million in 2010-11.

The Commission's estimate of the number of divorce and separations due to problem gambling in Victoria is explained in appendix F. Briefly, the Commission's calculation involved:

- the estimated number of problem gamblers in Victoria from the VGS (30 200)
- the annual rate of divorce and separation from the PC's *Survey of Clients of Counselling Agencies* (2.9 per cent)
- the counterfactual adjustment (80 per cent).

Based on these assumptions, the Commission estimated that the number of divorce and separations due to problem gambling in Victoria was 710 in 2010-11.

The Commission is not aware of any studies that have estimated the financial (administrative) cost of divorce and separation in Victoria.

The Commission calculated the financial cost of divorce and separation was \$1360 in 2010-11, comprising:

- \$550 for court fees associated with the application for divorce
- \$810 for legal fees related to divorce.

The court fee associated with applications for divorce is determined by the Commonwealth Government (*Federal Magistrates Regulations 2000* (Cth)).

The Commission is not aware of any studies that estimate average legal fees associated with divorce in Victoria. However, the Family Court Scale of Costs provides a proxy of about \$810 for the legal fees associated with an uncontested divorce in 2010-11 (*Family Law Rules 2004* (Cth)).

Table J.4 describes the Commission's calculations in estimating the total financial cost of divorce and separation due to problem gambling.

**Table J.4 Financial cost of divorce and separation, Victoria (2010-11)**

Variable	Calculation	Value
Estimated number of problem gamblers reporting divorce and separation due to problem gambling	a	710
Unit cost associated with divorce and separation	b	\$1360
<b>Total</b>	<b>a x b</b>	<b>\$1 million</b>

Source: PC 1999.

## J.6 Limitations of the Commission's analysis

While it is possible to derive broad estimates of some indirect costs of problem gambling, this chapter has highlighted information gaps in relation to costs of bankruptcy, particularly at the local level.

### J.6.1 Costs of bankruptcy

A key limitation in estimates of the cost of bankruptcy is the large uncertainty in the estimates, as reflected in the wide range between the lower and upper estimates. The lower estimate is likely to be affected by under-reporting and therefore be an under-estimate of the problem. The upper estimate suggests that bankruptcies due to gambling account for some 40 per cent of total bankruptcies in Victoria. Anecdotally, one insolvency manager has reported that, in more than 50 per cent of cases of personal bankruptcy, the problem has been caused or increased by gambling debt (Insolvency Guardian 2011).

Several participants identified a range of specific data that would be helpful, including the number of people who declare bankruptcy and their locations (postcodes) (Yarra Ranges Council, sub. 11; City of Monash, sub. 22). While experimental estimates of bankruptcy numbers at the postcode level have recently become available, bankruptcy numbers due to gambling are not currently published at a regional or postcode level for Victoria (ITSA 2012d).

The Commission has not included in its estimates the costs of administering debt agreements, which are an alternative to declaring bankruptcy. It also has not included the impacts of bankruptcy on a gambler's employment, earnings and ability to borrow funds.

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