Benefits and Costs of Gambling: A Framework for Analysis

A Submission to the Productivity Commission Inquiry into Australia's Gambling Industries

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Foreword

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1. Introduction

It is taken as an article of faith by many commentators, researchers and those concerned with social questions that there are significant *costs* associated with gambling.[1] This is evident from the concerns expressed in many submissions to the Productivity Commission's Inquiry into Australia's Gambling Industries. Moreover, the costs tend to be universally regarded as *social costs* requiring government action to correct for.

These claims about gambling are typical of the arguments continually being promoted about the risks of everyday activities: last week it was 'the cost to Australia of food poisoning';[2] the week before it was 'the cost to Australia of falls by people in their own homes'. Now there is a tendency to treat gambling as the cause of many other social ills.

Although apparently well meaning, the concerns expressed about gambling in many of the submissions to the Productivity Commission's Inquiry are not based on any consistent framework of analysis or logic. These submissions have almost universally ignored the long established and widely accepted economic approach to considering the benefits and costs of an activity. They see gambling as all cost and no benefit. Moreover, they do not define social costs properly and they have no respect for consumer choice. Heavy regulation of gambling, and demands for even more regulation are accepted without question and without any apparent thought to the costs it might be imposing on consumers, including those the regulations are designed to protect, and suppliers of gambling services.

The aim of this Submission is to set out a more rigorous and consistent approach to estimating the net benefits from gambling — which in-principle could be positive or negative. The approach that is outlined seeks to deal appropriately with all costs and benefits, distinguish

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1 One example of many is the submission on Internet gambling by the Interchurch Gambling Taskforce (1999). The Taskforce submission asserts that there are overall negative social impacts of gambling on the community. These social impacts are listed as "...household and social difficulties, increased reliance on social security, reliance and pressure on charity groups, increased crime, regressive taxation and impact of gambling on low income communities, cultural shifts in leisure and recreation, and an unsustainable government dependence on gambling revenue" (p. 1). No attempt is made to carefully define 'negative social impacts', or to provide a logical and consistent framework for evaluating claimed social costs from gambling and no consideration is given to the benefits from gambling.

2 ANZFA (1999) proposes a methodology for assessing benefits and costs of food safety standards. With a cursory analysis of the incidence of market failure (pp. 90-92) or other causes of price distortions, the report asserts that: "The proposed food safety standards represent the best way to minimise the incidence and costs of food borne illness in Australia" (p. 104). The report contains many loose references to 'costs' and 'benefits' and in no way represents a rigorous assessment of how to achieve an affordable level of safety.

between private and social costs and allow for benefits to both consumers and suppliers to be included in the final estimate.

The Submission begins with a summary of the main points on 'problem' gambling raised by ACIL Consulting's Submission to the Productivity Commission of March 1999 (ACIL, 1999). This is followed by a discussion of some of the key issues affecting the estimation of net benefits obtained from an activity and the major elements to be included in such estimation. Particular emphasis is placed on the distinction between private costs and social costs, merit goods, and the measurement of net consumer and producer benefits. Some comments are made on available qualitative and quantitative assessments of the impact of gambling.

The Submission concludes with a description of a formal framework for correctly analysing the *net benefits* from gambling. This is a framework that should be adopted by the Productivity Commission in its forthcoming Draft Report on Australia's gambling industries. No attempt has been made by ACIL to provide detailed quantitative estimates for every element of the framework. Nevertheless, it is clear from the estimates available and a careful qualitative assessment of issues commonly thought to be associated with gambling-related market failure such as so-called problem gambling, that the net benefits to Australia from gambling are positive and potentially very large.

2. ACIL's Submission to the Productivity Commission

Much of the supposed cost to society of gambling is laid at the door of 'problem' gambling. This is an elusive condition but, at the limit, appears to embrace virtually every human discomfort, with gambling being portrayed as its cause.

The ACIL Submission to the Productivity Commission of March 1999 explained that 'problem' gambling has not been objectively defined and its relevance as a basis for government intervention has not been demonstrated.

The ACIL Submission of March 1999 argued that 'problem' gambling has been promoted by those who think gamblers do not know what is good for them and by governments trying to rationalise their excessive and regressive taxation of gambling. The analysis of 'problem' gambling in the Submission ended with a recommendation that governments should de-institutionalise 'problem' gambling. The line of argument leading to this recommendation is summarised below.

Some people are compulsive gamblers. A small proportion of gamblers spend a relatively high proportion of their income on gambling. A very small proportion of gamblers (and their families) who experience heavy financial losses end up receiving welfare support from voluntary and government agencies. These facts are agreed, but the Submission rejected the idea that they provide sound grounds for governments to tax and regulate gambling differently from other economic activities.

The need for government intervention to combat self-harmful 'irrational' behaviour is unconvincing. Leaving aside the question of what remedy might be applied, compulsive gambling is not insane behaviour. First, the Australian Institute of Gambling Research (AIGR) notes that gambling is generally considered a normal pastime in Australia and psychiatrists here do not accept the US notion that compulsive gambling is a mental disorder. Second, this assessment by the AIGR is supported by a body of economic research that finds addictions of various kinds to be readily explained as the behaviour of rational, well-informed individuals with stable tastes.

On this basis, the Submission of March 1999 concluded that denying compulsive gamblers their freedom to gamble on the grounds that they are insane has no sound medical foundation and would infringe on their individual rights. In addition, acceptance of an insanity diagnosis of compulsive gambling could encourage bogus insanity pleas in court cases involving alleged crimes by gamblers.

The earlier Submission pointed out that special measures to address 'problem' gambling are predicated on gambling having external or 'spill over' impacts on non-gamblers for which they are not compensated. However, the existence of such costs outside the gambler's family has not been established. Moreover, there is confusion over whether gambling is a symptom or a cause of family distress, and whether suppressing it might unleash more harmful behaviour. The causal link between gambling and other social outcomes is increasingly being questioned.

There are general welfare measures to address financial stress suffered by gamblers' families. Because of perverse incentive effects of the kind mentioned above and the risks of state intervention in family life, the Submission finds that the case for additional measures to protect the relatives of compulsive gamblers is weak.

Importantly, the existence of gamblers with regrets, even repeated regrets, about their gambling is not evidence of a need for intervention by governments. People, especially some personality types, continually regret having done certain things and we all learn in life that what 'seemed like a good idea at the time' does not always work out. There is, in any case, no operational way that governments could implement a policy of nurturing 'disappointed' individuals. Among other things, to do so would encourage a continuation of the behaviour that lead to it in the first place.

Equally, ignorance of the odds, or ignorance of the rules of gambling is not a reason for special measures to protect gamblers from themselves. The *Trade Practices Act* protects all consumers against deceptive and misleading behaviour. Gambling providers readily supply information to consumers about the games that they provide. Competition amongst providers backed up by the *Trade Practices Act* is the best safeguard for consumers against deception. Indeed, in a competitive setting, providers have an incentive to look after their customers — and genuinely so, not merely to appease the authorities or head-off further regulation (as seems to explain some of the actions of suppliers at present).

Finally, at the Public Hearings on 30 March 1999 to discuss its Submission, ACIL's opening statement commented on ethically driven perceptions of 'problem' gambling. We observed that a minority of people see betting for material gain as morally wrong and that some go so far as to argue that gambling should be eliminated from our society. In doing so, they are quite entitled to encourage others to refrain from gambling voluntarily. However, there are ethical dilemmas in allowing those of this disposition to enlist the coercive powers of the state. The ethical basis for denying everyone — non-believers as well as believers — access to gambling where it causes no harm to others is highly dubious. Whose ethical standards are to be chosen? Why should one be preferred to the others? Some Christian commentators have argued that

removing the need for the individual to make ethical choices actually diminishes the redemptive power of the correct choice.

On the basis of all the above, ACIL concluded that the concern about 'problem' gambling in some quarters, while often well-meaning, does not provide a sound or a credible basis for governments to limit access to gambling by consumers.

To reiterate, there are no grounds for discriminatory tax or regulatory treatment of gambling to combat 'problem' gambling, and no grounds for maintaining specialised agencies to treat and/or monitor 'problem' gambling. Even as an area for 'further research', the subject is not prospective from society's point of view and should no longer attract special public funding.

We are prepared to stand by our assessment. However, we can also see that some governments might not find the above arguments persuasive and take the view that 'problem' gambling is a real issue for public policy and one on which they must act.

In the event this proves to be case and to encourage disciplined analysis, we have sought to:

- review how others have attempted to estimate the economic costs of 'problem' gambling; and then to have
- set out what economists would see as an appropriate framework or methodology for considering and estimating all the benefits and costs associated with gambling.

We believe that this is the framework that the Productivity Commission should adopt to address this issue in an appropriate way.

3. The Benefits and Costs of Gambling

3.1 All cost and no benefit?

All activities have costs: there is a price to pay for producing or consuming any good or service. However, these costs must be set against the benefits obtained from pursuing the particular activity. In the case of gambling, many commentators and researchers — including many who have made submissions to the Productivity Inquiry into gambling — consider gambling to be all cost and no benefit. Gambling is seen as a 'problem' and gamblers are 'offenders'.

Ignoring benefits is illogical and absurd. It is neither logical nor plausible to expect an individual would knowingly and voluntarily pay to undertake an activity that did not benefit them, either directly or indirectly. Even altruistic and co-operative behaviour is explicable in terms of its indirect benefits to the individual in question. As recent work by evolutionary biologists has shown, these sorts of behaviour are well entrenched throughout the natural world (and may ultimately benefit the giver by enhancing the survival of its genes).

The need to ensure that both benefits and costs are properly and fully accounted for in public policy is one of the reasons for the well-established and widely accepted application of benefit/cost analysis by governments. Governments have considered it to be an essential approach to adopt, at least informally, when considering the economic impact of any activity — whether it is building a bridge, a new road or a hospital. It is applicable to any policy choice, especially in relation to policies that propose to restrict or make more expensive the activity in question.

As an illustration of how absurd the 'all costs and no benefit' approach is, consider the use of motor vehicles. If the costs of fuel, depreciation, servicing and motor vehicle accidents (repairs, income loss due to injury, medical costs and premature death) were added together and published as a comprehensive estimate of the economic impact of motor vehicle travel, most people would ask why the benefits of the increased mobility, extra comfort and travel time savings made possible by the motor vehicle were excluded from the calculation. Similarly, few would argue that just listing the costs of going to the movies, eating chocolates, travelling or playing contact sports would constitute a balanced assessment of these activities.

Another good example of the 'all costs and no benefits' perspective is found in the issue of accidents in the home. From time to time there are

media reports of research which purports to show the cost of accidents in the home. What is missing from such analyses is consideration of the benefit obtained from the activity that gave rise to the accident (for example cooking, gardening, washing the car, or painting the house).

A full account of the net impact of gambling must include an assessment of the benefits of gambling along with the costs.

3.2 Social costs versus private costs

Not only must both benefits and costs be carefully evaluated, but also whether any of the impacts of gambling, positive or negative, should be the basis for government intervention must be carefully considered.

A clear distinction must be made between private costs — costs to one individual — and genuine social costs — costs to society as a whole. Private costs are fully taken into account by the gambler, smoker, drinker, car driver, chocolate eater, house painter and so on. As they are fully accounted for by the decision-maker, there is no basis on which government could sensibly intervene — intervention could improve the outcomes for some but it would only make things worse for the community as a whole. Only the costs arising from market failure (unpriced spillover effects) which lead to resource allocation and waste should in-principle be addressed by governments. This approach is in stark contrast to the views put forward by many individuals and organisations making submissions to the Productivity Commission Inquiry, who see all costs as requiring attention by governments.

Extreme care needs to be adopted by governments in intervening to correct for perceived market failure. The risk of 'government failure' is both real and substantial. As set out in ACIL's March 1999 Submission, even if external effects are present, it does not automatically follow that government intervention is likely to improve economic efficiency.

There are two main mechanisms which often prove flexible enough to reduce, if not eliminate, market failure (unpriced spillovers). They involve co-operation among the relevant parties or the negotiation of formal or informal contractual arrangements between them (for example gambling self-exclusion programs). Their scope to do so is only limited by the extent of the transaction costs of the arrangements in question. The modern understanding of the potential for voluntary arrangements to cope with spillovers involving negative or beneficial impacts on others owes much to Professor Ronald Coase,[3] the winner of the 1993 Nobel

3 Coase (1960).

Prize in Economics. Amongst professional economists, his analysis has become the most accepted view.

The ability of individuals and firms to form co-operative arrangements and contract to reduce or remove potentially unpriced spillover effects should not be underestimated. These activities occur regularly in day-to-day life, ranging from people adjusting their behaviour to avoid walking into each other on a crowded street or after an AFL Grand Final at the MCG, making agreements within a family, to more formal contracting arrangements between people to say take into account the effects of a potentially unpriced spillover from a business activity. A classic example of the latter type of activity is the 'steam locomotive case' (Box 1).

Box 1: Minimising costs without formal intervention - the steam locomotive case

The steam locomotive example was described by Coase in his famous 1960 paper 'The Problem of Social Cost' in the *Journal of Law and Economics*.

Coase used the example of a steam locomotive that emits sparks as it crosses a farmer's field. Coase observed that the standard view of this case would be to have the law and/or courts to settle the question of who is responsible for preventing fire damage. He explained that a legal re-assignment of rights and responsibilities is not necessary to minimise losses between the parties. Rather, what is needed are low transaction costs, to create an avenue for the farmer and the railroad to bargain easily and quickly over management of the interference between their activities — such as keeping a right of way clear of crops, or suppressing locomotive sparks, or some mixture of the two.

The law aside, Coase showed that it pays both parties to work out a way to assign the responsibility to whomever can do the job at least cost. One of the main implications is that having a statute predetermine the assignment could place a needless hurdle on the road to the two parties achieving a least cost solution, and of subsequently shifting to another solution if changes in costs and prices later demanded it.

Source: Coase (1960)

The estimation of the benefits and costs must make a clear distinction between private and social costs and should only account for the deadweight costs of market failure beyond those already corrected. Moreover, government intervention should only be focused on true social costs, not private costs, and then, only after the potential for agreements and contracting have been exhausted.

While social costs arising from genuine market failure are a legitimate concern in the estimation of the net economic benefits of an activity, there is the potential for policy makers and others to confuse so-called 'public goods' with economically unjustified 'merit goods'.

The ACIL Submission of March 1999 points out that 'merit good' is the term used by some public finance specialists to describe a good or service which governments supply or subsidise to ensure that the community consumes it. This is done, not because of the failure of the market to reflect supply and demand conditions accurately, but on the grounds that an influential interest group insists. Government support for merit goods is usually based on the highly paternalistic notion that people should

they do not know it themselves. Opera, ballet and public orchestras are often cited as examples of merit goods.

As far as the application of the concept to gambling goes, the services intended to combat 'problem' gambling might be thought of as merit goods. For its part, gambling might be regarded as a merit 'bad' (people must be saved from themselves) and governments should stop or severely control it rather than subsidise or supply it at a competitive price.

In contrast to merit goods, public goods are recognised by economists as goods or services afflicted by genuine market failure. Unlike a public good, a merit good does not involve genuine market failure but is based on the paternalistic view (usually held by a minority) that the good or service should be provided to community members for their own good. A consequence of this is that there is no objective basis for estimating whether the provision of a merit good is delivering a net benefit to the community. For a public good, the benefit can be measured by what economists call an individual's 'willingness to pay' to obtain it. For merit goods no such equivalent exists, so unless some consumption value of the merit good is manufactured, the calculation cannot be completed.

The merit good concept has no place in either the policy debate about gambling or in the estimation of benefits and costs.

3.3 Consumption and production benefits

As we have seen, all activities have benefits as well as costs. The net economic value of an activity takes into account what the activity offers to the community in terms of benefits to consumers after allowing for the resources that are used up producing it.

Net economic benefit (or value) measures the difference between benefits and costs. Positive net economic benefits comprise net economic benefits to consumers (consumer surplus) and net economic benefits to suppliers of the activity (producer surplus). In the case of consumers, the net benefits are a measure of the benefits of consumption — or looked at another way, their 'willingness to pay' — less what they actually had to pay. Producer surplus can be viewed as the excess of revenue over producers' costs.

Consumer and producer surplus are widely accepted and used concepts in economic benefit/cost analysis. To ignore consumer and producer surplus and just focus on gross costs would be to miss a major part of the story. Despite this, neglect of these points is common in many approaches to measuring the impact of an activity by those who express concern about the activity in question. Gambling is no exception.

A more detailed description of consumer and producer surplus, and how they can be calculated, is presented in Box 2. It also includes an analysis

on how consumer and producer surplus might change as a result of some market imperfection such as a supply-side regulation. The analysis of the impact of regulation also illustrates how genuine social costs — deadweight losses in consumption and production efficiency — arise.

While surplus measures are useful and widely used tools, it needs to be recognised that the situation outlined in Box 2 does not tell the whole story. It treats the activity (in this case gambling) in isolation from other activities. This is known as partial equilibrium analysis.

The ACIL Submission of March 1999 explained that a complete analysis of changes in consumer surplus (or producer surplus for that matter) would need to take into account how a reduction (or increase) in spending in gambling would change consumer spending in areas outside of gambling. These would all have consumer and producer surplus changes associated with them. Moreover they, in turn, would generate a second round of effects on gambling and so on until the changes had worked themselves out. The final result would be to dampen the initial impact of the first round of the changes. There would also be welfare losses and gains (consumption and production deadweight losses) across other activities.

Taking into account the complex interrelationships between activities is known as an economy-wide or general equilibrium (GE) approach (as opposed to the partial equilibrium approach outlined in Box 2). Building and estimating GE models which can adequately handle changes in surplus measures is a difficult task and the partial approach is often the best available — it will at least help establish the relative orders of magnitude.

Box 2: Consumer and producer surplus and deadweight losses

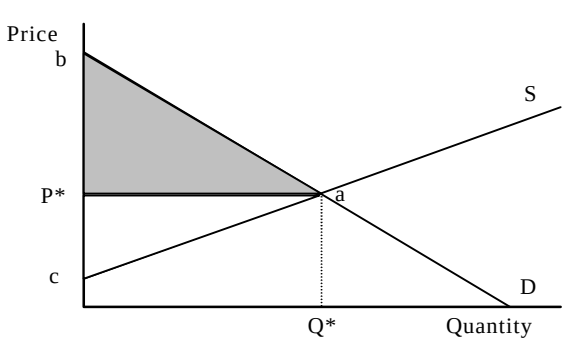
Benefit/cost analysis is the broad economic discipline devoted to the estimation of net benefits from a national standpoint. It is a highly developed methodology for measuring the effects on the well-being of individuals, of changes in the prices and quantities that are likely to occur as a result of a particular policy or project. From a theoretical viewpoint, the objective of benefit/cost analysis is to measure changes to two magnitudes — consumer surplus and producer surplus — which are the net amounts of value accruing in excess of costs (to consumers on the one hand and producers on the other) when goods and services are bought and sold.

Alfred Marshall, a renowned economist of the early 20th Century, originated the concept of consumer surplus. He noted that the price is typically the same for each unit of a commodity that a consumer buys, but that the marginal value of all units purchased previous to the final one leaves the consumer a net benefit. The size of the benefit from the amount purchased equals the difference between the consumers' value of all these units and the amount actually paid for the units. The difference is called the 'consumer surplus'. The term 'surplus' is used in recognition that people are generally willing to pay more for a product than they actually have to pay. It represents in dollar terms the extra utility or value that consumers' expect to derive from a product or service. An analogous story can be told for producers. If the marginal cost curve of an industry is represented by the industry supply curve, 'producer surplus' represents the excess of revenue received over aggregate marginal costs. This is akin to a measure of gross profit.

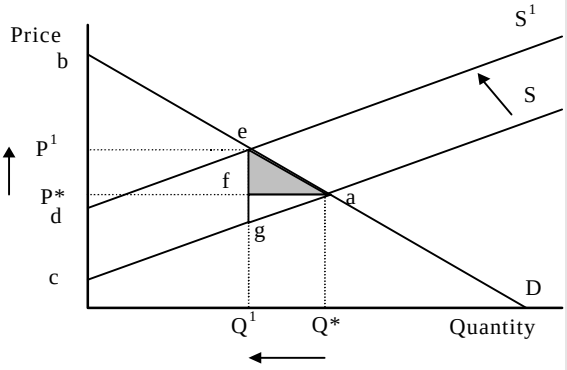
Consumer and producer surplus for a non-distorted market are illustrated in Panel A. The market price, P*, is determined by the intersection of the demand curve (D) and supply curve (S). At price P*, the amount produced will be Q*. Consumer surplus is represented by the shaded triangle abP*. Producer surplus is measured by the area above the supply curve and bounded by the market price, P*, that is, the hatched area acP*. In this simple example the benefit to society of the activity represented in Panel A is the sum of consumer and producer surplus. The size of consumer and producer depends on the slopes of the demand and supply curves, that is the price elasticities. For example, a steeper demand curve (more inelastic, or less responsive to price) than that depicted in Panel A would result in a larger consumer surplus.

Now consider a situation in which the supply of the product or service is subject to a regulation (a similar story can be told for the introduction of a consumption tax) – Panel B. The regulation causes the supply curve to shift to the right (up). This means that the product or service is now more expensive to produce at each level of output. The market price rises to P^1 and output falls to Q^1. Consumer surplus is now given by the triangle ebP^1 – a smaller area than the original consumer surplus. Similarly, producer surplus is now smaller, measured by the triangle edP^1.

The introduction of a regulation results in two other important effects: consumption and efficiency losses, also known as deadweight losses. The consumption deadweight loss is represented in Panel B by the shaded triangle aef. This is the part of the original consumer surplus which has 'disappeared' (as opposed to being transferred elsewhere) for ever (unless the regulation is removed). The producer deadweight loss is given by the hatched triangle agf. This is the part of the original producer surplus which has 'disappeared' as a result of the regulation being introduced. The consumer and producer deadweight losses represent true costs to society — social costs — resulting from the distortion. Looked at another way, the deadweight losses represent the amount by which the contribution from the industry would increase if the distortion were removed. Panel B does not tell the whole social cost story however. Also to be taken into account are the deadweight losses arising from compliance with and administration of the regulation.



Panel A



Panel B

4. Estimates of the Impacts of Gambling

The so-called 'social cost' impact of gambling is commonly asserted by those opposing gambling and is evident in a number of submissions to the Productivity Commission. Rigorous, and properly formulated, theoretical and quantitative analysis of the impact of gambling has, for the most part, been missing from the gambling debate (the aim of the March 1999 Submission by ACIL and the present Submission was to provide some balance in this area).

In its April 1999 Submission to the Productivity Commission, the Commonwealth Department of Health and Aged Care noted that there is a lack of documented evidence about the impact of problem gambling on the health and well-being, especially in the Australian context (Commonwealth Department of Health and Aged Care, 1999). The Department went on to observe that no attempt has been made to estimate the health impacts flowing from what it saw as gambling-related problems.

Most of the empirical work in this area has been undertaken in the US. In that country, the most recent attempt to estimate the economic costs of gambling was undertaken by the National Opinion Research Centre (NORC) at the University of Chicago (NORC *et al*, 1999). An outline of the NORC study is in Box 3.

The NORC study attempts to estimate the costs of each of the social impacts that previous research has found to be associated with gambling. The methodology used in the study is typical of that used by many previous studies dealing with the costs of 'sin' goods and services (eg smoking, drinking, gambling, boxing and other dangerous sports, adult services and products).

The NORC study attempts to evaluate, in some detail, the various costs that are thought to be associated with gambling. However, even taking these costs and NORC's estimate of them at face value, the study shows that the costs typically associated with gambling are relatively very small — this is further addressed below.

Even though the NORC study is probably the most thorough of its type, the basic methodology used in the study (and in earlier studies by others) is fundamentally flawed:

- only costs are considered in the analysis, the benefits of the activities in question are neither admitted nor estimated;
- measures of the gross costs are implicitly or explicitly taken to be the full dimension of the 'problem' which needs to be addressed;

- causation and association are confused; and
- no distinction is made between private costs (ie those incurred voluntarily by individuals in view of their assessment of the benefits) and social costs on the other hand (which arise from market failure or man-made distortions, both of which may impair the private benefit/cost assessment process).

4.1 Methodology and results

The NORC study addresses five broad categories of impacts that it says prior research has shown to be associated with gambling. The categories are as follows:

- divorce;
- poor health and mental health problems;
- jobs lost and lost wages from unemployment;
- bankruptcy; and
- arrest and incarceration.

In this regard, the NORC study lines up with the list of 'costs' in many of the criticisms of gambling and in the simplistic approaches to 'problem' gambling. Indeed the NORC study contains many of the bald assertions that may be found in the uninformed comment on these issues in much of the public debate on them, including that in several submissions to the Productivity Commission.

All the figures estimated in the NORC study are gross costs — gambling is treated as if it was all cost and no benefit. Any study which claims to be a study of the economic impact of gambling and which does not include the benefits (to consumers and producers) is only telling half of the story and is seriously misleading. In this respect, the NORC study does not differ greatly from the simplistic and non-analytical approaches to the issue that appear in a number of submissions to the Productivity Commission inquiry.

For the sake of argument, assume that the costs reported by NORC for the US are firstly accurate and secondly, can be more or less transferred to Australia. The annual cost per pathological gambler (as defined in the US) is US$1,050. The additional lifetime costs on the same basis total US$7,250 — equivalent to an annuity of US$725 a year (at a discount rate of 10 per cent). If we assume that 1 per cent of Australians fit into the 'pathological' category as defined, then the annual cost would be 185,000 times US$1,775 — that is US$330 million, or around A$500 million. This would be an overestimate because the measure should be 1 per cent of *adult* Australians. But even if the individual costs are double the above figure then the resulting aggregate amount would be small relative to the benefits, which, for Australia, are potentially very large (see Section 5).

Box 3: Measuring the costs of problem & pathological gambling — the NORC (1999) Study

The *Gambling Impact and Behaviour Study* by the National Opinion Research Centre at the University of Chicago attempts to estimate what it terms the 'tangible economic value of the costs of gambling'. The study focuses on estimating the value of those costs that have been alleged by commentators to arise from problem and pathological gambling, including job loss; bankruptcy; arrest and incarceration; divorce; poor health; and mental health problems. These costs are said to impact not only on the gambler, but their families, employers, creditors and taxpayers.

The study pooled data from two surveys: a national telephone survey of 2,417 adults and a face to face survey of 530 patrons of 21 gaming facilities. The pooled data were re-weighted so they matched the age and gender distribution of the general population. The study recognised that impacts often attributed to problem and pathological gambling may not be due to gambling. Thus, factors such as age, gender, ethnicity, educational attainment, residence with one's children and use/abuse of alcohol and illicit drugs were accounted for in the study. The study found these factors were generally indicative of whether individuals had experienced the impacts in question.

General conclusions from the study were that people defined as problem and pathological gamblers:

- experience significantly higher rates of costly consequences, not only to themselves but the whole community, than otherwise similar persons do;
- experience or impose thousands of dollars of 'economic costs' per year on society; and.
- rarely attributed these impacts directly to their gambling behaviour or difficulties.

Both continual and the infrequent impacts of problem and pathological gambling were addressed. The **continual impacts** included job losses, poor physical and mental health and were estimated to sum to **US$1,200 per pathological gambler** a year and **US$700 per problem gambler**. **Infrequent costs**, such as divorce, bankruptcy and arrest, were estimated to sum to about **US$10,500 per pathological gambler** over a "lifetime" and **US$5,100 for problem gamblers** over a lifetime. The results for each type of cost, and a brief outline of the methodology used follows.

- The study used two mechanisms to identify whether gambling brought adverse consequences: when the gambler loses too much money relative to earning capacity, and when the gambler gambles at 'inappropriate' times.
- Labour market participation rates, hours worked and wage rates were used to represent **employment**. The analysis revealed mixed patterns: while pathological gamblers had relatively high employment rates, problem gamblers were more likely to have been unemployed.
- To estimate the amount that each problem gambler and pathological gambler **costs an employer**, the study assumed search and training costs were 10% of the salary of the replaced employee: on this basis, the estimated annual cost to employers was US$200 per problem gambler and US$320 per pathological gambler.
- Despite more frequent rates of job loss, there was no indication that problem and pathological gamblers' **earnings** were less than otherwise similar adults, due to either lower wages or excess unemployment.
- **Indebtedness** per pathological gambler was found to be 25% greater for pathological gamblers than that for low-risk gamblers, however, the average level of indebtedness of problem gamblers was actually the lowest of any gambling group.
- Problem and pathological gamblers had higher rates of **arrest and imprisonment**, which were estimated to have cost government $1,630 per problem gambler and $2,950 per pathological gambler over a lifetime.
- Lifetime legal fees involved with **excess divorces** cost each pathological gambler US$4,300 on average, and US$1,950 per problem gambler. The legal costs per gambler ever divorced were developed by multiplying the average number of divorces per gambler by US$20,000 (average cost estimated from a previous study). This total was averaged over all pathological gamblers and adjusted down to account for the difference between reported and predicted divorce rates.
- A higher proportion of pathological gamblers were in poor or only fair **health** compared to problem gamblers, and the study estimated that annual health care expenditures of pathological gamblers were US$750 more than for other adults in the past year.
- Over 7% of problem and pathological gamblers had **mental health** problems, with an estimated cost for each problem and pathological gambler of about $350 per year.

The study also compared the cost of problem/pathological gambling to other health problems.

Type of problem	Annual cost per case ($ per person)
Pathological/problem gambling	$900
Drug & alcohol abuse	$17,000
Heart disease	$6,000
Motor vehicle crashes	$3,600
Smoking	$1,500

The annual cost for all problem and pathological gamblers was estimated to be US$5 billion, and with an estimated 5.8 million people affected in the US in 1999, this gives a cost of US$900 per case. However, NORC emphasises that not all of the costs of gambling are accounted for, as they could not be measured. The main missing cost NORC nominates is the cost of treatment, which is more readily available and administered more often to sufferers of the other health problems listed above than to pathological or problem gamblers.

4.2 Exclusion of transfer payments

The NORC study — and those who assert large costs associated with gambling — also ignore the issue of the transfer payments associated with gambling, in particular, taxation. Tax is a transfer to governments. The community only consumes the resources in question when the revenue is actually spent. Hence taxation does not impose an economic cost on the community, except for its disincentive effects, its compliance costs for taxpayers and the 'handling' fee taken by the taxman.

At least the NORC study acknowledges that transfers are part of the equation but, in doing so, it only recognises transfers *to* gamblers by way of government services. These are only one side of the coin. In a sense the question can be asked whether gamblers already pay their own way — in other words do transfers *from* gamblers to consolidated revenue compensate for the so-called costs attributed to their gambling?

Ignoring, for the sake of argument the issue of gross versus net costs and the fact that some of the costs are private costs, whichever way you calculate the costs, gamblers in fact do pay their own way. About $4 billion per year is paid Australia-wide by gamblers as specific gambling taxes. On the basis of NORC figures, the costs of gambling in Australia might amount to $500 million — taking the figures at face value, this means that gamblers pay *eight times* the estimated cost of problem gambling.

There is some Australian evidence on this issue. In a report funded by the Casino Community Benefit Fund (CCBF), Dickerson *et al* (1998) estimate the total 'costs' of problem gambling (defined in terms of the total expenditure on its treatment) to the NSW community of $50 million per year (Box 4). The other side of the coin is that NSW government revenue from gambling is more than $1.2 billion per year or *twenty-four times* the estimated cost.

The Dickerson study uses similar cost concepts to those in the NORC study. It also suffers from the same deficiencies and cannot be regarded as a full account of the all the benefits and costs of gambling.

The issue of transfers is of interest but of far less importance than the deadweight efficiency losses associated with generating the transfers — for example the efficiency losses from taxation and regulation. It is the social costs associated with the making the transfers, rather than the transfers themselves, which are of critical importance but these are excluded from many of the analyses of gambling impacts. The NORC study, which purports to be an economic study, fails to address the issue of deadweight costs and in this respect, the study is severely deficient.

Box 4: Measuring the costs of gambling — some Australian evidence

The NSW Government commissioned the initial study of the socio-economic effects of gambling on individuals, families and the community, including research into the costs of problem gambling in 1995. The results of this study were updated in 1998: these 1998 results are the subject of the Repeat of the 1995 Study 2.

In relation to the costs of gambling, this study estimates that the economic costs of the negative impacts arising from gambling in NSW are about $50 million. This is a similar level to that found in 1995, despite an increase in new forms of gambling (notably the casino and significant expansion of EGMs in hotels) and an increase in the estimated number of 'at risk' (of experiencing severe gambling-related problems in their lives) gamblers over the intervening years. The study estimates these costs in terms of:

- work-related (productivity loss; job change and unemployment) costs, estimated at $28.5m per year;
- legal (court cases; prison; and police costs), estimated at $17.8m per year;
- financial (bankruptcy) costs, estimated at $0.07m;
- personal costs (divorce and acute treatment) estimated at $0.7m; and
- existing services (for problem gamblers and their families), estimated at $3.2m.

These results were based on 2 surveys of the NSW population. Firstly, a survey that included sections on community gambling patterns, motivational factors, social impacts and demographic data was administered to 1,209 residents. The second survey was given only to those who reported gambling more than once a week. The questions provided in-depth description of the positive and negative consequences of gambling. These responses were scored using the SOGS. These results were used in conjunction with results from clinical databases. The clinical databases were used to estimate legal and personal costs, rather than the survey data.

In addition to estimating the costs of gambling in NSW, the study also includes an appraisal of the importance of the gaming and wagering industry to NSW. Key findings were:

- the direct output of the sector was estimated at $3.95bn in 1996-97;
- direct employment was estimated at 16,500 to 18,000 full-time equivalents; and
- Government revenue from gaming and wagering was $1.2bn in 1996-97.

Consequently, the socio-economic costs of gambling represent about 1.3% of the output generated by gambling in NSW.

Source: Dickerson et al (1998)

4.3 Problems of causality

Causality is an important issue when considering the source of the impacts that are seen as being associated with gambling. One of Australia's leading gambling researchers, Professor Jan McMillen, noted in the AIGR submission to the Gaming Inquiry conducted recently by the Independent Pricing and Regulatory Tribunal of NSW:

> "Emerging research however, has begun to raise questions about the complex relationship between gambling and other social issues such as unemployment, depression, family tensions, alcoholism, etc. Gambling is often just one of a complexity of factors which create problems for some people — and the question of cause and effect requires more investigation. It may be that gambling is merely a symptom, even an escape, from more serious social or personal problems." (AIGR 1998, p. 19).

Association is not the same thing as causation. Is gambling the underlying cause of things like marriage breakdown, health costs and so

on or *vice versa*? Are they directly related at all? How can we be sure of the linkages when there are so many factors at work, often over a long period of time?

As discussed above, leading researchers on gambling are now querying the previously asserted links with gambling. If causality cannot be established then a potentially large group of costs should not even be considered as part of the equation.

The NORC study at least acknowledged the causation issue. It attempted to identify some of the factors, other than gambling, which might account for divorce, health problems etc. However, their method for doing so was based on self-assessment and could give rise to a variant of the 'Crown defence', that is, using gambling as a convenient and plausible excuse.

4.4 Estimation of individual impacts

Working through the methodology used for the individual elements of the cost of gambling impacts can be a complex and lengthy task. Nevertheless, some feel for the questionable basis for the conclusions reached by the NORC study and a number of the submissions to the Productivity Commission can be obtained by looking at their treatment of each of the individual impacts in turn.

The list presented below is not exhaustive but illustrative. While the overall costs associated with gambling — whether private or otherwise— are relatively small in the scheme of things, they do cause distress to some people. Nonetheless, there is a tendency for people in the public arena to overstate these costs — perhaps not intentionally but because all of the associated issues have not been carefully worked through.

4.4.1 Divorce

The first is their treatment of marriage break up and divorce. The NORC study at least applies some quantification to the issue. It uses the legal costs of 'excess divorces' among gamblers, compared to non-gamblers, as a measure of the cost of marital breakdown due to gambling.

Apart from the critical issue of whether gambling causes divorce or whether both are caused by something else, the NORC methodology ignores the economic and social benefits that might accrue from divorce. Although divorce generally involves pain and distress for all those who are affected by it, particularly children, the community has agreed that, on balance, it is better to let couples divorce in certain circumstances than to force them to remain in a dysfunctional relationship. From the perspective of the community as a whole, the decision to allow couples to divorce may be considered as an exercise in cost minimisation — would the material and physic costs for all those who would be affected be likely to be reduced by separation or not? For their part, economists would

define the reduction in these costs as the benefit that might arise from divorce compared to staying in an unhappy relationship. This means that divorce is, on balance, considered to be a net social benefit in such cases compared to the alternative of an enforced relationship.

The NORC approach views the expenditure on legal fees as a cost, but does not ask what do the people who go through with it get out of it — or even lose from it. The issue that is of far greater policy significance than the cost of legal fees is how to ensure that the laws regulating marriage and divorce deliver the greatest net benefit for the community as a whole. On this, the NORC study is silent.

4.4.2 Employment

Another indication of the questionable basis for the estimates that have been made can be obtained by looking at their treatment of the impacts of gambling on employment. In actual fact, these are likely to be less than stated.

First, lost wages are private costs and job loss impacts on employers are also likely to be private costs. This is because there is every reason to expect that employers will take the expected costs of absenteeism, inattentiveness, etc (whether associated with gambling or anything else) into account when they agree on or adjust the terms of employment for the workers in question. In these circumstances, both parties could be getting what they had bargained for and no social (non-private) costs would enter the picture.

Second, the costs may not be as large as some people think. For example, even according to the biggest estimate, so-called 'problem' gamblers are a very small proportion of the population. Thus, in all but the smallest organisations any workdays lost due to gambling could be made up relatively easily by others, perhaps by their working overtime. There would be reason to believe that the overall losses in wages and production would be insignificant.

4.4.3 Health

In relation to health, blaming poor health on gambling or attributing mental health costs to gambling is often likely to be misleading. As discussed above, causality is a critical issue here. Gambling could be blamed when in fact gambling is the result of something else, or is not the root cause of the incurred cost.

Moreover, the likelihood of positive health effects for some people from gambling cannot be lightly dismissed. The positive therapeutic benefits and contribution to some people's physical and mental well-being have been known for many centuries. The early writer on the science of gambling, and perhaps the most eminent European physician of his day,

Giralamo Cardano (1663), observed in the 16th Century[4] that gambling can have a very positive effect on a person's frame of mind, particularly in times of personal distress.

4.5 Summary

In summary, studies like the NORC study are not economic studies of gambling as they claim. Not all of the benefits and costs are included: only gross costs are considered and even then there is a question over what the alleged costs actually mean. Moreover, the study does not make a clear distinction between private costs and social costs as it needs to if it is to form a sound basis for public policy.

NORC is not alone in this misguided methodology. Much of the popular commentary on the so-called 'social cost' of gambling makes the same mistakes — including many of the submissions to the Productivity Commission that have expressed concerns about those costs. At least the NORC study has made an attempt to quantify the issue and in doing so, has set out the various assumptions underlying its estimates. This is more than can be said for those who have made claims based on assertion alone.

There is a well-established and widely accepted framework for assessing the benefits and costs to the community from an economic activity. As our March 1999 submission argued, there is no reason why it should not be applied to gambling. The following Section sets out the key elements of that framework.

4 Cardano's book on gambling was written in the 16th Century but did not appear in print until 1663 when his complete works were published. In relation to the benefits of gambling Cardano (1663, p. 241) noted that "By these pleasures it is permitted to relax the mind with play, in turmoils of the mind, or when our labours are light, or in great tension, or as a method of passing the time. A reliable witness is Cicero, when he says (*De Oratore*, 2): '…men who are accustomed to hard daily toil, when by reason of the weather they are kept from their work, betake themselves to playing with a ball, or with knucklebones or with dice, or they may also contrive for themselves some new game in their leisure.'"

5. Framework for Measuring the Benefits and Costs of Gambling

5.1 Overview

Any assessment of the net impact of the gambling industries (or any other activity for that matter) must include a full accounting of all benefits and costs. The various elements of the framework, along with a discussion of which costs should be the subject of government intervention, are discussed above.

In this section, these various elements are brought together in an accounting framework that allows for two key estimates to be made:

- the total net economic benefits of gambling to Australia at present (that is, the net benefit with the current tax and regulatory regimes in place); and
- the estimated net economic benefit to Australia in the absence of market imperfections (that is, what it would be in the absence of intervention that was due to government failure).

There is nothing 'special' about the framework, nor is it just applicable to gambling — it can be applied to any economic activity. It represents an approach based on standard economic principles that are widely understood and used. It is an approach that was applied by each of the predecessors to the Productivity Commission and is the one we would expect the Commission to apply if it were to estimate the net impact of gambling in Australia.

This framework has been ignored by opponents of gambling, who see gambling as all cost and no benefit, and who see all gambling impacts as social costs requiring government intervention. Even the more serious attempts at estimating the impact of gambling, such as the NORC study, have neglected the issue of the appropriate framework to apply to the measurement of the impacts of gambling. The framework is summarised in Figure 1.

5.2 Current net economic benefits from gambling

The first part of the framework covers the private benefits and costs of gambling. These accrue to both consumers and producers.

Costs to consumers consist of what they spend on gambling — gambling expenditure as usually defined, is currently around $11 billion, not accounting for expenditure by foreign gamblers. They also include

private costs from gambling such as wages foregone and the net health effects — they are net because there may be positive well-being effects for some people.

Benefits to consumers consist of the market value of their gambling and the consumer surplus attached to it. The market value to consumers of gambling must be equal to the costs they pay or they would not do it, so those two elements cancel out leaving just consumer surplus on the consumer side of the equation. As noted in our March 1999 Submission, we have estimated that the consumer surplus from gambling was more than $5 billion in 1996-97.

Figure 1: Calculating the benefits and costs of gambling

1 Private Benefits and Costs of Gambling

1.1 *Costs to Consumers*
- 1.1.1 Expenditure on gambling
- 1.1.2 Private costs including wages, health etc

1.2 *Benefits to Consumers*
- 1.2.1 Perceived value of gambling, including known costs
- 1.2.2 Consumer surplus

1.3 *Costs to Producers*
- 1.3.1 Cost of supplying gambling services

1.4 *Benefits to Producers*
- 1.4.1 Recouped gambling supply costs in 'sale price' of gambling net of gambling taxes
- 1.4.2 Producer surplus

2 Deadweight Costs of Market Failures
[beyond those already corrected]

3 Total Current Net Economic Benefits to Australia
[1.2.1+1.2.2+1.4.1+1.4.2-1.1.1-1.1.2-1.3.1+/-2]

4 Market Imperfections [Transfers]
- 4.1 Transfers from gamblers to consolidated revenue
- 4.2 Transfers from consolidated revenue to gamblers
- 4.3 "Normal" taxes paid cf other goods and services
- 4.4 Transfers from gamblers to gambling providers
- 4.5 Net transfers [4.1+4.4-4.2-4.3]

5 Deadweight Efficiency Loss From Net Transfers (4.5)

6 Deadweight Impact of Market Failures in the Absence of Intervention

7 Estimated Net Economic Benefits to Australia of Gambling if no Market Imperfections
[3+5+/-6]

Costs to producers (gambling service providers) consist of the costs of supplying gambling services. Benefits to the producers are captured in the revenue they receive for their services. The benefits are made up of the costs that are recovered through the 'sale price' of gambling services plus any producer surplus that accrues to the industry. Conventionally, producer surplus consists of any profits received by producers in excess of a normal or competitive rate of return. These are known as rents.

Although revenue from product taxation is not normally regarded as part of producer surplus, in the case of gambling, regulation of entry creates rents that the government takes a share of through taxes and licence fees. In these circumstances, it is reasonable to view taxes and licence fees (or at least that part of them which is in excess of the norm across industries generally) as part of producer surplus. Annual revenue from gambling licence fees and taxes is currently about $4 billion. This figure would represent the lower bound of the producer surplus as it excludes the annualised equivalent of the substantial lump sum licence fees paid by most operators. It also excludes any rents earned by the operators over and above the taxes and licence fees they pay. In our Submission of March 1999 we suggested that producer surplus was around $5 billion a year. This is probably a conservative figure.[5]

In addition to consumer and producer costs and benefits, account must be taken of any costs or benefits as a result of market failure (or unpriced spillover effects). The only market failure effects to be included are those remaining after contracting between market participants and (as a last resort) appropriate government intervention has taken place. Unpriced spillovers can be positive as well as negative.

In the case of gambling, it is generally thought that 'problem' gambling is the major area of market failure. However, as discussed in summary fashion above, and in more detail in Chapter 6 of the ACIL Submission of March 1999, the available evidence strongly suggests that the 'problem' gambling issue has been overstated and any market failure associated with it is likely to be insignificant.

The above factors are brought together in Item 3 of Figure 1, which provides a simple summary accounting of the current level of the net economic benefits of gambling in Australia, that is, given existing taxation, regulatory and intervention regimes. Net benefits are given by subtracting all costs from benefits. What remains is the sum of consumer and producer surplus adjusted for any deadweight costs from any unaccounted market failures.

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5 This may appear to contradict our conclusions on the magnitude of producer surplus in our March 1999 Submission. However, the coverage of this issue in the Submission was, in hindsight, rather brief, and the explanation given here just extends on the explanation of the measurement of producer surplus in the Submission.

5.3 Net economic benefits from gambling without market imperfections

Item 4 of Figure 1 sets out the various transfers to and from gamblers and from consolidated revenue to gamblers. These transfers arise from market imperfections — such as gambling taxes and regulations that affect the gambling industries — and from transfers to gamblers from consolidated revenue — for example, health costs in the absence of a properly functioning health market. Four kinds of transfers are listed.

Three of the four (4.1, 4.2 and 4.4) are relatively straightforward. The framework includes a transfer item (4.3) which allows for 'excessive' taxes for example — that is, taxes over and above taxes also paid by other, non-gambling related, consumers and producers. Unlike gambling, the vast majority of other service industries (pre-GST) are not subject to specific taxes on their services, so the 'normal' rate of taxation would be zero. Net transfers (Item 4.5) are calculated by adding together transfers from gamblers to consolidated revenue and from gamblers to gambling providers, then subtracting transfers from consolidated revenue to gamblers and the amount of 'normal' taxes.

Transfers associated with gambling can be very large. For example, gambling specific taxes were around $4 billion in 1997-98. However, while gamblers are clearly made worse off by transfers to consolidated revenue, transfers do not impact on the welfare of society as whole: they just go somewhere else. What is important is the size of the deadweight efficiency losses (Item 5) associated with the generation of the transfers — the 'efficiency triangles' depicted in Panel B in Box 1 — that arise, in that case, from the imposition of regulations on gambling service providers.

The other type of deadweight impacts to consider in the calculation of what the contribution of the gambling industries would be in the absence of market imperfections is the impact of market failures without intervention. Again, this will be primarily focused on 'problem' gambling and again, will be minimal and close to zero. In a generalised framework such as that presented in Figure 1, allowance must be made for positive unpriced spillovers, meaning that the impact could be positive as well as negative.

Finally, the net economic benefits to Australia of gambling (or any other activity for that matter) can be estimated by adding the current net benefit (Item 3) to the deadweight efficiency loss from net transfers (Item 5), after an adjustment for the impact of market failures in the absence of intervention (Item 6).

6. Concluding Observations

The aim of Section 5 is to bring together the various relevant parts of the gambling benefit and cost equation into a formal framework to show how the net impact should be estimated. No attempt has been made to estimate the private costs of gambling (foregone wages, net health benefits, etc). This omission is of little consequence, as the costs in question do not form part of the final benefit/cost estimate, although critics of gambling incorrectly tend to focus on them.

Our preliminary estimates of the consumer and producer surplus from gambling for 1996-97 suggest orders of magnitude of around $5 billion a year for each (although the producer surplus estimate, as discussed earlier, is rather conservative). Deadweight costs of market failure — beyond those that have already been corrected — are likely to be close to zero. Taking consumer surplus, producer surplus and deadweight costs together, we estimate that the net benefit of gambling is likely to be in excess of $10 billion per year (based on 1996-97 values).

While the deadweight costs associated with current taxation and regulatory regimes have not been estimated, given the high rates of taxation and the pervasive and punitive nature of the regulations, it could be expected that these costs are likely to be significant. Again, given that the 'problem' gambling issue has been overstated, the net benefit to Australia in the absence of market imperfections is likely to be noticeably higher than it currently is. Looked at another way, the Australian community is currently likely to be significantly worse off as a result of the extensive regulation and high taxation of the gambling industries than it would be if intervention in the industry were wound back.

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