14 October, 1999

Maribyrnong
CITY COUNCIL

The Chairman
Gambling Inquiry
Productivity Commission
PO Box 80
BELCONNEN ACT 2616

MUNICIPAL OFFICES
Napier Street
Footscray
POSTAL ADDRESS
PO Box 58
Footscray
Victoria 3011
TELEPHONE
03) 9688 0200
FACSIMILE
03) 9687 7793

Dear Chairman,

Further Submission by Maribyrnong City Council

At a public hearing held at Moreland City Council on 1 September last, we indicated that we would provide the Commission with a copy of a final report of a research project into the local economic impacts of poker machine gambling commissioned by a consortium of Victorian local governments. As you may recall, this project was undertaken by Dr James Doughney and others of the Workplace Study Centre at Victoria University of Technology. A copy of that report is attached to this letter and it forms the bulk of this supplementary submission to the Inquiry. We will forward the VUT report in electronic form as soon as possible.

You will be aware that Maribyrnong City Council forwarded an outline of its verbal submission to the Commission's Moreland hearing prior to that hearing (submission D202). Council having had the opportunity to elaborate on that outline at the hearing, we think it would be repetitious to revisit that material, especially given the generous time allowed for us to address the Commission on the points set out in D202. Having had some opportunity to further consider the issues raised in D202, we continue in the view that the contents of that submission are, with respect, worthy of the Commission's further consideration. In particular, we have had an opportunity to consider the submissions made on behalf of the Hon. Nick Xenophon, MLC, by Prof. Richard Blandy and Dr Anne Hawke, to which reference was made by the Commission during our verbal submission.

It seems to Council that the points made by Blandy and Hawke are well made indeed, and support the thrust of our view that calculations of net 'benefit' derived from gambling in Australia are, to put it mildly, fraught. With respect to this, I refer to an attached photocopy of a promotional pamphlet prepared by the Australian Gaming Machine Manufacturers Association, which asserts (*inter alia*) that:

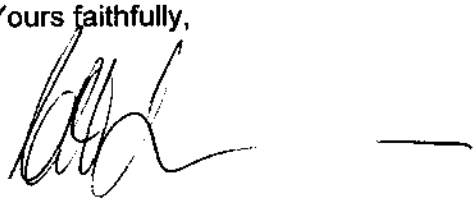
> The Productivity Commission found that the '*consumer benefits*' of the gambling industry, namely the net consumer surplus (including taxation revenue) ranged from **$5.4 billion to $6.3 billion**....

What it means is that the Productivity Commission recognised that there is a **huge net benefit** to the Australian economy after taking into account the costs of problem gambling. (see attached: emphasis as in the original.)

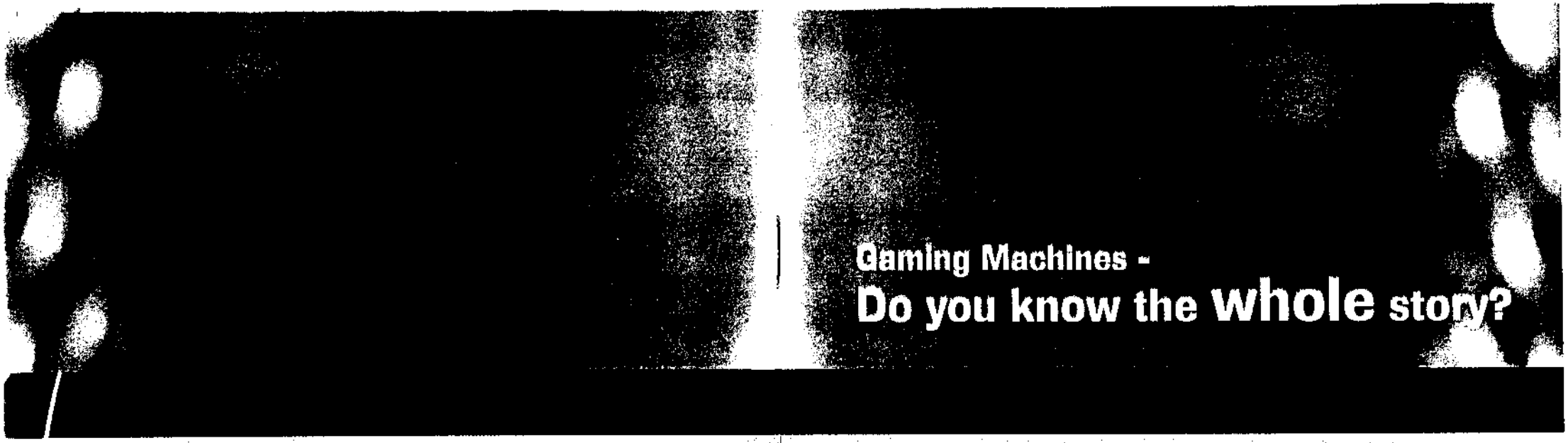
Clearly, the use (or misuse) to which the Commission's estimates are put is not the responsibility of the Commission. We would however, with respect, submit that issues in relation to the calculation of consumer surplus, such as those raised briefly by Council and in a careful and considered way by Blandy and Hawke should be carefully considered by the Commission in the preparation of its final report.

We would like to take this opportunity to congratulate the Commission on the standard of its work so far, and thank you for the opportunity to participate in this important and timely inquiry. We look forward with interest to the Commission's final report.

Yours faithfully,



Charles Livingstone
Research and Policy Officer (Mayor & Councillors)



Gaming Machines -
Do you know the whole story?

Gaming Machines

Interest in gaming machines has in fact increased even faster than 12% during the three years in question, the average increase in net takings from gaming machines being 17% nationally for each of the three years ending 30 June, 1998.

Indeed, **gaming machine revenue accounted for 58% of the total net takings from gambling in 1997-1998** (compared with 51% in 1994-1995).

The Productivity Commission estimated that Australia has approximately 180,000 electronic gaming machines and stated that these comprise 21% of the total number in the world. This is incorrect. Japan alone has close to 4 million electronic gaming machines. This suggests Australia in fact has less than 4% of the electronic gaming machines in the world.

Nevertheless, it is clear that gaming machines are very popular in Australia.

Why? The simple answer is that the number of gaming machines purchased has increased to satisfy demand - but what has fuelled that demand?

Australia's gaming machine manufacturers are producing the most entertaining, sophisticated gaming machines, systems and games *in the world* (as evidenced by the extraordinary growth of what are now referred to as 'Australian style' gaming machines in the United States and elsewhere).

Why are gaming machines attracting more interest than virtually every other form of gambling combined?

The machines and games are very entertaining and simply compete well against other available forms of entertainment. The venues are attractive, the odds are regulated and fair. The minimum return to player is between 85-87% in most states (90% plus is not uncommon) so it is difficult to find better odds than gaming machine odds if you are not a professional punter.

The Productivity Commission recommended that the mathematical odds of different outcomes be displayed on gaming machines using 'evocative examples'. Unfortunately these were very misleading and gave rise to incorrect media reports which distracted the public from the key 'return to player' requirements referred to above.

Contribution to Australia's Economy and Quality of Life

The Productivity Commission found that the *'consumer benefits'* of the gambling industry, namely the net consumer surplus (including taxation revenue) ranged from **$5.4 billion to $6.3 billion**. The significance of this somewhat dry and arcane economic estimate should not be overlooked.

What it means is that the Productivity Commission recognised that there is a **huge net benefit** to the Australian economy after taking into account the costs of problem gambling.

The ABS report estimated that, as of June 1998, 7,072 employing businesses were involved in the provision of gambling services. The ABS stated that these businesses employed some **37,035 staff** as of June 1998, an increase of 16% since June 1995.

The ABS, however, utilised very restrictive definitions which did not even include any of the employees of gaming machine manufacturers in Australia (some 3,000 plus) nor most of the employees of the club industry. The 1,512 clubs in NSW (as of 30 June, 1998) alone employ over 65,000 people directly (comprising the largest private employment group in NSW) and 250,000 people indirectly.

The club industry of NSW would be unrecognisable without gaming machine revenue. Those clubs provide community owned gaming facilities to their 3 million plus members who enjoy those facilities knowing that the net profits derived are used for club and community purposes.

The ABS reported that net takings from gaming machines in Australian clubs had increased from $2,621 million in 1994-1995 to $3,595 million in 1997-1998, an increase of 37.2%.

Rugby League as we currently know would not exist without that gaming machine revenue which effectively funds most of the clubs' costs.

The ABS reported that net takings from gaming machines in pubs, taverns and bars throughout Australia had increased from $990 million in 1994-1995 to $2,105.7 million in 1997-1998, an increase of 112.6%.

Final Report to
Brimbank City Council
Greater Dandenong City Council
Maribyrnong City Council
Moreland City Council

PRELIMINARY LOCAL AREA GAMBLING RESEARCH

Economic Effects

By

Dr James Doughney and Tony Kelleher

Workplace Studies Centre
Faculty of Business & Law
Victoria University

October 1999

THE AUTHORS

Dr James Doughney (PhD*VUT*, BBus(Econ)*GIAE*) is currently Acting Executive Director of the Workplace Studies Centre. In addition to working on this study of the economic impact of poker machine gambling in the Maribyrnong region, James is a political and labour market economist who has undertaken numerous studies on such topics as the impact of deregulation on employee entitlements and the increase in precarious employment in Victoria. He was a key collaborator with Santina Bertone on the development of the *Better or Worse off?* data base model: a unique software model that makes quantitative and qualitative comparisons of awards and employment agreements. James has worked as a teaching academic and was Manager of Job Watch in 1992-93.

Tony Kelleher (DipSSCD*VUT*, DipSSCJS*VUT*) holds Diplomas in Justice Studies and Community Development. Before commencing academic studies as a mature age student he worked for more than 20 years with children and youth living on public housing estates in both the UK and Australia. He has extensive knowledge of the needs of and pressures placed upon such children and youth by having a family member who gambles large amounts of family income. He has lived in the City of Maribyrnong for the last seven years and is an active local historian. For the last three-and-a-half years he has been a telephone counsellor for the Men's Referral Service. He has completed one research project on the effectiveness of a male specific telephone counselling service for men who are violent and abusive towards family members. Currently he has been engaged by the Men's Referral Service to conduct a second research project tracking the help-seeking behaviour of violent and abusive men accessing behaviour-change programs.

WORKPLACE STUDIES CENTRE
FACULTY OF BUSINESS & LAW VICTORIA UNIVERSITY

The Workplace Studies Centre of Victoria University is a Faculty of Business and Law research centre specialising in independent workplace research, conferences, training, and consulting. Workplace studies is a broad field covering research on all aspects of the relationship between employers, employees, the economy, and society. This includes knowledge and techniques from industrial relations, human resource management, organisational behaviour, labour economics, social policy, labour law, cultural studies and psychology. It examines issues such as changes in labour regulation, the benefits of cultural diversity for business, and the implications of workplace change for the economy and individual enterprises.

The Workplace Studies Centre has multidisciplinary research teams to tackle contemporary issues and questions. The Centre consists of a highly skilled professional secretariat supported by 25 Victoria University academics across the full range of specialisations. All of them are active and experienced researchers, many with significant industry experience and demonstrated ability to work on research for external agencies. Our clients range from employer organisations and government agencies to community groups, trade unions and individuals companies.

FOREWORD

CONTENTS

TABLES, CHARTS, & FIGURES

TABLES

CHARTS

FIGURES

1
INTRODUCTION

1.1 Purpose

This study has a specific purpose: to develop a method or methods to assess the economic effects of poker-machine gambling in low-income Victorian municipalities. Therefore, from among the many possible dimensions of gambling research, the study concentrates on one object, namely the *economic* impact of the rapid expansion of electronic gambling in Victoria since it became legal in 1992. A *local-area* emphasis further narrows the focus of the study, as does its concentration on *low-income* municipalities. Moreover, the form of this study is *methodological* rather than applied. It aims to help to clarify issues that may assist applied work in the future. The words in italics above explain the highly targeted nature of this work. Broader contextual and other matters are canvassed only if they contribute to the specific purpose of the study.

The purpose was spelled out clearly in the introduction to the project specification:

> 'Council's Corporate plan requires *inter alia* that Council will be a catalyst for economic growth, will build and celebrate community life, and will improve the environment so that it is clean, safe and attractive. Each of these commitments is relevant to the proposed research which is the subject of this specification.
>
> 'Local government in Victoria is required to make a range of decisions which may relate to planning applications or other aspects of gambling venue development and, in doing so, is legislatively required to have regard to social and economic effects if such considerations are warranted. The local area effects of local gambling venues are not well understood and this research is intended to begin the process of developing a good understanding of the economic effects of such gambling at the local area level.
>
> 'Please note that in this specification, "local area effects" means the effects on economic activity at the level of individual suburbs and/or neighbourhoods, and includes but should not be limited to consideration of such factors as gambling induced variations in patterns of household expenditure, the net effect of gambling expenditures on local area rates of employment and unemployment, and the effect of gambling expenditures on retail sales.

Similarly, a methodological focus was explained as the aim of the research:

> 'The preliminary research will develop a methodology to assist Local Government Authorities to assess the local area economic effects of local poker machine gambling venues.' (Maribyrnong City Council 1999, p. 6)

Reflecting the preliminary nature of the research, the project assignment specified two essential tasks:

> '1. Undertake a comprehensive literature review of material likely to assist in the development of a methodology capable of assessing the local area economic effects of local poker machine gambling venues, including in particular a comprehensive survey of relevant statistical and sampling issues;
>
> '2. Determine and develop an appropriate methodology to assess the local area economic effects of local poker machine gambling venues; undertake a pilot application of that methodology; assess the results of that pilot application; and make recommendations for further research.' (Maribyrnong City Council 1999a, p. 6)

These issues will be addressed in subsequent chapters (see section 1.5). That is, the current project is examining critically how to define the main issues and to propose suitable approaches to research the subject rather than to complete the detailed practical research.

1.2 Research Methods and Focus

The methods proposed by the Workplace Studies Centre originally had two features. First, they aimed to overcome perceived deficiencies in the existing economic research, especially at the local level. Second, they proposed to 'triangulate' a combination of research approaches using demand-side (consumer or gambler) spending data, supply-side (operator, venue, and tax) revenue data, and other interdisciplinary studies. A thorough literature review was emphasised. However, at the heart of the proposed approach was the notion that we would develop and pilot a survey instrument that could be used to get direct information from low-income areas on household gambling and consumption spending patterns.

Some caveats were included from the start, but nonetheless the combined approach, including a local household survey, was considered possible:

> ' ... it seems that the best way to get the desired information on consumption and gambling is to find out from the "demand-side", as it were: i.e., to get the information from consumers-gamblers. Of course, issues of reliability of answers to questions will need to be accommodated in the survey design, but the other methods seem even less reliable on this issue...
>
> 'Therefore a survey approach of households is proposed (*pending modification at the literature review stage*) to be the core research method. This *must* entail:
>
> - a research instrument that validly targets the key issues of interest (i.e., consumption and its relationship to income and saving);

- a recognition that time and resources are limited and that the questionnaire needs to be brief; and
- standards of survey reliability (sample size, administration, etc.) based, for example, on ABS approaches.' (Doughney 1999, A2 p. 4; original emphasis)

The words cited above in italics and our view that the literature review would be crucial turned out to be well advised. In consultation with the project sponsors, the plan for a pilot local survey was dropped very early in the research. There were two reasons for this:

1. The primary reason was that we quickly came to the opinion that problems associated with obtaining reliable information from households would be insurmountable within the scope of this project. 'Under-reporting' and 'over-reporting', euphemisms for distortion, often plague survey responses on issues where social status and moral (un)desirability are involved. Results are often meaningless. Answers to questions about gambling and associated consumption spending fit squarely into this category (see section 3.2 for a full discussion).

2. The costs involved in attempting to overcome the under-reporting problem would be prohibitive locally and whether they would be effective would remain uncertain.

Thus our research methods shifted. Our approach to demand-side consumption data-generating methods continued to be investigative, but its content now focused on critique. Instead we focused our own data-gathering efforts on the supply-side: applying the industry data on gaming machine losses to local economies. We coupled this with three other emphases: (a) intense field research discussions with industry participants and interested critics; (b) targeted analysis of how local economies actually work; and (c) greater involvement with researchers in cognate disciplines (sociology, psychology, social policy, welfare, and community development) to understand better who uses poker machines, how much, why, and at what cost.

We also made the methodological decision to target the City of Maribyrnong. This was partly due to the limited scope of this preliminary study. However, it was also because Maribyrnong provided a limiting case according to the purpose of the research. It is both the lowest income municipality in Melbourne and it has the highest *per capita* number of poker machines outside central Melbourne (see, e.g., Maribyrnong City Council 1998). Maribyrnong is thus cast in the role of the 'low-income municipality', and the points made about it may be generalised in a moderated form.

1.3 Outcomes

Despite the limitations outlined in section 1.1 and the problems identified in section 1.2 it has nevertheless been possible to evaluate some of the existing

Electronic Gaming Machine (EGM) research.[1] This evaluation is highly critical. In particular, it will be argued that research claiming, for example, that 'Victoria has experienced significant and measurable net economic benefits flowing from increased gaming opportunities' and 'as a whole, the Victorian macroeconomy has benefited significantly' (VCGA 1998, p. 1) is based on a shaky premise.

The premise of existing Victorian research into the economic effects of the rapid increase in poker machine gambling from 1992 is that expenditures (i.e., losses) did not substitute for alternative forms of consumption spending, such as retail spending. Rather, according to this premise, or received view, gaming machine losses were effectively financed from adjustments in household saving. This, in turn, was reflected in a lower household saving ratio (NIEIR 1997a). Thus, leaving aside any social costs that may be caused by problem gambling, electronic gambling machine losses may be regarded as adding to economic growth and employment. *Prima facie* this result seems implausible, especially if an attempt is made to translate it to low-income local areas. This report, however, goes further and argues in detail why the views presented in the existing research are not sustainable.[2] Indeed, we note that the recent Productivity Commission Draft Report titled *Australia's Gambling Industries* also rejects the premise of the existing Victorian research (see, e.g., Productivity Commission 1999 Overview, pp. xix, xxx).

In contrast to the received view, this report suggests potentially fruitful alternative research approach. To illustrate this, we present some example approximations showing a negative local area economic impact on local businesses and low-income households and communities. These estimates are based on industry data recording poker machine losses. They stem plausible arguments about spending and saving patterns in low-income areas. They also rely on what qualitative research and industry evidence tells us about who gambles and by what amounts.

Two different types of estimate are given. The first is the diversion (or substitution) of potential consumption spending away from non-gambling local businesses, which in turn has consequences for employment. The second attempts to show how this may be translated into a measure of, in lieu of a better phrase, socio-geographic income redistribution. A simple local area model is presented in Chapter 5 to capture the two effects and, crucially, to point out where further research and better data are needed. While more sophisticated models may be developed as research progresses, the model given in these examples has the merit of being transparent, and the argumentation surrounding it is straightforward.

---

[1] It should be clear to the reader that we are using the terms gaming machine, poker machine, and pokie interchangeably. EGM (electronic gaming machine) is another term for the same thing. Similarly, expenditure and losses are interchangeable terms. So, too, from the side of the proprietors, is net revenue. See Glossary.

[2] In this discussion a number of terms can be used that have quite specific economic and data-definitional meanings: e.g., consumption, saving, borrowing, lending, assets, liabilities, income, household, household disposable income, net income, wealth, etc. We refer readers to the Australian Bureau of Statistics publications *A ProvisionalFramework for Household Income, Consumption, Saving and Wealth* (1995c 6549.0), *1997-98 Australian System of National Accounts* (1999a 5204.0), *Household Expenditure Survey Australia: Detailed Expenditure Items* (1996 6535.0), *Retail Trade Australia* (1999e 8501.0), and *1997-98 Gambling Industries Australia* (1999d 8647.0, 8684.0) for relevant conceptual discussions and definitions, including where gambling 'fits'.

1.4 Research Management and Acknowledgements

The authors individually and jointly undertook all of the research reflected in this report. In every sense the result is a joint effort. Of course, this also means that any errors or omissions are our responsibility alone. Throughout the project we met regularly with the designated project manager, Charles Livingstone, being the 'person holding, occupying or performing the duties of Research and Policy Officer (Mayor & Councillors) of [Maribyrnong City] Council (City of Maribyrnong 1999a, p. 3). Special thanks are due to him for his practical efforts and intellectual contribution.

We also wish to thank the representatives of the other municipalities who helped to fund the project and who provided stimulating input at regular project meetings. They were Kerrie Birtwhistle, Senior Policy and Projects Officer Brimbank City Council, Frances Grindlay, Senior Officer Research, Planning, and Development Unit City of Greater Dandenong, and Lynette Green, Family Services Officer Moreland City Council.

Special thanks are also due to four people. Dr Neil Diamond of Victoria University's School of Communications and Informatics provided invaluable specialist statistical advice, as did John Henshall of Essential Economics in his field of local area economics. Sarah Brown, Gambling Project Worker of Women's Health West, generously shared her extensive research experience and knowledge of the social effects of poker machine gambling. Finally, Dr Keis Ohtsuka, of Victoria University's Department of Psychology, added further cross-disciplinary input on various issues. In each case the insights we received from our discussions with these colleagues served as a reminder that those undertaking studies in economics should listen more and pontificate less.

Many others with whom we spoke during our field research, and who provided their time, documents, articles, and advice, are also owed our gratitude. Alas they are too many to name and, at the risk of leaving someone out, we instead offer a global acknowledgement to all. It is important, however, that we single out those from the Australian Bureau of Statistics who gave us advice that helped us to formulate our ideas more clearly regarding the crucial issues discussed in Chapter 3. They were Neil McLean, Vaughn Moore, Kate Nielsen, and Russell Rogers. Of course, we alone are responsible for the results.

1.5 Outline of the Report

The content of the report will be as follows. Chapter 2 will provide a snapshot of the broad economic indicators describing the growth of poker machine gambling in Australia, Victoria, and locally. We will use the data for the City of Maribyrnong throughout as an example. This snapshot will also explain why low-income municipalities are concerned about the potential economic consequences of gaming machine gambling growth.

Chapter 3 will then discuss the crucial problem with attempts to research the economic impact of gambling using 'demand-side' (spending) data obtained by surveying households or individuals. Under-reporting of the *extent* of gambling activity is especially noticeable in the Australian Bureau of Statistics (ABS) *1993-94 Household Expenditure Survey* (ABS 6530.0 1995; 6535.0 1996), a concern to

which the ABS has itself drawn sharp attention (ABS 1998a). However, under-reporting is not restricted to this source alone. As the Victorian Casino and Gaming Authority notes on its web site, figures on perceived household 'outlays on EGMs' obtained from 'the three community studies undertaken by the Authority ... can not be relied upon for accuracy' (VCGA 1998, p. 2).

Chapter 4 will evaluate critically some of the existing research on the economic impact of gaming machine gambling growth in Victoria. In so doing it will criticise what may be called the 'saving hypothesis', which has been described above. This chapter will also comment on the recent Productivity Commission draft report *Australia's Gambling Industries*, with which our criticism of the 'saving hypothesis' accords (Productivity Commission 1999).

Chapter 5 will contrast most of the existing research with an outline of how we may begin to use the accurate 'supply-side' (industry) data to construct a simple model of local area economic impact. Example estimates of local area economic impact will be presented and explained in this chapter.

Chapter 6, the Conclusion, will summarise essential outcomes and, it should be noted, the limitations of this report. It will also suggest where additional research work and/or data[3] are required or where alternative approaches may be or have been fruitful. In the context of this research project the authors make a plea for transparency in putting data and research methodologies on the public record. A series of recommendations to the sponsors of the project, the City Councils of Brimbank, Greater Dandenong, Maribyrnong, and Moreland, will be made in the Conclusion.

[3] Some relevant data exist but, largely because of their 'commercial-in-confidence' status, are not on the public record.

2
BACKGROUND: GROWTH OF GAMING MACHINE GAMBLING

2.1 Personal, Social, and Economic Impact

Why have local governments been especially concerned about the rapid increase in gaming machine gambling in Victoria? The initial submission by the Maribyrnong City Council to the *Productivity Commission Inquiry into Australia's Gambling Industries* presents the reasons forcefully:

- 'The introduction of Casino gambling and Electronic Gambling Machines (EGMs) into Victoria from 1992 was accompanied by a 258% increase (up to 1995-96) in the proportion of household expenditure devoted to gambling.

- 'By 1996-97 total losses to gambling in Victoria were $2.76 billion, of which $1.46 billion (~ 53%) was lost to EGMs.

- 'The current framework of regulation of EGMs provides for a State-wide cap of 27,500 EGMs (other than the 2,500 currently operated by Crown Casino). The non-Casino EGMs are split 50:50 between licensed clubs and hotels, and 80:20 between metropolitan and regional locations. As at 29 September 1998, there were 27,211 EGMs deployed at 561 venues throughout Victoria, as well as the EGMs operated by Crown Casino. This number of EGMs operated at average rates of return would imply annual losses to non-Casino EGM gamblers in the range of $1.6 billion.

- 'Tax revenue derived from EGM expenditure is highly regressive. EGM gamblers earning $200 per week are likely to spend about 250 times more as a proportion of income on EGM gambling than EGM gamblers earning $1,200 per week.

- 'Maribyrnong City Council has been aware for some time of anecdotal reports from local welfare and community agencies about the impact of EGM gambling on demand for their services. Local traders have also increasingly provided anecdotal reports of decreased demand from consumers, attributed to the impact of EGM gambling.

- 'Maribyrnong has a very high proportion of low income earners (55.7%) and very high rate of unemployment (15.9% in June

1998). Both these data are the highest in theMelbourne metropolitan area. Maribyrnong also has the highest density of EGMs in suburban Melbourne.

- 'There are very strong correlations between the data sets for both the proportion of low income earners, and unemployment rates, against EGM density by Local Government Area in suburban Melbourne.

- 'The greater the proportion of low income earners and the unemployment rate for a particular municipality, the greater the EGM density is likely to be. This may be attributable to the placement of EGMs being determined by the maximisation of return, coupled with the pattern of EGM expenditure by low income earners described above.

- 'Existing research indicates that, at least in its early phases, the large increase in gambling expenditure in Victoria after the introduction of EGM and Casino gambling was funded by a rundown in household savings. The implications of this for low-income households or communities require further research, but it may be hypothesised that, over time, the result is likely to be a decline in other consumption expenditure in favour of gambling expenditure.

- 'Losses to EGM gambling at venues within Maribyrnong are estimated in the range of $44 million per annum (1996-97), or about $45 per week per active gambler within the municipality (based on an estimate that about 40% of the adult population use EGMs at least annually).

- 'The costs of problem gambling in Maribyrnong are estimated at between $9 million and $36 million per annum additional to EGM losses.

- 'The upper range for direct employment generated by EGM gambling within Maribyrnong is about 140 jobs, of which an estimated 48 are full time.

- 'The powers of LGAs to regulate EGM venues are very limited. Planning approval from an LGA is not required if a venue proposes to operate EGMs within an area no greater than 25% of its licensed floor area. A recent amendment to all planning schemes (S70) promulgated by the Victorian Government permits licensed hotel or club venues in designated strip shopping areas to operate EGMs up to the same limit, also without a requirement for planning permission.

- 'The need for a range of micro-studies of the impact of EGM gambling on local areas has been highlighted by preliminary work

undertaken by Maribyrnong City and other Councils. In particular, there is a need to develop a methodology to asses the extent of any relationship between EGM gambling expenditures and other local economic activity, particularly consumption expenditure.

- 'The Victorian Government has indicated that the existing cap on total EGM numbers will apply until at least 2000. Maribyrnong Council believes that a regional cap on EGM numbers should also be applied in addition to existing regulation. Council would also argue for the adoption by all venues of a Charter for Responsible Gambling, and for greater planning control by LGAs over the location of EGM venues, and EGM numbers.' (Maribyrnong City Council 1998a, pp. 2-3)

Such concerns were echoed in submissions to the inquiry by other local government bodies (see, e.g., City of Greater Dandenong 1998). Especially relevant are the points raised that poker machine losses are large, the machines themselves tend to be concentrated in low-income areas, demands on welfare services (externalities[1]) have increased, and that existing research linking increasing losses to a run-down in saving seems implausible.

The position presented in the Maribyrnong City Council's submission had earlier been released as a public discussion paper (Livingstone 1998). Significant media and community interest had been generated by this local initiative. Indeed the Maribyrnong City Council's work was singled out for special comment in the gambling industry's collective submission to the Productivity Commission inquiry (ACIL Consulting 1999, p. 59). In particular, Charts 2.1 and 2.2 reproduced here from work provided by Council Officers, have captured the public imagination on the issue in a striking way. They demonstrate both the regressive nature of EGM expenditures and 'targeting' of low-income locations.

2.2 National and Victorian Gambling Aggregates and Trends

Australian and Victorian data about gambling in general help to set the discussion in context and, possibly, answer some inevitable questions. Readers should note that all aggregate Australian and State data are primarily from *Australian Gambling Statistics 1972-73 to 1997-98*, which is published by the Tasmanian Gaming Commission in association with the Centre for Regional Economic Analysis of the University of Tasmania (TGC 1999). These data are accurate, and they are the most comprehensive time series available.[2] The information in this publication is provided to the Tasmanian body directly by the other State gambling authorities.

[1] Externalities is a term used in economics to describe '... effects that the production [or consumption] of one product may have on the production possibilities [or consumer welfare] of others' (Leftwich & Eckert 1985, p. 615).

[2] The notes to this publication make the following comment on its gaming machine data: 'Gaming machines accurately record the amount of wagers played on machines so turnover is an actual figure for each jurisdiction.' (TGC 1999, p. 5)

CHART 2.1

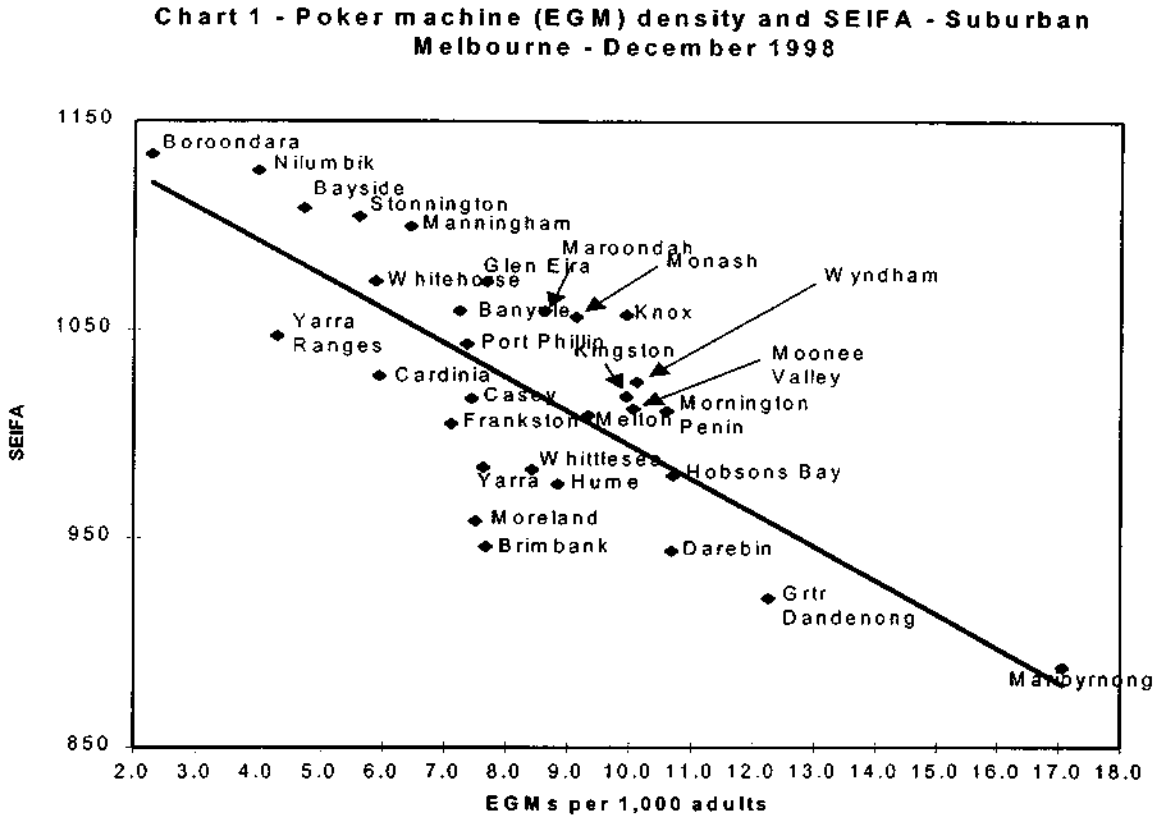
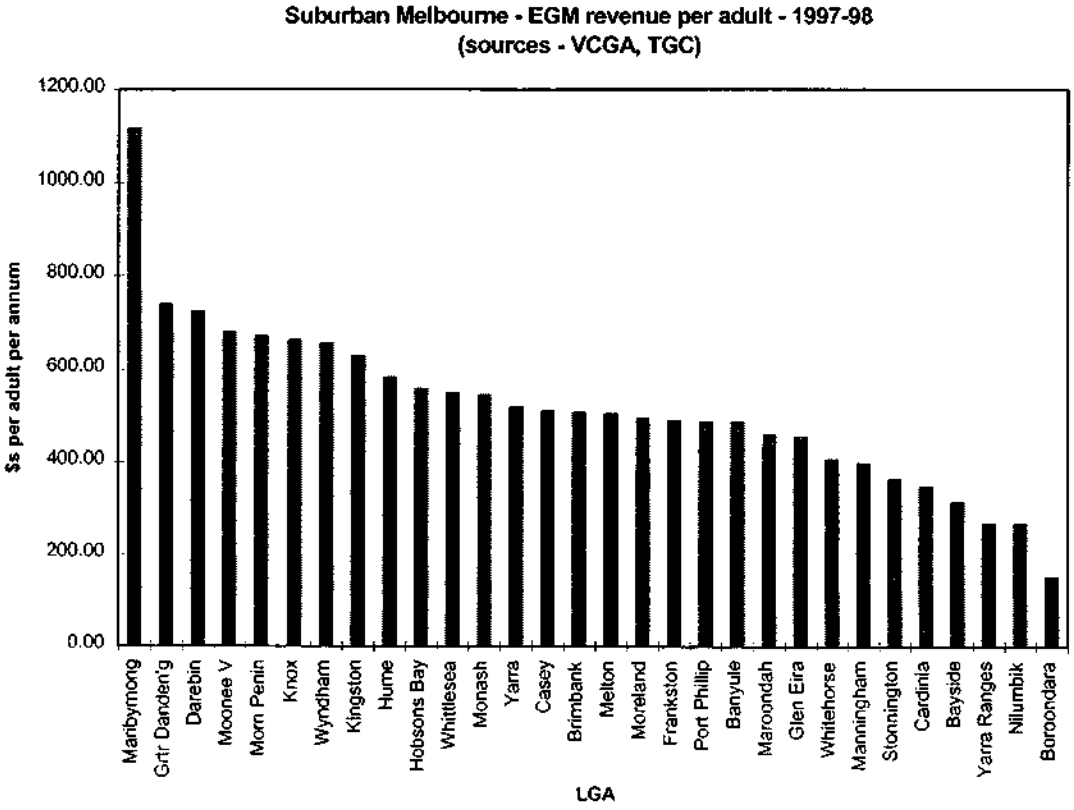


CHART 2.2



The Australian Bureau of Statistics has also published two reports on *Australia's Gambling Industries* for two distinct years only, 1997-98 and 1994-95 (ABS 1999 8684.0; ABS 1999 8647.0, provisional; ABS 1997b 8684.0). The data in these publications correspond with the TGC (1999) figures at the level of 97 per cent, but they include other issues relating to gambling venues and use somewhat different definitions.

Tables 2.1 and 2.2 below compare the relative sizes of the components of gambling in Australia and Victoria. Figures for NSW, which is regarded as the 'premier state' for gambling, are presented for comparison. Table 2.11 is for aggregate expenditure, including expenditure as a proportion of household disposable income (HDI). Table 2.2 presents expenditure per head of population. Note that 'expenditure' means losses to the gambler and net revenue to the industry: i.e., it is equal to total bets or wagers, or 'turnover', less winnings.

The striking features of the first table are the size of the industry and the size of gaming machine expenditure within it. It is the largest gambling activity, for NSW (66 per cent), Victoria (54 per cent), and Australia as a whole (52 per cent). These figures do not include expenditure on gaming machines in casinos, but these are shown in Table 2.3, which reproduces data from ABS (1999 8647.0; 1997b 8684.0). The gaming machine proportions thus rise again, especially for Victoria. Note also that NSW, and now Victoria, lead the national averages.

TABLE 2.1
Gambling Expenditure: Australia, Victoria, and NSW 1997-98

Gambling type	NSW $m	Victoria $m	Australia $m	NSW % to total	Victoria % to total	Australia % to total
TAB	533.85	379.51	1437.44	11.79	11.88	12.69
On-course totalisator	59.90	35.92	142.51	1.32	1.12	1.26
On-course bookmaker	33.59	17.34	83.34	0.74	0.54	0.74
Off-course bookmaker	0.00	0.00	0.15	0.00	0.00	0.00
Sports betting (Racing)	5.07	0.39	20.26	0.11	0.01	0.18
Total Racing	*632.40*	*433.16*	*1683.70*	*13.97*	*13.56*	*14.86*
% of HDI	*0.50*	*0.47*	*0.47*	*n.a.*	*n.a.*	*n.a.*
Lottery	46.55	5.21	56.94	1.03	0.16	0.50
Lotto, tattslotto	250.29	268.82	923.42	5.53	8.41	8.15
Pools	3.57	1.24	7.70	0.08	0.04	0.07
Minor gaming	0.00	0.00	194.91	0.00	0.00	1.72
Gaming machines	2989.08	1711.29	5866.97	66.03	53.56	51.80
Casino	446.20	742.29	2232.04	9.86	23.23	19.71
Instant lottery	62.69	23.67	224.84	1.38	0.74	1.98
Keno	96.10	6.87	132.31	2.12	0.22	1.17
Sports betting (Gaming)	0.00	2.39	4.21	0.00	0.07	0.04
Total Gaming	*3894.49*	*2761.78*	*9643.33*	*86.03*	*86.44*	*85.14*
% of HDI	*3.09*	*3.02*	*2.72*	*n.a.*	*n.a.*	*n.a.*
Total All Gambling	*4526.89*	*3194.94*	*11327.03*	*100.00*	*100.00*	*100.00*
% of HDI	*3.59*	*3.49*	*3.20*	*n.a.*	*n.a.*	*n.a.*

Australian Gambling Statistics 1972-73 to 1997-98 Table A

TABLE 2.2
***Per Capita* Gambling Expenditure: Australia, Victoria, and NSW 1997-98**

Gambling type	NSW $	Victoria $	Australia $
TAB	113.59	109.40	103.91
On-course totalisator	12.74	10.35	10.30
On-course bookmaker	7.15	5.00	6.02
Off-course bookmaker	0.00	0.00	0.01
Sports betting (Racing)	1.08	0.11	1.46
Total Racing	*134.55*	*124.87*	*121.72*
Lottery	9.91	1.50	4.12
Tattslotto, lotto	53.25	77.49	66.76
Pools	0.76	0.36	0.56
Bingo and minor gaming	0.00	0.00	14.09
Gaming machines	635.98	493.31	424.13
Casino	94.94	213.98	161.36
Instant lottery	13.34	6.82	16.25
Keno	20.45	1.98	9.56
Sports betting (Gaming)	0.00	0.69	0.30
Total Gaming	*828.61*	*796.13*	*697.12*
Total All Gambling	*963.17*	*921.00*	*818.84*

Australian Gambling Statistics 1972-73 to 1997-98 Table B (gambling-age population 18+)

TABLE 2.3
Australian Bureau of Statistics Gambling Expenditure (Net Revenue): Australia 1994-95 and 1998-98

Total gambling and venue	1994-95 $	1997-98 $
Poker/gaming machines		
Clubs	2,621,000,000	3,431,800,000
Pubs, taverns, & bars	990,300,000	2,239,100,000
Casinos	343,600,000	700,100,000
Total poker/gaming machines	*3,954,900,000*	*6,371,100,000*
Total totalisator, TAB, & bookmakers		
On-course totalisator & off-course TAB	1,456,800,000	1,559,100,000
On-course & off-course bookmakers	44,200,000	69,000,000
Total totalisator, TAB, & bookmakers	*1,501,000,000*	*1,628,100,000*
Lotteries, lotto, pools, instant money, & club keno	1,344,600,000	1,602,600,000
Casinos		
Casino keno	25,500,000	33,400,000
Casino gaming tables	1,012,700,000	1,431,600,000
Total casino (including poker/gaming machines)	*1,381,800,000*	*2,165,100,000*
Total gambling	*7,838,700,000*	*11,066,800,000*

ABS (1999 8684.0, 8647.0; 1997b 8684.0)

Charts 2.3 to 2.6 depict the evolutionary, then revolutionary, expansion of gambling losses in Australia and Victoria since 1972-73. Chart 2.3 and 2.4 are in real dollars. Charts 2.5 and 2.6 use gambling and gaming machine expenditure per head of gambling age population (age 18 and over) as the unit of analysis. Each representation demonstrates the special contribution of gaming machine expenditures (losses) to the increase. Note that just non-casino machines are included in these figures. The point is made more starkly in Chart 2.7, which represents gaming machine expenditure as a percentage of total gambling expenditure for both Australia and Victoria. When the poker machines placed in casinos are added to the non-casino total, as they are in the Australian Bureau of Statistics estimates for 1994-95 and 1997-98, the proportion of EGM (gaming or poker machine) losses rises to more than 60 and then 70 per cent of all gambling losses (ABS 1999 8684.0; 1997b 8684.0).

CHART 2.3
Real Gambling and Gaming Machine Expenditures: Australia 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98

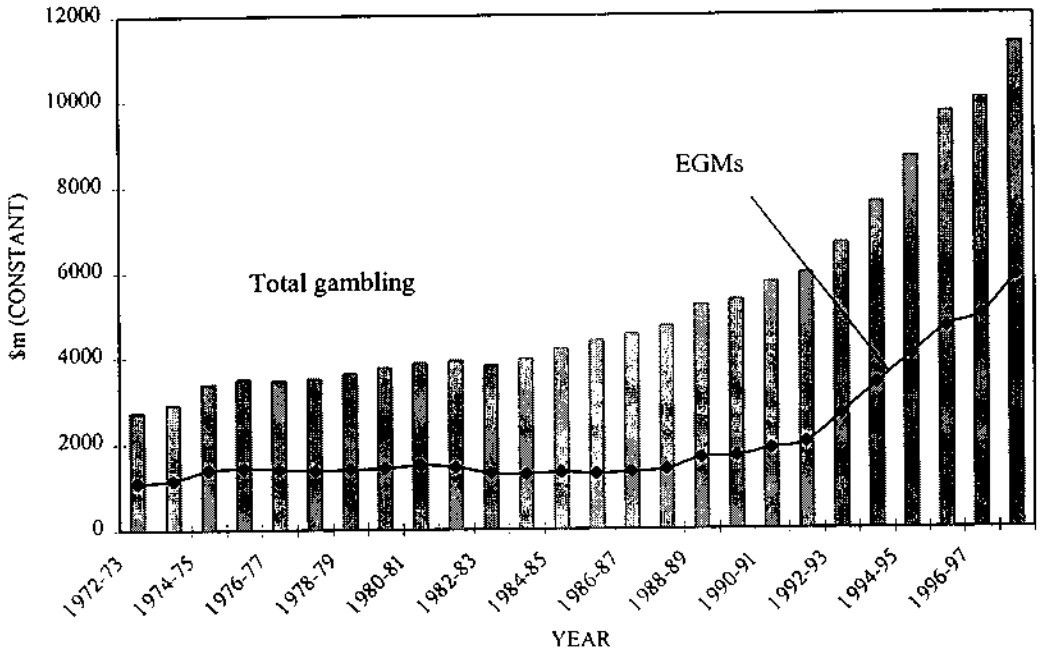


CHART 2.4
Real Gambling and Gaming Machine Expenditures: Victoria 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98

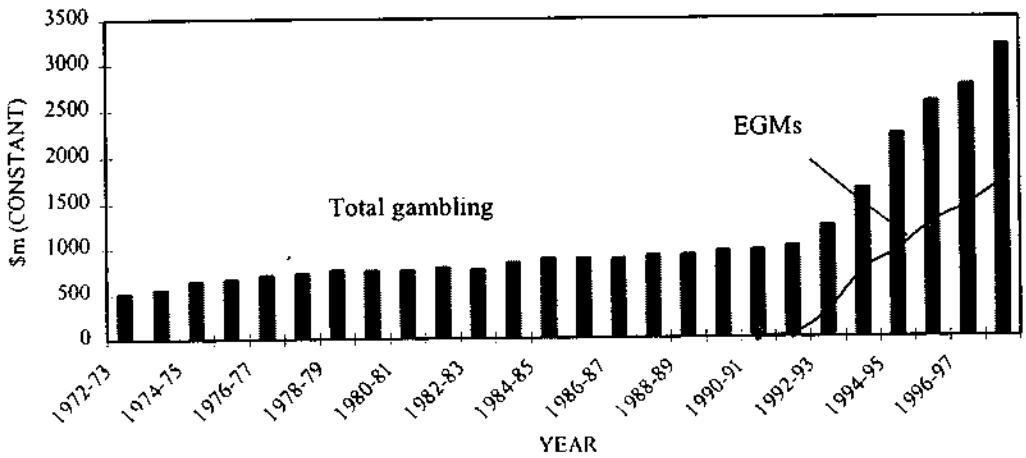


CHART 2.5
Real Gambling and Gaming Machine Expenditures *Per Capita*: Australia 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98

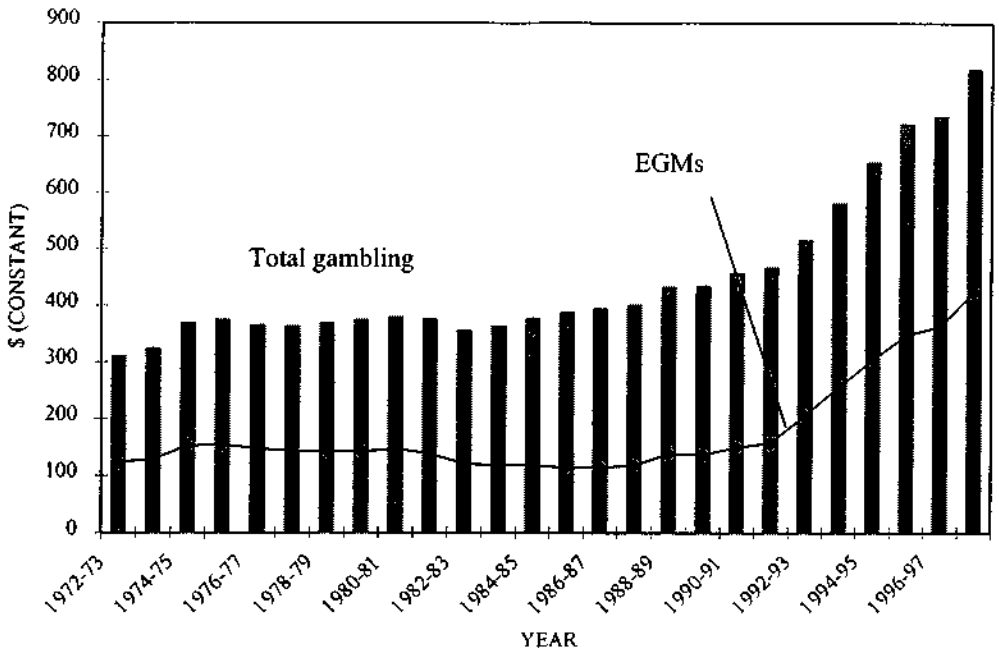


CHART 2.6
Real Gambling and Gaming Machine Expenditures *Per Capita*: Victoria 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98

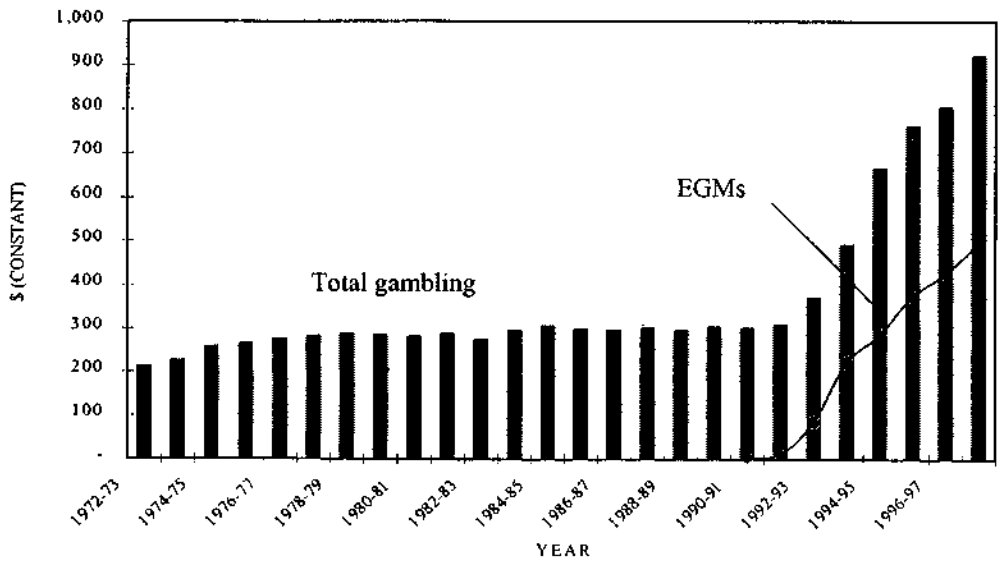
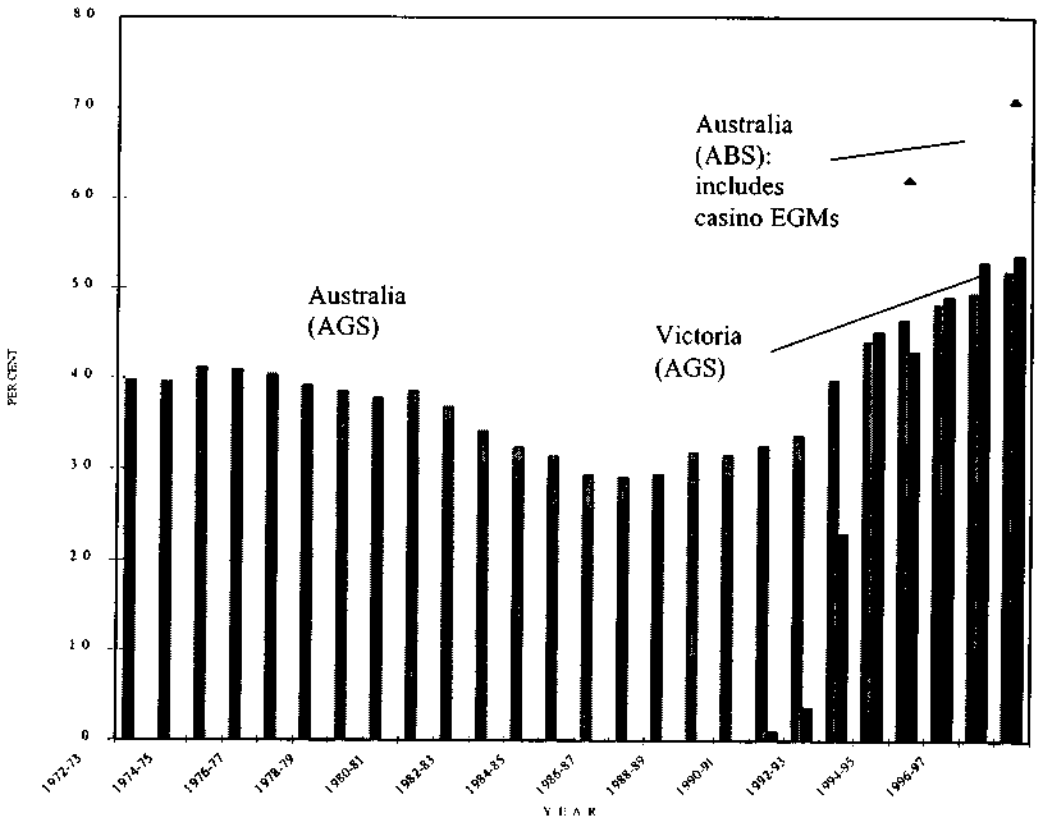


CHART 2.7
Gaming Machine Expenditure Per Cent to Total Gambling: Australia, Victoria 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98; ABS (1999 8684.0, 8647.0; 1997b 8684.0)



2.3 Regulations Governing Gaming Machines in Victoria

We now shift the focus directly to Victoria and to gaming machines. It is important to get to the issue rather than dwell on the plethora of national and State figures available. As shown in section 2.2 all of these show significant trend increases in real gambling and real gaming machine expenditures for Australia, NSW, and especially for Victoria. Nonetheless the national and State data are useful for comparison, and they should be kept in mind when the data are estimated for the City of Maribyrnong below.

It is necessary also to understand the regulations that govern the number and location of EGMs in Victoria. These provide a context for calculating local area gaming machine expenditure estimates and are important for understanding current policy debates. The three most significant regulations are:

1. *A cap of 30,000 gaming machines in the State.* Up to 27,500 machines may be located in licenced venues (hotels and clubs) and 2,500 at Crown Casino. The 'cap' is to be reviewed in 2000. However, in the light of the recent controversy surrounding the Productivity Commission's draft report on *Australia's Gambling Industries* (Productivity Commission 1999), the government has already announced that the 'cap' will remain.

2. *Duopoly operator licences.* Two operators, Tattersall's and Tabcorp, are licenced to operate (and own) non-casino gaming machines in Victoria and, within the regulations, to locate them in licenced venues based on profit-maximising commercial criteria. Each is permitted to operate up to 50 per cent of the maximum allowed number of machines (i.e., 13,750). Their licences expire in 2012.

3. *Division of net revenues (expenditures, losses).* A minimum of 87 per cent of the amount gambled, or turnover, must be returned to the gaming machine user as winnings. The remaining 13 per cent, or net revenue (expenditure or losses), is divided in the following proportions: State tax (33 1/3 per cent) and the Community Support Fund (8 1/3 per cent for hotels only), operators (33 1/3 per cent), and venues (25 per cent for hotels and 33 1/3 per cent for clubs).

Other germane regulations are:

- the proportion of machines to be located outside the Melbourne metropolitan area must not fall below 20 per cent;
- a maximum of 105 machines is permissible for any one licenced venue, with a limit of 100 machines in the designated gaming area of the venue;
- the number of machines in approved venues is to be equally distributed between hotels and clubs across the State; and
- local planning approval is unnecessary if a venue plans to locate its machines within an area smaller than 25 per cent of its floor space.

This regulatory framework is essential to understand in estimating local area economic impacts of poker machine gambling. Apart from the obvious implications regarding division of revenues, we will foreshadow some of the other reasons now. First, it is known that machines located in metropolitan Melbourne have a higher turnover and generate more net revenue than those in rural Victoria. Second, it is also known that machines located in hotels, especially the larger ones, have a higher turnover and generate more net revenue than those clubs. Third, it is not necessary at a local level to equalise the number of machines in pubs and clubs, raising the possibility that pub-rich areas will have a higher return per machine than the average.

3
CRITICAL EVALUATION OF DATA SOURCES AND STUDIES

3.1 Demand- and Supply-Side Data

This chapter comprises a targeted survey of data sources, relevant issues, and views about local area economic effects of poker machine gambling. It is not a complete literature review because it does not address all of the contents of the various sources listed below. As was noted in chapter 1, the purpose of this study is specifically to discuss methods that may be used to assess the economic effects of poker-machine gambling in low-income Victorian municipalities. Thus the study concentrates on *economic* impact, with a *local-area* emphasis on *low-income* municipalities. Moreover, the form of this study is *methodological* rather than applied. It aims to help to clarify and propose types of methods needed to obtain more accurate and reliable answers to the most pressing questions.

An important first step, which goes to the heart of this study, is to examine critically what may be learned from the existing sources of data and the most influential studies to date. It is important that the discussion here be both critical and targeted so that areas of doubt and unanswered questions may be brought into sharper relief. Thus we will be in a position to re-engage in a more informed way in chapter 4, 'Victorian and Maribyrnong Gambling: A Case of Diverted Consumer Spending', with the trends in gaming machine gambling raised broadly in chapter 2. This chapter and chapter 4 will together underpin the model of local area economic impact that will be presented in chapter 5 as one possible guide to future applied work.

This section will look principally at relevant data sources. As we noted in section 1.2, the original methods considered by the Workplace Studies Centre proposed to 'triangulate' a combination of research approaches using demand-side (consumer or gambler) spending data, supply-side (operator, venue, and tax) revenue data, and other interdisciplinary studies. At a national level demand-side data exist in the form of the Australian Bureau of Statistics *1993-94 Household Expenditure Survey* (ABS 1996 6535.0). Another possible source was the *Auspend* data based on the HES and ABS income distribution series applied to socio-geographic areas (1998b 6257.0). However, the most timely, accurate, reliable, and comprehensive gambling statistics collected and published in Australia are from the supply side. These are the *Australian Gambling Statistics 1972-73 to 1997-98* published by the Tasmanian Gaming Commission in conjunction with the Centre for Regional Economic Analysis of the University of Tasmania (TGC 1999). These are drawn directly from material collected by the State gambling authorities. We also aimed to develop and pilot a survey instrument that could be used to get direct information from low-income areas on household gambling and consumption spending patterns.

Some caveats were included from the start, but nonetheless the combined approach, including a local household survey, was considered possible. Further

analysis of the quality of the data involved, coupled with our literature review, soon convinced us that demand-side data were too unreliable and inaccurate to use. No matter how much we adjusted for known problems with the HES unit record gambling data, for example, we could not in good conscience have presented the results to the project sponsors with any degree of confidence. Dubious assumptions about the spending behaviour of gamblers would also have to had to be made for any analysis to be undertaken using demand-side data at the national or State levels (see section 3.2.2).

The plan for a pilot local survey also was dropped very early in the research. There were two reasons for our this decision:

1. The primary reason was that we quickly came to the opinion that problems associated with obtaining reliable information from households would be insurmountable within the scope of this project. 'Under-reporting' and 'over-reporting', euphemisms for distortion, often plague survey responses on issues where social status and moral (un)desirability are involved. Results are often meaningless. Answers to questions about gambling and associated consumption spending fit squarely into this category (see section 3.2.1 for a full discussion).

2. The costs involved in attempting to overcome the under-reporting problem would be prohibitive locally and whether they would be effective would remain uncertain.

Our approach to demand-side consumption data-generating methods continued to be investigative, but its content now focused on critique. Instead we focused our own data-gathering efforts on the supply-side: applying the industry data on gaming machine losses to local economies.

Section 3.2 of this chapter will critically analyse the data and their uses. Section 3.3 will canvass the most influential research to date on the economic impact of poker machine gambling in Victoria in the 1990s. It will delve into a leading view to emerge from Victorian Casino and Gaming Authority sponsored research hitherto, namely the hypothesis that gambling expenditure has been 'financed' by reducing saving from current income and not by reducing other forms of consumption spending. It will contrast this with one industry view presented to the Productivity Commission inquiry by Access Economics (Access Economics 1999). Section 3.3.3 also will present the Productivity Commission's outright rejection of the view that gambling expenditure has been 'financed' by reducing saving from current income and not by reducing other forms of consumption spending.

3.2 'Under-Reporting' by Users of Gaming Machines

This section discusses how users of electronic gambling machines have systematically 'under reported' in surveys the extent of their activity. It is an important concern for two reasons. First, under-reporting has affected the worth of existing research on the economic effects of electronic gambling machines. Under-reporting is insufficiently acknowledged as a problem, and its implications are rarely explained. Second, the discussion provides a warning that to

contemplate surveying households and individuals on this subject in the future may be perilous for the quality of the results obtained. This section will also offer an explanation, based on qualitative and other research, of why under-reporting is likely to be an especially intractable worry for gambling research.

General issues will be canvassed in section 3.2.1. This will lead into a specific account of under-reporting in the ABS Household Expenditure Survey (ABS 1996 6535.0) in section 3.2.2, including comments by the ABS itself on the problem (ABS 1998a). Section 3.2.3 will comment, rather pessimistically, on possible remedies and attempt to explain why gamblers may be especially prone to under report the extent of their gambling activities and why the problem, therefore, may well be insurmountable by the normal survey techniques.

3.2.1 'Under-Reporting' in Social Research

Researchers in the social sciences who seek answers from people to questions that touch on issues of social status or social desirability know in advance that they will also have to face questions. In particular, will the answers they get be distorted? Another term for the general problem is 'prestige bias' (de Vaus 1990, p. 84). The issue is commonly raised in texts on social research methods. For example:

> 'Researchers sometimes ask about sensitive issues or ones that respondents find threatening. Many respondents find questions about sexual behavior, drug or alcohol use, deviant behavior, mental health, illegal activity, or controversial public issues to be threatening. Researchers who ask such questions must do so with extra care.
>
> '*Threatening questions* are part of a broader issue. Respondents may try to present a positive image of themselves to interviewers or researchers instead of giving true answers. Respondents may be ashamed, embarrassed, or afraid to give a truthful answer. Instead they give what they believe to be the normative or socially desirable answer. This is the *social desirability bias*. This social pressure can cause an overreporting or underreporting of the true situation.' (Neuman 1991, p. 230)

In general, research into survey responses has found that people tend to over report their being a good member of society, having a good home life, and being well informed, cultured, and responsible. However, they typically under report what may be regarded by others as socially undesirable traits and actions, including illness, illegal activity, sexual activity, drinking, smoking, drug use, and gambling (see, e.g., Newell 1993, pp. 106-07; Neuman 1991, pp. 230-31). They are also likely to be coy regarding the true nature of their financial status. The research also finds that different ethnic communities and social groups may be even less inclined to reveal information that consider is sensitive or private (Fielding 1993, pp. 149-50).

Under-reporting here has a very specific meaning. It refers to the way in which people, consciously and/or unconsciously, distort the responses they give to researchers' questions by minimising the size or ranking of the variable measuring

their responses. For example, they may give a lower dollar figure for the amount they lose on electronic gambling machines; or they may say that they play the pokies fewer times than they actually do; or they may rank themselves a moderate gambler when, compared with others, they may be among the most frequent users and highest losers.

Other reasons for low reporting, as distinct from distorted under-reporting, also exist. This is why a wider interpretation of under-reporting is sometimes used in the literature on gambling activity. People may under report because they do not understand the question being asked.[1] They also may have forgotten what they have done or how much they have lost, or they may not have bothered to keep even a mental record of their spending in the first place.[2] Two important issues for social scientific research method arise here: the validity (accuracy) and the reliability of the data generated by surveys.

> 'Naturally, researchers want their indicators to be as good as possible. This means that the measurements they make should be *valid* (accurately measuring the concept) and *reliable* (consistent from one measurement to the next). For instance, suppose that you want to measure people's consumption of alcohol ... You choose to do this using a questionnaire in which you ask respondents to tell you how much they drank during the previous month. In fact, this is not a good indicator of alcohol consumption. People tend to under-report consumption – they say that they drink less than they actually drink – casting doubts on the validity of the indicator. Also, people have difficulty remembering in detail what they were doing as long as a month ago. This means that if you were to ask someone repeatedly over a few days what they had drunk during the previous month, it is quite likely that they would give you different answers, just because they were not remembering consistently. The indicator is not reliable.' (Gilbert 1993, pp. 27-28)

All of these factors apply to poker machine gambling, raising concern from the outset that survey data will be inaccurate. Moreover, under reported data are likely to be both inaccurate and unreliable, unless one thinks improbably that people are bound to be reliably untruthful quantitatively as well as qualitatively. However, some of the factors may be easier to correct. A logbook can be used as an *aide memoir* and questions can be made clearer. However, conscious and/or unconscious distortion of answers about activities that may be regarded as socially undesirable is much harder to tackle. It is the core problem and should be recognised as such. Indeed, as the following will show, it should not be minimised (i.e., under reported) by social researchers.

---

[1] See, e.g., the discussion in Blaszczynski, Dumlao, and Lange (1997) regarding confusion between 'turnover' and 'losses'. Of course, confusion does not necessarily predispose answers towards under-reporting. It depends on how the question is framed.

[2] See also the discussion of Access Economics (1999) below.

3.2.2 'Under-Reporting' in the Household Expenditure Survey

The Australian Bureau of Statistics *Household Expenditure Survey 1993-94* (HES) (ABS 1995a 6530.0; 1997 6535.0) has been used widely in efforts to model the economic impact of gambling. Its attractiveness is partly explained by it being a large data set to which a range of statistical procedures may be applied. Such traits make it a seductive source of data for the modeller. However, as will be explained below, under-reporting seriously compromises the data provided at the level of gambling activity. The data are inaccurate and unreliable, and any analysis based on them must similarly be compromised. First, we will review the ABS's own attitudes to using the HES in relation to gambling. Second, we will provide our own estimates of under-reporting in the HES and argue why its gambling data should not be used in gambling research.

The Australian Bureau of Statistics submission to the still incomplete Productivity Commission Inquiry into Australia's Gambling Industries explains why the Household Expenditure Survey estimates of gambling losses are problematic. It clearly points to the wide discrepancies between the HES data and the accurate industry data that record business revenues.[3] The submission states:

> 'There are a number of potential sources of differences between demand estimates (ie net expenditure on gambling services by households) as measured by HES and supply estimates (income by businesses providing gambling services) as measures by industry surveys. These include reporting issues (eg householders may have difficulty in recalling and isolating gambling expenditure separately from other forms of expenditure such as food, drink and entertainment and/or may more readily recall winnings as opposed to losses) and conceptual differences (eg HES excludes expenditure by overseas visitors to Australia whereas they are included in industry estimates). However, the supply estimates for 1993-94 of $6,972 [compared with the HES figure for the year of $1,784] as recorded in the Tasmanian Racing [sic] Commission publication 'Australian Gambling Statistics 1972-73 to 1996-97' *indicate a very significant degree of under reporting in the HES which is unlikely to be explained by the reporting errors mentioned above.* This clearly indicates that respondents are deliberately failing to report the full extent of their gambling activities. This may be due to a concern that they have that other members of the household and ABS staff will see the diary of expenditures and may judge their gambling activities as excessive and/or anti social. These difficulties are demonstrated ... to the extent that the HES estimates show households in NSW, SA, WA and NT all with negative expenditure (or all winnings) on the 'TAB, on course betting etc' for 1993-94.' (ABS 1998a, pp. 4-5; emphasis added)

A number of points are being made here. However, the most important is that under-reporting, or 'respondents ... deliberately failing to report the full extent of their gambling activities', is the main reason for the wide disparity

[3] Note again the following comment in the notes to the *Australian Gambling Statistics 1972-73 to 1997-98* regarding EGMs: 'Gaming machines accurately record the amount of wagers played on machines so turnover is an actual figure for each jurisdiction.' (TGC 1999, p. 5)

between the HES estimates and the supply side data. Other reporting errors, from inaccurate memory by respondents to overseas visitors falling outside the scope of the survey, are less significant. Recall also that the 'supply side' data, given in *Australian Gambling Statistics 1972-73 to 1997-98* (TGC 1999) record gambling revenues received by the various parts of the industry (net of winnings by punters). These are regarded highly for their accuracy and reliability. Hence, on the 1993-94 figures presented by the ABS for the gambling industry as a whole, the actual figure was some 390 per cent higher than that which was reported in the HES. That is, the HES reports about one-quarter of the actual expenditure. This clearly means that the HES gambling data are inaccurate.

Moreover, the ABS submission also casts doubt on the reliability of the HES data. Within the HES significant items record net winnings (i.e., racing for NSW, SA, WA and NT). These clearly false results are incorporated in the aggregates for gambling overall. Note also that the ABS submission identifies the same fundamental cause of the problem as did section 4.3.1, namely that of truthfulness. This is why it is pessimistic about whether the HES can ever provide a solution:

> 'A further Household Expenditure Survey (HES) is being conducted in respect of 1998-99. The wording of the gambling items have been varied to try to improve the reporting of this item. However, these changes are unlikely to substantially improve the reporting of gambling expenditure, and there is no reason to believe that this survey will be any different to earlier HES collections in terms of reporting problems in respect of gambling losses. Unfortunately, within the broader scheme of a HES design, it is considered highly unlikely that such reporting problems can be fully addressed in a systematic fashion. The problems with accurate reporting of gambling expenses in HES are an international problem, not just restricted to Australia.' (ABS 1998a, pp. 7-8)

The ABS submission to the Productivity Commission inquiry concludes with a warning that 'HES data on gambling is significantly under-reported and hence any analysis based on, for example income distribution, may be questionable' (1998a, p. 10). However, it adds that it 'may be possible for the ABS to design and develop a household survey specifically focussed on gambling activity and its impact on individual and family well-being that may overcome some of the problems associated with the HES' (1998a, p. 10). We understand from our discussions with ABS officers, however, that it may be appropriate to put the emphasis on the words 'may', 'possible', and 'some' in the above sentence and that the ABS is still cautious about whether such a specific survey can be successful. However, regarding the existing and forthcoming HES, which will be published in mid-2000, the advice obtained by the authors directly from a number of ABS officers was both consistent and firmly worded. In their view the Household Expenditure Survey gambling data is not really suitable for studying the economic impact of gambling.

There are further and particular reasons to be wary of using the HES to study poker machine gambling. The extent of under-reporting is huge. Moreover, the disaggregated data, on which Australia-wide or State average weekly household expenditure items are based, contain serious anomalies. These features

indicate that the data are inaccurate and unreliable in this context.[4] Table 3.1 presents HES data for the past three surveys for the line item *583 Poker machines and ticket machines*. It then builds an aggregate figure by multiplying the weekly expenditure (losses) item by the appropriate number of households. Finally it juxtaposes the amount households have reported with the accurate industry data (TGC 1999) and calculates the proportions of the actual figure that are reported or not reported. Data for NSW are presented, in addition to those for Victoria and Australia, so that we may consider the level of reporting in a State that has had poker machines for a long time. Note that the earlier HES years shown were before Victoria introduced poker machines and that the 1993-94 survey occurred not long afterwards.

The numbers in the two right-hand columns speak for themselves. At most (for Australia in 1993-94) between 10 and 11 per cent of the actual losses were reported by respondents to the survey. In Victoria for 1993-94 the figure drops below 10 per cent, as do all figures for NSW and for Australia in 1984 and 1988-89. In general this represents a staggering proportion of the actual data not reported of more than 90 per cent. Simply, the data are extremely inaccurate. Indeed the actual 1993-94 weekly household expenditure (losses) should read, in 1993-94 dollars: Australia ($8.90), Victoria ($7.91), and NSW ($16.76).

TABLE 3.1
HES Under-Reporting of Poker Machine Gambling Expenditure

	1 HES average weekly reported expend-iture	2 Number of house-holds	3 Reported annual household poker machine spending = 1x2x52.14	4 Actual annual gaming machine expenditure	5 Per cent of actual reported = (4-5)/5	6 Per Cent of actual not reported = (5-4)/5
	$	#	$	$	%	%
Australia						
1984	0.26	5,039,200	68,313,411	717,916,680	9.52	-90.48
1988-89	0.29**	5,420,400	81,959,700	1,272,568,570	6.44	-93.56
1993-94	0.95	6,616,800	327,749,954	3,071,632,000	10.67	-89.33
Victoria						
1993-94	0.77	1,648,200	66,171,604	679,663,000	9.74	-90.26
NSW						
1984	0.52*	1,766,900	47,905,606	694,777,720	6.90	-93.10
1988-89	0.79**	1,837,400	75,683,608	1,220,440,000	6.20	-93.80
1993-94	1.51	2,231,800	175,712,739	1,950,044,668	9.01	-90.99

HES data supplied directly by the ABS, Australian Gambling Statistics 1972-73 to 1997-98

It would also be wrong to think that there is some level of consistency in the rate of under-reporting. To take the Australian data as an example, not only does the proportion reported drop and then increase but also the small size of the proportions means that the per cent changes are quite large. If, say, we were to

[4] We emphasise the phrase 'in this context'. The HES has many other important uses, especially when less sensitive data about household spending at a higher level of aggregation are involved.

take the 10.67 per cent reporting rate for 1993-94 as applying in 1988-89 we would multiply the reported losses of $81,959,700 by a factor of (100/10.67) to obtain an estimate of $768,132,146. However, the actual figure, reflecting a reporting rate of 6.44 per cent, was $1,272,568,570. That is, the result would have been under-reported by approximately 40 per cent. This also suggests that the HES data are unreliable over time.

The accuracy and reliability of the data are further compromised when it is realised that some of the elements that comprise the average weekly household expenditure data are plainly false. (See the reference in the quote above to the negative entries for racing for NSW, SA, WA and NT.) The aggregated HES data provided by the ABS include not only the 'all households' figure shown above but estimates for 'metropolitan', 'other urban', and 'rural' areas. For Victoria in 1993-94 the HES 'all households' amount for poker and ticket machines was 77 cents per week. However, while 'metropolitan' and 'other urban' recorded losses of 90 cents and 89 cents per week, respectively, 'rural' had a negative entry of 78 cents. That is, rural Victorians surveyed claimed to be winning on poker machines.[5]

One of the few reports to recognise and discuss seriously what it calls 'under-coverage' by the HES has been the Access Economics submission to the Productivity Commission inquiry on behalf of Tattersall's (Access Economics 1999). A similar table to Table 3.1 above is presented that demonstrates clearly how much gambling data are distorted in the 1993-94 HES. This shows that lottery and lotto losses were over reported significantly, pokie and horse-racing losses were under reported massively, and that casino patrons recorded winning $132 million in aggregate when industry data explained that aggregate losses were $823 million.[6] This report offers a number of biases as possible reasons, in addition to strict under-reporting. For example, the first is 'attrition bias if gamblers, especially heavy gamblers, have a lower response rate than others do. This source of under-coverage is the problem of sample bias.' (Access Economics 1999, p. A5) However, this is regarded as minor. It then refers to 'observation bias', where people who record their expenses in the HES diary over a two week period, 'may abstain from incurring certain types of "controversial" types [*sic*] expenditure when they know the expense is supposed to be recorded in a dairy [*sic*]. *This observation bias* is not present in retrospective questionnaires where interviewees are asked about past expenditure.' (p. A5; original emphasis)[7]

For all of these reasons we think a valid question to ask is whether the HES poker machine expenditure data can be relied upon in any meaningful way to reflect the realities of this form of gambling or their relationship to other consumption patterns. We think, at least, that it is incumbent upon researchers who use these data to address such doubts thoroughly.

---

[5] Note also that some of the entries in Table 3.1 are asterisked. This indicates an additional, statistical, problem of high relative standard error of the data, with the ABS cautioning against its use on this ground alone.

[6] The latter figure no doubt includes overseas gamblers' losses, but this hardly explains how we can place faith in figures that have Australian residents winning at casinos. It just does not add up.

[7] See section 4 below, which comments on the use of the HES by Access Economics despite its obvious misgivings (Access Economics, pp. A7-A31).

3.2.3 Why 'Under-Reporting' May Be an Intractable Problem

A number of techniques have been suggested to try to minimise under-reporting. We understand that the Productivity Commission is examining, for its forthcoming report on Australia's gambling industries, approaches that have been used overseas.[8] The VCGA's current research program will also be exploring the issue. The research literature suggests that telephone or postal surveys, which are more anonymous, may have a higher success rate (de Vaus 1990). However, each of these methods of survey administration brings its own basket of potential inaccuracies and doubts. At present nothing we have seen has diminished our pessimism about the survey approach in this area.

This is also true for another possible technique known as 'randomised response'. This is designed mainly to estimate the *proportion* of the population who may be involved in an under reported or illegal activity such as drug use. The respondent tosses a coin but the person conducting the survey does not know the result. If the coin comes up 'heads' the respondent is asked to answer truthfully. If it is 'tails' the answer will be to another question, such as 'did you attend the football in the past two weeks?' Assuming we know the proportion of the population who attended the football it is possible to calculate the proportion we are interested in, without the interviewer ever knowing the respondents' real answers. However, a check of the statistical research literature reveals that, even if we could modify this approach for amounts lost on gambling and not just proportions participating, the results of the method are not encouraging. The main problem is that people do not understand the method and hence revert to distorting their answers.[9]

Overall, our pessimism about obtaining accurate data about *how much* people lose on gaming machines and how this may relate to their household spending patterns is reinforced by what we think is a deeper analysis of why people under report. For this understanding we think that it is necessary to leave the world of surveys and statistics and engage the predominately qualitative research on gambling activity. Here the work of social policy, psychology, and welfare researchers is of especial value, as is the work of economists who have delved into the structure of gambling losses (Quiggin 1998).

A useful starting point is to recognise that not all people use gaming machines. A figure of 42 per cent of people having used poker machines in the previous year is given in the VCGA-sponsored study of inner city municipalities (Johnson 1998, pp. 42-43; citing DHSA, MIAESR, & NIEIR 1997c and Market Solutions 1997). The most recent VCGA-sponsored *Sixth Survey of Community Gambling Patterns and Perceptions* (Roy Morgan Research 1999) reports that '[p]articipation in EGM gambling has declined over the past year, falling slightly to 31% in 1998 from 39% in 1997' (VCGA 1999). Although this seemingly goes against what we have just said about surveys, it is probably reasonable to think that, for gaming machine use if not for illegal drug use, the answers given to participation-type questions are likely to be more accurate and reliable than those to extent-type questions about frequency and amounts lost. At any rate these figures are what we might expect intuitively to be the case.

---

[8] The report is due in early- to mid-July.

[9] We would like to thank Dr Neil Diamond for the information in this paragraph.

Now if we go a bit deeper the survey data are likely to become a bit woolly. However, it is clear from industry sources[10] and from the qualitative research that some people use machines very regularly ('regulars'). Some have been called 'problem gamblers'. It is also clear that not only do the heavier machine users gamble a lot, but they also lose a lot. In a submission to the Productivity Commission inquiry, Professor John Quiggin of James Cook University in Queensland presented results from a study of Queensland casino patrons (McMillen, Ryan, & Quiggin 1996). From this he maintained that it was possible to show that a 'small minority' of patrons was 'crucial to the profitability of the gaming enterprise'. His figures were that 2 per cent of heavy gamblers were responsible 'for more than 25 per cent of the casino's total income from machines. 13 per cent ... account on table games for more than 50 per cent of total income from table games' (Quiggin 1998, p. 8).[11]

If anything like this applies to gaming machine expenditure in Victoria then it is clear that a big share of gambling losses are concentrated among a relatively small proportion of the population (first more than halved for non-users and then concentrated for heavy users). Indeed, the VCGA *Sixth Survey* says that there 'are fewer people participating in EGM ... gambling, but those that do, tend to play more often and outlay more money each time they play' (VCGA 1999). However, it is precisely the heavy users who are unlikely to be open and honest about the true extent of their gambling.

The term 'denial' is one that emerges forcefully from the welfare, social policy, and psychological literature to describe the behaviour of those experiencing gambling problems. 'People often don't disclose gambling difficulties' for reasons of 'stigma, embarrassment, denial' (Ayers-Wearne & Farnsworth 1999, p. 59). Often the extent of the problem is not revealed until well into counselling, and it is hidden from loved ones and friends to avoid embarrassment and shame. Unwillingness to speak about gambling can be especially acute for some cultures (see, e.g., Australian Vietnamese Women's Welfare Association 1998, pp. 2, 3; Brown & Coventry 1997, pp. 10-11; Brown, Johnson, Jackson, & Wynn 1999, pp. 12-13, section 3; Webster 1997, p. 3; Wesley Gambling Counselling Service 1998, pp. 30-31).

What all of this explains is that it will be difficult, because of the operation of forces that we have put here under the heading of 'denial', to obtain accurate and reliable information from surveys about the extent of gaming machine use and losses. As well as the general dilemma posed by under-reporting, we have the specific concern that those who gamble most are simply the least likely to reveal the extent to which they do.

3.3 Existing Research and the 'Saving Hypothesis'

Why has it been necessary in section 3 to explore at length (perhaps to over report) information on under-reporting? Partly it is to explain why we have eschewed proposing a survey approach at the local level. It is also related to research sponsored by the Victorian Casino and Gaming Authority on the

[10] This is based on our discussions with a number of industry representatives and, again, it seems intuitively obvious.

[11] See also Dickerson *et al.* (1997) and points 1 and 2 in 'A positive case for substitution' in section 4 below.

economic impact of increased gambling in Victoria, to which we drew attention in the introduction. This research has been influential. For instance, the main national gambling industry submission to the Productivity Commission inquiry, by ACIL Consulting, refers to it throughout to support its own arguments (ACIL 1999).[12]

In contrast we maintain that the essential findings of this research are open to serious question. One reason is that these findings are based on econometric techniques that compare gambling versus non-gambling households as reported in the HES. However, the gambling and consumption patterns observed are heavily compromised by under- and false reporting, even if subsequent methods and assumptions are used to allow for the problem. Even more importantly, however, we will outline below why we think the findings of this research are 'causally' implausible and will present what we consider is a more plausible alternative.

3.3.1 Findings of the VCGA-Sponsored Research

It is worth recalling what the VCGA-sponsored research findings are. First, its conclusion is that 'Victoria has experienced significant and measurable net economic benefits flowing from increased gaming opportunities' and 'as a whole, the Victorian macroeconomy has benefited significantly' (VCGA 1998, p. 1). Second, this view is based on the premise that increased gaming machine expenditure did not substitute for alternative forms of consumption, such as retail spending, but was effectively financed from household saving.

We will focus here on three reports: *The Impact of the Expansion in Gaming on the Victorian Retail Sector* (NIEIR 1997a); *The Effect of Gambling on Employment in Victoria* (NIEIR 1997b); and *Impact of Gaming Venues on Inner City Municipalities* (DHSA, MIAESR, & NIEIR 1997). The first two were prepared for the VCGA by the National Institute of Economic and Industry Research (NIEIR), while the third was the result of a joint effort by NIEIR and two other organisations, the Melbourne Institute of Applied Economic and Social Research and Deakin Human Services Australia. The latter contains separate sections written by each organisation, and it raises some significant questions that challenge whether the central conclusion of economic benefit can reasonably be applied at the local level (see, e.g., DHSA, MIAESR, & NIEIR 1997, p. 4).[13]

Readers are advised to examine these sources directly for the range of conclusions they contain. We do not provide here anything approaching a thorough review. Our interest is the central proposition as we have outlined it above. However, to ensure that we are being fair in our presentation we will quote the sources directly. The employment report offers a clear summary:

> 'It will be noted ... that the fundamental position adopted is that up to 1995-96 at least new gaming expenditure largely represents *new expenditures in the Victorian economy that would not otherwise have been made.* This is in contrast to earlier methodologies applied by NIEIR in gambling studies which argued that expenditures of

[12] We will refer to a different view, which is expressed by Access Economics in its submission to the Productivity Commission on behalf of Tattersall's (Access Economics 1999). ACIL uses the HES raw data rather indiscriminately, even though it mentions under-reporting (1999, pp. 44-46).
[13] Some questions over the differential effects in local areas are also raised in the retail report.

> Victorian residents on new gambling activities would largely represent displacement of other forms of expenditures. This led to domestic resident expenditures being ignored in the process of determining the employment impact. In this case the main positive influence of gambling on the economy comes from:
>
> (i) visitor expenditure in Victoria that is made because of the new gaming availability; and
> (ii) retained Victorian resident expenditure that would otherwise have been applied interstate on gaming activities.
>
> 'What has changed the methodological approach is the findings of the recent Authority's study "*The Impact of the Expansion in Gaming on the Victorian Retail Sector*". This study found that the increase in expenditure on new gambling activities from 1991-92, from the state-wide perspective, was financed in the main by reduction in the Victorian savings ratio. This was especially true in the protection of retail expenditure from gambling activities.' (pp. 79-80; emphasis added)

Hence the employment report, based on the retail report, stated that '[n]ew gambling in Victoria by 1996 has increased Victorian employment by 34,700 persons taking into account both the positive and negative direct and indirect impacts' (NIEIR 1997a, p. i). This conclusion is re-endorsed in the inner city municipalities report. It must also be noted that the VCGA studies also acknowledge a downside to the 'saving hypothesis'. This is that 'long run effects of increased gambling activity on retail spending may be more severe' because lower saving today will likely become lower future consumption, especially during a recession (NIEIR 1997a, p. iii; see also DHSA, MIAESR, & NIEIR 1997, p. 15). The inner city report also added two further significant caveats. While the macroeconomic effect for Victoria might be positive, this could mask negative regional and local area effects and the nature of gambling tax and expenditure is regressive (DHSA, MIAESR, & NIEIR 1997, p. 2; Johnson 1998, pp. 43-44). The inner city report also acknowledged the problem of under-reporting, in relation to its own telephone survey of 200 people in each of the four municipalities studied, and referred to an unsourced view that about half of the true extent of gambling is reported (DHSA, MIAESR, & NIEIR 1997, p. 46).

Alas none of the reports take up thoroughly what should be a central concern: the implications of under- and false reporting of gambling expenditures in the ABS Household Expenditure Survey 1993-94. The reason that this is so important is that the crucial retail study used the 1993-94 HES poker machine gambling data as a foundation on which to construct its analysis. The employment study then applied this approach and found employment benefits, and the inner city study raised more caveats but doffed its cap to the preceding analyses at the aggregate level. We (echoing the ABS) have said that there are serious methodological problems in using the HES poker machine data in this way, precisely because they are so faulty. We simply do not really know whether we can trust them in any meaningful way. This is so even if the data are adjusted to account for the much higher actual expenditures and/or certain assumptions are

adopted to permit comparisons between the consumption patterns of reported gamblers and non-gamblers.

For reasons such as these Access Economics, in its submission on behalf of Tattersall's to the current Productivity Commission inquiry, has implicitly disagreed with the view on saving in the VCGA-sponsored research. It concludes that 'the over-simplistic view that gambling offsets savings appears to have *no empirical support*' (Access Economics 1999, p. A31; emphasis added). In fact it undertook an econometric assessment of the 1993-94 HES gambling data to arrive at this view, the same data that were used to opposite effect in the VCGA research. It is worth noting again that Access Economics is aware of the problems with the HES (see section 3.2.2 above), and it warns its readers to weigh these in assessing its results. It also concludes that gambling has not been 'at the expense of an increase in other expenditure' (1999, p. A31). Note that this does not deny substitution. Spending on all items in a basket of consumption goods can increase, but if it were not for substitution it is possible that the non-gambling items would have increased by more. However, Access Economics does explain that it is hard to infer much about the issues from the aggregate picture. Instead they suggest we look more closely at household decisions (1999, p. A24). They chose to do so through the HES, which we consider is problematic.

3.3.2 Implications of the Argument over Substitution

Why we have discussed the HES and under-reporting should now be clear. However, it is also important to have a framework for thinking about the alternative, or what may be called the counterfactual. That is, but for gaming machine expenditures consumption spending would have been higher. This will help to set up the argument in chapter 4 below, in which we present a positive case for such substitution (see also section 3.3.3 below). It will also help to define aspects of the model to be used in chapter 5. David Johnson of the Melbourne Institute of Applied Economic and Social Research, an author of parts of the VCGA inner city municipalities report, has summarised in a popular form some of the essential points:

> 'Households in the four municipalities spend $223 million on EGM gambling. The first round impact of the introduction of EGMs depends on whether household spending on them is at the expense of other retail activity or savings. If EGM spending were entirely at the expense of other retail activity there would be no net impact, merely a transfer from retailers to venue operators. Alternatively, if EGM growth is entirely at the expense of saving then in the short term all the spending would represent additional economic activity to the study region, of the order of $223 million per year. However in the long term households are likely to replenish their levels of saving and reduce consumption and the long term economic impacts are likely to be small.
>
> 'Within a region, there may be leakages of economic activity if tax, pub and gaming operator income is repatriated elsewhere and transfers of a similar magnitude into the area don't occur from

somewhere else.' (1998, p. 44; see also DHSA, MIAESR, & NIEIR 1997, p. 4)

We might quarrel over the view that there would be no net impact of a realignment of spending between regular retailing and gambling, given the different structures of each industry and the consequent multiplier and other income transfer effects. These can be highly significant in local areas. However, the general principles are clear. In particular, it is not possible to consider economic impacts without considering opportunity costs: the cost of the alternatives foregone. Indeed it is also clear that Johnson thinks that these must be considered:

> 'The strong growth in gambling has led to it becoming an important industry in Victoria. It does provide many jobs, it has led to strong growth in investment, and it is an important source of income at the local level. However much of the growth has been at the expense of industry—retailers, other forms of entertainment, other forms of gambling and so on. The gambling industry has no greater claim of importance than any other industry of the same size and accordingly should not receive greater acclaim. This view might be changed if it could be shown that gambling had positive externalities greater than other industries of equivalent size. However the evidence is the opposite—the externalities seem to be largely negative.' (1998, p. 44)

3.3.3 Productivity Commission Rejects 'Saving Hypothesis'

On August 25, 1998, the Productivity Commission received a reference from the Federal Treasurer to conduct an *Inquiry into Australia's Gambling Industries.* Following written and oral submissions from interested parties, as well as its own research, the commission presented its extensive Draft Report *Australia's Gambling Industries* on July 19, 1999 (Productivity Commission 1999). The report has had an explosive impact, especially because it highlighted the extent of 'problem gambling'. It said that about '330,000 Australians (2.3 per cent of the adult population are estimated to have significant gambling problems, with 140,000 experiencing severe problems'. It also found that 'just 10 per cent of gamblers accounted for around 80 per cent of total gambling expenditure in 1997-98' and that 'gains in output or jobs' from the growth in gambling are 'mostly illusory' (Productivity Commission 1999 Overview, p. vi, xv). These findings are highly significant and relevant to this report. They challenge the existing Victorian and industry research cited above.

Pertinent terms of reference of the commission's inquiry included that it examine and report on:

> '... (b) the participation profile of gambling;
>
> '(c) the economic impacts of the gambling industries, including industry size, growth, employment, organisation and interrelationships

with other industries such as tourism, leisure, other entertainment and retailing.

'(d) the social impacts of the gambling industries, the incidence of gambling abuse, the cost and nature of welfare support services of government and non-government organisations necessary to address it, the redistributional effects of gambling and the effects of gambling on community development and the provision of other services...

'(h) the adequacy of ABS statistics involving gambling.' (Productivity Commission 1999 Overview, p. v)

It has reported on the first three of these, and comment on item (h) will appear in the final report due in late 1999. The final report will take into account further submissions, hearings, and comments on the draft report.

Unlike the research sponsored by the VCGA the Productivity Commission is unequivocal in its rejection of the 'saving hypothesis'. It unambiguously states that gaming machine expenditure substitutes for other forms of current or future expenditure:

'While gaming machines' share of total gambling expenditure has risen, its growth appears not to have displaced other gambling modes – which have largely maintained their previous growth trends – but rather has been at the expense of other consumption items or savings (future consumption).' (Productivity Commission 1999 Overview, p. xii)

The report Overview explains this point in more detail, under the heading '"Production-side" gains are limited':

'... [A]dvocates for gambling industries ... typically point to benefits interms of expenditure, incomes, jobs and trade associated with the industry, both directly and indirectly.

'But these 'production side' benefits, incontrast to those from consumption, *are* largely illusory.

'The resources available to Australia's economy – its people, capital and land – are not stamped *For use only by the gambling industries*. If these industries did not exist, most of the resources in the gambling industries would be employed in other uses, creating similar levels of income and jobs to gambling itself. For example, the skills required of personnel in gambling venues are very similar to those required in most entertainment and hospitality industries.

'Thus while there may be instances where additional jobs or income are generated – say in depressed regions – most of the resources in the gambling industries will have been diverted from other industries. The vocal opposition of retail traders to the expansion of gambling outlets is a visible sign of this underlying economic reality. By the same logic, however, that diversion should not in itself be a concern to policy-makers, unless it *reduces* aggregate economic benefits, rather than simply reshuffling them.

'An economy-wide assessment of the contribution of the gambling industries can really only be gained with the aid of quantitative economic models, notwithstanding their particular limitations in dealing with the social costs of gambling. Such economy-wide modelling was conducted by the industry, as well as by consultants commissioned by the inquiry.

'The Commission's analysis of these various studies, taking into consideration their different methodologies and assumptions, supports qualitative reasoning about the industries' likely net contribution to the economy. In short, the modelling indicates that changes in the size of the industry would have little impact on Australia's GDP, consumption levels or labour market outcomes over the long term.' (Productivity Commission 1999 Overview, p. xix; original emphasis; see also Vol. 1, pp. pp. 4.9-4.10, 5.16-5.24, 7.45, 9.22-9.27, 9.33-9.41)

Similar comments are made throughout the main body of the report, but the one worth citing is a direct criticism of the NIEIR retail report:

'In Victoria, the VCGA commissioned a study into the impact of the expansion of gaming over the period 1990 to 1996 on the Victorian retail sector...

'The central finding was that the expansion of expenditure on gambling in Victoria had occurred at a time of a large fall in the level of savings in the State, and that expenditure on other retail activity had continued to rise over the same period. The study concluded that the expansion of gambling had been funded by the decline in the level of savings rather than a switch in expenditure from the retail sector.

'While gambling may not have caused a reduction in actual retail expenditure in Victoria during or immediately after its introduction, the Commission does not believe that this result can be generalised to suggest that an expansion in gambling comes at no cost to other retail activity. All products and services compete for a share of the consumer's budget. Unless there is a permanent shift in the savings rate, the growth in expenditure on one product or service generally must be at the expense of expenditures on others, *whether it be in the form of an actual decline in retail spending or a slower growth in retail spending than otherwise would have happened.* And even if there is a permanent shift in the savings rate, this can be expected to have an adverse effect on other economic variables, such as interest rates, which will ultimately find their way back to the economy in the form of reduced demand for other goods and services. Only if the increase in gambling caused a significant and sustained increased in economic growth, sufficient to offset the switch in market spending away from other retail spending, would other retail sectors be better off. *The Commission sees no reason to believe this would be the case.*

'Indeed, the Victorian study recognised that:

' "The long run impacts of increased gambling on retailing may be more severe. In previous recessions in Australia, lower savings have supported household expenditure and retail sales than what

would otherwise have been the case. To the extent that lower savings have financed increased gambling expenditure, part of the cushion to consumption expenditure in the next recession has been removed.'" (Productivity Commission 1999 Vol. 1, p. 9.26; emphasis added; citing NIEIR 1997a, p. iii)

3.4 'Consumer surplus'?

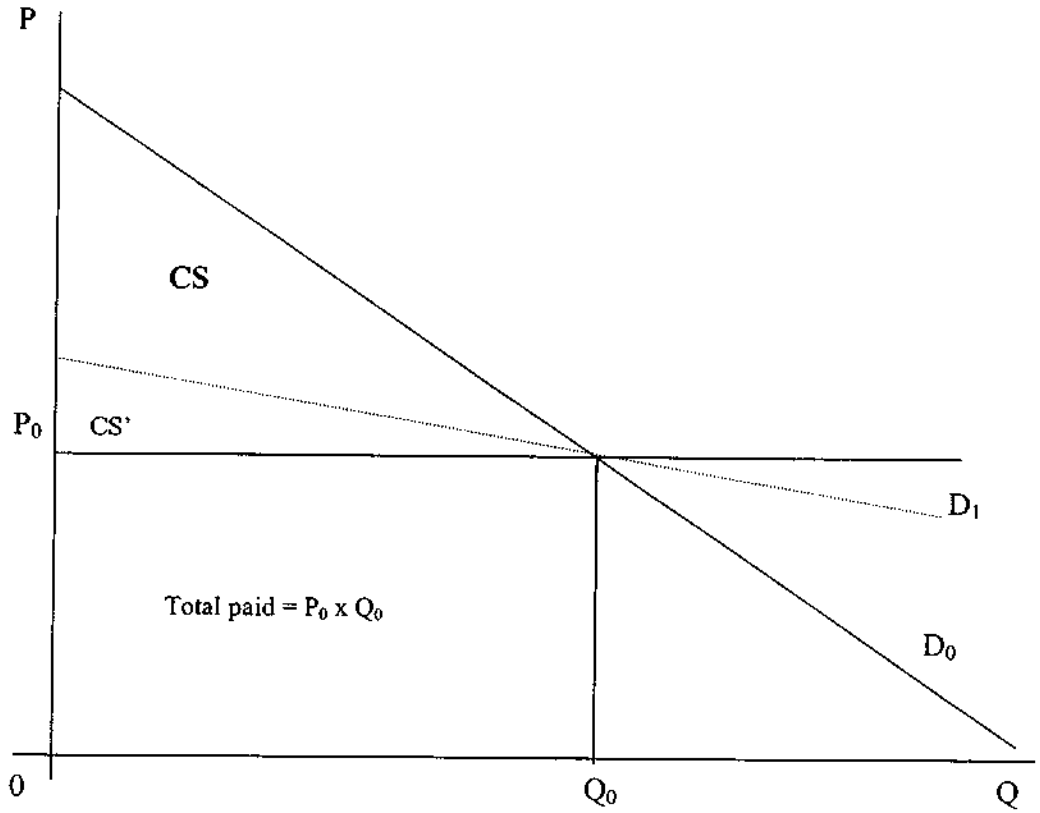
We have chosen to quote rather extensively from the Productivity Commission's Draft Report. However, this does not mean that we agree with all aspects of it. It uses the microeconomic concept of 'consumer surplus' to measure the gains to consumers from participating in gambling. We find this approach problematic, although the commission also subtracts estimates of the costs associated with problem gambling from the gains and also warns that '[q]uantification of the costs and benefits of the gambling industries is hazardous' (Productivity Commission 1999 Overview, p. vi). Indeed, the Commission gives rather flexible estimates of between $0 and approximately $5 billion. Unfortunately the media seemed to latch onto the latter, in doing so rather distorting the 'back of the envelope' nature of the estimates that the Commission was careful to underscore in its public presentations and reports. We will argue in the next two chapters that the increase in gaming machine gambling in Maribyrnong and other low-income municipalities, by diverting other consumption spending, actually does reduce aggregate economic benefits.

However, it is worth commenting briefly on the idea of 'consumer surplus' as a measure of the benefit to gamblers. First, what is it? It is an orthodox microeconomic concept that, in straightforward language, attempts to measure the total amount consumers would have paid for a quantity of a good or service and the amount they actually had to pay for that quantity. It depends on there being a downward sloping demand curve for the product (i.e., were the price higher less of the product would be bought). The demand curve (D_0) shows how much of the product (Q) would be bought at different prices (P). Figure 3.1 illustrates the case. The area designated CS (consumer surplus) is the triangular area beneath demand curve D_0 less the total amount actually paid at $P = P_0$ (i.e., $P_0 \times Q_0$).

Now there are a number of problems with this approach, three of which we will present.[14] The first and most significant, we think, is that the dollar value of consumer surplus, an estimate of the 'welfare' or enjoyment gamblers get from their expenditure (losses) on pokies, whether or not it is discounted for problem-gambling, *is not a measure of actual economic activity with any bearing on local economies or jobs*. Only the actual losses compared with their alternative (counter-factual) uses give us an estimate that translates directly into productive activity at the local level (or, indeed, to the macroeconomy). Unfortunately, again, media reportage of the Productivity Commission's data mangled this important distinction.

[14] We will leave aside the well-rehearsed argument that it is not methodologically possible to aggregate interpersonal benefits (plus the rejoinders to it). For simplicity below we will not refer to the concept of adjusted consumer surplus, but we acknowledge that the Commission does.

FIGURE 3.1
Consumer Surplus



Second, the Commission's estimates of consumer surplus have themselves been challenged.[15] Readers are referred to two submissions to the Productivity Commission received after its Draft Report was released under the name of South Australian MLC Nick Xenophon. The submissions, by Professor Richard Blandy and Dr Anne Hawke (Blandy & Hawke 1999a, 199b), argue that the estimate of consumer surplus depends crucially on the assumption of the price elasticity of demand for gambling products. That is, it depends on how much, or how responsive (elastic) changes in quantities gambled will be to price changes (in this case the proportion of each bet retained by the machine). Blandy and Hawke explain, following the Commission, that such estimates are notoriously scarce in Australia. In fact, using different estimates of elasticity than the Commission's, estimates provided in a submission on behalf of poker-machine supplier Aristocrat Leisure Industries, gives a vastly different range for consumer surplus. Blandy and Hawke conclude that, when problem gambling effects are subtracted, the 'surplus' is negative in aggregate. The broken-line demand curve (D_1) in Figure 3.1 can be used to illustrate a more elastic consumer response (i.e., proportionately greater changes in quantity for a given change in price). The consumer surplus triangle

[15] Please note that the Commission was highly circumspect in attributing weight to its flexible estimate ranges, calculation of which it regards as 'hazardous' (Productivity Commission 1999 Overview, p. vi).

(CS') is correspondingly smaller. If a relatively larger estimate for problem gambling is subtracted the result may be strongly negative. Thus:

> 'If this [smaller, more elastic estimate of consumer surplus] ... is combined with the Commission's "high" estimate of the total private and social costs of problem gambling of $5210 million (Table J.6, p. J.29), the annual net *cost* of the gambling industries to the Australian community can be estimated as *$215 million* ($4995 million - $5210 million).
>
> *'This is an important result. It demonstrates that using the Commission's own methodology, together with [Aristocrat's] assumptions about elasticities ... the gambling industries* could *be imposing a net* cost *on the Australian community...*
>
> *'It is evident, then, from the example presented, that not only could the gambling industries impose a net annual* cost *on the Australian community, but that that annual cost* could, *potentially, be sizeable.*
>
> *'The truth is that a range of net benefits from substantially positive to substantially negative are all plausible, and it is not possible to know at this stage which situation actually confronts us.*
>
> *'We would ask the Commission, on present evidence, to accept in its final Report that these industries* could *be having a sizeable detrimental effect on the Australian people. The present finding, by suggesting that* only *positive net benefits are likely to accrue, is misleading.*
>
> *'The outcome* could *be adverse – and the Commission should say so.'* (Blandy & Hawke 1999a, pp. 3-4; original emphasis)

Our third objection is methodological. It questions whether we should even try to apply the concept of consumer surplus to poker machine gambling, even if we excise all problem gambling effects from it. The conceptual apparatus of neo-classical economics from which the demand curve is derived, and with it measures of consumer benefit (or utility), depend crucially on the assumption of rational choice by consumers in maximising their (individual) utility from their spending decisions. If we assume, reasonably, that punters aim to win individually in placing their bets then we face a contradiction. Some do win, but we *know* that, collectively, they will lose. They are a certainty, a sure bet, to lose in the aggregate. Hence in moving from an individual possibility to a collective certainty the calculus becomes irrational.

4
VICTORIAN AND MARIBYRNONG GAMBLING: A CASE OF DIVERTED CONSUMER SPENDING

4.1 Victorian and Maribyrnong Poker Machine Losses

This Chapter shifts the focus to the supply-side data on gaming machine gambling in Victoria and then, specifically, in the City of Maribyrnong. It is important to get to the issue rather than dwell on the plethora of national and figures available, all of which show significant trend increases in real gambling and real gaming machine expenditures for Australia, NSW, and especially for Victoria. Nonetheless the national and State data here are useful for comparison. The State data are presented in Table 4.1 and are used to construct the estimates for the City of Maribyrnong, which are presented in Table 4.2. Both tables are located at the end of this section for convenience because of their size. In section 4.2 we will extrapolate some of the data to form estimates for 1998-99. Section 4.3 will argue why gaming machine losses (expenditures) must eat into other forms of consumption spending.

Readers will notice that we have calculated separate figures for expenditure in hotels and that in clubs. While the total Victorian expenditure figure is given in *Australian Gambling Statistics 1972-73 to 1997-98* (TGC 1999), the split is not. The operators of gaming machines regard this as 'commercial-in-confidence', and there is no way to get the actual figures.[1] The numbers of machines in Victorian hotels and clubs can be obtained from the VCGA web site, and we have obtained industry views that hotel based machines are 1.5 times more profitable than those in clubs (a 60:40 split). This view is also confirmed in evidence to the Productivity Commission inquiry and from a survey of hotel and club venues contained in a VCGA-sponsored report on the employment effects of gambling (Wunsch 1998, p. 542; NIEIR 1997, p. 49).

From this information we have drawn our estimates, on the assumption that the Victorian average expenditure per machine is roughly equal to the average for a municipality, in this case Maribyrnong. Note, however, that we have not adjusted these data to account for a generally held view that machines in the country perform less well than do those in the city. Thus it may be that we have underestimated the Maribyrnong data.

4.1.1 The Regressive Nature of Poker Machine Expenditures

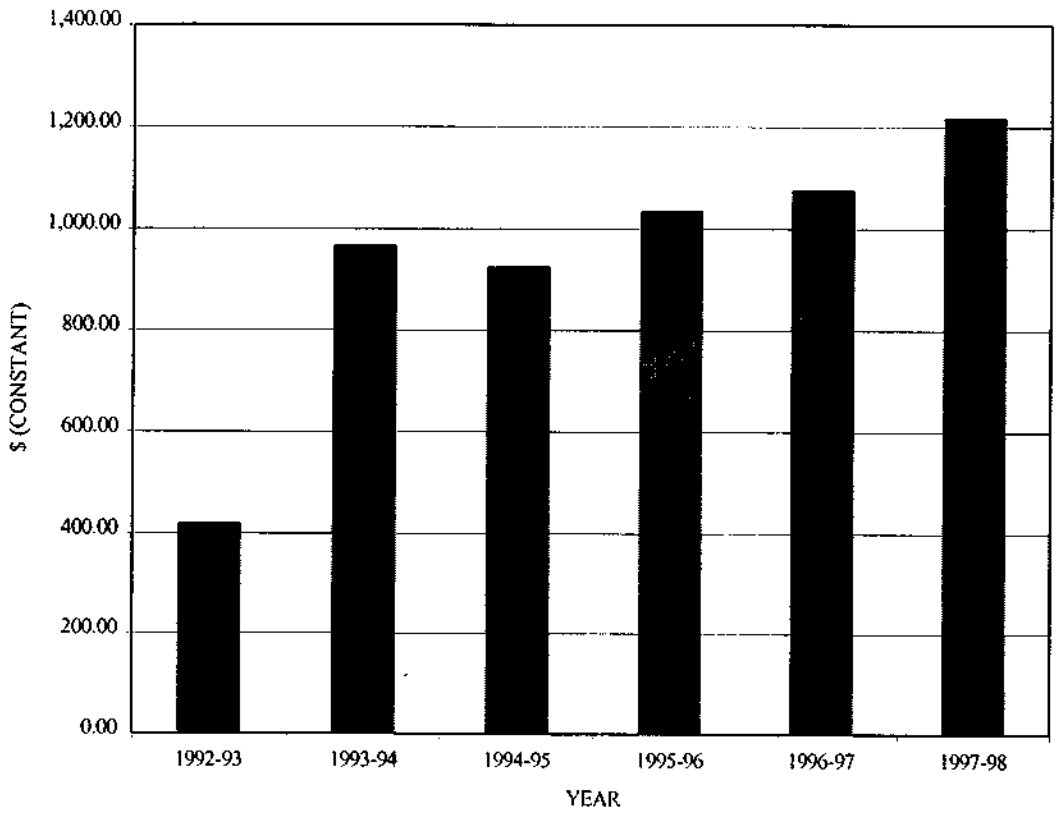
A number of facts cry out to the reader from these tables. First, both Table 4.1 and Table 4.2 show just how rapidly gaming machine gambling has grown in Victoria and in Maribyrnong. From zero at the start of the 1990s, it now

[1] However, see the provisional estimate for 1998-99 below, which uses data for the daily take per Tattersall's and Tabcorp machine given by Coster & Mitchell (1999).

comprises more than half of the total gambling expenditure in Victoria (even with casino pokie gambling excluded). Second, the sums involved are large. Third, the sums per household and per gambler in Maribyrnong are more than twice the state average, reflecting the fact that more than twice the State average number of machines per head of population are located in the municipality. Maribymong has the highest gaming machine expenditure *per capita* of gambling-age population and per household of any metropolitan municipality (excluding the City of Melbourne proper). The facts here are also illustrated in Charts 4.1 to 4.5.

This by itself is profound evidence of the regressive nature of gambling revenues in this local area, subsequently shared between State tax (33 1/3 per cent) and the Community Support Fund (8 1/3 per cent for hotels only), operators (33 1/3 per cent), and venues (25 per cent for hotels and 33 1/3 per cent for clubs).[2] Even more is this true because Maribyrnong's ranking among Melbourne municipalities on the ABS *Socio-Economic Indexes for Areas* is the lowest (ABS 1997a 2033.0). It also suggests, together with the evident growth from 1992-93 of expenditures (demand) in the wake of the number of machines (supply), that this is a 'supply-led' market with a working class demographic (see also Pentland 1997, p. 83; citing Goodman 1995, p. 180).

CHART 4.1
Expenditure per Gaming Machine per Week: Victoria and Maribyrnong 1992-93 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98, VCGA web site, Tables 4.1 & 4.2



[2] See also the comment in section 4 below on existing VCGA research, which confirms this view.

CHART 4.2
Annual Gaming Machine Losses *Per Capita* (18+): Victoria and Maribyrnong 1992-93 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98, VCGA web site, Tables 4.1 & 4.2

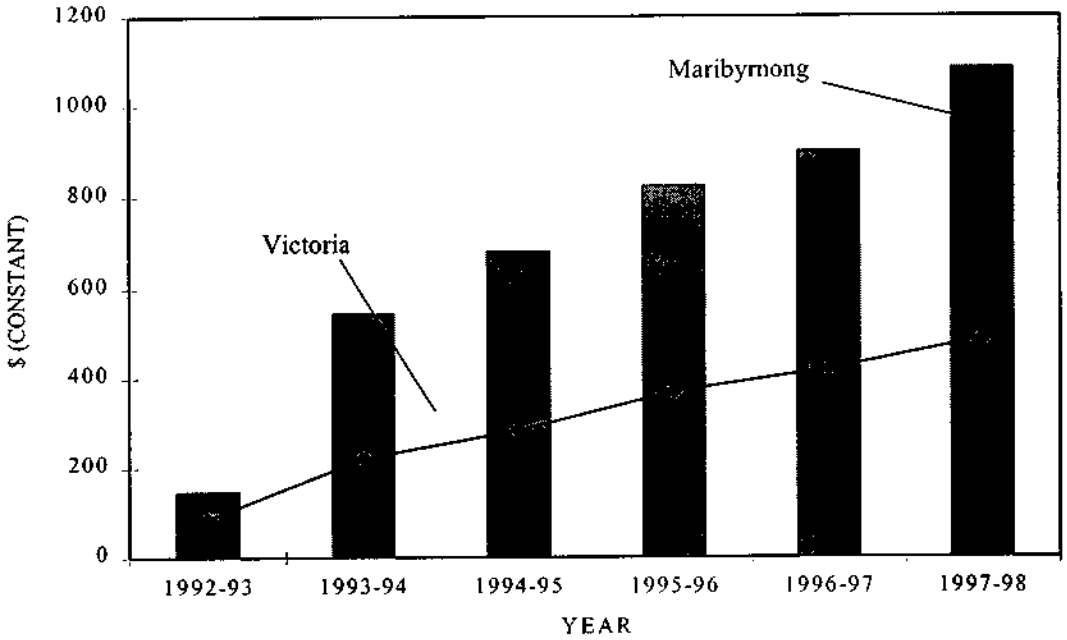


CHART 4.3
Annual Gaming Machine Losses per Household: Victoria and Maribyrnong 1992-93 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98, VCGA web site, Tables 4.1 & 4.2

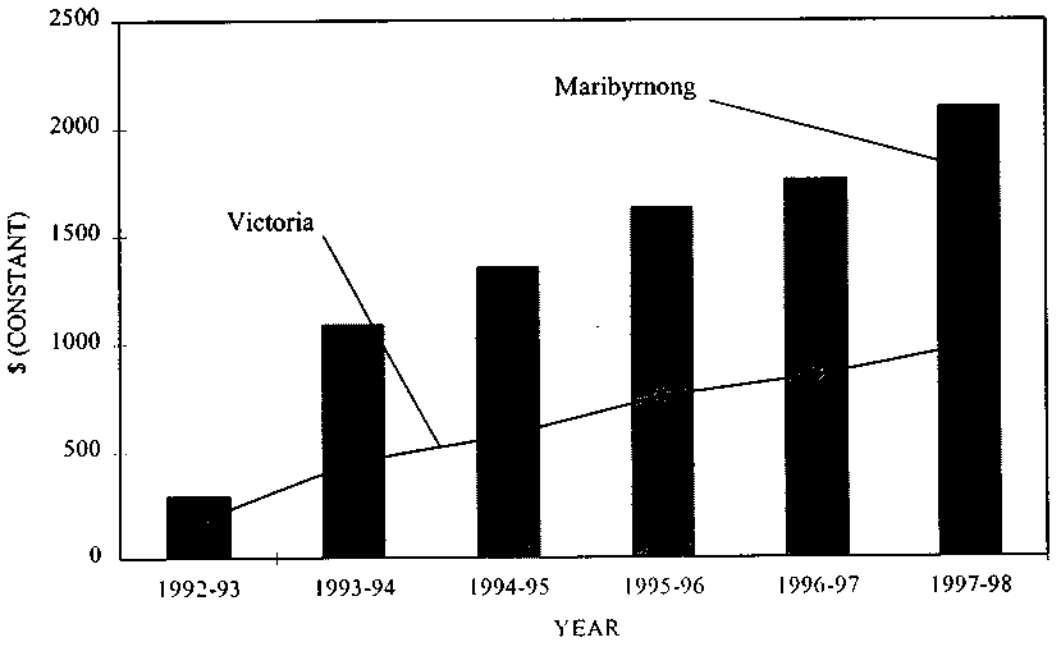


CHART 4.4

Annual Gaming Machine Losses per Household per Week: Victoria and Maribyrnong 1992-93 to 1997-98

Australian Gambling Statistics 1972-73 to 1997-98, VCGA web site, Tables 4.1 & 4.2

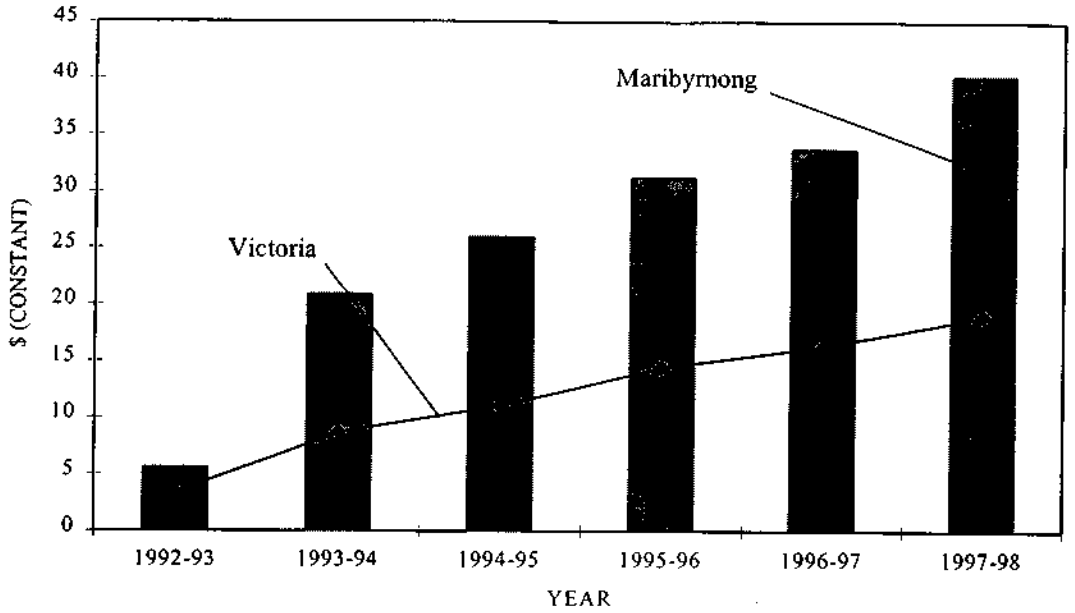
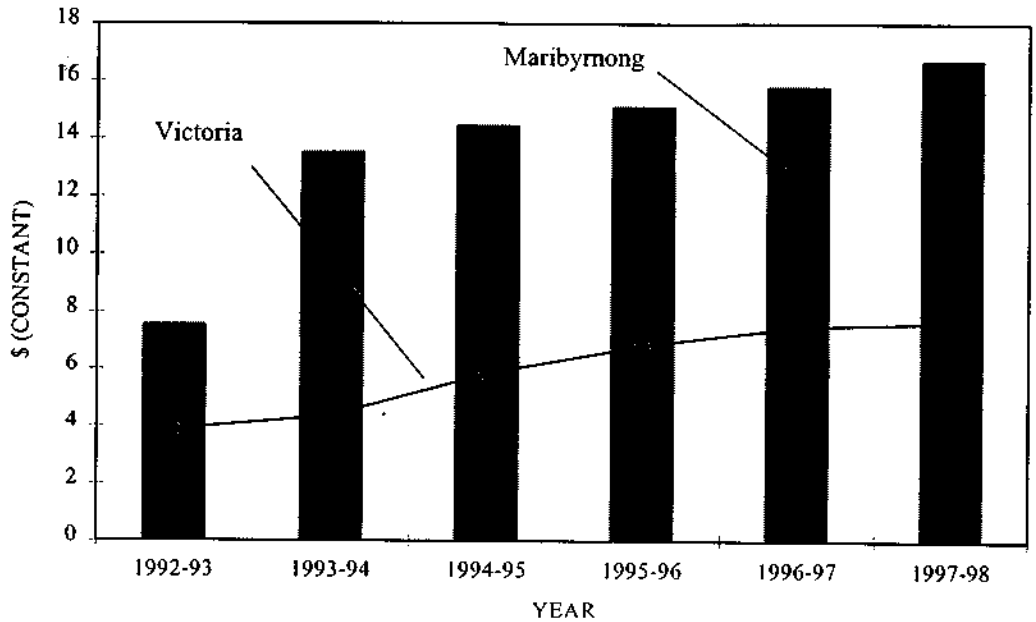


CHART 4.5

Gaming Machines per 1000 Population: Victoria and Maribyrnong 1992-93 to 1997-98

Australian Gambling Statistics 1972-73 to 1997-98, VCGA web site, Tables 4.1 & 4.2



Answering a question from Commissioner Robert Fitzgerald during the Productivity Commission inquiry, the General Manager of Corporate Affairs for Tabcorp, Tricia Wunsch, said:

> 'I would say that there is – well, again, that we target where there is the demand and that there is a skew towards more – a tendency among blue-collar workers to be attracted to this product. So it's, I suppose, a bit chicken and egg. In fact we're putting machines where there is demand.' (Wunsch 1998, p. 534)

Fitzgerald had asked if 'areas of low socioeconomic circumstance are being specifically targeted'. In response to her reply he added:

> '... Some would say that prior to the introduction of EGMs, certainly to the extent that we now have them, there was no great outpouring by Australians to have more and more access to gambling facilities. In a sense what we've seen is demand being fed by supply.' (Fitzgerald 1998, p. 534)

4.1.2 Number of Machines or Expenditure per Machine?

An interesting question arises when we examine the Victorian data more closely. Has the increase in expenditure (losses), and therefore losses per household, etc., been due mainly to the increase in the number of available machines or an increase in expenditure per machine? The answer to this question can help to shed some light on policy issues such as the cap and/or the level of machine promotion. The following simple decomposition of aggregate expenditures (E) allows some estimates to be made:

$$E = M \,.\, (E/M)$$

where M stands for the total number of machines and the term in brackets (E/M) is expenditure per machine. Data for the two terms on the right hand side are given in tables 4.1 and 4.2 at the end of section 4.1.

In a simple two-step procedure we can calculate either year-on-year proportionate changes in aggregate expenditure (E), the number of non-casino poker machines (M), and the expenditure per machine (E/M) or proportionate changes for selected years. Then we take the logarithms of those proportionate changes. Since the logarithms are additive we can then calculate the per cent contribution of the proportionate change of each of M and E/M to the proportionate change in E. This, in turn, will tell us which has been the most powerful influence and to what degree. The results for successive years for Victoria are:

1992-93 to 1993-94	13per cent (M)	87per cent (E/M)
1993-94 to 1994-95	116per cent (M)	-16per cent (E/M)
1994-95 to 1995-96	60per cent (M)	40per cent (E/M)
1995-96 to 1996-97	73per cent (M)	27per cent (E/M)
1996-97 to 1997-98	23per cent (M)	77 per cent (E/M)

What does this show? After an initial surge in expenditure per machine from 1992-93 to 1993-94, consistent with the introduction of poker machines to Victoria, the most powerful factor contributing to poker machine losses (expenditure) from 1993-94 to 1996-97 was the growth in the number of machines. During this time the number of machines grew from 14,713 to 25,962. As the number approached the cap in 1997-98, growing to 26,965, the proportionate growth in the number of machines slowed appreciably. As a result the strongest factor was the expenditure per machine. Overall, this analysis suggests clearly that an increase in the number of machines in the state will increase the total amount lost and the amount lost per machine. Apart from 1993-94 to 1994-95, the year after the initial (novelty) surge, an increase in the number of machines has been accompanied by an increased take per machine. Both contribute positively in percentage terms to aggregate losses.

A similar result can be seen if we choose the years more selectively, contrasting the following proportionate changes to the terminal year (1997-98):

1992-93 to 1997-98	41 per cent (M)	59 per cent(E/M)
1993-94 to 1997-98	72 per cent (M)	28 per cent(E/M)
1994-95 to 1997-98	53 per cent (M)	47 per cent(E/M)
1995-96 to 1997-98	46 per cent (M)	54 per cent(E/M)

That both factors have continued to contribute positively to aggregate losses says that Victoria has not yet reached the point at which, to use orthodox microeconomic terminology, marginal revenue (per machine) has started to diminish. On the view that most people gamble locally,[3] the above data imply that Victoria has a number of locally lucrative markets yet to be exploited and that, at least for a modest increase in the cap, the average take per machine has room to grow. Alternatively, if the number of machines swelled significantly, each machine could be expected to be used less intensively. In this case the average take per machine would fall even though the total take for all machines would increase (i.e., the marginal revenue would decline but not yet become negative).

The data from NSW indicate that such a scenario is likely, on the assumption that the Victorian and NSW markets are substantively the same. The average loss per machine in Victoria in 1997-98 was $63,463 for 26,965 machines at June 30 1998. In NSW, which has about 100,000 machines, the average per machine was about $29,890 per machine. Perhaps the situation is best captured in the admittedly stylised representation of Figure 4.1. It shows increasing marginal and average revenues per machine up to a point, followed by declining marginal and average revenues but increased total revenues (i.e., community losses). Total revenues grow because the number of machines increases.

In this context, the argument we have heard that the cap should be lifted because, with a fixed cap, machines will just be worked more intensively to compensate, seems incoherent. First, it is not borne out by the data: both the number of machines and losses per machine contribute to total losses. Second, the NSW experience indicates the opposite: even if machines are used less intensively the total losses still increase on the back of an increase in the number of machines. Moreover, and this seems to be the most crucial point to us, an increase in the

[3] This view was expressed to us by industry representatives.

number of machines in Victoria has been accompanied by a greater proportionate increase in the amount lost per head of gambling-age population (208 per cent compared with 573 per cent from 1992-93 to 1997-98 or 183 per cent compared with 220 per cent from 1993-94 to 1997-98). This can be seen clearly from Charts 2.6 and 4.6. Perhaps even more telling is that NSW, with its 100,000 machines, has a higher *per capita* loss on poker machines than does Victoria ($635.98 compared with $493.31 on average in 1997-98). This can be clearly seen from Table 2.2. In fact, the NSW loss per head of gambling-age population is a full 28.92 per cent higher than that in Victoria.

The argument that, with the cap, machines will just be worked more intensively in low-income areas, in which they are concentrated, is a more telling one. However, this also turns out to be incoherent because it begs two rather obvious questions. First, what is there to stop operators from working machines more intensively in low-income areas *and* other areas simultaneously. Certainly this approach would follow from a targeted profit-maximising strategy in a situation in which increased revenues accrued because of more machines and more losses per machine (as occurs still in Victoria on average). Second, isn't increasing the State cap an indirect, and more likely as not counterproductive, way to protect low-income communities? Why not go straight to the source of the problem and impose regional caps within the existing Statewide total?

FIGURE 4.1
An Australian Poker Machine Revenue Scenario?

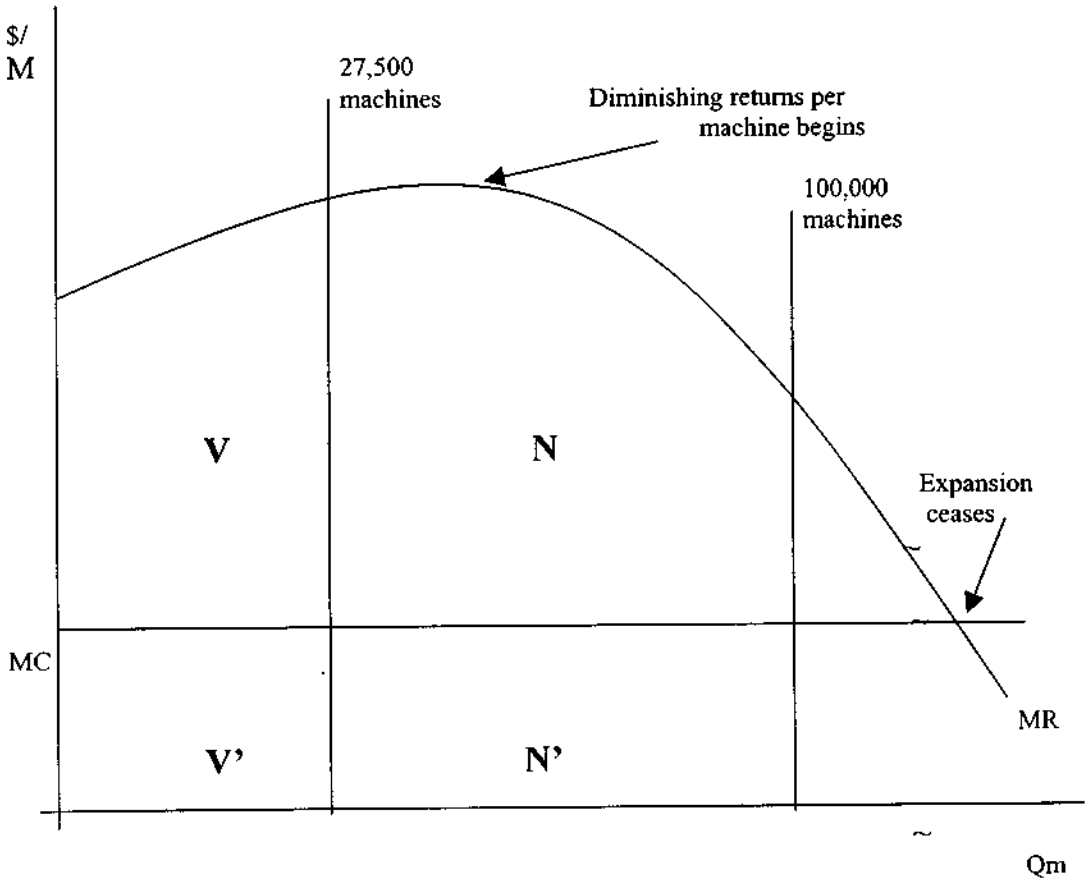


CHART 4.6
Real *Per Capita* Gaming Machine Expenditure: NSW and Victoria 1972-73 to 1997-98
Australian Gambling Statistics 1972-73 to 1997-98

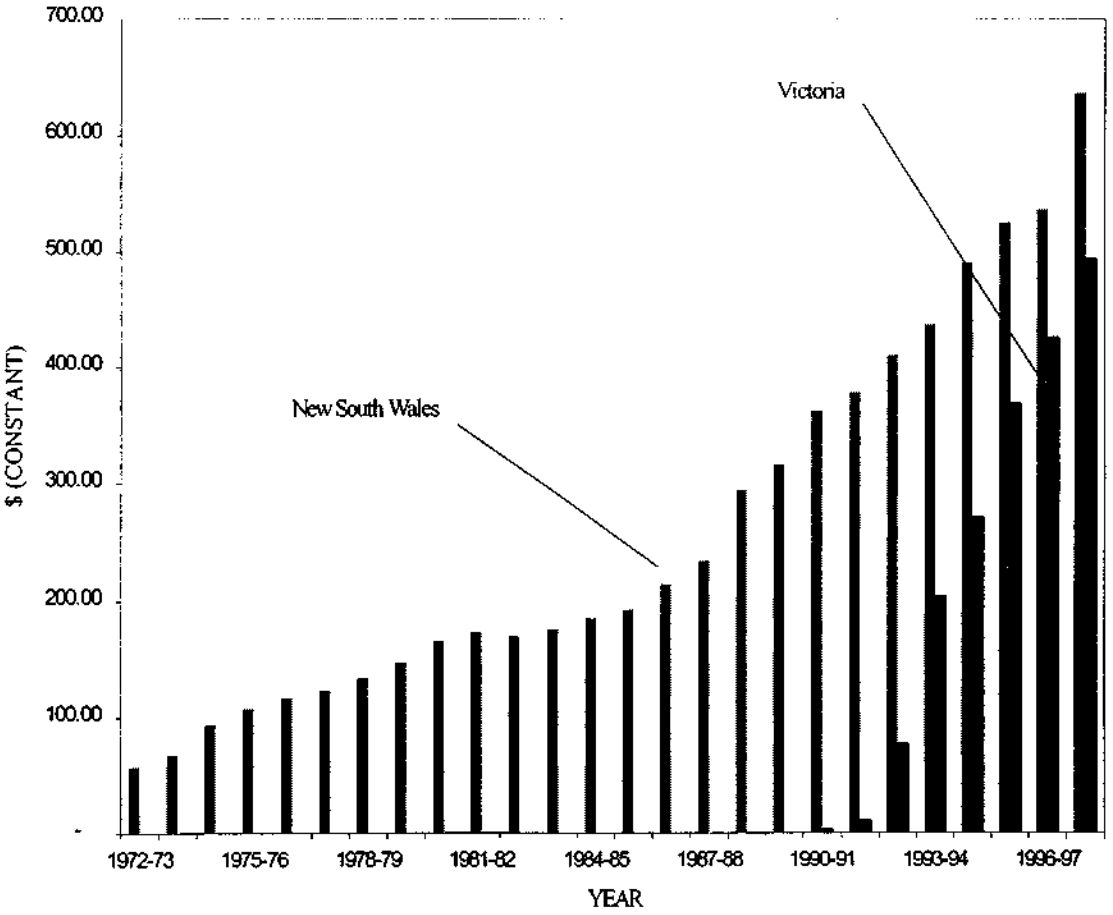


TABLE 4.1
Gaming Machine Expenditure and Other Data: Victoria 1992-93 to 1997-98

Item	Unit /date	Year					
		1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Victorian aggregates and averages							
Total gaming machine expenditure	$m const	283.26	740.61	959.17	1,263.11	1,455.80	1,711.29
Total gaming machines in hotels	Jun-30	7,779	9,527	10,371	12,253	13,633	13,735
Total gaming machines in clubs	Jun-30	5,882	8,010	9,506	11,162	12,329	13,230
Total non-casino gaming machines	Jun-30	12,970	14,713	19,877	23,415	25,962	26,965
Expenditure per gaming machine in hotels	$ const	24,210	49,816	57,407	64,136	66,620	75,872
Expenditure per gaming machine in clubs	$ const	17,062	34,380	38,943	43,561	45,315	50,962
Expenditure per gaming machine	$ const	21,840	50,337	48,255	53,944	56,074	63,463
Weekly measures							
Total gaming machine expenditure per week	$ const	5,432,737	14,204,284	18,396,133	24,225,325	27,920,924	32,821,059
Expenditure per gaming machine in hotels p.w.	$ const	464.32	955.42	1,101.02	1,230.07	1,277.71	1,455.16
Expenditure per gaming machine in clubs p.w.	$ const	327.23	659.38	746.90	835.47	869.09	977.40
Expenditure per gaming machine p.w.	$ const	418.87	965.42	925.50	1,034.61	1,075.45	1,217.17
Other Victorian data							
Population 18 years & over (18+)	#	3,338,248	3,356,801	3,385,521	3,425,734	3,468,786	3,520,077
Population all ages	#	4,472,387	4,487,570	4,517,387	4,560,155	4,605,210	4,660,885
Average household size	#	2.77	2.73	2.71	2.72	2.69	2.69
Total households	#	1,617,417	1,642,994	1,667,000	1,677,193	1,713,846	1,734,693
Gaming machine expenditure per capita (18+)	$ const	84.85	220.63	283.32	368.71	419.68	486.15
Gaming machine expenditure per capita	$ const	63.34	165.04	212.33	276.99	316.12	367.16
Gaming machine expenditure per household	$ const	175.13	450.77	575.39	753.11	849.43	986.51
Gaming machine expenditure per household per week	$ const	3.36	8.65	11.04	14.44	16.29	18.92
Gaming machines per 1000 popn. (18+)	$ const	3.89	4.38	5.87	6.84	7.48	7.66
Total gaming machine expenditure	$m curr	255	680	908	1,246	1,456	1,711
Gaming machine expenditure per household per week	$ curr	3.03	7.93	10.45	14.25	16.29	18.92
Total household disposable income (HDI)	$m curr	77,240	79,084	83,361	87,483	90,872	94,606
Total household final consumption expenditure (HFCE)	$m curr	65,113	67,163	71,131	75,593	79,278	84,947

TABLE 4.1 continued
Gaming Machine Expenditure and Other Data: Victoria 1992-93 to 1997-98

Item	Unit /date	Year					
		1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Average household disposable income	$m curr	47,755	48,134	50,007	52,160	53,022	54,538
Average household final consumption expenditure	$m curr	40,257	40,878	42,670	45,071	46,257	48,969
Household consumption/ disposable income	%	84.30	84.93	85.33	86.41	87.24	89.79
Gaming machine expenditure/HDI	%	0.33	0.86	1.09	1.42	1.60	1.81
Gaming machine expenditure/HFCE	%	0.39	1.01	1.28	1.65	1.84	2.01

Australian Gambling Statistics 1972-73 to 1997-98, ABS 5204.0, VCGA web site and data supplied directly, City of Maribyrnong data supplied directly

TABLE 4.2
Gaming Machine Expenditure and Other Data: Maribyrnong 1992-93 to 1997-98

Item	Unit /date	Year					
		1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Maribyrnong aggregates and averages							
Total gaming machines in hotels	Jun-30	108	253	313	395	417	454
Total gaming machines in clubs	Jun-30	260	405	390	340	340	350
Total non-casino gaming machines	Jun-30	368	658	703	735	757	804
Total gaming machine expenditure in hotels	$const	2,614,660	12,603,395	17,968,374	25,333,573	27,780,436	34,445,828
Total gaming machine expenditure in clubs	$const	4,436,113	13,923,851	15,187,902	14,810,901	15,406,938	17,836,554
Total gaming machine expenditure	$const	7,050,773	26,527,246	33,156,276	40,144,474	43,187,374	52,282,383
Weekly measures							
Total gaming machine expenditure in hotels p.w.	$const	50,147	241,722	344,618	485,876	532,805	660,641
Total gaming machine expenditure in clubs p.w.	$const	85,081	267,047	291,291	284,060	295,492	342,090
Total gaming machine expenditure p.w.	$const	135,228	508,770	635,909	769,936	828,296	1,002,731
Other Maribyrnong data							
Population 18 years & over (18+)	#	48,687	48,684	48,680	48,677	47,968	48,185
Population all ages	#	61,987	61,767	61,548	61,329	60,567	60,961
Average household size	#	2.56	2.53	2.51	2.49	2.47	2.45
Total households	#	24,252	24,375	24,502	24,630	24,541	24,923
Gaming machine expenditure per capita (18+)	$const	144.82	544.89	681.11	824.71	900.34	1,085.03
Gaming machine expenditure per capita	$const	113.75	429.47	538.71	654.58	713.05	857.64
Gaming machine expenditure per household	$const	290.73	1,088.28	1,353.23	1,629.89	1,759.81	2,097.78
Gaming machine expenditure per household per week	$ const	5.58	20.87	25.95	31.26	33.75	40.23
Gaming machines per 1000 popn. (18+)	$const	7.56	13.52	14.44	15.10	15.78	16.69

Australian Gambling Statistics 1972-73 to 1997-98, ABS 5204.0, VCGA web site and data supplied directly, City of Maribyrnong data supplied directly

4.2 Estimates of 1998-99 Victorian and Maribyrnong Losses

In this section we will extrapolate some of the real (constant dollar) data from Tables 4.1 and 4.2 to form estimates for 1998-99 gaming machine gambling losses (expenditures) for both Victoria and Maribyrnong. In doing so we make the assumption that the total number of non-casino poker machines in the state at June 30 in 1998 will remain the same. This is not so much a problem for Victoria, since the total (26,965) is near the 'cap' of 27,500. The number of machines in Maribyrnong, however, may be more variable over a year and thereby influence the annual losses.[4] Hence readers should keep this in mind and remember that the data are estimates. We will also offer a current dollar provisional estimate for 1998-99 based on data for the daily take per Tattersall's and Tabcorp machine given in the *Herald-Sun*:

> 'The latest Tabcorp annual report showed a 19 per cent jump in pokies' takings, from $170 to $190 a machine, a profit of $86 million...
>
> 'Tattersall's profit for the same period was a record of $130 million for its 13,500 poker machines, representing an average daily taking per machine of $185.' (Coster & Mitchell 1999, p. 19)

The estimates are contained in Table 4.3. Note that the first set of estimates (estimate 1 and 2) is a linear extrapolation based on the past rate of growth of *poker machine gambling losses per machine* in Victoria and Maribyrnong. The reason for this is that the losses overall have grown rapidly to date because both the loss per machine and the number of machines have grown. The latter must be excluded, as explained in the opening paragraph of this section. To give a more reasonable view of current trends, we have first excluded the earliest two years of actual data and used only the most recent four (1994-95 to 1997-98). That is, the estimate states what the losses would have been in the last financial year if they continued to grow as they have on average each year from 1994-95. Then we have used the most recent five years to construct another estimate: what the losses would have been in the last financial year if they continued to grow as they have on average each year from 1993-94. Including the first year of data exaggerates the estimate, so we have excluded it in both cases.

The second set of estimates (estimate 3) simply averages the Tattersall's and Tabcorp daily averages given in the above quote (Coster & Mitchell 1999, p. 19). That is, they use an average daily take per machine of $187.50.

TABLE 4.3
Estimates of 1998-99 Victorian and Maribyrnong Losses

	Estimate 1 Based on average growth from 1994-95 $	Estimate 2 Based on average growth from 1993-94 $	Estimate 3 $187.50 average take per machine per day $
Victoria	1,816,705,026	1, 742,915,836	1,924,913,368
Maribyrnong	54,167,656	51,967,526	57,342,653

Australian Gambling Statistics 1972-73 to 1997-98, ABS 5204.0, VCGA web site and data supplied directly, City of Maribyrnong data supplied directly; Coster & Mitchell 1999, p. 19

[4] The VCGA web site gives a figure of 771 machines in May.

4.3 The Argument for Consumption Substitution

So far we have argued negatively against the 'saving hypothesis', which *prima facie* seems implausible. Here we will present a plausible alternative to the 'saving hypothesis': i.e., argue why gaming machine losses (expenditures) must eat into other forms of consumption spending. This argument will be reflected in the models of local area economic impact presented in chapter 5. First, however, there are some additional comments to those made in chapter 3 that should be made about the 'saving hypothesis'. These form a backdrop to the argument set out systematically in section 4.3.2.

4.3.1 Saving and Consumption Trends

Recall that in Chapter 3 we pointed to the flaws in the Household Expenditure Survey gambling data, upon which the 'saving hypothesis' was constructed in the VCGA-sponsored report on the impact of poker gambling on the retail sector (NIEIR 1997a; see also 1997b). Even if the HES poker machine data were not flawed, however, the method used in the retail report is debatable for another reason. This is true also of the more simplistic approach that contrasts Australia's and Victoria's declining household saving ratios with increasing ratios of gambling and gaming machine spending to household disposable income (see, e.g., ACIL 1999, pp. 38-40).

Our criticism is straightforward: even if a valid association between variables is observed this does not show causation. Alternative or common factors could be at work on both variables. Correlation cannot replace a sound and plausible explanation. None is really offered in the reported cited immediately above, nor do the VCGA-sponsored reports address thoroughly the valid concerns raised over the HES gambling data.[5] Thus we are obliged to say that important aspects of the VCGA research into the economic impact of gaming machine gambling growth are seriously flawed.

This line of criticism is supported by an understanding of the extremely complex, not to say sometimes paradoxical, nature of the factors driving consumption and saving actions and outcomes. Not only do we have to contend with multiple tendencies influencing what people do, but we also have to take into account the additional problems associated with aggregation (as Keynes *et al.* were at pains to explain). Recently the Reserve Bank of Australia has commented on Australia's declining household saving ratio: i.e., an increase in the proportion of household final consumption spending to household disposable income. It cites interest rate changes, asset price increases, and confidence due to an extended period of economic growth as influencing a shift in saving and consumption propensities (RBA 1999, pp. 16-18, 24-25). Similar but even more pronounced trends towards increased consumption have been seen in other OECD countries, most notably in the United States. It is to draw a long bow to associate these trends causally with an increase in gambling. It is quite possible to have an underlying trend increase in consumption ratios and, within consumption, a proportionate increase in gambling expenditure (i.e., substitution).[6]

---

[5] We also add that the ABS warns that the HES is not a good vehicle for studying saving in general (ABS 6350.0 1995a, p. 27, 37; 1995b, p. 33).

[6] Readers may wish to re-examine the last seven rows of Table 3.

For reasons such as these Access Economics, in its submission on behalf of Tattersall's to the current Productivity Commission inquiry, has implicitly disagreed with the view on saving in the VCGA-sponsored research. It concludes that 'the over-simplistic view that gambling offsets savings appears to have *no empirical support*' (Access Economics 1999, p. A31; emphasis added). In fact it undertook an econometric assessment of the 1993-94 HES gambling data to arrive at this view, the same data that were used to opposite effect in the VCGA research. It is worth noting again that Access Economics is aware of the problems with the HES (see above), and it warns its readers to weigh these in assessing its results. It also concludes that gambling has not been 'at the expense of an increase in other expenditure' (1999, p. A31). Note that this does not deny substitution. Spending on all items in a basket of consumption goods can increase, but if it were not for substitution it is possible that the non-gambling items would have increased by more.

However, Access Economics does explain that it is hard to infer much about the issues from the aggregate picture. Instead they suggest we look more closely at household decisions (1999, p. A24). They chose to do so through the HES, which we consider is problematic. We will look instead at some of the things we already know from quantitative and qualitative research about gambling in the City of Maribyrnong (acting in proxy as a limiting case for low-income municipalities in general). This will provide a positive plausible alternative to the 'saving hypothesis'.

4.3.2 Why Poker Machine Expenditures Affect Other Consumption Spending

The main points can be summarised in a step-by-step argument:

1. Recall from chapter 3 that (as a reasonable working figure) about 40 per cent or less of the population use poker machines in a year. This is also confirmed by the Productivity Commission, which presents a figure of 39 per cent (Productivity Commission 1999 Overview, p. xiv Table 1, xv). Of these some are regular users and some are heavy users. These groups carry the burden of losses. (Again this is a reasonable working conclusion.)

2. Recall from the Maribyrnong data in section 2 that in 1997-98 the average household lost $40.23 per week or $2098 per year. Only about 40 per cent of households use machines, however, so the actual figure per gambling household is more like $100.58 per week or $5245 per year. Now consider the (modest) case that 50 per cent of losses are sustained by 25 per cent of gambling households.[7] That is, the weekly household loss rises for these households to $201.16, while the annual bill is $10,490. These are large enough figures for any household budget, but they need to be interpreted in the context of a low-income area. Note that this *is* a conservative estimate. Again, according to oral evidence to the Productivity Commission inquiry by Tricia Wunsch, General Manager of Corporate Affairs for Tabcorp:

[7] Note also that the 'effect [of EGM tax] on low-income households is exacerbated because there is a higher probability that partners of EGM gamblers will also be EGM gamblers', explained Johnson in his summary of the inner city municipalities report (1998, p. 43).

> 'One thing I will say, just in terms of where the revenue comes from, is there's a general 80:20 rule, the idea that 80 per cent of your revenue comes from 20 per cent of your customers, and that's certainly true in our business. Obviously somewhere in that 20 per cent would fall anyone that might have problems with gambling but I couldn't say how much.' (Wunsch 1998, p. 539)

The 20 per cent of heavy EGM-using households would contribute about $20,000 each year on these figures. Note that the Productivity Commission went even further, stating that:

> '... just 10 per cent of gamblers accounted for around 80 per cent of total gambling expenditure in 1997-98' (Productivity Commission 1999 Overview, p. xv).

This pushes the figure for the 10 per cent of households into the $40,000 range per year. This *prima facie* seems implausible itself. However, anything even remotely like it, or in the range between the '80:20 rule' figure of $20,000 and that based on an '80:10 split' leaves the 'saving hypothesis' in tatters.

3. Maribyrnong has the highest rate of socio-economic *dis*advantage recorded by the ABS *Socio-Economic Indexes for Areas* of any Melbourne municipality.[8] Its ranking is 887.68 (Brimbank is ranked fourth most disadvantaged at 946.389, Greater Dandenong second at 920.995, and Moreland fifth at 958.113). The 1996 Census has Maribyrnong's median weekly household income at about $250 (see also DHSA, MIAESR, & NIEIR 1997, p. 25), which (roughly) places it in the first-to-second quintiles of the HES 1993-94 income groups, though there is an obvious distribution of incomes within the municipality (see Department of Infrastructure 1998; using ABS Census Data). Tables 4.3 to 4.5 present various data to give an overview of income distribution and associated spending patterns in the area (noting, of course, that the data are now becoming dated). Note the HES data given in Table 4.3 imply that saving is non-existent in the first and second quintiles. We acknowledge, however, that the ABS warns users of the HES that its income and expenditure estimates '...do not balance for individual households or for groups of households and the difference between income and expenditure cannot be considered to be a measure of saving' (ABS 6350.0 1995a, p. 37; 1995b, p. 37). Therefore this conclusion is merely indicative.

4. In the light of 1-3 above it is hardly conceivable that such spending on gaming machines could be derived from running down savings, neither in the form of eating into bank balances nor adjusting propensities. It is implausible that this level of losses could not have eaten substantially into the ongoing consumption spending of those who use gaming machines, either relative to what it would otherwise have been or absolutely. This is emphatically so if the sums are aggregated across the years since the introduction of machines in 1992. This longer run view, indeed, is also suggested by the VCGA research (as explained above), the absence of a recession notwithstanding. We dismiss the possible view that the losses may be explained to similar effect by increased and aggregated

[8] The rankings of disadvantage work from lowest to highest.

dissaving (borrowing and/or liquidating assets) for the same reasons. There must be a time when consumption spending is affected, at a minimum relative to that level it otherwise would have reached.

Our review of the qualitative social policy, welfare, and psychological literature also leads us to this assessment (see, e.g., Brown & Coventry 1997, pp. 56-57, 65-68). When people lose their savings, which they do, the alternative consumption for which it was to be used is compromised. There is also a section of the results presented in the VCGA inner city municipalities report that seems to us to contradict the aggregate argument the report presents about savings. The following quote is drawn from the household telephone survey mentioned earlier (so we note that there may be problems of the sort we discussed under the heading of 'under-reporting'):

> 'We had planned to obtain information on the extent to which time and expenditure devoted to EGMs had been substituted for other activities but since it had been five years since the introduction of EGMs it was felt that any information relying on recollections of activities from five years before would be misleading and inaccurate. Instead we asked respondents to nominate how they would spend money and time freed up if EGMs were no longer available. We also sought to uncover whether the use of EGMs has led to financial problems for families/households... (p. 18).
>
> - 'were EGM gambling no longer possible sixty-five per cent of respondents indicated that they would not use any of the money currently devoted to EGMs, to savings. On the other hand 13 per cent indicated that they would devote all the money to savings. The remainder said that they would devote some of the money to savings. On average it emerges that respondents indicated that they would devote about 20 per cent of the money to savings;
>
> - 'the responses for "other entertainment" were very similar, indicating that on average about 20 per cent of the funds would be devoted to other entertainment. A smaller proportion, about 15 per cent would be devoted to household necessities and much the same again to other personal items;
>
> - 'other gambling would not increase much at all with nearly 90 per cent saying that they would not spend any of the money on other gambling and under one half of one per cent saying that they would spend it all on other gambling; and
>
> - 'similarly very little of the time spent on EGMs would be used on other gambling. The two main activities that would gain are other entertainment outside the home and staying at home, although interestingly it was reported that there would be a slight increase in paid work.' (DHSA, MIAESR, & NIEIR 1997, pp. 18, 45; see also p. 3)

TABLE 4.4
Income Distribution and Spending Patterns: Australia ($1993-94)

Average weekly household expenditure and other data from the 1993-94 HES	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	All households
Upper boundary of income quintile group	*266*	*457*	*741*	*1102*	..	..
Average weekly household income	*149.37*	*352.22*	*592.04*	*910.39*	*1610.38*	*723.37*
Broad expenditure group:commodity or service						
Current housing costs (selected dwelling)	46.95	63.23	82.56	97.99	121.21	82.43
Fuel and power	12.06	14.89	17.04	18.36	21.48	16.77
Food and non-alcoholic beverages	59.8	86.18	108.1	129.16	171.2	110.95
Alcoholic beverages	7.51	12.3	17.23	20.37	29.87	17.47
Tobacco	6.38	9.38	10.32	10.86	9.14	9.22
Clothing and footwear	13.78	18.58	30.4	41.42	64.38	33.72
Household furnishings and equipment	18.33	27.47	36.01	46.23	68.9	39.41
Household services and operation	19.87	26.03	30.78	35.69	45.59	31.61
Medical care and health expenses	14.8	18.36	24.27	32.59	45.73	27.16
Transport	40.26	63.22	88.13	105.2	157.2	90.86
Recreation	37.89	50.3	69.91	89.23	146.84	78.87
Personal care	5.54	8.07	10.69	13.43	19.06	11.36
Miscellaneous commodities and services	18.27	22.54	39.45	53.29	82.11	43.15
Total commodity and service expenditure	*301.44*	*420.55*	*564.89*	*693.82*	*982.71*	*592.98*
Average weekly household income less total commodity and service expenditure	*-152.07*	*-68.33*	*27.15*	*216.57*	*627.67*	*130.39*

ABS 6530.0

TABLE 4.5
Income Distribution and Spending Patterns: Australia (per cent)

Average weekly household expenditure and other data from the 1993-94 HES	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	All households
Upper boundary of income quintile group	88.24	108.67	131.18	158.83	..	..
Average weekly household income	49.55	83.75	104.81	131.21	163.87	121.99
Broad expenditure group:commodity or service						
Current housing costs (selected dwelling)	15.58	15.04	14.62	14.12	12.33	13.90
Fuel and power	4.00	3.54	3.02	2.65	2.19	2.83
Food and non-alcoholic beverages	19.84	20.49	19.14	18.62	17.42	18.71
Alcoholic beverages	2.49	2.92	3.05	2.94	3.04	2.95
Tobacco	2.12	2.23	1.83	1.57	0.93	1.55
Clothing and footwear	4.57	4.42	5.38	5.97	6.55	5.69
Household furnishings and equipment	6.08	6.53	6.37	6.66	7.01	6.65
Household services and operation	6.59	6.19	5.45	5.14	4.64	5.33
Medical care and health expenses	4.91	4.37	4.30	4.70	4.65	4.58
Transport	13.36	15.03	15.60	15.16	16.00	15.32
Recreation	12.57	11.96	12.38	12.86	14.94	13.30
Personal care	1.84	1.92	1.89	1.94	1.94	1.92
Miscellaneous commodities and services	6.06	5.36	6.98	7.68	8.36	7.28
Total commodity and service expenditure	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

ABS 6530.0

TABLE 4.6
Household Income Distribution: Maribyrnong, Melbourne, Victoria (per cent)

Weekly income	Maribyrnong households	Melbourne households	Maribyrnong individual	Melbourne individual
	%	%	%	%
Nil or -ve	1.0	0.7	6.0	7.0
$1-$119	1.0	0.7	8.6	9.1
$120-$299	25.2	15.7	41.1	29.6
$300-$499	18.1	14.5	17.4	18.6
$500-699	13.6	13.1	10.4	13.9
> $699	30.8	44.3	8.5	15.3
Not stated	10.2	10.9	8.2	6.5
Total	*100.0*	*100.0*	*100.0*	*100.0*

Department of Infrastructure 1998; using ABS Census Data

5
ESTIMATING LOCAL AREA ECONOMIC IMPACT: A CASE STUDY OF MARIBYRNONG

5.1 A 'Supply-Side' Model

The following outlines how we may attempt to use the available 'industry' data on gambling to estimate economic effects in local areas. Recall from chapter 2 that national and State figures for gaming machine expenditure are recorded electronically and are, for our purposes, accurate (TGS 1999, p. 5). Also recall from chapter 4 how, using reasonable assumptions, information on the location of poker machines in pubs and clubs throughout Victoria can be used to calculate expenditure on poker machines in municipalities.

However, it should be recognised that other 'supply-side' information is required to build a model of economic impact. Some of this information has to be regarded as provisional at this stage of the research. However, we think that the information and data below are reasonable to illustrate the points we will make, and we think also that the assumptions used to support the argument are plausible. Data limitations and assumptions will be stated clearly as the model is constructed.

Two different types of estimate will be constructed. The first set will indicate the diversion (or substitution) of potential consumption spending away from non-gambling local businesses. This, of course, will provide the basis for subsequent studies of broad employment effects. The second will look more closely at the income of the municipal residents. It will offer examples of how we might measure the hitherto neglected effect of socio-geographic income redistribution. The estimates will be constructed step-by-step, with each step or assumption numbered sequentially irrespective of section heading. This will make it clearer for the reader to follow the line of argument and the calculations in the tables below.

At the outset it is important to record that regional economics throws up complex problems. These are magnified if the region is relatively small and contained within a city. Economists often will be heard to groan when asked even to consider such problems. Such difficulties are recognised (see, e.g., DHSA, MIAESR, & NIEIR 1997, pp. 19-20), but they should not stop us from trying to propose successively better and more accurate answers. This means that it is inevitable that assumptions will have to be adopted, while over time attempting to anchor such assumptions by improving the data and concepts on which they may be based.

5.2 Broad Assumptions and Foci

The model, which we think can be useful in future research, here is based on the following assumptions, foci, and steps. We will number these so that all of the

influences are transparent and, therefore, easier to track (and criticise[1]). Some of the influences were mentioned in the previous section in point form; others were covered in the passage quoted there (Johnson 1998, p. 44; see also DHSA, MIAESR, & NIEIR 1997, p. 4). More general assumptions and foci are:

1. Annual flows in Maribyrnong

We will consider only flows per annum of expenditures in Maribyrnong, as a limiting case of low-income municipalities in general. That is, our focus is the ongoing nature of gambling activity and its alternative(s) in this low-income municipality.

2. Investment excluded

This approach excludes the effect of new investment spending, which is likely to be less significant over time at any rate. Investment, arguably, also applies to both gambling businesses and to the alternative activity of non-gambling businesses. If the latter were to consider that additional relative increases in ongoing sales gave cause to buy more equipment and/or expand or refurbish their buildings, then their investment would similarly rise (see DHSA, MIAESR, & NIEIR 1997, p. 15 n. 2).

3. Government spending excluded

The approach also excludes any impact of the sums derived from gaming machine gambling by government through tax (and the Community Support Fund), as well as the operators of the gambling machines (Tattersall's and Tabcorp), which escapes from the local area in the model. It could be argued that this part of gambling spending in Victoria (and Australia) flows back to the local area in some measure, e.g., *per capita* for the State. However, a similar thing may be said about the spending generated outside the area by the alternative activity, such as escape spending and via the wages and salaries of employees, taxes, etc. Indeed if, as has been argued, the government share has contributed to State debt reduction (VGCA 1998, p. 2) this leakage has no return effect.

4. A 'zone' approach

The border of an area is arbitrary. A key assumption here then is that we should treat it less like a walled city and more like a zone. This will allow us to account for the Maidstone-Braybrook (Maribyrnong) resident who will shop and gamble 'across the border' in Sunshine (Brimbank) and *vice versa*. When we treat the issue in this way it is possible to assume reasonably, in the context of the broad growth of gaming machine gambling across the regions with which we are concerned, that such marginal 'in-out' spending and gambling broadly balance. It would be different were, in an extreme example, one area to contain all the shops

[1] We are far from claiming that our examples, or this paper in general, are definitive. Constructive criticism is always welcome and helps to enhance knowledge of this complex question.

and its neighbour all the gambling venues. However, this is extreme, and for practical purposes here the assumption is viable.[2] This is a somewhat different issue from those of measuring 'escape spending' in general and gambling in the region's venues by, for example, employees but non-residents of a region (see below).

5. Complementary consumption excluded

Complementary consumption describes an increase in consumption spending that may occur because people using poker machines may buy drinks and meals, etc., while they attend the gambling venue. However, a little thought shows that the economic effect of this is at best illusory. People do not consume meals twice. A meal and drinks at a venue will replace a meal and drinks at home or elsewhere and thus divert spending. Note also that there are forms of complementary spending that accompany some activities that gambling has replaced (e.g., coffee and a meal while out shopping). Indeed it may well be true that patrons would have spent more elsewhere, especially when the subsidised prices of meals and free coffee available in some venues is accounted for. Complementary consumption in gambling venues is best treated as another form of substitution and will not be considered here.

5.3 Building the Model: Estimating 'Leakages'

The following are more specific assumptions and steps. The numbers here will correspond to the sequence of steps in the following tables titled 'Models of local area economic impact: 1-4'. These are grouped in this report as tables 5.1 to 5.4.

6. A 60:40 split between pubs and clubs

A 60: 40 split is assumed to apply to expenditures on poker machines in hotels *versus* those in clubs. These are used to derive aggregate losses *per annum* in hotels and clubs, assuming the Victorian average per machine applies in Maribyrnong. We suspect that this estimate is lower than it should be because the State average includes rural areas. Gaming machines in country Victoria, we understand, have a lower average take. These issues were discussed in section 2.

7. Substitution/diversion of consumption incorporated

What we have dubbed the 'saving hypothesis' is substantively unsustainable. This argument may be stated positively: over time it is more reasonable to treat gaming machine expenditure as being substantively a diversion/substitution from consumption spending. The latter is called the 'alternative' here. Two cases will be used as examples. In the first diversion is complete. In the second, following the hint in DHSA, MIAESR, & NIEIR (1997, p. 45) cited at the end of the

[2] An obvious caveat is that Highpoint shopping centre in Maribyrnong probably exerts more centrifugal than centripetal shopping force than its 'competitors' in neighbouring municipalities.

previous section we will say that 80 per cent is diverted and 20 per cent is from savings.

8. *Gaming machine 'leakages'*

Leakages of income and spending from the area in general are crucial to understand the approach. Leakages from the 'first round' of gaming machine expenditure are well known and *large*: State tax (33 1/3 per cent); the Community Support Fund (8 1/3 per cent for hotels only); and operators (33 1/3 per cent). The leakages for the alternative are less well known and much more complex to calculate. We will discuss them in subsequent points. At this stage we will not treat the profits of hotel venues as a leakage, though the region's hotels seem to be owned increasingly by larger external chains, including breweries.

9. *Retail as a prime example*

We must have some idea of (or working assumption for) the particular household spending that is being diverted or substituted for. Table 8 in the previous section gives a general view of the proportions of the major categories in household budgets obtained by the 1993-94 HES.[3] Of the expenditure categories we can infer that some of the categories are more akin to 'fixed costs' (e.g., housing, etc., health, education, and, to some degree at least, transport and communications).[4] Others are more malleable and discretionary (e.g., furnishings and household equipment, recreation, restaurants, clothing and footwear, personal care, and, to some extent at least, food, etc.). These are the ones most likely to be affected by substitution. Largely they fit under a retail heading.

10. *Other consumption 'leakages'*

There are three potential local leakages from alternative consumption spending to consider: (a) what is known as 'escape spending' or spending outside the local area; (b) the proportion to which the gaming machine losses in the area of non-residents of the local area exceed those of local residents (and hence would not necessarily[5] be spent on alternative consumption locally); and (c) the proportion of losses not from reduced consumption (from saving or dissaving). The third leak we have discussed in point 7. The second we will argue is zero. We know from discussions with some industry sources that most people gamble locally. We also know, as well, that the Crown Casino and other City of Melbourne venues draw clientele from the inner suburban areas of Melbourne (DHSA, MIAESR, &

[3] Additional tables detailing the proportions of total household final consumption expenditure data for the 1990s for Australia and Victoria may be found in ABS 5204.0 (1999, Table 2.26) and ABS 5220.0 (1999, Table 7).

[4] This breaks down for those experiencing financial problems from serious gambling losses (see, e.g., Brown & Coventry 1997, pp. 41-44, 56-57, 65-68).

[5] We say 'not necessarily' because the gaming machine losses of non-resident workers may well be spent locally on alternative consumption.

NIEIR 1997, pp. 4-5). Our assumption is that as much is 'gambled out' as is 'gambled in'. The first leak is discussed in point 11.

11. 'Escape spending'

'Escape spending' is very difficult to estimate, and we have not engaged in direct research on this subject ourselves. However, our discussions with those directly involved in local area economics as consultants or as council officers leads us to think that escape spending is not high in Maribyrnong. Most people shop locally. Factors influencing this conclusion are that the municipality has a broad range of retail and other recreational outlets, more people have no or fewer vehicles than the Melbourne average (Department of Infrastructure, p. 51), the region is relatively settled, and *a fortiori* the area has shopping facilities that attract people from outside the municipality. These points are also contained in a City of Maribyrnong background report (Waugh 1998) and a draft Retail Overview kindly made available to the authors. Our discussions suggest it is reasonable *for this example exercise* to use an escape spending factor of about 20 per cent for the sorts of items referred to in point 9, but we register the view that practical local area economic analysis is needed to arrive at a more accurate figure (e.g., based on retail floor space analysis, etc.). Hence we also present an example estimate using a very conservative figure of 50 per cent escape spending (coupled with the more conservative estimate for consumption version given in point 7).

5.4 Completing the Model: Value Added and Multipliers

The remaining steps combine features of traditional local area and regional economics, using concepts such as value added and multipliers, with a much simplified input-output approach. Key to understanding the next steps is that income earned from any initial spending rounds will continue to be spent on other consumption goods and services by those who earned it. Some will be spent locally and some will leak from the area. Moreover, some additional production will be generated locally from this spending. This, in turn, will generate more spending via the local incomes earned, and so on.

12. Income shares and induced production

The steps above give estimates of initial gaming machine and consumption leakages. Remaining from the initial expenditures are estimates of the initial shares of the gaming machine venues (hotels and clubs) and the businesses that would have benefited from alternative consumption displaced. These shares are broken down into gross operating surplus (profit before all taxes in this case), employee compensation (principally wages and salaries), and induced production (production by other businesses of goods and services that enter into the output of the venues and alternative, e.g., retail, production). Not all of the latter are, of course, produced locally. We have used a rough estimate that 20 per cent are produced within the region for this exercise. All of the estimates for respective shares here are otherwise derived from ABS *1994-95 Input-Output Tables* (1999

5209.0, Tables 10 and 15) for the categories in which gambling is located (9301) and retail trade (5101). This very broad approach is not ideal, and subsequent research will need to look more closely at the (preferably local) structure of gaming machine venues and the alternatives. The release in July of the final version of *1997-98 Gambling Industries Australia* (see ABS 1999) is a useful starting point. So too will be a closer analysis of the data in existing and future VCGA-sponsored research.

13. Multiplier effects

The above allows the example exercises to estimate the total initial value added for the area. From this it may be reasonable to deduct the gross operating surplus of hotel venues as a leakage from the area, as noted above. Club operating surpluses we treat as local. However, we have yet to account for multiplier effects derived from the wages and salaries, etc., paid in the initial round being spent on consumption goods in successive rounds. For convenience again we have used the relevant multipliers in ABS *1994-95 Input-Output Tables* (1999 5209.0, Table 15) to estimate the overall effect, then reduced it as above to account for actual local production.

14. 'Estimate of total local value added'

The resulting item 'Estimate of total local value added' is one of the two effects we set out to examine. This shows the relative effects on what is genuine *local production or output* of gaming machine expenditure *versus* its alternatives. It is this figure that has local implications for jobs.

15. 'Resident share of local value added'

However, the item 'Estimate of total local value added' does not in itself describe the effect on the incomes of local residents of gaming machine expenditure *versus* its alternatives. The reason is that not all venue or alternative business employees (and owners) live locally. In fact various estimates have been given for the proportion of the workforce who live in the municipality (cf. DHSA, MIAESR, & NIEIR 1997c, pp. 2, 37-38; Waugh 1998; Maribyrnong City Council 1999). The figure of about 20 per cent, based on journey to work data, will be used as a reasonable approximation. The result is the second of our desired effects, namely 'Resident share of local value added', which gives a clue to what we somewhat ponderously described in the introduction as 'socio-geographic income redistribution'.[6]

[6] By way of analogy this is a GNP-type measure of local impact (Armstrong 1993; Bleaney *et al.* 1992).

5.5 Summary of Example Outcomes

Four example outcomes are presented as Table 10 below. The first three have been signalled in the 15 steps above. The fourth is derived from our reading of the approach followed in NIEIR (1997b, section 7.10). All of the example outcomes here show that economic production, employment, and income in Maribyrnong would have been higher *had the expenditures on gaming machines not been diverted from other consumption spending*. The main reason for this is to be found in the fundamentally different structures of gaming machine activity and its alternative. Simply, the former leaks considerably in the first round via tax and the oligopoly (or duopoly) position of Tabcorp and Tattersall's (and subsequently, if we account for the leakage of hotel owners' profits). The tables show that that a small proportion of such expenditures 'remain'. Gaming machine expenditures are regressive both individually and for low-income areas on this account.

Now it should be said that the approach above could be made much more sophisticated in many ways. We have not really taken into account the precise structure of local economic activity, as would be the case if we used input-output or other more complex models. Our multipliers are general and would benefit greatly from being made much more industry specific. Obviously work is needed in this area. However, given the large leakages involved with gaming machine losses, we suspect that added sophistication, while necessary if resources permitted, would not alter the broad picture. Practical research on 'escape spending' and who uses local venues would add more to the final results, as would a clearer and up to date account of work and residential patterns.

For these reasons we stress that the figures given in the tables in this section are in the category of 'best guess' examples rather than final research results. This, of course, is in keeping with the nature of this research, as outlined in the introduction: a critical survey of the issues and a methodological assessment of ways to go about researching the local area economic impact of the growth in gaming machine gambling in low-income areas.

TABLE 5.1
Models of Local Area Economic Impact (Example 1)

Model of local area economic impact: 1

City of Maribyrnong	Factors, proportions, & multipliers			Leakages and amounts remaining and net effects			
Items	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Hotels plus clubs less alternatives
				$	$	$	
Local gaming machine expenditure				34,445,828	17,836,554	52,282,383	
Initial gambling leakages							
Gambling tax	0.33	0.33	0.00	11,481,943	5,945,518		
Operators' share of expenditure	0.33	0.33	0.00	11,481,943	5,945,518		
Community support fund	0.08	0.00	0.00	2,870,486	0		
				25,834,371	11,891,036		
Initial consumption leakages							
Proportion of gaming machine expenditure from non-residents greater than from residents			0.00			0	
Proportion of gaming machine expenditure not from reduced consumption			0.00			0	
Escape spending			0.20			10,456,477	
						10,456,477	
Remaining for venue/alternative consumption				8,611,457	5,945,518	41,825,906	
Comprising:							
Gross operating surplus (GOS)	0.38	0.38	0.19	3,242,749	2,238,857	7,976,073	
Employee compensation (EC)	0.22	0.22	0.29	1,852,788	1,279,201	12,256,696	
Induced production (intermediate goods & services)	0.41	0.41	0.48	3,515,920	2,427,460	20,232,769	
Local content of induced production	0.20	0.20	0.20	703,184	485,492	4,046,554	
Value added in local induced production	0.52	0.52	0.52	363,027	250,641	2,089,083	
Estimate of total initial local value added				5,458,564	3,768,699	22,321,852	-13,094,589
Estimate of total initial local value added less hotel gross operating surplus				2,215,816	3,768,699	22,321,852	-16,337,338
Total initial gambling/consumption leakages				32,230,013	14,067,855	29,960,531	
Consumption induced effects (multiplier)							
Value added in induced consumption	0.92	0.92	1.27	5,027,338	3,470,972	28,438,040	
Local content of value added in induced consumption	0.20	0.20	0.20	1,005,468	694,194	5,687,608	
Estimate of total local value added				*6,464,032*	*4,462,894*	*28,009,460*	*-17,082,535*
Estimate of total local value added less hotel gross operating surplus				3,221,283	4,462,894	28,009,460	-20,325,284
Total gambling/consumption leakages				36,251,883	16,844,633	52,710,962	385,553
Resident share of local value added (proportion of workforce)	0.20	0.20	0.20	*644,257*	*892,579*	*5,601,892*	*-4,065,057*

TABLE 5.2
Models of Local Area Economic Impact (Example 2)

Model of local area economic impact: 2

City of Maribyrnong Items	Factors, proportions, & multipliers			Leakages and amounts remaining and net effects			
	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Hotels plus clubs less alternatives
				$	$	$	
Local gaming machine expenditure				34,445,828	17,836,554	52,282,383	
Initial gambling leakages							
Gambling tax	0.33	0.33	0.00	11,481,943	5,945,518		
Operators' share of expenditure	0.33	0.33	0.00	11,481,943	5,945,518		
Community support fund	0.08	0.00	0.00	2,870,486	0		
				25,834,371	11,891,036		
Initial consumption leakages							
Proportion of gaming machine expenditure from non-residents greater than from residents			0.00			0	
Proportion of gaming machine expenditure not from reduced consumption			0.20			10,456,477	
Escape spending			0.20			8,365,181	
						18,821,658	
Remaining for venue/alternative consumption				8,611,457	5,945,518	33,460,725	
Comprising:							
Gross operating surplus (GOS)	0.38	0.38	0.19	3,242,749	2,238,857	6,380,858	
Employee compensation (EC)	0.22	0.22	0.29	1,852,788	1,279,201	9,805,357	
Induced production (intermediate goods & services)	0.41	0.41	0.48	3,515,920	2,427,460	16,186,215	
Local content of induced production	0.20	0.20	0.20	703,184	485,492	3,237,243	
Value added in local induced production	0.52	0.52	0.52	363,027	250,641	1,671,266	
Estimate of total initial local value added				5,458,564	3,768,699	17,857,482	-8,630,218
Estimate of total initial local value added less hotel gross operating surplus				2,215,816	3,768,699	17,857,482	-11,872,967
Total initial gambling/consumption leakages				32,230,013	14,067,855	34,424,901	
Consumption induced effects (multiplier)							
Value added in induced consumption	0.92	0.92	1.27	5,027,338	3,470,972	22,750,432	
Local content of value added in induced consumption	0.20	0.20	0.20	1,005,468	694,194	4,550,086	
Estimate of total local value added				*6,464,032*	*4,462,894*	*22,407,568*	*-11,480,643*
Estimate of total local value added less hotel gross operating surplus				3,221,283	4,462,894	22,407,568	-14,723,392
Total gambling/consumption leakages				36,251,883	16,844,633	52,625,247	471,269
Resident share of local value added (proportion of workforce)	0.20	0.20	0.20	*644,257*	*892,579*	*4,481,514*	*-2,944,678*

TABLE 5.3
Models of Local Area Economic Impact (Example 3)

Model of local area economic impact: 3

City of Maribyrnong	Factors, proportions, & multipliers			Leakages and amounts remaining and net effects			
Items	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Hotels plus clubs less alternatives
				$	$	$	
Local gaming machine expenditure				34,445,828	17,836,554	52,282,383	
Initial gambling leakages							
Gambling tax	0.33	0.33	0.00	11,481,943	5,945,518		
Operators' share of expenditure	0.33	0.33	0.00	11,481,943	5,945,518		
Community support fund	0.08	0.00	0.00	2,870,486	0		
				25,834,371	11,891,036		
Initial consumption leakages							
Proportion of gaming machine expenditure from non-residents greater than from residents			0.00			0	
Proportion of gaming machine expenditure not from reduced consumption			0.20			10,456,477	
Escape spending			0.50			20,912,953	
						31,369,430	
Remaining for venue/alternative consumption				8,611,457	5,945,518	20,912,953	
Comprising:							
Gross operating surplus (GOS)	0.38	0.38	0.19	3,242,749	2,238,857	3,988,036	
Employee compensation (EC)	0.22	0.22	0.29	1,852,788	1,279,201	6,128,348	
Induced production (intermediate goods & services)	0.41	0.41	0.48	3,515,920	2,427,460	10,116,385	
Local content of induced production	0.20	0.20	0.20	703,184	485,492	2,023,277	
Value added in local induced production	0.52	0.52	0.52	363,027	250,641	1,044,542	
Estimate of total initial local value added				5,458,564	3,768,699	11,160,926	-1,933,663
Estimate of total initial local value added less hotel gross operating surplus				2,215,816	3,768,699	11,160,926	-5,176,411
Total initial gambling/consumption leakages				32,230,013	14,067,855	41,121,457	
Consumption induced effects (multiplier)							
Value added in induced consumption	0.92	0.92	1.27	5,027,338	3,470,972	14,219,020	
Local content of value added in induced consumption	0.20	0.20	0.20	1,005,468	694,194	2,843,804	
Estimate of total local value added				*6,464,032*	*4,462,894*	*14,004,730*	*-3,077,805*
Estimate of total local value added less hotel gross operating surplus				3,221,283	4,462,894	14,004,730	-6,320,553
Total gambling/consumption leakages				36,251,883	16,844,633	52,496,673	599,843
Resident share of local value added (proportion of workforce)	0.20	0.20	0.20	*644,257*	*892,579*	*2,800,946*	*-1,264,111*

TABLE 5.4
Models of Local Area Economic Impact (Example 4)

Model of local area economic impact: 4

City of Maribyrnong	Factors, proportions, & multipliers			Leakages and amounts remaining and net effects			
Items	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Base on Hotels	Based on Clubs	Alternative constmption (e.g., retail)	Hotels plus clubs less alternatives
				$	$	$	
Local gaming machine expenditure				34,445,828	17,836,554	52,282,383	
Initial gambling leakages							
Gambling tax	0.33	0.33	0.00	11,481,943	5,945,518		
Operators' share of expenditure	0.33	0.33	0.00	11,481,943	5,945,518		
Community support fund	0.08	0.00	0.00	2,870,486	0		
				25,834,371	11,891,036		
Proportion of gaming machine expenditure from non-residents greater than from residents			0.00			0	
Proportion of gaming machine expenditure not from reduced consumption			0.00			0	
Escape spending			0.20			10,456,477	
						10,456,477	
Remaining for venue/alternative consumption				8,611,457	5,945,518	41,825,906	
Comprising:							
Gross operating surplus (GOS)	0.33	0.33	0.33	2,870,486	1,981,839	13,941,969	
Employee compensation (EC)	0.33	0.33	0.33	2,870,486	1,981,839	13,941,969	
Induced production (intermediate goods & services)	0.33	0.33	0.33	2,870,486	1,981,839	13,941,969	
Local content of induced production	0.20	0.20	0.20	574,097	396,368	2,788,394	
Value added in local induced production	0.67	0.67	0.67	382,731	264,245	1,858,929	
Estimate of total initial local value added				6,123,703	4,227,924	29,742,867	-19,391,240
Estimate of total initial local value added less hotel gross operating surplus				3,253,217	4,227,924	29,742,867	-22,261,726
Total initial gambling/consumption leakages				31,192,611	13,608,630	22,539,516	22,261,726
Consumption induced effects (multiplier)							
Value added in induced consumption	0.50	0.50	0.50	3,061,851	2,113,962	14,871,433	
Local content of value added in induced consumption	0.20	0.20	0.20	612,370	422,792	2,974,287	
Estimate of total local value added				*6,736,073*	*4,650,716*	*32,717,153*	*-21,330,364*
Estimate of total local value added less hotel gross operating surplus				3,865,587	4,650,716	32,717,153	-24,200,850
Total gambling/consumption leakages				33,642,092	15,299,800	34,436,663	14,505,230
Resident share of local value added (proportion of workforce)	0.20	0.20	0.20	*773,117*	*930,143*	*6,543,431*	*-4,840,170*

5.6 'Externalities': Costs Borne by Families and the Community

This report is incomplete in one important respect. If we are to embrace the full economic impact of poker machine gambling, we need at least to describe the actual dollar costs to society as a whole as well as the financial and personal costs and benefits to individual machine users and their families. In the language of economics such costs are 'externalities', and they 'include the specific costs of support of problem gamblers by government and private charitable and community organisations, but also include a general cost in the form of damaged social infrastructure' (Johnson 1998, p. 44).

From our own research and literature review it has become clear that the persons most adversely affected by the introduction of EGMs into Victoria from 1992 are principally those already socially disadvantaged sections of the Victorian community (see, e.g., Ayres-Wearne & Farnsworth 1999; Brown, Johnson, Jackson & Wynn 1999; Brown & Coventry 1997). There seems to be a clear, but rarely stated policy on the part of the EGM industry to 'target' working class areas in the clear belief that poker machine playing is a working class leisure activity (see sections 2.1 and 4.1 above). Yet in a crucial sense it is irrelevant whether the industry 'consciously' targets low-income areas.[1] The fact remains that this is where the machines are located. At the end of June 1998 there were about 17 machines pre adult in Maribyrnong. In Booroondara, which covers the suburbs Camberwell, Hawthorn, and Kew, on the other hand, the ratio of EGMs to population over the age of 18 is one machine for 408 persons (see charts 2.1 and 2.2).

Many low-income people do indeed choose to spend their recreational dollars playing the machines. It would be condescending to instruct them to do otherwise. However, what we cannot dismiss as a serious social policy concern is the fact that social welfare, legal agencies, and local governments are reporting increasing demand for their services from those economic problems that are totally or partly related to family income being lost to EGMs. Some of these people are referred to as being in the 1 to 3 per cent of the population people for whom gambling has become a serious problem. As the Productivity Commission noted in its Draft Report:

> 'Some people representing the [gambling] industries have argued that there is little that *is* special about them: they are just like other entertainment businesses competing for the consumer's dollar – and they are excessively burdened by government regulation and taxation. But this was not the predominant view. Even within the gambling industries themselves, many of those with whom the Commission met accepted that their industry was indeed "special"; in the words of one senior executive, gambling was seen as a "questionable pleasure".
>
> 'The "questionable" nature of the gambling industries reflects their ability to provide entertainment that is harmless to many people, while being a source of great distress – and even of financial and personal ruin – to a significant minority. The imbalance between the consequences for each group can be very marked, a feature not found in other entertainment industries. (Alcohol consumption

[1] Local government bodies have presented oral and other evidence to the researchers that disputes the commonly-heard industry claim that EGMs are concentrated in low-income areas because that is where the pubs and clubs are. The have data to show that there are just as many venues available in more affluent regions (City of Maribyrnong unpublished data).

provides a closer analogy.) (Productivity Commission 1999 Overview, p. xvi; original emphasis)

Indeed we know just how large the average losses can be for some families (see section 4.3.2). We also know that the 'significant minority' is socio-geographically concentrated and that it provides the gaming machine gambling industry in Victoria with its regular cash flow and the State Government with increasing amounts of gambling taxes.

The effects of problem gambling on the family are the erosion of living standards and cohesion. As families are affected by either a drop in, or even absence of, disposable funds, individual members begin to experience a decline in both their mental and physical well being. The good will and financial resources of extended family members and friends run out over time. This, in turn, leads to social isolation. Children are neglected and, in some cases, abused. Having exhausted all legal methods of obtaining money, many problem gamblers see no other alternative than to turn to crime. Agencies report that many such clients initially either minimise losses or do not reveal that gambling is the main source of their problems. It takes time and a number of counselling sessions before clients begin to reveal the extent of their financial predicaments. Trust and respect between counsellor and client needs to be established before many people feel confident to divulge their stories. Many clients express shame about what they have done to themselves and their families and friends.

The BreakEven Western Service, which operates in Melbourne's western suburbs, has reported that 68 per cent of their clients gambled on gaming machines. They went on to point out that women made up 53 per cent of those requesting support from the service. BreakEven Western also suggested that gambling is a new 'entertainment' option being taken up by increasing numbers of women. Women who, in the past, would not have entered a pub because they felt threatened or uncomfortable, perceive the new gambling venues as places in which they can enter and be safe (BreakEven Western 1998, p. 4).

There is increasing concern on the part of agencies about the involvement of women at gambling venues. Traditionally gambling has been perceived as a male pastime, and historically women have suffered from their partners' excessive gambling. Given that the divorce rate in Australia is around 45 percent of marriages in the first 7 years, more and more women are now becoming the sole provider of family income. Although more women are in the workforce now than 20 years ago, they are disproportionately to be found in low-paid and casual employment and, for many, their employment prospects are precarious. Agencies have expressed serious concern about the mental, physical, and general well being of women and their children due to problem gambling. Women are still the main providers of child care, and this is clearly a major reason for the agencies' involvement in the debate over the rapid increase in poker machine gambling in this State.

It is clearly beyond the scope of this project to estimate the massive social costs that accrue because of the externalities associated with gaming machine gambling growth. However, suitable methodologies can be developed that involve not only estimating the direct costs and labour provided by welfare and various government agencies as well as the opportunity costs of the decline in the mental, physical, and general well being of those affected. Obviously the task is complicated. The Productivity Commission, however, has made an important first step (1999 Draft Report).

6
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The Workplace Studies Centre of Victoria University research presented here on behalf of the Brimbank, Greater Dandenong, Maribyrnong and Moreland councils has raised again the negative economic impact that gaming (poker) machine gambling can have on local economies. The research, *a fortiori* in the case of low-income areas, disputes the prevailing view in research sponsored by the Victorian Casino and Gaming Authority. This view is that 'Victoria has experienced significant and measurable net economic benefits flowing from increased gaming opportunities' (VCGA 1998).

Our study finds that the VCGA research conclusions are based on a shaky premise. This is that increased pokie expenditure (or loss) from 1992 did not substitute for alternative forms of consumption, such as retail spending, but were effectively an economic 'add-on' because they were financed from saving. This, in turn, was reflected in a lower household saving ratio. We do not think that this proposition is sustainable. In similar vein, the Productivity Commission's recent Draft Report *Australia's Gambling Industries* argued:

> 'While gaming machines' share of total gambling expenditure has risen, its growth appears not to have displaced other gambling modes – which have largely maintained their previous growth trends – but rather has been at the expense of other consumption items or savings (future consumption).' (Productivity Commission 1999 Overview, p. xii; see also p. xix; Vol. 1, pp. 4.9-4.10, 5.16-5.24, 7.45, 9.22-9.27, 9.33-9.41)

In the context of generally increased consumption expenditures in Australia (and other countries, such as the United States) household saving ratios have declined. However, it is to draw an extremely long bow indeed to establish a causal link between increased gambling and lower saving ratios at the aggregate level. First, a multitude of much more powerful influences, from sustained economic growth to rising asset prices and lower real interest rates, have affected the consumption-saving proportions (RBA 1999, pp. 16-18, 24-25). Saving and consumption relations are notoriously tricky at the macroeconomic level. Second, gambling expenditures (losses) more than doubled *per capita* in real terms in Australia over past decade to $819. They trebled in Victoria to $921. It is more plausible that these higher losses were 'financed' in large measure by reducing other consumption spending relatively. In low-income areas this diversion or substitution may well have been absolute. That is, actual revenues of local retail business may have fallen while the general trend was upwards.

Our argument is both critical of the existing research and offers a reasonable alternative explanation:

1. The original research for the VCGA in 1997 used the ABS *1993-94 Household Expenditure Survey* statistically to compare spending patterns of gambling and non-gambling households. However, massive under-reporting of poker machine losses in the HES (only about 10 per cent of total losses were admitted by respondents) means that we cannot necessarily trust it to model the economics of gambling. This is so even if the data are adjusted to account for the much higher actual expenditures and/or other assumptions are made. The ABS also expresses such concerns about the HES in its submission to the current Productivity Commission Inquiry into Australia's Gambling Industries (ABS 1998).
2. We estimate, using accurate industry data from the Tasmanian Gaming Commission and the VCGA, that City of Maribyrnong residents lost a staggering $52.25 million in 1997-98 on the pokies alone. This represents on average $2098 *per annum* or about $40 per week per household. These figures are double the Victorian averages, and they are out and out losses net of any winnings. Yet Maribyrnong is ranked by the ABS as Melbourne's lowest-income and most disadvantaged municipality.
3. We also reckon that fewer than 40 per cent of households use pokies each year. The actual figure per gambling household is therefore more like $100.58 per week or $5245 per year. In addition, losses are shared disproportionately: heavy gamblers lose more. Consider that, modestly, 50 per cent of losses are sustained by 25 per cent of gambling households. The weekly loss rises for these households to $201.16, while the annual bill is $10,490. We also note that the gambling industry acknowledged to the Productivity Commission that 80 per cent of losses were borne by 20 per cent of regular EGM users (Wunsch 1998, p. 539).
4. These sums are large enough for any household budget, but they need to be interpreted in the context of a low-income area where saving is low or non-existent on average. It is thus hardly conceivable that such spending on gaming machines would not have affected consumption seriously. This is emphatically so if the sums are aggregated across the years since the introduction of machines in 1992. This longer run view, indeed, is also suggested by the VCGA research. There must be a time when consumption spending is cut, at a minimum relative to the level it otherwise would have reached. Our review of the social policy, welfare, and psychological case studies reinforces this assessment.

Moreover, when use example 'best guess' models of the above data in the Maribyrnong economy, by contrasting expenditure on gaming machines with the alternatives (e.g., retail), we find (on most reasonable assumptions) that local production is lower and income flows outwards. Pokie expenditures are individually and socio-geographically regressive: they fall heaviest on low-income households and they leak heavily from low-income areas like Maribyrnong. More than one-third of each pokie dollar goes directly out to the State government via gambling tax and the Community Support Fund Levy. Another one-third goes to the oligopoly (duopoly) operators, Tattersall's and Tabcorp. Large hotel organisations also take their share. By contrast the usual local area economic leakages such as retail 'escape spending' are less severe.

Overall, the Workplace Studies Centre research reinforces what many have been concerned about all along: the negative economic impact that gaming machine gambling can have on local economies. However, it is important to point out the limitations of this research. The purpose of this study was specifically to discuss methods that may be used to assess the economic effects of poker-machine gambling in low-income Victorian municipalities. Thus the study concentrated on *economic* impact, with a *local-area* emphasis on *low-income* municipalities. Moreover, the form of this study was *methodological* rather than applied. In this sense it may be regarded as a contribution to an ongoing program of applied local area economic analysis and research.

6.2 Recommendations

The scope of this project has been modest and focused on 'how to' research problems and issues. Our recommendations, which follow, are similarly modest and target the needs of an ongoing program of applied local area economic analysis and research. Nonetheless some relevant policy-oriented recommendations also arose from the content of this study. Thus the recommendations here are presented in three parts: policy, policy framework, and research. However, we have not repeated various recommendations contained, for instance, in local government responsible gambling policies and the welfare-social impact literature. Others are more qualified to advance these issues, which for most part remained outside the scope of our study.

6.2.1 Policy recommendations

The 'cap'

1 To limit further negative local area economic effects, and to recognise that Victorian poker machine gambling losses, in aggregate and per household, are caused both by increasing losses per machine (intensity) *and* growth in machine numbers (extensity):

- **the current Statewide 'cap' of 27,500 non-casino gaming machines should be maintained.**

2 To limit particular local area economic effects in low-income areas, and to recognise that Victorian metropolitan poker machines and poker machine losses are concentrated heavily in a number of low-income areas:

- **a mechanism to permit regional and/or municipal 'caps' should be developed.**

Advertising and marketing strategies

3 To improve 'consumer' education, and to recognise that maintaining the Statewide 'cap' and introducing regional and/or municipal 'capping' mechanisms will likely result in stronger efforts by the machine owners and venue proprietors to work each machine more intensively:

- **stricter regulation of poker machine advertising and marketing strategies should be imposed; and**
- **more hard-hitting public gambling awareness campaigns should be developed.**

The public's right to know

4 To ensure both that the public has a right to know and that the relevant local government authorities have the most accurate information on which to base their decisions:

- **all local area and venue-specific expenditure (loss) data currently held 'commercial-in-confidence' by the Victorian Casino and Gaming Authority should be placed on the public record.**

6.2.2 Policy framework recommendations

5 To give local government more decision-making power to regulate local gambling, and to recognise that the ability of local communities to influence the planning policies affecting their areas has been restricted in recent years:

- **the '25 per cent rule', which makes local planning approval unnecessary if a venue locates its machines in an area smaller than 25 per cent of its floor space, should be abolished;**
- **more broadly defined social and economic criteria should be recognised explicitly in making planning decisions, in turn raising the need to develop something akin to a 'social and economic impact statement' before planning approval is granted;**
- **any regional and/or municipal 'capping' mechanism should explicitly recognise a significant role for local government; and**
- **the existing powers held by local government concerning advertising of poker machine gambling (e.g., signage) should be reinforced.**

6.2.3 Research recommendations

Avoid survey methods

6 To recognise that survey based techniques used to obtain data about gambling expenditures (losses) are problematic because of under-reporting, and because any complicated measures needed to overcome such shortcomings would be prohibitively expensive at the local level:

- **local governments should avoid survey methods to research gambling losses and local area economic impacts, targeting instead those research methods and associated policy changes need to obtain accurate (supply-side) data collected by the industry.**

Refining the supply-side model

7 To make the estimates and assumptions used in this study more accurate, and to recognise that the study's purpose has been to develop a supply-side model for ongoing research:

- **further applied local area gambling research into the following issues is needed: the employment, wage, and profit structures of local gambling venues; etc.**
- **further applied local area economic research into the following issues is needed: the proportion of goods and services produced locally that are bought as inputs in local economic activity (e.g., local bakery output sold in sandwiches in local shops); local area multipliers; levels of 'escape-spending' in particular regions and municipalities; etc.; and**
- **the model, improved by better and locally specific data, should be applied to other regions and municipalities as well as Maribyrnong.**

Venue-based research

8 To short-circuit the need for more roundabout (and problematic) research methods, such as sample resident surveys, it is important to press harder for industry co-operation and openness to research. In particular:

- **independent venue-based research should be undertaken on a range of issues that presently we assume to be the exclusive ('commercial-in-confidence') preserve of industry market research (e.g., post codes of players); and**
- **appropriate and ethical methods for such research should be developed by multi-disciplinary teams of gambling researchers.**

Regulation of advertising and marketing

9 To ensure policy developments concerning broader and local regulation of gambling advertising and marketing are soundly based:

- **expert media and legal research into the implications of and most effective strategies for gambling advertising and marketing regulation is needed.**

Consolidating various research threads

10 To ensure that the recent expansion in the range and quality of research into the social and economic impact of gambling is better understood:

- **a comprehensive critical summary of recent social and economic studies into gambling, including a check-list of key issues and arguments, should be produced.**

Industry structure

11 Though it was outside the brief for this work, it became clear during our research that issues of poker machine ownership and industry structure demanded more attention than we could pay to them. Thus, to ensure that such concerns are addressed:

- **research be initiated into the appropriateness of policy concerning, for example, the duopoly ownership of poker machines in Victoria, chain ownership of venues, distribution of machines between clubs and pubs, distribution of machine net takings (losses), taxation and Community Support Fund distributions, and other related issues.**

6.2.4 Concluding remarks

A mere 11 recommendations have been made here. The policy and policy framework recommendations are modest and reasonable. However, if implemented, we think they would make a considerable contribution. The research recommendations are more open-ended but, we think, mark out the logical and *necessary* next steps.

GLOSSARY

This glossary has been reproduced in abbreviated form directly from the publication *Australian Gambling Statistics 1972-73 to 1997-98* (TGC 1999). Our reasons were to ensure (1) that the terminology used is consistent with that used in the principal data source and (2) that readers are aware of how the principal data source is constructed. Readers should note, however, that throughout our report we have used other descriptive terms (e.g., poker machine gambling) whose meaning is either obvious or clear from the context in which it is used.

Definitions from *Australian Gambling Statistics 1972-73 to 1997-98*

Casino gaming: ... wagers at casinos and include wagers on table games, gaming machines, and keno systems. Casino gaming is a highly regulated industry within Australia. Casino games have set rules and fixed odds (approved by the relevant jurisdiction), designed to return a percentage from each wager to the casino operator. Jackpots are becoming increasingly wide spread and include both cash and product. In recent times gaming machines have impacted on the figures reported, and it is expected that this trend will continue as newer forms of machines are available on the market.

CPI Deflator: The All Groups Index (weighted average of 8 capital cities) has been used as the deflator for conversion to real values.

Expenditure: ... the net amount lost, or, in other words, the amount wagered less the amount won, by people who gamble. Conversely, by definition, it is the gross profit (or gross winnings) due to the operators of each particular form of gambling.

Gambling: ... the (lawful) placement of a wager or bet on the outcome of a future uncertain event. It is treated as an activity that can be clearly divided into two distinct areas - **racing** related and **gaming** related. Where the word *gambling* is referred to in this publication, it is intended to imply the total of racing *and* gaming activities. The statistics presented in this publication are for legalised regulated gambling for which accurate figures are available, and hence do not represent turnover or expenditure on all forms of gambling.

Gaming: ... all legal forms of gambling other than racing, such as lotteries, poker and gaming machines, casino gaming, football pools and minor gaming (which is the collective name given to raffles, bingo, lucky envelopes and the like).

Gaming machines: All jurisdictions, except Western Australia, have a statewide gaming machine (poker machine) network operating in clubs and/or hotels. The data reported under this heading does not include gaming machine data from casinos. Gaming machines accurately record the amount of wagers played on the machines so turnover is an actual figure for each jurisdiction. In most jurisdictions operators must return at least 85 per cent of wagers to players as winnings, either by cash or a mixture of cash and product. Gaming machines have the capacity to be linked in order to offer major jackpots.

Household Disposable Income (HDI): ... is defined as the total net income (whether in cash or kind, and after deduction of direct taxes) available to households in the region in question. Information on HDI has been taken from Australian Bureau of Statistics figures for the relevant years. The figures for the current year are estimates only, and are revised in subsequent years as better data become available. All calculations involving the use of HDI figures may be subject to change in later years as and when amended figures are released by the Bureau.

Population: ... data from the Australian Bureau of Statistics (1998a) have been used to calculate the figures presented in the per capita tables. These population data exclude all persons under the age of 18 years. Population figures for the latest year are estimates only, and are revised in the subsequent year when actual data become available. The per capita calculations are undertaken by dividing the relevant financial data for a given financial year by the eighteen-and-over population in the region at the commencement of the financial year. Estimates for the populations of the states and territories for the period commencing 30 June 1972 and ending 30 June 1997 are presented in the following table.

Racing: ... comprises legal betting with bookmakers and totalisators, both on racecourses and off-course (TAB). It is related to betting on the outcome of horse and greyhound races, and, in recent times, on some other specified sporting events such as football matches.

"Real" Variables: ... refer to data that have had the effects of inflation removed. This is achieved by specifying a base year (in this instance 1997-98) and 'deflating' each previous year by the CPI deflator. This means that all data in a table showing *real* values may be compared directly, the effects of inflation having been removed.

Turnover: ... is an expression used to describe the amount wagered. This does not include any additional charges that may also be paid at the point of purchase, such as selling agents commission in the case of lotteries.

REFERENCES

Access Economics 1999, 'Submission on behalf of Tattersall's', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

ACIL Consulting 1999, 'Submission on behalf of Crown, Jupiters, Star City, Tabcorp, Tab, and Tattersall's', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Armstrong, H.W. 1993, 'The Local Income and Employment Impact of Lancaster University', *Urban Studies*, Vol. 30, no. 10, pp. 1653-1668.

Armstrong, H.W. & Taylor, J. 1985, *Regional Economics and Policy*, Hemel Hempstead, U.K., Philip Allan.

Australian Bureau of Statistics (ABS) 1999a, *1997-98 Australian System of National Accounts* (Cat. no. 5204.0), Canberra, ABS.

_____ 1999b, *1994-95 Input-Output Tables*, Canberra, ABS.

_____ 1999c, *1997-98 Gambling Industries Australia: Preliminary* (Cat. no. 8647.0), Canberra, ABS.

_____ 1999d, *1997-98 Gambling Industries Australia* (Cat. no. 8684.0), Canberra, ABS.

_____ 1999e, *Retail Trade Australia* (Cat. no. 8501.0, monthly), Canberra, ABS.

_____ 1998a, 'Submission by the Australian Bureau of Statistics', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

_____ 1998b, *Auspend Advanced Client Guide* (Cat. no. 6257.0), Canberra, ABS.

_____ 1997a, *Socio-Economic Indexes for Areas '96* (Cat. no. 2033.0), Canberra, ABS.

_____ 1997b, *1994-95 Gambling Industries Australia* (Cat. no. 8684.0), Canberra, ABS.

_____ 1996, *1993-95 Household Expenditure Survey Australia: Detailed Expenditure Items* (Cat. no. 6535.0), Canberra, ABS.

_____ 1995a, *1993-95 Household Expenditure Survey Australia: Summary of Results* (Cat. no. 6530.0), Canberra, ABS.

_____ 1995b, *Information Paper Australian National Accounts: Introduction to Input-Output Multipliers* (Cat. no. 5246.0), Canberra, ABS.

_____ 1995c, *A ProvisionalFramework for Household Income, Consumption, Saving and Wealth* (Cat. no. 6549.0), Canberra, ABS.

Australian Retailers' Association 1998, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Australian Vietnamese Women's Welfare Association. 1998, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Ayres-Wearne, V. & Farnsworth, L. 1999, *Peninsula on Pokies*, Melbourne, Good Shepherd Youth and Family Services.

Blandy, R. & Hawke, A. 1999a, 'Submission by Professor Richard Blandy and Dr Anne Hawke on Behalf of Hon Nick Xenophon MLC', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Blandy, R. & Hawke, A. 1999a, 'Supplementary Submission by Professor Richard Blandy and Dr Anne Hawke on Behalf of Hon Nick Xenophon MLC', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Blaszczynski, A., Dumlao, V., Lange, M. 1997, ' "How Much Do You Spend Gambling?" Ambiguities in Survey Questionnaire Items', *Journal of Gambling Studies*, Vol. 13 (3), Fall 1997, pp. 237-52.

Bleaney, M.F., Binks, M.R., Greenaway, D., Reed, G.V., & Whynes, D.K. 1992, 'What Does a University Add to its Local Economy', *Applied Economics*, Vol. 24, pp. 305-11.

Borderlands Cooperative Inc. 1999, *Literature Review: Theories of Problem Gambling and Research on Prevalence and Social Impact,* Report to Boroondara City Council.

BreakEven-Western Problem Gambling Service 1998, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Brown, S., Johnson, K, Jackson, A.C., & Wynn, J. 1999, *Who Picks Up The Tab? Issues and Dilemmas for Services Providing Mainstream Support to Women Affected by Gambling in Melbourne's Western Metropolitan Region*, Melbourne, Women's Health West.

Brown, S. & Coventry, L. 1997, *Queen of Hearts: The Needs of Women with Gambling Problems*, Melbourne, Financial and Consumer Rights Council.

City of Greater Dandenong 1998, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

Coster, P. & Mitchell, G. 1999, 'A Miserable Partnership: Why the Poor Have Become Pokies' Best Customers', *Herald-Sun*, 1 July, Melbourne, p. 19.

Deakin Human Services Australia, Melbourne Institute of Applied Economic and Social Research, & National Institute of Economic and Industry Research (DHSA, MIAESR, & NIEIR) 1997, *Impact of Gaming Venues on Inner City Municipalities*, Melbourne, VCGA.

Department of Infrastructure (Victoria) 1998, *Melbourne in Fact: 1996 Census Statistics for Melbourne's Local Government Areas*, Melbourne, Department of Infrastructure.

de Vaus, D.A. 1990, *Surveys in Social Research*, 2nd edn, Allen & Unwin, Sydney.

Dickerson, M.G., Baron, E., Hong, S.M., & Cottrell, D. 1997, 'Estimating the Extent and Degree of Gambling Related Problems in the Australian Population: A National Survey', *Journal of Gambling Studies*, Vol. 13(2), pp. 161-78.

Doughney, J., 1999, 'Quotation, Information Questionnaire, and Related Documents: Preliminary Local Area Gambling Research: Economic Effects', Melbourne, Workplace Studies Centre.

Doughney, J. & Kelleher, T. 1999, 'The Impact of Poker Machine Gambling on Low-Income Municipalities: A Critical Survey of Key Issues', interim report and paper presented to *Regulating Local Gambling* conference, Victorian Local Governance Association, 17 June, Melbourne.

Fielding, N. 1993, 'Qualitative interviewing', in *Researching Social Life*, ed N. Gilbert, Sage Publications, London.

Fitzgerald, R. 1998, 'Commissioner's questions 24 November', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Transcripts, Productivity Commission.

Gilbert, N. 1993, 'Research, theory and method', in *Researching Social Life*, ed N. Gilbert, Sage Publications, London.

Goodman, R. 1995, *The Luck Business*, The Free Press, New York.

Johnson, D. 1998, 'Shedding the Wowser Image: Gambling in Victoria, *Australian Social Monitor*, No 2 (December), Melbourne Institute of Applied Economic and Social Research.

Leftwich, R. & Eckerk, R. 1985, *The Price System and Resource Allocation*, 9th edn., Chicago, The Dryden Press.

Livingstone, C. 1998, 'Poker Machine Gambling in Maribyrnong: Public Discussion Paper', Melbourne, Maribyrnong City Council.

Maribyrnong City Council 1999a, 'Preliminary Local Area Gambling Research: Economic Effects – Short Form Contract and Specification', Melbourne, Maribyrnong City Council.

_____1999b, *Draft Retail Overview*, Melbourne, Maribyrnong City Council.

_____1998a, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries,* hhtp://www.pc.gov.au/, Productivity Commission.

_____ 1998b, *Poker Machine Gambling in Maribyrnong: Public Discussion Paper*, Melbourne, Maribyrnong City Council.

Market Solutions 1997, *Fifth Community Gambling Patterns Survey & Second Positive and Negative Perceptions of Gambling Survey*, Melbourne, VCGA.

McMillen, J., Ryan, N, & Quiggin, J.1996, 'Social and Economic Reports: Potential Impacts of the Cairns and Brisbane Casinos', Brisbane, Queensland University of Technology.

Moore, S.M. & Ohtsuka. K. 1997, 'Gambling Activities of Young Australians: Developing a Model of Behaviour', *Journal of Gambling Studies*, Vol. 13(3), Fall 1997.

National Institute of Economic and Industry Research (NIEIR) 1997a, *The Impact of the Expansion in Gaming on the Victorian Retail Sector*, Melbourne, VCGA.

_____ 1997b, *The Effect of Gambling on Employment in Victoria*, Melbourne, VCGA.

Newell, R. 1993, 'Questionnaires', in *Researching Social Life*, ed N. Gilbert, Sage Publications, London.

Neuman, W.L. 1991, *Social Research Methods: Qualitative and Quantitative Approaches*, 2nd edn, Allyn & Bacon, Boston.

Ohtsuka, K., Bruton, E., Deluca, L., Borg, V., 1999, 'Sex Differences in Pathological Gambling using Gaming Machines', *Psychological Reports,*1997-80, pp. 1051-1057.

Pentland, J. 1997, *Picking Up the Pieces: What is the Effect on Financial Counselling Services of Increased Gambling in Victoria*, unpublished

Master of Social Science Thesis, Faculty of Social Science and Communications, Melbourne, RMIT University.

Praxion Consultants 1995, *The Effect of Electronic Gaming Machines upon Charity and Non Profit Organisations in Victoria*, Melbourne, Victorian Casino and Gaming Authority.

Productivity Commission 1999, *Australia's Gambling Industries*, Draft Report, Overview, Part I, Part II, Canberra, Productivity Commission.

_____ 1998, 'Issues Paper', *Productivity Commission Inquiry into Australia's Gambling Industries*, hhtp://www.pc.gov.au/, Productivity Commission.

Quiggin, J. 1998, 'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries*, hhtp://www.pc.gov.au/, Productivity Commission.

Reserve Bank of Australia (RBA) 1999, *Reserve Bank of Australia Bulletin*, May, Sydney, Reserve Bank of Australia.

Roy Morgan Research 1999, *Sixth Survey of Community Gambling Patterns and Perceptions*, Project Report, Melbourne, Victorian Casino and Gaming Authority.

Tasmanian Gaming Commission (TGC) & Centre for Regional Economic Analysis University of Tasmania 1999, *Australian Gambling Statistics 1972-73 to 1997-98*, Hobart, TGC.

Victorian Casino and Gaming Authority (VCGA) 1999, 'Executive Summary', Roy Morgan Research 1999, *Sixth Survey of Community Gambling Patterns and Perceptions*, http://www.gambling.vcga.vic.gov.au, VCGA.

_____1998, 'Executive Summary', *Summary of Research Findings: 1996-97 Research Program*, http://www.gambling.vcga.vic.gov.au, VCGA.

Waugh, J. 1998, *Background report: Key Economic Data, trends and Economic Development Needs*, Melbourne, City of Maribyrnong.

Wesley Gambling Counselling Service (NSW) 1998'Submission', *Productivity Commission Inquiry into Australia's Gambling Industries*, hhtp://www.pc.gov.au/, Productivity Commission.

Women's Health West 1998, *Women, Gambling, Culture, Health: An Annotated Bibliography Featuring Articles About Women and the Health Impacts of Gambling from a Regional and Cultural Perspective*, Melbourne, Women's Health West, School of Social Work University of Melbourne, VicHealth.

_____ 1997, *Who Wins? Women and Gambling in the Western Metropolitan Region of Melbourne (A Pilot Study)*, Melbourne, Women's Health West.

Wunsch, T. 1998, 'Oral submission 24 November', *Productivity Commission Inquiry into Australia's Gambling Industries*, hhtp://www.pc.gov.au/, Transcripts, Productivity Commission.