

**2004 Amendments Inquiry:
From Agencies concerned
about gambling harm.**

IGA SUBMISSION RE 2004 LEGISLATION

Joint Submission from Gambling Harm Elimination Agencies

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IGA Submission re 2004 Legislation

Joint Submission from Gambling Harm Elimination Agencies

SECTION 1

EXECUTIVE SUMMARY

This joint Submission has been prepared by organisations referred to as “the concerned sector” in past IGA reports. The collaborating organisations are listed in Appendix 1.

These organisations share a vision of a South Australian community that is fair and prosperous, and free from gambling harm.

We acknowledge that gambling is part of the South Australian social and economic landscape. We also recognise that the introduction of poker machines into hotels and clubs has increased problem gambling tenfold. It is the consensus of the ‘concerned sector’ that the current level of problem gambling is far too high.

We are, therefore, seeking the provision of appropriate policies and programs that will minimise the harm of problem gambling, particularly from poker machines. We recognise that there is no single solution to the difficulties arising from problem gambling, and understand the measures to curb gambling harm that were dealt with in the 2004 Legislation to be part of a suite of measures. The combined effects of these measures, coupled with codes of practice that are enforced, smoking bans and measures we outline in this Submission are based on evidence that indicates that they will lead to useful levels of reduction in gambling harm in South Australia.

In assessing the impact of the 2004 Legislation we have used ‘evidence based’ methodologies and have drawn the following conclusions:

1. Reducing the number of poker machines is an effective mechanism for reducing gambling harm.
2. The 2004 Legislation would lead to greater reductions in gambling harm by reducing the number of poker machine venues.
3. Although the legislated target for machine reductions has not been achieved, the growth in problem gambling has been capped and appears to have peaked, and a slow decline in levels of problem gambling is anticipated due to the slow decline in NGR since the reduction of gaming machines began in July 2005.

4. The current trading mechanism for reducing poker machine numbers and the number of venues, we suggest, will not result in achieving the 3000 machine reduction within a reasonable timeframe.
5. Problem gambling levels in the community are higher in lower socio-economic areas.
6. No Clubs One venues have been established to date, therefore responsible evaluation of this aspect of the legislation is not yet possible.

These conclusions lead us to make the following suggestions for priority recommendations:

Recommendations

1. The priority Electronic Gaming Machine (EGM) gambling policy is proposed as being a reduction in the number of **venues**. This is even more crucial than reducing the number of machines, although this also needs to be achieved. Three measures are suggested to achieve this:
 - removing the legislated price cap for EGM entitlements to enable the 'market' established by the 2004 legislation to operate more freely
 - increasing the maximum number of machines permitted per venue to up to 50 entitlements.
 - Removing one poker machine for every 3 purchased.
2. The legislated target of removing 3000 poker machines is also a priority and one that, we suggest, needs to be met by December 2007. This target could be achieved by:
 - Removing the legislated price cap for EGM entitlements to enable the market (see 1 above) to operate.
 - Ensuring that at least 3 trading rounds are conducted by December 2007.
 - Setting a timeline of December 30th 2007 to achieve the target of 12,000 EGM entitlements.
 - If this target is not met, each venue with 16 or more EGM entitlements would forfeit one entitlement.
 - Should the target still not be met by these measures, then a ballot of venues would be conducted with each venue 'drawn' forfeiting a license until the required State target is met.
3. That a State goal be the halving of problem gambling levels by 2011 (5 years), with reducing the number of poker machine venues to 400 a central strategy to achieve this goal.

4. Regional caps for the number of poker machines would be useful, particularly for provincial cities and metropolitan communities with a SEIFA index for disadvantage less than 900 (based on 2001 census)
5. That Gaming Machine Licensing Guidelines include limits on locations where new or re-locating venues can be established, based on preventing additional venues in locations where:
 - Current gaming losses per head are greater than \$550 per annum
 - The SEIFA index is below 950, based on 2001 indexes..
 - Existing EGM entitlements per 1000 adults, for the SLA, exceed the State Average (at June 2006)
6. That gaming machine entitlements be required to be renewed every five years, with a rolling renewal process commencing in 2010.
7. There is value in the Office of the Liquor and Gambling Commissioner reporting on the actions and outcomes associated with the powers and responsibilities given to the Commissioner by the Gaming Machines (Miscellaneous) Amendments Act 2004 in their Annual Report.
8. We also encourage the Independent Gambling Authority to update its Smartcard Report (commissioned by the 2004 legislation) by, for example, June 2007 to trial a preferred approach to pre-commitment, particularly for people who are regular gambling customers.

Summary

We are convinced that the primary objective, in reducing gambling harm needs to be the reduction of the number of venues with poker machines. This can be achieved in the short term by completing the legislated reduction of 3,000 gaming machine entitlements.

We also propose a medium term (5 year) goal of halving the level of gambling harm with a key strategy to reduce the number of poker machine venues to 400.

The Agencies suggest that the next most effective means of reducing gambling harm are:

- Applying pre-commitment approaches using 'smart-card' technologies, starting with voluntary trials of technologies and applications
- Compliance and enforcement to ensure that there are high levels of compliance with legislation and codes of practice.

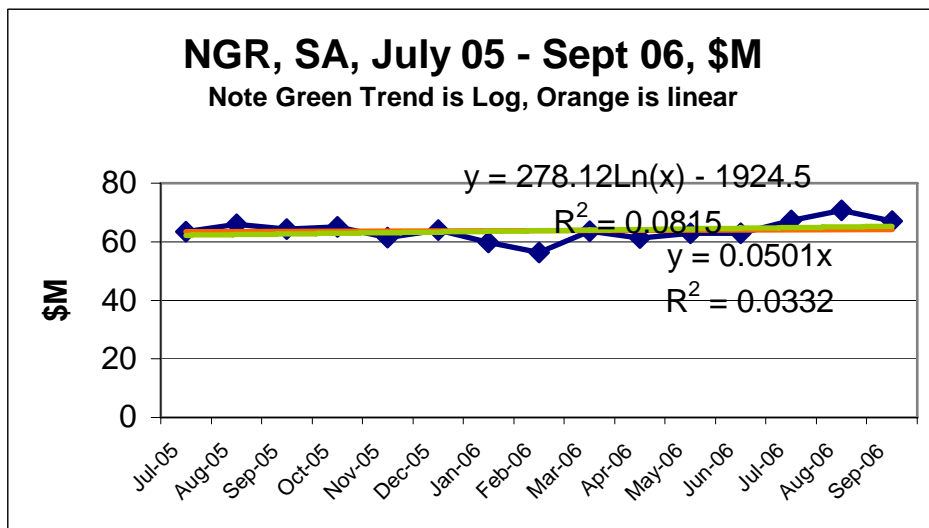
Note re Impacts of Recent Data

The majority of this submission was prepared before the release of data for the July to September 2006 quarter, by the Office of the Liquor and Gambling Commissioner. This data showed that Net Gambling Revenue for the three months was higher than for the previous quarter and higher than for the corresponding period in 2005.

Month	Jul 05	Aug 05	Sept 05	Apr 06	May 06	Jun 06	Jul 06	Aug 06	Sept 06
NGR \$m	63.5	65.93	64.39	61.28	62.83	62.9	67.28	70.78	67.00

These results for the winter' 06 quarter were a little higher than we anticipated, but do not significantly change our analysis or recommendations.

In Section 2, issue 1 we use three approaches to consider the impacts of reduced numbers of poker machines. For Approach 1, Trend analysis, the trend line of NGR since July 2006 has changed with the additional data, as shown below:



Using both log and linear trend lines show very similar results, and show a very small positive slope coefficient, indicating that the trend is now for a very gradual increase in NGR over time, compared to a declining trend for the period to June 06. However, the trend line slope is still flatter than for the period before Jun 05, so our general observations and conclusions have not changed significantly, using this approach, with the new data.

Our second approach, regression analysis, is robust because the data used is for an extended period and so three additional observations will have minimal impact on the model developed. In particular our conclusions about the importance of reducing the number of venues has not changed.

We also note that our regression analysis recognises seasonality as significant and so predicts an increase in NGR, compared to previous months, for the winter quarter, reinforcing the 'robustness' of the model.

Section 2

Introduction

This submission is presented jointly by a group of collaborating organisations with experience in providing services to people with problem gambling and extensive history in forming gambling related public policy.

Further detail about the collaboration is provided as **Appendix 1**

We recognise that the focus of this Inquiry is to reduce gambling harm in South Australia, and to review progress to date in achieving that objective which can be, in part or full, attributed to the impact of the 2004 legislative amendments in the SA Parliament through the Gaming Machines (Miscellaneous) Amendments Act 2004.

The submitting organisations and members of the 'writing group' have had extensive involvement in the various debates and processes leading up to this Inquiry, including:

- 1992-4 Lobby actions opposing the introduction of poker machines into hotels and clubs in SA.
- 1997-8 Submission and presentations to the Social Development Committee Review of the impacts of poker machines in SA.
- 2001 Membership of the Gaming Machine Review Group, Chaired by Hon. Graham Ingerson. (this group led to the formation of the IGA, though initial focus was on capping poker machine numbers).
- 2002-4 Written submissions and presentations to every IGA Inquiry
- 2003 Submission to IGA Review of Poker Machine numbers
- 2004 Meetings with the majority of SA parliamentarians in the lead up to the debate about the Legislation in the Parliament.

We recognise this Inquiry as part of a continuing process intended to reduce gambling harm in South Australia, and so limit our comments to those elements of gambling harm reduction which have a substantial focus in other areas, including the current revision of codes of practice also being undertaken by the IGA.

The structure of this Submission is to address the major issues associated with the 2004 Legislation, on an issue-by-issue basis, starting with the most public issue; that of considering the effectiveness of reducing the number of poker machines.

Issue 1: Impact of Reducing the Number of Venues / Poker Machines

In this section we consider two issues simultaneously, since they are closely linked.

Our primary objective, in the context of this Inquiry, is to see a reduction in gambling harm that we believe is most effectively bought about through a significant reduction in the number of venues. However, reducing the number of poker machines is an essential element in reducing the number of venues, and has harm reducing qualities in it's own right.

In recognising that the current review is part of an ongoing debate, with new information emerging on a regular basis, we begin by considering what some of the collaborating agencies said in submissions to the 2003 Inquiry into a freeze on poker machine numbers.

The Churches' Gambling Taskforce and agencies that submitted were clear about the importance of reducing the venues as the primary objective to reduce gambling harm. A couple of excerpts are given in appendix 2.

The submitting organisations were seeking a reduction in the level of gambling opportunities that was much greater than that finally proposed by the Authority. Most 'concerned sector' submissions argued for a level of reduction of venues and machines of at least a half of 2003 levels arguing that a reduction of this order of magnitude was required to achieve a significant reduction in gambling harm.

There were different views about the means of achieving venue (and machine number) reductions, with UnitingCare Wesley proposing a move to poker machines in Clubs only while the GTF proposed a 'market model' predicated on increasing the return to player so that margins were reduced, making poker machine less attractive for venues.

In summary, the opinion of those members of the collaborating group who made submissions to the 2003 hearings, was to focus on reducing the number of venues as a priority to reduce gambling harm, with reducing the number of machines being a mechanism to achieve this primary objective.

We note that the Independent Gambling Authority shared this view by stating in its report: “

“The Authority is also persuaded that, if a reduction in the numbers of gaming machines is handled in an appropriate way, the market itself will have a

tendency to reduce the number of venues and that this in turn would have a beneficial effect in relation to accessibility and availability.”

Reducing the number of venues is intuitively logical from a service provider perspective because:

- Surveys of clients show that a vast majority gamble within 5 minutes of home.
- Passing a venue can prompt a person with gambling problems to gamble, less venues, less prompts
- More venues increases the competition, particularly in higher density locations, meaning venues are more likely to market their venues to encourage more gambling

What has Happened Since the 2004 Legislation was Enacted?

We recognise the importance of a clear and dispassionate understanding of the impacts of reducing poker machine numbers and take three different approaches to try to assess the impact of the reduction in machine (and venue) numbers.

First, we state the following facts as the basis for considering the impacts of the 2004 legislation, with particular reference to the impacts of reducing machine numbers:

- The number of poker machines was reduced by 2,168 from 1st July 2005
- There have been 3 trading rounds which have resulted in the removal of a further 34 machines
- A total of 2,202 machines have been removed from operation since the legislation was enacted, but that is still 798 machines, or 27%, short of the legislated 3,000 machine reduction.
- The number of venues with poker machines has been reduced by 17 venues, a reduction of 3%.

We conclude that the actions taken to date have not significantly reduced the number of venues, and also note that there has been greater success in reducing the number of machines.

We recognise that the interpretation of the impacts is not clear cut and that there are different views among the collaborators of this Submission about the effectiveness of the reduction in machine numbers that have been achieved. We now consider the impacts of the reduction of 2,202 machines, using 3 approaches.

Approach 1: Trend Analysis

We are keen to apply other independent and rigorous approaches to the question of the impacts of machine number reduction. We note that data for the first quarter of the 2006/7 year was recently released, but this data has not been included in the following analysis, which was

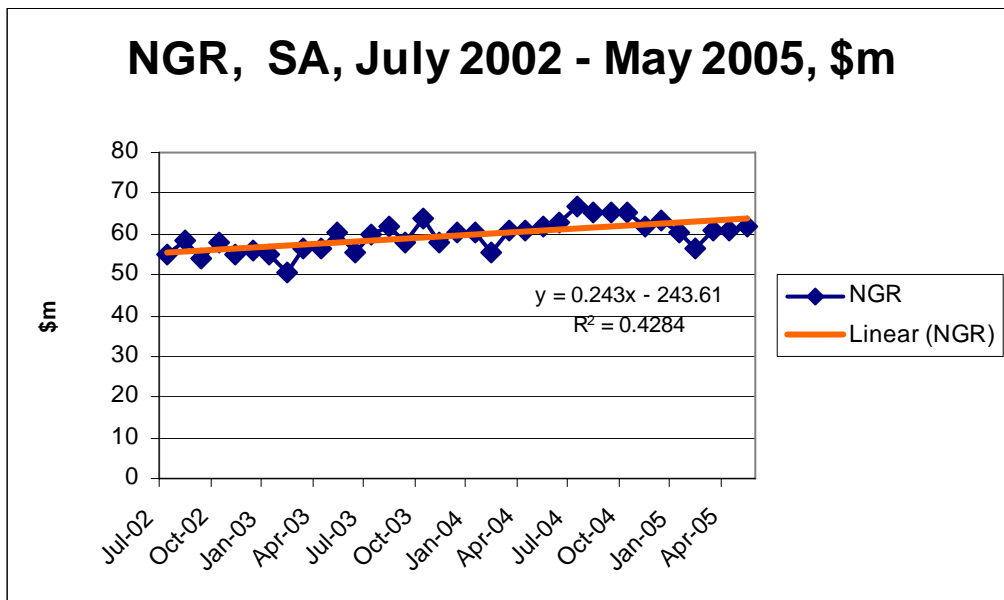
completed before the data was available. (We will seek to consider this recent data and comment about it at the IGA hearings).

We have applied some statistical approaches to seek a dispassionate view of effectiveness and to see if inferential statistics, based on available data and experience, can provide some guides for good public policy. We summarise our analysis below, before drawing conclusions in the following section.

We note that in order to make inferences about legislation effectiveness, we have used NGR as a proxy for problem gambling levels. The rationale for this approach is given as Appendix 3. The relationship is directly proportional, so if NGR increases, then problem gambling increases, and similarly if NGR falls, so does the level of problem gambling.

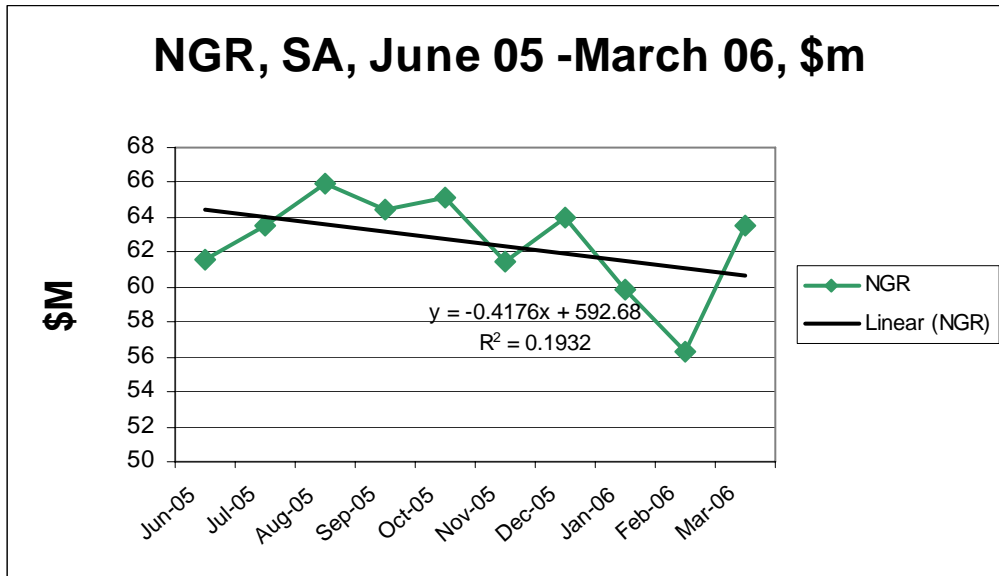
To start the statistical analysis of the results of reducing poker machine numbers, we have graphed NRG, for poker machines, by month for the 3 years prior to the 'initial cull' of machines in July 2005 and then compared this with NGR, by month, for the year since the 'cull'. Linear trend lines have then been added.

Graph 1, with linear trend line for NGR in South Australia prior to the initial removal of poker machines during July 2005, does not have a high 'goodness of fit' for the trend line to the actual data (R squared), but clearly has a positive coefficient for the trendline. This indicates that NGR is rising, over time, for this period. It can be inferred from this that without intervention, the level of NGR would continue to rise.



Graph 1. Data source, Office of the Liquor and Gambling Commissioner.

Graph 2. The period after the initial reduction in poker machines has a poor R squared value (0.1932), so the trend line is not a close approximation of the actual data. This is partly because the data is only available for 12 months, a short period of time for a trend to emerge and also because gambling expenditure is seasonal. However, the trend line for the post July 05 period has a negative coefficient, meaning that NGR is declining over time.



Graph 2. Sources, OLGC for NGR, problem gambler estimates were sourced from a range of sources: SACOSS, Dr P Del Fabbro, SACES, Productivity Commission

These two trends suggest that the reduction in poker machine numbers has changed the trend behaviour of NGR, moving it from a slow but steady increase over time to a trend of decline over time.

Since there were no other major policy changes or ‘shocks’ to the poker machine industry in SA during 2005, it is safe to infer that the reduction in poker machine numbers has had the effect of changing the direction of NGR growth over time from positive to negative.

We regard this shift in the NGR trend as an indicator that the reduction of poker machines has made some small but significant impacts:

1. The steady and continuing growth in NGR has been halted.
2. The trend is now for NGR decline over time.
3. We infer that these results will lead to a small reduction in levels of problem gambling in SA

The collaborating agencies believe that this data, coupled with our own experience, suggests that:

- a. The reduction in poker machine numbers has made a small impact in reducing gambling harm.

- b. Reducing problem gambling levels can be achieved by reducing poker machine numbers.
- c. The reduction in problem gambling by the partial meeting of the reduction target is inadequate given the extent of problem gambling.

Approach 2: Regression Analysis

Dr Tony O'Malley was asked to undertake an independent analysis of the impacts, if any, of the reduction in poker machine numbers. In particular to make inferences on:

- The structure of possible models of gaming behaviour
- Some statistical testing of those models using available data, and
- Some application of the models to forecast the effects of possible future amendments.

A summary of this work is given as Appendix 4.

NGR was used as the dependent variable, as a proxy for problem gambling levels, (the rationale for this approach is given as appendix 3). A range of independent (explanatory) variables were considered, with the most significant for explaining problem gambling, at a population level being:

- Venues, number, July 2002 to June 2006.
- Civilian Population, Persons 15 years and over, monthly, Feb 1978 to Sept 2006, ABS Series ID A163367T
- Season

Regression models for both impacts of machine numbers and the number of venues were tested. These models were then used to make inferences about impacts of different 'targets' for the explanatory variable.

The results are summarised as:

<u>Machine Numbers</u>	
The best model was a linear form:	
$NGR_t = 29.86 + 0.28 \times t + 2.65 \times Q1 + 1.52 \times Q2 - 2.31 \times Q3 + 0.0016 \times EGM_t$	
(8.89)	(0.04)
(0.0006)	(1.03)
	(1.04)
	(1.02)
$R^2 = 0.69$	Figures in brackets are standard errors of
coefficients.	
Where:	

NGR_t = Monthly Net Gaming Revenue in \$ million in month t
 t = month number with July 2002 = 1
 Q1 = 1 when the month is July, August or September. Otherwise Q1 = 0
 Q2 = 1 when the month is October, November or December. Otherwise Q2 = 0
 Q3 = 1 when the month is January, February or March. Otherwise Q3 = 0
 EGM_t = Number of live Gaming Machines in month t.

Using this model we calculated the following values for Net Gaming Revenues in June 2008, corresponding to the number of live Electronic Gaming Machines shown.

Number of live Electronic Gaming Machines in June 2008	Monthly Net Gaming Revenue in June 2008 (\$ million)
12,000	69.26
10,000	66.01
8,000	62.75

These estimates suggest that Net Gaming Revenue is not very responsive to change in the number of gaming machines. A 10% reduction in gaming machine numbers reduces gaming revenue by about 2.5%.

Number of Venues

The best model took a (natural) log – linear form.

$$NGR_t = -594.53 + 0.23 \times t + 1.38 \times Q1 - 3.31 \times Q3 + 0.16 \times NILE_t + 88.52 \times \ln(Ven_t)$$

(155.02) (0.03) (0.76) (0.75) (0.07) (23.52)

R2 = 0.72 Figures in brackets are standard errors of coefficients.

Where:

NGR_t = Quarterly Net Gaming Revenue in \$ million in quarter t
 t = month number with July 2002 = 1
 Q1 = 1 when the month is July, August or September. Otherwise Q1 = 0
 Q3 = 1 when the month is January, February or March. Otherwise Q3 = 0
 $NILE_t$ = Number of people neither in the labour force nor employed in month t in thousands.
 $\ln(Ven_t)$ = Natural log of the number of gaming venues in month t.

This model tracks Net Gaming Revenue from July 2002 to June 2006 with deviations varying between 8.1% or \$4.57 million high in February 2006 to 6.0% or \$3.79 million low in May 2003.

This model provides the following forecasts of Net Gaming Revenue in June 2008, assuming that the number of people neither in the labour force nor employed is 520,000.

Number of Venues in June 2008	Ln (VENUES) in June 2008	Net Gaming Revenue in June 2008 (\$ million)
595	6.388561	70.33
495	6.204558	54.04
400	5.991465	35.18

The model concludes that **Net Gaming Revenue (and hence problem gambling level) is highly responsive to changes in the number of venues.** A ten percent reduction in venue numbers would reduce Net Gaming Revenue by 13.8% and this elasticity increases as the number of gaming venues reduces.

We infer from this result that a reduction in venue numbers of about a third, to a target of 400 venues, would lead to an outcome in the vicinity of a halving of problem gambling levels. (Halving NGR having a proportionally similar impact on problem gambling levels, i.e. a halving. Refer to appendix 3)

This analysis reinforces our strong view that the priority for policy to reduce gambling harm needs to be to reduce the number of venues.

The collaborating agencies suggest that a target of 400 poker machine venues is a reasonable mid term (3-5 year) objective that would be a meritorious State Goal as it would, on the basis of modelling, reduce problem gambling levels by about a half.

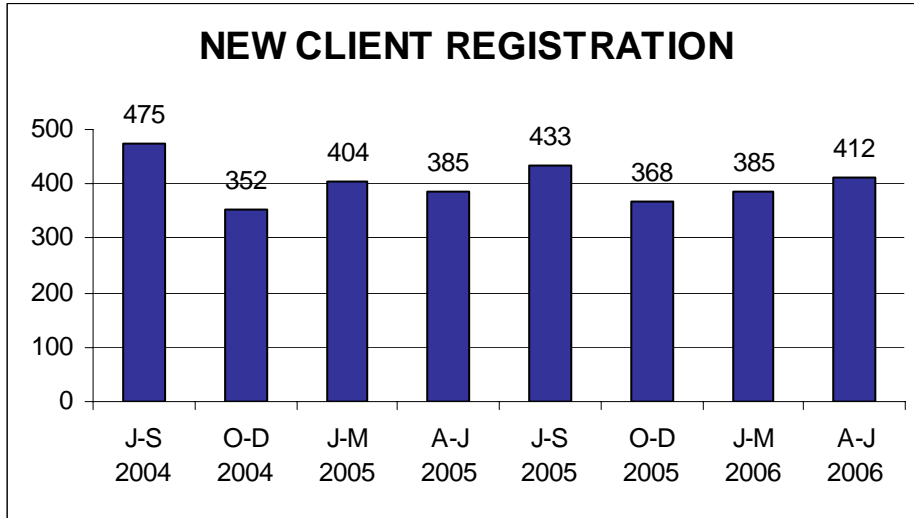
Recommendation

That a State goal be the halving of problem gambling levels by 2011 (5 years) with a reduction in the number of poker machine venues to 400 a central strategy to achieve this goal.

Approach 3: Demand for Help Services

Agencies providing gambling help services have not observed a noticeable reduction in demand for gambling help services since the number of machines was reduced. This is reflected in the graph below

which shows “new clients” as registered by Break Even services, by a quarter.



Source Dept Families and Communities

Comparing quarters for the post machine reduction period with corresponding quarters from before the reduction indicates that there has been minimal observable change in new demand for help services since the number of machines was reduced.

We note that this data must be considered with care because there are factors, apart from the level of gambling, that influence the extent of help seeking. Promotion of gambling help services is an important factor in demand for services and the level of advertising through the “think what you are really gambling with” campaign was less in 2005/6 than over the previous couple of years. (Recent campaigns have been conducted in November / December 2004 [TV, Press, CALD radio], March 2005 [TV and press] and May / June 2006 [TV, press, CALD radio and in venue signage])

An example of an agency perspective on recent demand for services comes from one service, which reports:

There have been 104 new registrations of clients in the 2005/2006 year. This is an increase of 35% (27 registrations) over the 2004-2005 year where there were 77 new registrations.

No clear conclusions can be drawn about impacts of the reduction in machine numbers from demand for gambling help services. The evidence and anecdote suggests that there has not been an observable reduction in demand for services

Conclusions from Analysis – Impacts of Reduction in EGM Numbers

While recognising that the data available from the initial reduction of gaming machine numbers only covers one year and so is of limited value in understanding longer term impacts, we are convinced that the analysis leads to the following conclusions:

1. Reducing the number of poker machines is an effective mechanism for reducing gambling harm.
2. The 2004 Legislation would lead to greater reductions in gambling harm by reducing the number of poker machine venues.
3. Although the legislated target for machine reductions has not been achieved, the growth in problem gambling has been capped and appears to have peaked, and a slow decline in levels of problem gambling is anticipated due to the slow decline in NGR, since the reduction of gaming machines began in July 2005.
4. The current trading mechanism for reducing poker machine numbers and the number of venues, we suggest, will not result in achieving the 3000 machine reduction within a reasonable timeframe.

Our clear conclusion from the evidence gathered is that the priority action to reduce gambling harm needs is to reduce the number of poker machine venues, both:

- in the short term through achieving the legislated 3,000 machine reduction and
- in the medium term to halve levels of problem gambling

Priorities for Action

This section considers actions that the partners suggest will best respond to the conclusion that venue reduction needs to be the priority for gambling harm reduction.

The partners recommend that as an immediate priority, action must be taken to ensure that all 3000 poker machines are removed from operation, as passed by the Parliament.

This means that there are 798 machines still to be removed, and begs the question of how this is best achieved?

We accept that the model of trading to achieve machine number reduction is an appropriate model to both reduce the number of machines and the number of venues. The key features from the 2004 legislation being:

- Buying price set at \$50,000 in legislation
- So selling price set at \$37,500 per license
- Buy 4 get 3
- Trading through set rounds

However, we note that this model has not been as effective as it could have been, probably for the following reasons:

- the legislation included a set price, meaning that a market price was unable to be found.
- possibly the rate of reduction of machines should have been greater than one for every four sold.
- possibly there were not enough incentives to trade.
- the legislation did not include timelines for achievement of the objective.
- Clubs were excluded from the trading regime that included the reduction of poker machine numbers.

We continue to be concerned about the capacity of the trading model to deliver the required outcomes in a reasonable timeframe.

We note that for the remaining 798 machines to be removed, and the current arrangements, 3,193 machines would need to be traded, meaning a relocation of 2,394 machine entitlements. This is 77% more than the total demand for entitlements from trading rounds.

We suggest that the trading round process be continued for another year, with amendments with other processes to be introduced, as a matter of urgency, if amended trading regime does not deliver the required results in machine entitlement reduction.

Considering specific aspects of trading in turn of:

Set price

The legislation set a purchase price of \$50,000 per machine which gave the sale price of \$37,500. We note that subsequent trading has seen much greater demand for machines than machines offered, the summary results from the first 2 rounds being:

Round 1, 11th May 2005

Supply: 169 entitlements (from 21 venues)
Less 42 forgone Leaves 127 for allocation
Demand: 1349 entitlements (from 186 venues)

Round 2

Supply 75 entitlements (10 venues)
less 19 forgone leaves 56 for allocation
Demand 1349 (186 venues)

The following table compares price per machine for various trading processes in Australia

•NSW	\$240,000 (Buy 3 get 2)		
		NGR/ egm approx	\$57,000pa
•SA	\$ 50,000 (Buy 4 get 3)		
		NGR/egm approx	\$47,000pa
•Q'ld	May '05 SE	\$123,955	
	Coast	\$ 77,659	
	West	\$ 30,002	

The New South Wales and Queensland results back up the observation about the fixed-price of the Australian market, namely that the selling price has been set much too low.

The collaborators recognise the trading system as an appropriate model for reallocation of poker machine entitlements and for meeting the objective of reducing poker machine numbers. We recognise that this approach is preferred by industry and we except the approach, as long as the harm reducing objectives are reached.

For significant trade to occur, the market solution is to remove price controls so that the market for poker machine entitlements, in this case, can find its own equilibrium price.

Recommendation

That the poker machine entitlement price cap be removed to enable more vigorous trade to occur.

Rate of reduction

The current process requires one machine entitlement being forfeited for each four being purchased. We note that in New South Wales, one machine entitlement is forfeited for each 3 purchased. The following table shows the level of trade required in order to meet the machine reduction target of 798 machines, using different rates of loss through trade.

Entitlement Trade to Achieve 798 EGM Entitlement Reduction,

Entitlement loss rate	1 in 2	1 in 3	1 in 4	1 in 5
Trades to secure EGM loss outcome	1596	2394	3193	3990
EGM entitlements relocated	798	1596	2394	3192
EGM entitlements removed	798	798	798	798

We observe that a reduction rate of one in three with an associated entitlement demand of 1596 entitlements, is closer to entitlement demand in South Australia of 1349 entitlements, through rounds one and two. While there are many other factors associated with the

trading model, we suggest that this reduction rate is more realistic for South Australia to achieve the desired outcome.

Recommendation

That the rate of removal of EGM entitlements from trading be changed from one machine entitlement forgone for every four traded to one entitlement forgone for every three traded.

Incentives to Trade

We recognise that the trading reduction target has not been achieved for a range of reasons, outlined in this section. We also recognise that for trading to be effective, there need to be incentives to trade. While the original model provided the opportunity for venues to trade back up to the original ceiling of 40 entitlements per venue, we suggest that lifting the ceiling may provide an additional incentive for some venues to trade, potentially increasing the amount of EGM's traded and hence speeding up the rate of reduction.

This begs the question as to whether a 45, 50, 55 or even 60 poker machine hotel or club is more or less likely to encourage problem gambling than a 40 machine venue. We have no clear evidence on this question, however we are very clear that significantly reducing the number of venues will reduce levels of problem gambling.

We also believe that it would be appropriate to require a venue with 40 or more machines to employ specialised staff to identify and reduce gambling harm, perhaps on similar lines (but a lesser scale) to the SkyCity Host Responsibility Coordinator program.

While we would prefer less venues with less (than 40) entitlements, we believe that less venues but with more than 40 EGM's, coupled with clear and enforced codes of practice, are likely to generate lower levels of problem gambling in aggregate than the current mix of number of venues with up to 40 machines per venue. Indeed with more thorough enforcement of regulation than is the current case, there is potential for larger venues to actually reduce levels of problem gambling behaviour. This would occur where larger venues recognise they had more to lose by not complying with gambling harm reduction codes and strategies and inspections were regular and breaches penalised.

Recommendation

We therefore recommend that further consideration be given to lifting the current limit of 40 machines per venue, to somewhere between 45 and 50 entitlements, as long as this is backed up by a strong compliance and enforcement approach and employment of staff with dedicated host responsibility roles.

Timelines

The lack of any time imperative has also meant that the industry has been able to move slowly, in our opinion, in reducing machine numbers without any consequence. We recommend that a timeline be set for the removal of three remaining machines and an alternative approach be instigated, should the timeline not be reached.

Our recommendations for timeline and default process are:

- Setting a timeline of December 30th 2007 to achieve the target of 12,000 EGM entitlements.
- If this target is not met, each venue with 16 or more EGM entitlements would forfeit one entitlement.
- Should the target still not be met by these measures, then a ballot of venues would be conducted with each venue 'drawn' forfeiting a license until the required State target is met. We would also suggest that it may be possible to develop an approach that would exempt venues that have been exemplary in implementing responsible gambling approaches, from the 'ballot'.

Clubs Excluded from Trade Reductions

We note that an area of change between the initial model for machine reductions and the legislated model was the exclusion of Clubs from the initial cull of machine entitlements and loss through trading. While recognising the reasons for the Parliament's decisions regarding Clubs, we also recognise that the quarantining of Clubs from poker machine reduction processes reduced the capacity of the model to deliver the intended level of aggregate entitlement reduction.

The collaborating agencies anticipate that the changes outlined above would meet the goal of reducing machine numbers by the full 3,000 as legislated. We see no reason for any change in the trading arrangements outlined above, once the initial target reduction has been achieved.

Consolidated Recommendations (for this section)

1. The priority Electronic Gaming Machine (EGM) gambling policy is proposed as being a reduction in the number of **venues**. Three measures are suggested to achieve this:
 - removing the legislated price cap for EGM entitlements to enable the 'market' established by the 2004 legislation, to operate more freely

- increasing the maximum number of machines permitted per venue, possibly to a level of between 45 and 50 entitlements.
 - For venues with 40 or more machines, staff would be required to be employed to deliver host responsibility roles.
 - Removing one poker machine for every 3 purchased, through trading rounds.
2. The legislated target of removing 3000 poker machines is also a priority and one that, we suggest, needs to be met by December 2007.
- This target could be achieved by:
- d. removing the legislated price cap for EGM entitlements to enable the market (see 1 above) to operate.
 - e. Ensuring that at least 3 trading rounds are conducted by December 2007.
 - f. Setting a timeline of December 30th 2007 to achieve the target of 12,000 EGM entitlements.
 - g. If this target is not met, each venue with 16 or more EGM entitlements would forfeit one entitlement.
 - h. Should the target still not be met by these measures, then a ballot of venues would be conducted with each venue 'drawn' forfeiting a license until the required State target is met.
3. That a State goal be the halving of problem gambling levels by 2011 (5 years) with reducing the number of poker machine venues to 400 a central strategy to achieve this goal.

Issue 2. Regional Caps.

Those members who collaborated on this submission, and submitted to the 2003 submission, were strongly of the view that regional caps would be a useful tool in reducing gambling harm. This was based on the experience of agencies providing gambling help services in rural and outer metropolitan areas where the concentrations of poker machines per head of adult population were greatest.

The Authority recognised this concern making the following comments as part of its recommendations:

"however, to further protect those areas [the regional areas] from further concentration of machine numbers, there should also be provision for a regional cap to prevent machines being sold into the region until a machine against in the region had reached the desired level (an example of which might be the average machine density for the State.)"

We continue to be very concerned that gambling harm is highest in regions of lower socio-economic status. We believe that some limits

need to be placed on poker machine densities, in lower¹ income regions.

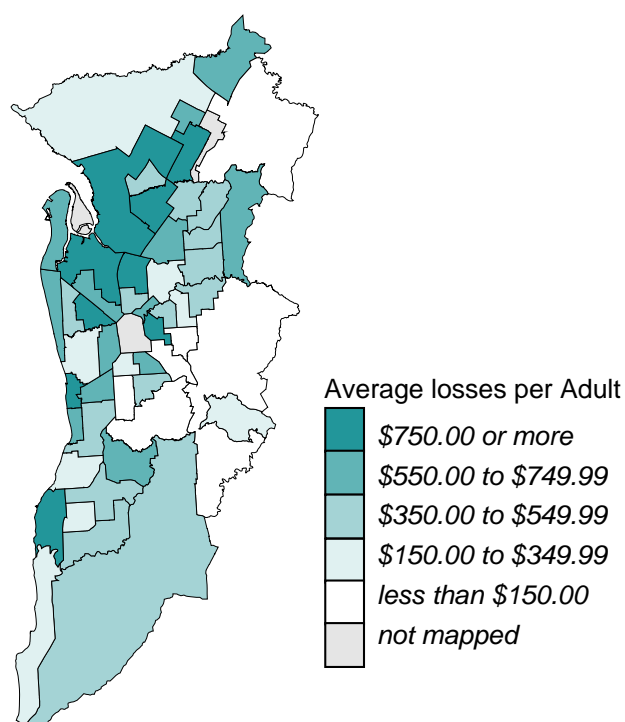
The following is drawn from “Inequalities in South Australia”, and identifies relationships between the gambling harm and other indicators of lower socio-economic status.

The following map shows average gambling losses per adult, by region, for greater Adelaide. The map shows highest concentrations of gambling losses in northern, north-western and outer southern suburbs, each of these areas being recognised as areas of lower social economic status. Similar maps are not available for country regions

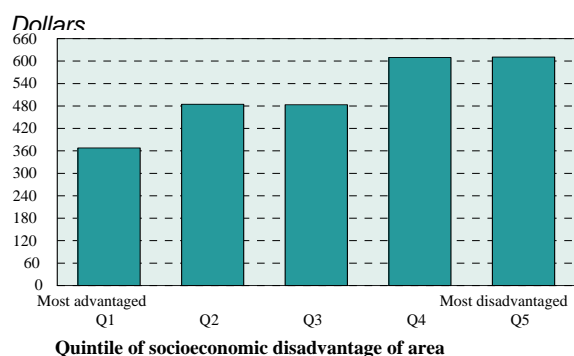
Gambling: Expenditure and losses

Gambling losses per adult from electronic gaming machines, Adelaide, 2002.

The following graph shows gambling losses per adult from electronic gaming machines, Adelaide, 2002. This again shows that gambling losses are highest for the poorest two quintiles of the population, i.e. the poorest 40% of the population.



¹ “Inequalities in South Australia 2004” John Glover et al



We have also tested correlations between “average gambling losses from electronic gaming machines per adult” and other socio economic variables reported in the “Inequalities in South Australia 2004” report.

The Pearson correlation statistic was used, and the variables with a high correlation are tabulated below.

	% Low income families	% Children living in low income families	% Unemployed	Apprehension per 1000	Smoking during pregnancy
Ave gambling Loss	0.439	0.346	0.389	0.371	0.349

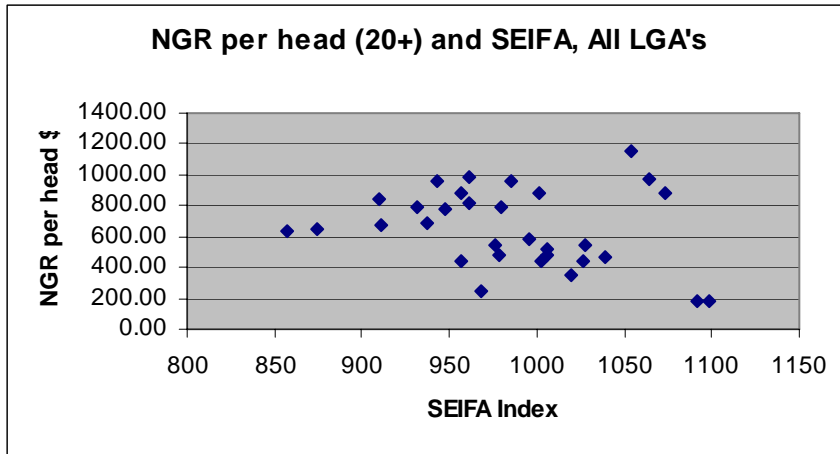
Source: Inequalities in SA

Some further detail about the correlations between gambling levels and other indicators is given as Appendix 5.

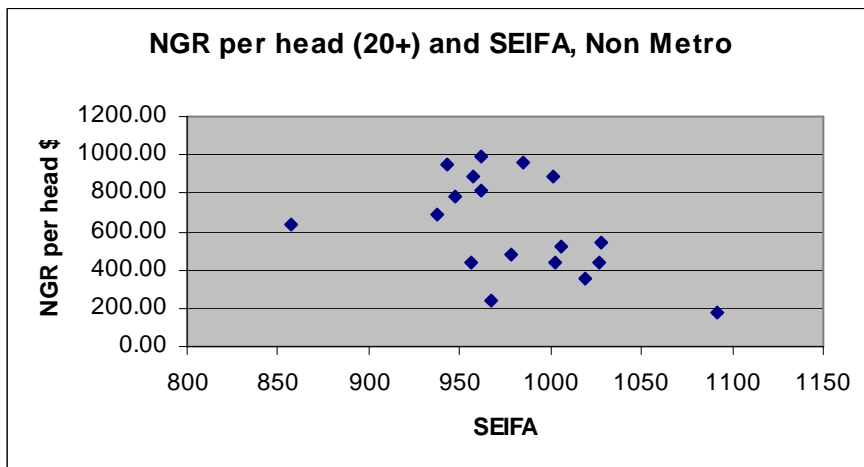
While we’re not suggesting that there is a causal relationship in either direction between these variables and gambling, the results show that there are a number of behaviours which are particularly associated with lower income and lower social economic status individuals in households, reinforcing our concern that high levels of gambling are associated with lower income people.

This has led us to consider the usefulness of the SEIFA index for application for some aspects of gambling policy.

The following plot is for NGR per head against SEIFA index for all local government areas in South Australia, which shows a weak relationship between NGR and SEIFA



On inspection, this scatter plot does not show a clear relationship between SEIFA index and NGR per head. However, on closer inspection the 3 points for high NGR and high SEIFA, skew the story. The three apparent 'outliers' are Norwood, Payneham and St Peters; Holdfast Bay and Prospect Walkerville. Holdfast Bay is a tourist area while the other 2 are inner city so will pick up passing trade. So in each case, the NGR per head is unlikely to give a good indication of resident population gambling expenditure, which is much more likely with other LGA's. So we remove these 3 observations and get a picture suggesting that resident gambling declines as socio economic status rises.



This second plot is for non-metropolitan areas and shows that high gambling expenditure as measured by NGR per head occurs in districts where the SEIFA index is less than 1000, suggesting a stronger relationship between socio economic disadvantage and gambling levels in rural communities.

Based on these observations, we suggest that regional caps need to be applied to reduce concentrations of gaming activity in the lower social economic districts.

Market concentration

The collaborating agencies also observed that there appears to be an increasing level of concentration of ownership of hotels in South Australia. This raises concerns about the level of concentration of ownership of gaming machine entitlements, both across the State and in regions.

We are aware that through codes of practice negotiations, owners of more than one venue in a particular location have agreed not to stagger opening hours to encourage people with gambling problems to move between venues and exacerbate their problems. This responsible approach has been welcomed.

However we know the potential for market power, within a region, for example, to be concentrated into one or two groups holding large numbers of hotels and hence large numbers of gaming machine licences. This provides the risk of monopoly or monopoly-like behaviour which could potentially have an adverse impact on problem gambling levels.

While we have not explored this issue in detail, we suggest that the Authority might want to consider the merits of something like a “group cap”, limiting the total number of gaming machine entitlements that could be held by any one company or group of companies with a high level of shared ownership. Such a measure either by region already agreed across the State, may provide some installation against the potential of market concentration.

Recommendation

Regional caps for the number of poker machines would be useful, particularly for provincial cities and metropolitan communities with a SEIFA index for disadvantage less than 900 (based on 2001 census).

Issue 3: Clubs One

The “Clubs One” approach was developed and approved by the Parliament to provide a management mechanism to enable the club sector to increase its share of gaming revenue compared to the hotel sector. We recognise that South Australia has far away the highest share of gaming machine revenue going to the hotel sector will compete with other jurisdictions.

We recognise that the Licensed Clubs Association in South Australia has been working actively to develop the Clubs One structure and has been instrumental in increasing the number of poker machines based at the Adelaide Soccer Club.

We also recognise that the Licensed Clubs Association has been active in developing strategies to reduce problem gambling in its

venues, the most obvious being the development of the Clubs Safe program and employment of staff to implement this program. The collaborating agencies are strongly supportive of this development.

While the program has not been implemented to the degree that would enable evaluation of its effectiveness, and in particular the impacts associated with problem gambling, there are three issues of concern that we wish to raise for further consideration.:

- The approval process for Clubs One (and other) new or relocating venues
- involvement of hotels in managing Club facilities.
- gambling industry concentration

Approval Process for New or Relocating Venues

We strongly encourage the IGA and the Office of the Commissioner for Liquor and Gambling to reach agreement about *Gaming Machine Licensing Guidelines*, based on the IGA's 2 November 2005 Guidelines.

We recognise that reviewing these guidelines is part of the review of Regulatory functions that is currently being considered by the Authority. However, we wish to make the following brief comments about one aspect of these Guidelines.

In looking at locations for Clubs One venues, irrespective of the model chosen, we believe it is important that Clubs One management has clear guidelines about locations that are acceptable and unacceptable for its new or relocating gaming focused venues.

We suggest that the following criteria be endorsed and circulated as a basis for planning and future decision making.

Recognising the relationship between gambling harm and communities in lower social economic circumstances we propose that there be no further gaming venues, or additional gaming machines, in geographic locations meeting any of the following criteria :

- Current gaming losses per head greater than \$550 per annum
- The SEIFA index is below 950, based on 2001 indexes. We recognise that this benchmark will need to be adjusted once the SEIFA indexes are calculated from the 2006 Census.
- Existing EGM entitlements per 1000 adults, for the SLA, exceed the State Average (at June 2006).

Involvement of hotels in managing Clubs facilities

In past submissions to the IGA, 'concerned sector' agencies have generally been more supportive of gaming machines being located in clubs rather than hotels for a number of reasons, including the following:

- Patrons are required to sign in as members or be signed in by a member
- Clubs offer a diversity of activities, other than being predominately gaming venues
- There is less likelihood of a patron being alone in a venue
- Clubs are open for less hours than hotels
- Clubs are less likely to actively promote poker machine play than hotels
- All surpluses generated by clubs are distributed to the community for activities of community benefit.

While the involvement of people with hotel management experience in the clubs sector is understood as a means of improving management skills and processes, we would be concerned if the distinguishing features of clubs, as summarised above, are diminished. In particular we are concerned that diminution of club features, particularly community involvement and community 'feel', is likely to exacerbate problem gambling in Clubs.

We therefore suggest that in considering the Clubs One process, guidelines are negotiated with the Licensed Clubs Association, to determine core club criteria that will be maintained.

Gambling Industry Concentration

We have raised this general concern in the previous section and note that the Clubs One approach may be able to play a role in shaping an industry that is characterised by a small number of larger venues, but with a diverse ownership base.

We suggest that there may be merit in 'loosening' the trading restrictions between sectors, to enable 'small hotels' to trade entitlements to Clubs One. Small hotels would be understood to be those with no more than 2 hotels under common ownership and with less than 20 gaming machine entitlements.

Recommendation

That Gaming Machine Licensing Guidelines include limits on locations where new or re-locating venues can be established, based on preventing additional venues in locations where:

- Current gaming losses per head are greater than \$550 per annum
- The SEIFA index is below 950, based on 2001 indices. Existing EGM entitlements per 1000 adults, for the SLA, exceed the State Average (at June 2006)

Issue 4: Fixed terms for Machine Licenses?

The 2003 IGA Report recommended that gaming machine entitlements be issued for a maximum of five years, with venues reapplying for licences every five years, based on their record in providing a responsible gambling environment.

We also note that the gambling industry and indeed the hospitality industry is undergoing a period of significant change, and so it is appropriate that licenses are renewed every 5 years so that regulators and the community can be satisfied that responsible gambling strategies are being applied and that holders of gaming licenses are taking their responsibilities seriously.

Recognising that there would be some issues with phasing in this approach, we suggest that a rolling program of license renewals be commenced in 2010, with about 1/5 of licenses reviewed each year. This approach would provide industry with the chance to prepare for re-licensing and would enable the Commissioner to organise appropriate staffing that would work at a relatively constant level of activity.

Recommendation

That gaming machine entitlements be required to be renewed every five years, with a rolling renewal process commencing in 2010.

Issue 5: Pre-commitment Smart card

We suggest that the development of an effective pre-commitment scheme for gambling operations in South Australia is a very high priority strategy for reducing gambling harm.

We recognise that the Authority investigated the use of Smartcards as a mechanism for applying pre-commitment for gamblers as an outcome of the 2004 legislative amendment process. We believe that it is appropriate to revisit options for pre-commitment schemes that are 'smart card' based, with specific focus on the development of voluntary trials to test a preferred approach.

Recommendation

We also encourage the Independent Gambling Authority to update its Smartcard report (commissioned by the 2004 Legislation) by, say, June

2007 to trial a preferred approach to pre-commitment, particularly for people who are regular gambling customers.

Issue 6: Actions of the Commissioner of Liquor and Gambling

The amendments to the Act included some additional roles for the Commissioner for Liquor and Gambling, including:

- provision to establish a process of objection for applications before it.
- various offences and disciplinary actions that are the responsibility of the Commissioner to implement.
- responsibility for dealing with gaming machines vacated in premises or not adequately secured.

We believe it is appropriate that the office of the Commissioner develop approaches for reporting on these responsibilities, and their Annual Report would appear to be a sensible option.

Recommendation

There is value in the Commissioner for Liquor and Gambling reporting on the actions and outcomes associated with the powers and responsibilities given to the Commissioner by the Gaming Machines (Miscellaneous) Amendments Act 2004 in their Annual Report.

Issue 7: 10 year Freeze on Further Changes

The decision in the legislation to 'freeze' any further reduction in machine numbers and to 'freeze' current tax levels of poker machines was a disappointing element of the legislation.

This decision affords a level of certainty and protection to the poker machine industry that is not afforded to any other industry, a protection that we believe provides an unfair and unreasonably advantage to an industry that had already benefited substantially from the windfall gains of parliamentary decisions. At the time that the decision was made, gambling help services were only funded on a year by year basis with no certainty or capacity to plan, the 'certainty for industry' had some deleterious impact on the morale of some Break Even employees.

However any Parliament can change any previous decisions and in the case of poker machines we see no reason for the current Parliament to be bound to this 2004 decision. This is particularly the case when a reduction in the number of venues, implemented through a further reduction in poker machine entitlements, is in the public benefit

Issue 8: Increased Funds to GRF

The increase in funding to the Gamblers Rehabilitation Fund was welcomed by the sector. We think the increase was supported by Parliament because there was some genuine recognition that the rehabilitation providers' resources were stretched. However the subsequent focus on funding of early intervention has meant that relatively small real increases in funding were actually allocated to rehabilitation services.

Section 3

Summary

Having sought evidence to enable analysis of the impacts, to date, from the 2004 gaming machines legislation, the Agencies concerned with gambling harm reduction are of the opinion that even partially implemented, the measures show positive signs of limiting the growth of gambling harm.

We are convinced that the primary objective in reducing gambling harm needs to be the reduction of the number of venues with poker machines.

We propose strategies to achieve some further reduction in the number of venues, in the short term, by completing the legislated reduction of 3,000 gaming machine entitlements.

The Agencies also propose a medium term (5 year) goal of halving the level of gambling harm with a key strategy being to reduce the number of poker machine venues to 400.

Following this primary objective, the Agencies suggest that the next most effective means of reducing gambling harm are:

- Applying pre-commitment approaches using 'smart-card' technologies, starting with voluntary trials of technologies and applications
- Compliance and enforcement to ensure that there are high levels of compliance with legislation and codes of practice.

We thank the Authority for their interest in this submission and look forward to the outcomes of their deliberations.

Sue Park
CEO, UnitingCare Wesley Adelaide

On behalf of the Agencies concerned with gambling harm
October 2006.

Appendix 1: Background to Collaboration

This is a joint submission from the Agencies that could be considered to be the 'concerned sector'. This is a term coined by the IGA and a term that has remained general, rather than specific.

While the term 'concerned sector' does not sit well with some people, we will define the agencies collaborating to produce this Submission as the 'concerned sector'.

The agencies collaborating to produce this Submission are:

- Non Government Agencies Providing Break Even services
- SACOSS (SA Council of Social Service)
- SA Heads of Christian Churches Gambling Taskforce
- (The Break even Network experience is reflected through the input of Break Even Network members to their employing Agencies)

We recognise that there are other groups and interests that are also concerned about the impacts of problem gambling, including consumer groups, for example, Duty of Care and Gamblers Anonymous and the Hon Nick Xenophon Independent "No Pokies" MLC.

The collaborators recognise the importance and validity of the perspectives of these, and other groups, however, they believe that the common characteristics of the collaborating group provides a 'comfortable fit'. These defining characteristics include:

- Independence from Government
- Experience in providing help to people with gambling problems.
- Focus on social policy / legislation and regulation as a means of rationale for using NGR as a proxy for reducing gambling harm.

Previous Submissions to the IGA by the collaborating groups should be regarded as part of the 'heritage' of these groups and are 'assumed knowledge' for this Submission. Past Submissions making up this 'heritage' have been submitted by:

- SA Heads of Christian Churches Gambling Taskforce (GTF)
- Anglicare SA
- Relationships Australia
- Nunkuwarrin Yunti
- UnitingCare Wesley Adelaide
- Break Even Network of SA
- SACOSS

This Submission was written by a 'writing group' comprising

- Helen Carrig, nominated by Churches' Gambling Taskforce
- Janet Firth, nominated by Angilcare
- Belle Cheney, nominated by Relationships Australia
- Garry Raymond, nominated by Salvation Army
- Michael McCabe, nominated by Nunkuwarrin Yunti
- Jennifer Duncan, nominated by SACOSS
- Mark Henley, nominated by UnitingCare Wesley, who convened the group

Appendix 2. Extracts from Previous Submissions

The following two extracts are taken from 2003 submissions to the Authorities' inquiry into a 'freeze on Poker machine numbers.

Churches Gambling Taskforce

8.3 Third Best Position: In each Statistical local area, halve the number of Hotels and Taverns with gaming machines and reduce by 10 the number of machines in all venues with 20 – 40 machines at May 2003

The current South Australian situation of both a large number of gaming machine venues and large numbers of machines in each venue, (with limited Codes of Practice and , correspondingly, limited enforcement) creates an environment for substantial gaming machine based gambling harm.

The Taskforce is convinced that the central measure that would reduce poker machine gambling harm is a substantial reduction in the number of venues. We believe that the number of hotel and tavern venues needs to be halved and the number of machines in each venue reduced by 10 (from May 2003 levels).

We have recently become aware of findings from an action research project conducted by the Relationships Australia (SA) Break Even agency that a significant reduction in numbers of machines per venue, (e.g. a reduction of 10 machines) would reduce harm for about 35% of problem gamblers. The findings also indicate that reduction of venues within easy access of problem gamblers would curtail their gambling, and hence reduce gambling related harm.

This approach needs to be applied on a regional basis to avoid excessive concentration of venues or machines in any region. We suggest that SLA (Statistical Local Area) be the definition for 'region'.

Applying this approach means that the number of gaming machines and gaming machine venues in any SLA respectively would be given by the expressions:

$$\text{Machine numbers}_{SLA} = \sum(\text{hotel and tavern gaming machines})_{SLA} / 2 + \sum(\text{club gaming machines}_{SLA} - 10)$$

$$\text{Gaming machine licenses}_{SLA} = \sum(\text{hotel + tavern licenses})_{SLA} / 2 + \sum(\text{club gaming machine licenses})_{SLA}$$

The rationale for this strong recommendation includes:

- Marginal reductions in either venue numbers or machine numbers, will have little impact, since turnover will still increase with more promotion and more incentives to gamble, and an increase in the number of machines with the highest propensity for addiction (see evidence in sections 4 and 5).*

- *Limiting ease of access or proximity to poker machines, particularly at local level, will reduce the level of use by problem gamblers (in conjunction with machine design regulations and other harm reducing measures)”*

UnitingCare Wesley

“Adelaide Central Mission therefore proposes that an acceptable, (but not preferred) recommendation from the IGA to the State Government would be to permit poker machines in the Casino and Licensed Community Clubs only, under the conditions detailed below.

This would provide about 80 venues throughout the State and a cap of 3301 machines. We suggest a limit of 30 machines per Club venue. There are currently 901 machines in the Casino.

Conditions that would apply to Clubs providing EGM’s would need to include:

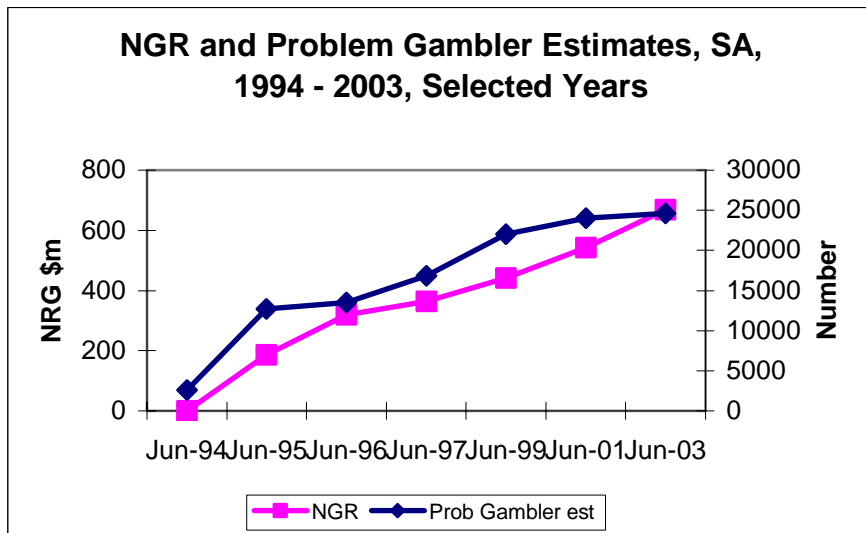
- *All members and guests to sign in and out*
- *All Clubs closed between 3.00 am and 10.00 am*
- *No alcohol to be served*
- *Clubs to be non smoking*
- *Active harm elimination measures to be established and maintained.*
- *Regulated Codes of Practice*
- *All ‘profits’ to be allocated for community benefit*

There are advantages of limiting poker machines to licensed clubs. In particular, Club venues are less likely to allow the anonymity for gamblers that many current venues afford. For example, Clubs need to require that all attendees sign in either as members, or as the guest of a member. This action alone gives responsible venues help to identify problem gamblers, and would make processes like barring easier to implement than is currently the case.”

Appendix 3 Relationship Between NGR and Problem gambling levels.

In order to use statistical modelling, from available data, to seek to understand the impacts of regulation based changes on the problem gambling levels, we have used NGR as a proxy for problem gambling levels. We have taken this step because continuous NGR data is available whereas problem gambling data is less continuous.

In order to consider the relationship between the two variables we have plotted them as shown in graph 3/1



Graph 3/1

By inspection, the two variables of problem gambling levels in South Australia and NGR appear to be highly correlated. We have tested this with regression analysis using both linear and log linear approaches.

The non linear forms are to mimic the curve in the plots. However this curvature may be due to problem gambling estimates or to some form of 'crowd' behaviour among problem gamblers in which they encourage each other to gamble more as they increase in number.

The correlation coefficients are about (0.87) and are about the same for the linear and the other forms, largely because the sample size is small. The slope coefficients are best for the linear model and the R squared value of 0.876487 for the linear model is very strong. We are, therefore, satisfied that there is a significant, highly correlated and linear relationship between NGR and Problem gambling numbers.

Further, this suggests that each added problem gambler adds \$30,153 to NGR, or that an NGR decrease of about \$30,000 reduces the number of problem gamblers by one. (We know that this final indifference needs to be treated with care as the relationship with problem gambling is not that precise at the marginal level. However we believe that generally, in the order of magnitude, inferences can be drawn using this relationship)

Regression results for linear model

Linear		
coefft	0.030153	-149.976876
se	0.00566	110.5885797
r^2 , se_y	0.876487	66.99135784
F, df	28.38528	4
SS_{reg} , SS_{res}	127388.7	17951.3681
	const	
t	5.327784	-1.356169655

Regression results for log linear model

Ln(ProblemGamblers)		
coefft	541.3812	-4892.205858
se	107.5674	1056.058429
r^2 , se_y	0.863624	70.39346674
F, df	25.33057	4
SS_{reg} , SS_{res}	125519.1	19820.96064
	Ln(PG) const	
t	5.032949	-4.632514378

We summarise from this analysis that NGR and problem gambling levels are highly correlated and so NGR can appropriately be used as a proxy for problem gambling levels in statistical analysis

Appendix 4 Regression Analysis

This report provides:

- Some conclusions on the structure of possible models of gaming behaviour,
- Some statistical testing of those models using available data, and
- Some application of the models to forecast the effects of possible future amendments.

The particular questions on which we have constructed and tested models are:

1. What is the effect of change in the number of gaming machines and the number of gaming venues on net gaming revenue after accounting for the effects of other possible factors?
2. What is the effect of socio-economic status on net gaming revenue after accounting for the effects of other possible factors?
3. How do changes in the number of gaming machines affect the balance between the benefits and costs of gaming to the community?
4. Is there an optimal number of gaming machines or gaming venues?
5. Given these results, what forecasts can be produced about the effects of further amendments?

This report presents the most successful models and the implications of those models for behaviour and policy. The models and regression analyses are contained in separate MS Excel files.

Variables Considered

Data were available on:

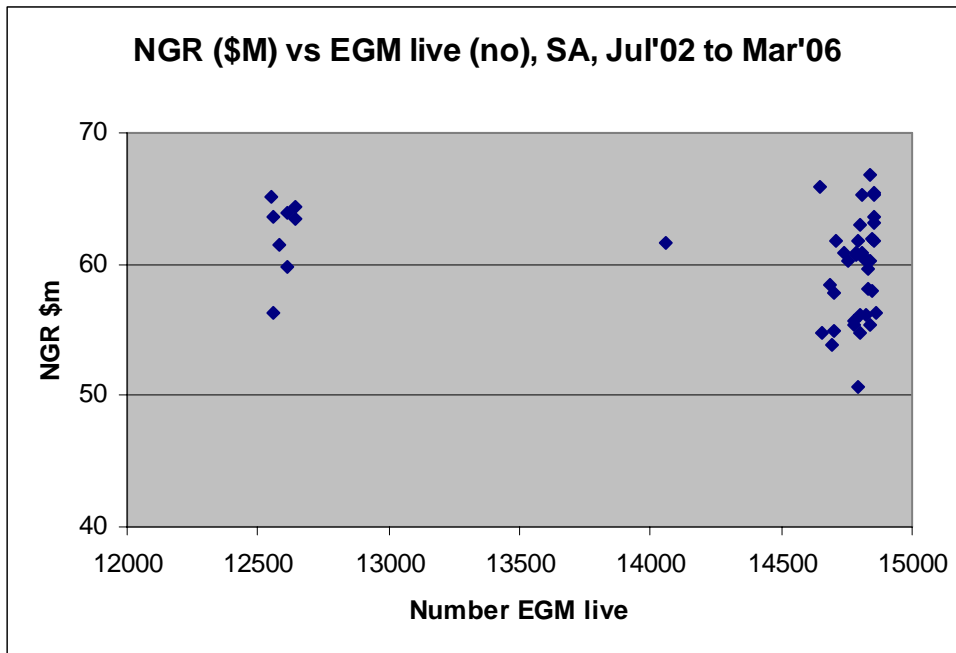
- Net Gaming Revenue, \$million, monthly, July 2002 to June 2006.
- Venues, number, July 2002 to June 2006.
- Electronic Gaming Machines live, number, July 2002 to June 2006.
- Estimated Resident Population, South Australia, persons, quarterly, Sept 1989 to March 2006, ABS Series ID A2060846R
- Civilian Population, Persons 15 years and over, monthly, Feb 1978 to Sept 2006, ABS Series ID A163367T
- Participation rate, Persons, per cent, monthly, Feb 1978 to Sep 2006, ABS Series ID A184023C
- Unemployed – total Persons, South Australia, monthly, Feb 1978 to Sep 2006, ABS Series ID A184017J

- Average Weekly Total Earnings, Persons, South Australia, Quarterly, Nov 1983 to May 2006, ABS Series ID A597228R

Correlation with Net Gaming Revenue

In the first instance we have considered simple correlations, and then proceeded to multiple regression analysis.

Number of Electronic Gaming Machines Live



Observation and analysis both indicate that changes in the number of Electronic Gaming Machines have little effect on Net Gaming Revenue. Correlation coefficients (r^2) never exceeded 0.17. The relationship between these variables changed after May 2005, indicating clearly that other variables determine the size of Gaming Revenues. However, when the effects of other variables are accounted for in the analysis, the number of Gaming Machines does have a significant effect on the remaining unexplained change in Net Gaming Revenue.

This complies with common sense. Gamblers are unlikely to notice additional gaming machines in a population of 14,000 machines. On average the number of machines in a venue will rise but there is not likely to be a significant change in congestion around machines. There is no tangible difference in the travel distance to a machine. Some gamblers are habitual.

The effect of added gaming machines on Net Gaming Revenues should reflect the improved ease with which a gambler can find a gaming machine. The improvement in access would decline as the

existing number of gaming machines rises. The second machine may double accessibility, the one thousandth machine will add only slightly to accessibility. This suggests a curvilinear relationship between Net Gaming Revenues and the number of Gaming Machines. The correlation between Net Gaming Revenues and the natural logarithm of the number of Electronic Gaming Machines is weak ($r^2 = 0.08$).

Number of Gaming Venues

Quarterly Net Gaming Revenue is weakly correlated ($r^2=0.2$) with the number of Gaming Venues. This relationship is weaker than that between Net gaming Revenue and the Number of Gaming Machines.

Time

Net Gaming Revenue has a strong positive trend over time. Net Gaming Revenue in any month is closely related to Net Gaming Revenue in the previous month. This is consistent with habitual behaviour.

Over the whole period to March 2006, Net Gaming Revenues grew by \$276,000 per month after accounting for the effects of changes in the number of Gaming Machines and quarterly variation. Over the period to May 2005, Net Gaming Revenues grew by \$260,000 per month. The t statistics for both these coefficients are 7.6 and 5.9 well in excess of the level required to be statistically significant (about 2). These strong relationships do not persist after September 2005, possibly due to the limited number of observations available. Not surprisingly, this reinforces the conclusion that there are other variables which are not time dependent, or dependent on the number of Gaming Machines, influencing Net Gaming Revenues.

Season

Net Gaming Revenues also change with the seasons. In the January to March quarter, monthly Net Gaming Revenues are down by \$2.27 million. In the July to September quarter, monthly Net Gaming Revenues are up by \$2.64 million. These results are statistically significant and are repeated across most analyses. They may reflect mood, the availability of other recreation opportunities, family holidays or a range of other distractions in summer. Further research and analysis on the effects on Net Gaming Revenue of various festivals and events such as the Royal Adelaide Show, motor races and the Festival of the Arts, may reveal ways to design winter festivals to moderate the winter increase in gaming.

Population

Net Gaming Revenue is correlated ($r^2=0.4$) to quarterly Estimated Resident Population. Taken on its own, population is a very strong

factor in gaming expenditure. Over the whole period, Quarterly Net Gaming Revenue increases by \$700 for each additional person in the population ($r^2 = 0.4$). Similarly, Monthly Net Gaming Revenue increases by \$202 per person added to the Civilian Population over 15 years of age ($r^2 = 0.4$). However, this strong relationship may simply be a result of the fact that both population and Net Gaming Revenue are correlated with time. There is also a strong correlation ($r^2=0.32$) between the labour force and Net Gaming Revenue.

Population Not Working

Further analysis suggests that monthly Net Gaming Revenue is not correlated ($r^2 = 0.03$) with the size of the adult population who are not working, that is those who are not in the labour force or in the labour force but not employed.

Average Weekly Earnings

The correlation between Total Average Weekly Earnings for persons and Net Gaming Revenue is weak ($r^2=0.08$). It can be speculated that as incomes rise, the form of gambling changes from gaming machines towards horseracing and perhaps casinos. This variable does not give a good indication of family income because it omits transfer payments from Government, which is probably significant.

The Models, The Results and The Implications

The models tested omit factors for which there is no data available. Where data was available on a factor expected to influence gaming, we have suggested the way in which the factor might influence gaming, and developed models to test the expected relationship.

We constructed models to test whether linear or log-linear relationships best predict Net Gaming Revenue. Models were selected according to the regression correlation coefficient and whether the sign on the slope coefficients match reasonable expectations about the effect of the variables used.

Linear Model

The best linear model takes the form:

$$NGR_t = 29.86 + 0.28 \times t + 2.65 \times Q1 + 1.52 \times Q2 - 2.31 \times Q3 + 0.0016 \times EGM_t$$

(8.89)	(0.04)	(1.03)	(1.04)	(1.02)
(0.0006)				

$R^2 = 0.69$ Figures in brackets are standard errors of coefficients.

The correlation coefficient did not improve when the EGM_t variable was lagged by one month.

Where:

NGR_t = Monthly Net Gaming Revenue in \$ million in month t

t = month number with July 2002 = 1

Q1 = 1 when the month is July, August or September. Otherwise Q1 = 0

Q2 = 1 when the month is October, November or December. Otherwise Q2 = 0

Q3 = 1 when the month is January, February or March. Otherwise Q3 = 0

EGM_t = Number of live Gaming Machines in month t.

The residuals from this regression have a coefficient of autocorrelation of -0.29, indicating that in 95% of such cases there is no autocorrelation. The model tracks the behaviour of monthly Net Gaming Revenue from July 2002 to March 2006 with maximum deviations being 7.6% or \$4.27 million high in February 2005 and 5.6% or \$3.57 million low in October 2003.

Using this model we calculated the following values for Net Gaming Revenues in June 2008, corresponding to the number of live Electronic Gaming Machines shown.

Number of live Electronic Gaming Machines in June 2008	Monthly Net Gaming Revenue in June 2008 (\$ million)
12,000	69.26
10,000	66.01
8,000	62.75

These estimates suggest that Net Gaming Revenue is not very responsive to change in the number of gaming machines. A 10% reduction in gaming machine numbers reduces gaming revenues by about 2.5%.

Log Linear Model

The preferred log-linear model takes the following form:

$$NGR_t = -594.53 + 0.23 \times t + 1.38 \times Q1 - 3.31 \times Q3 + 0.16 \times NILE_t + 88.52 \times \ln(Ven_t)$$

(155.02) (0.03) (0.76) (0.75) (0.07) (23.52)

$R^2 = 0.72$ Figures in brackets are standard errors of coefficients.

Where:

NGR_t = Quarterly Net Gaming Revenue in \$ million in quarter t

t = month number with July 2002 = 1

Q1 = 1 when the month is July, August or September. Otherwise Q1 =

0

Q3 = 1 when the month is January, February or March. Otherwise Q3 =

0

$NILE_t$ = Number of people neither in the labour force nor employed in month t in thousands.

$\ln(Ven_t)$ = Natural logarithm of the number of gaming venues in month t.

This model has a coefficient of autocorrelation of -0.46, meaning that the residuals are autocorrelated. Autocorrelation has little effect on the forecast accuracy, but it can distort the coefficient values. The autocorrelation is a likely result of using variables which are correlated with each as independent variables: time and the numbers in the unemployed adult population are correlated ($r^2 = 0.33$).

This model tracks Net Gaming Revenue from July 2002 to June 2006 with deviations vaying between 8.1% or \$4.57 million high in February 2006 to 6.0% or \$3.79 million low in May 2003.

This model provides the following forecasts of Net Gaming Revenue in June 2008, assuming that the number of people neither in the labour force nor employed are 520,000.

Number of Venues in June 2008	Ln (VENUES) in June 2008	Net Gaming Revenues in June 2008 (\$ million)
595	6.388561	70.33
495	6.204558	54.04
400	5.991465	35.18

Net Gaming Revenue is highly responsive to changes in the number of venues. A ten percent reduction in venue numbers would reduce Net Gaming Revenue by 13.8% and this elasticity increases as the number of gaming venues falls.

This suggests the possibility of using the model to determine a number of venues which would create an optimum balance in policy between the socially harmful effects on problem gamblers and the beneficial effects of added public revenue and expenditure.

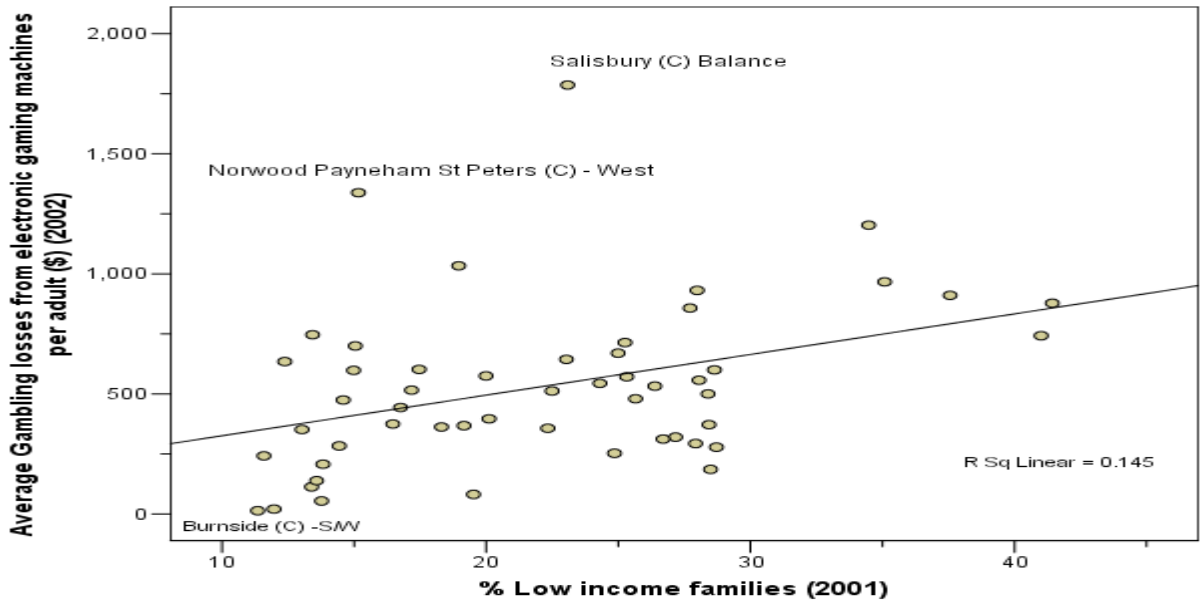
Dr Tony O'Malley
Outlook Management

Appendix 5: Inequalities in SA Gambling Correlations

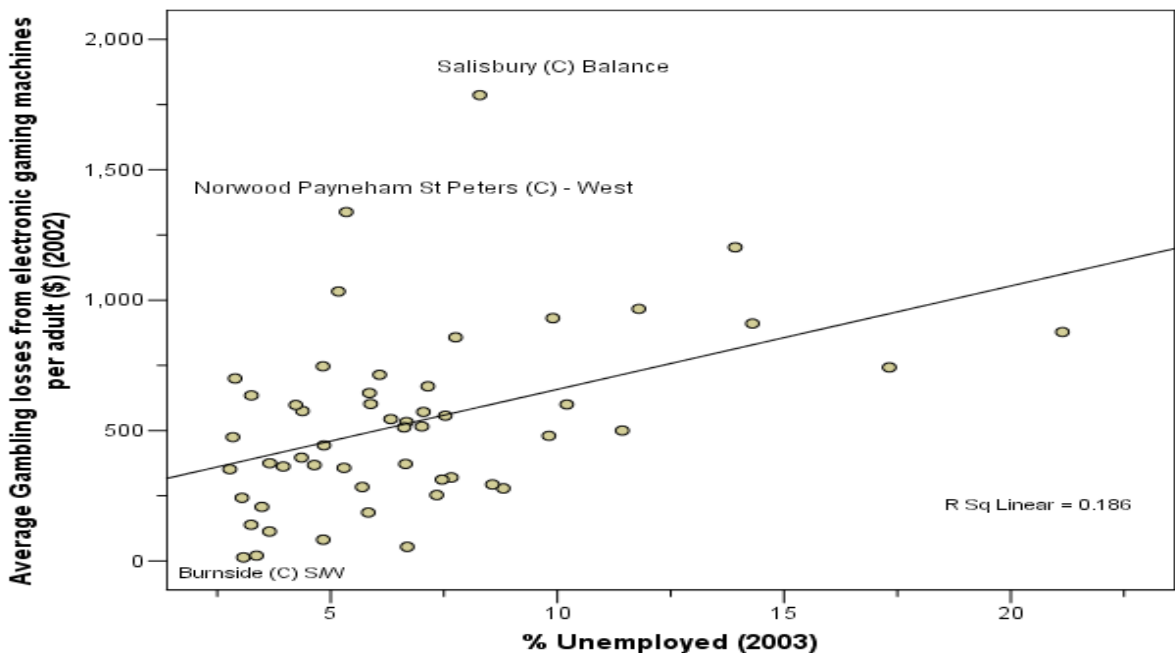
The following plots have been developed from data published in the Inequalities in SA report 2004, and show direct proportional relationships between average gambling loss, from poker machines, by location with each of:

- Level of low income families
- Unemployment
- Incidence of Children living in low income households
- Smoking during pregnancy
- Apprehensions (for criminal activity)

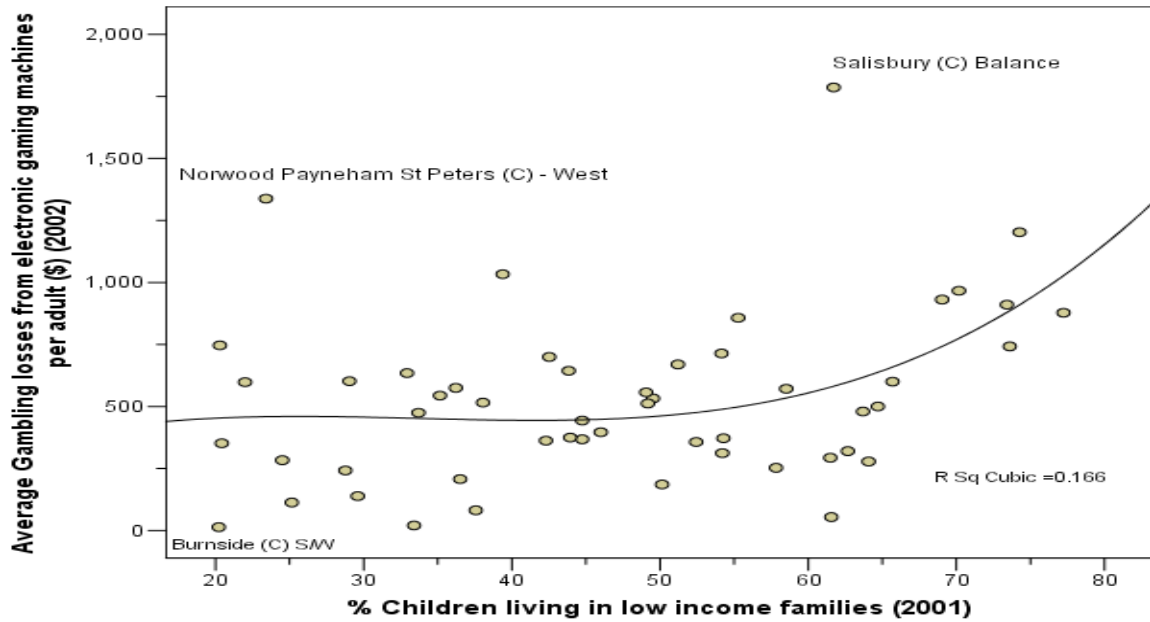
Average Gambling Losses and Incidents of Low Income Families. (Data: Inequality in South Australia, 2004).



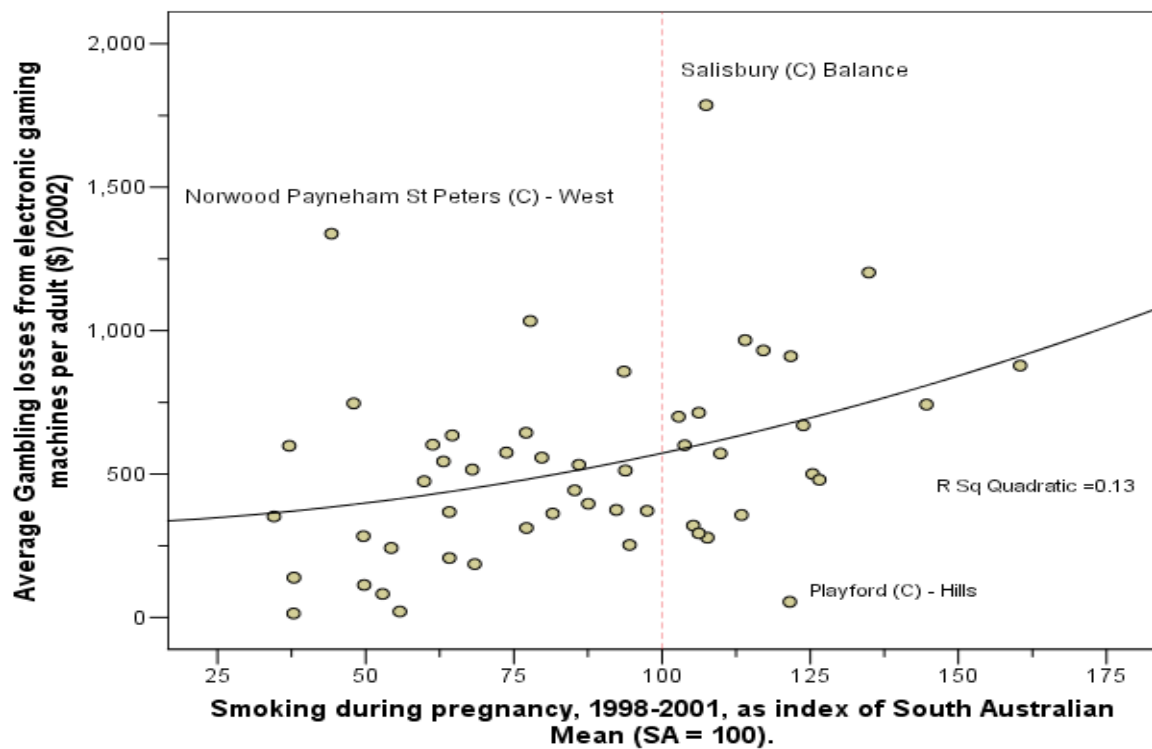
Unemployment and Neighbourhood Gambling Losses (Data: Inequality in South Australia, 2004).



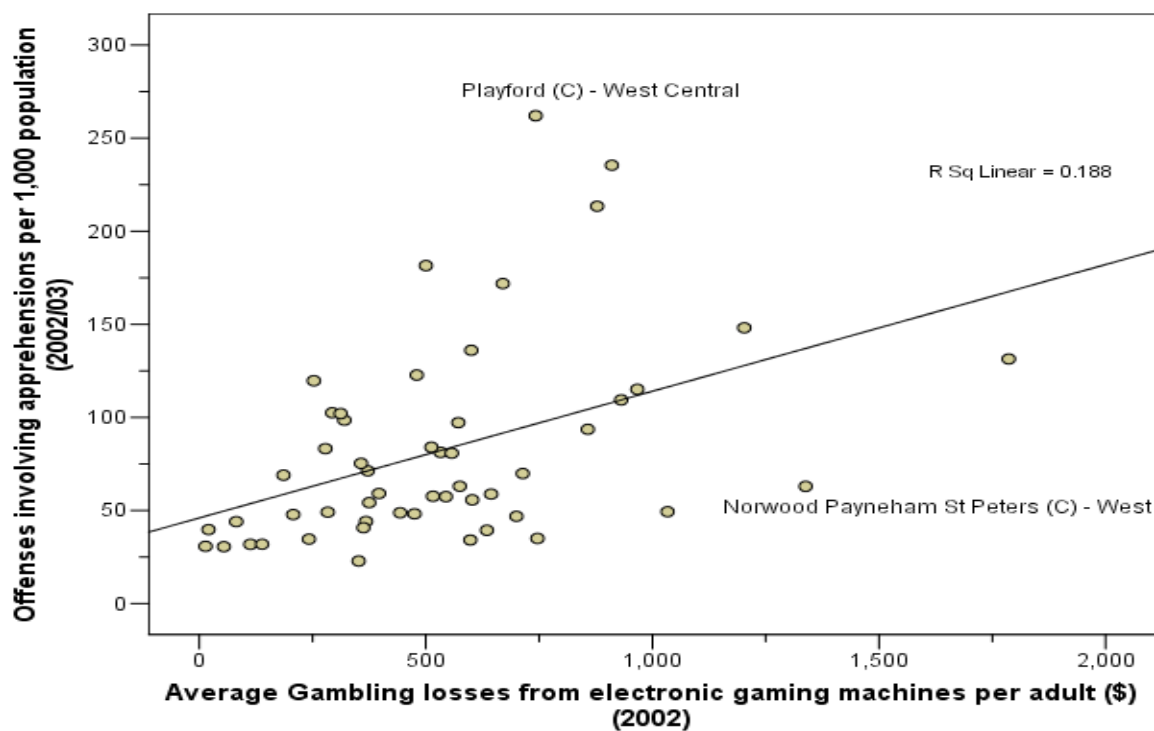
Neighbourhood Gambling Losses relative to Incidences of Children Living In Low Income Households (Data: Inequality in South Australia, 2004).



Gambling Losses in Relative to Neighbourhood incidence of Smoking During Pregnancy. (Data: Inequality in South Australia, 2004).



**Offenses involving apprehensions and Neighbourhood Gambling Losses
(Data: Inequality in South Australia, 2004)**



Still being developed

Will include definitions of

- Problem gambling
- Responsible gambling
- Break Even services
- Regression analysis and associated terms
- SEIFA

Appendix 6: Glossary of Terms

- Break Even services** *Gambling rehabilitation services funded in SA through the Gambler's Rehabilitation Fund and provided by community service agencies, including those involved in preparing this joint submission.*
- CALD** *Culturally and Linguistically Diverse*
- Entitlements** *The license entitling the holder to install a poker machine in an approved venue*
- Harm Minimisation** *Harm minimisation refers to policies and programs aimed at reducing addiction related harms – in this case, harm from gambling. It includes preventing anticipated harm and reducing actual harm. It aims to improve health, social and economic outcomes for both the community and the individual and encompasses a wide range of approaches, including abstinence-orientated strategies and other demand and supply reduction strategies. Harm minimising strategies, in 'treatment' are tailored to the individuals needs and abilities to act.*
- NGR** *Net Gambling Revenue, usually used as an aggregate, Statewide measure. It is total gambling turnover less returns to players.*
- Pre-commitment** *Any process that enables a gambler to pre-set limits on gambling activity, including the amount of money spent over a pre-determined period of time, and limitations on times or days of gambling. Pre-commitment has been one of the key components proposed as part of smartcard technologies intended to reduce gambling harm.*
- Problem Gambling** *Problem gambling is deemed to exist when gambling activity results in a range of adverse consequences where:–The safety and well-being of gambling customers and/or their families and friends are placed at risk; and/or–Negative impacts extend to the broader community. A person who scores 10 or more on the South Oaks Gambling Screen (SOGS) is considered to be a 'problem gambler'*
- Problem Gambler** *A person who scores 5 or more on the South Oaks Gambling Screen (SOGS) may be considered to be a 'problem gambler'. The term 'Problem Gambler' that is widely used in Australia also encompasses people who are experiencing extreme levels of gambling harm. Such people in some instances are labeled 'Pathological Gambler' or 'Compulsive Gambler' either by themselves or others. Whether such labels are helpful to the person experiencing the problems is an important consideration in therapy. It is often preferred to use terms such as 'problem gambling', and 'pathological gambling'*

that describes a set of behaviours (and their consequences) that are potentially changeable rather than describing a person in a way that sounds less changeable.

Regression analysis *A statistical method for determining the association between a dependent variable and one or more independent variables. Other related terms include:*

Pearson Coefficient *The Pearson correlation coefficient is a statistic which is used to estimate the extent and direction of any linear relationship that may exist between two given variables. A strong linear relationship between two variables does not necessarily mean that there is a causal relationship between the two, but it does mean that you can use a measure on either one of those variables to predict with some degree of confidence what the measure will be on the other variable.*

Regression Coefficient *An asymmetric measure of association; a statistic computed as part of a regression analysis.*

R-Squared *A statistical measure of the degree to which two variables are related. The nearer to 1.0 the R-squared statistic is, the more the dependent variable is explained by the independent variable(s). R-squared cannot exceed 1.0. Generally an R-Squared over about 0,7 is regarded as a good correlation*

Correlation coefficient *A numerical value that identifies the strength of relationship between variables*

Responsible gambling: *Responsible gambling occurs in a regulated environment where the potential for harm associated with gambling is minimised and people make informed decisions about their participation in gambling. 'Responsible gambling' is a term that only makes real sense when it is contrasted with levels or types of gambling activity that demonstrate a lower degree of responsibility.*

SEIFA *Socio-Economic Indexes for Areas (2001), a set of 4 Indexes constructed by the Australian Bureau of Statistics, based on census data. The SEIFA index used in this submission is **Index of Disadvantage** - This index is derived from attributes such as income, educational attainment, unemployment, and dwellings without motor vehicles. In particular it focuses on low income earners, relatively lower educational attainment and high unemployment.*

Smart Card *Any card or similar product that includes a 'computer chip' that is capable of being 'read' and programmed.*

