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SOCIAL PLANNING & RESEARCH, SOCIAL & ECONOMIC IMPACT ASSESSMENT, CONSULTATION & FACILITATION

Dr Ralph Lattimore
Gambling Inquiry
Productivity Commission
GPO Box 1428
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13 March 2009

Dear Dr Lattimore,

GAMBLING INQUIRY SUBMISSION

Dr Judith Stubbs has been a member of the NSW Social Impact Assessment (**SIA**) review panel under the previous NSW Liquor Administration Board for six years. As part of that role, Dr Stubbs and Mr Storer have undertaken a range of analyses with regard to Electronic Gaming Machines (**EGMs**). Much of that analysis is of relevance to the subject inquiry.

This submission addresses a number of areas under the scope of the inquiry.

The economic impacts of the gambling industries

In its 1999 report, the Commission carried out an economic analysis utilising the concept of consumer surplus to quantify the recreational value of gambling. We have two areas of concern with this approach.

The first is a range of conceptual and theoretical flaws in this methodology. These are discussed in the attached paper by Dollery and Storer (2008). Criticisms include:

- Violation of assumptions of the Pigouvian approach and in particular, uncertainties about the meaning of price and the availability of price information to the consumer;
- Precision in calculation of consumer surplus, in particular because no market information exists for gambling and so the demand schedule cannot be known; and
- The accuracy of estimates of price elasticities of demand given the lack of knowledge of the demand schedule.

In the face of these various concerns, the paper supports a methodology based on traditional cost-benefit analysis approaches for the assessment of the social value of gambling and similar

to the approach used by the Commission in its assessment of the costs of problem gambling. Such approaches could include for example, the use of a shadow price for the value of recreational time by analogy to other pursuits such as attending the cinema, socialising in a hotel and the like.

The second concern is the quantum ascribed to recreational gambling by the analysis. A core assumption of the Productivity Commission's 1999 conclusion was based on an assumption of elasticities of demand ranging from –0.3 to –1.3. However an analysis of expenditure data for NSW over time shows a marked increase in demand with no apparent change in price, that is that the demand curve is flat and therefore the consumer surplus, at least for EGM gaming, should be taken as zero. (Storer et al 2007a). A linear regression analysis of EGM data for NSW[1] comparing price and expenditure suggests an elasticity of demand of -13, ten times the worst value assumed by the Commission and in line with other research cited, but discarded, by the Productivity Commission supporting the conclusion that either gambling is very sensitive to price or that increases in gambling consumption have little to do with price and everything to do with increasing demand. In this context, we particularly note that the Productivity Commission rejected the notion that expenditure on gambling was quite sensitive to changes in price, despite identifying a range of studies finding the contrary.[2]

Using this empirically defensible value, the net total benefit/surplus of gaming (that is the benefit obtained in excess of the price paid plus taxation and community contributions) is found to be a total **cost** of $18,308 million, compared to the estimated **benefit** of $4,365 - $6,076 million in the 1999 report. When combined with the estimates of the social cost of gambling, the total cost to society is estimated at $20,108 - $23,894 million.[3]

Rather than focusing on the quantum, the calculation underlines the sensitivity of the approach to assumptions regarding elasticity of demand.[4] Using the same method of calculation, assuming an elasticity of about –3 gives a breakeven point at which the consumer surplus for normal gamblers and the taxation collected is equal to the consumer loss for problem gamblers.

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[1] Refer to Attachment A for details.

[2] Productivity Commission (1999), *Australia's Gambling Industries*, C5.

[3] Refer to Attachment B for details.

[4] The assumption that the demand curve is a straight line is itself a significant assumption, and in the case of high elasticities, will overestimate the consumer loss.

By way of illustrating sensitivity, an elasticity of about –2.4 gives total benefit/surplus equivalent to the low estimate of social costs of gambling and an elasticity of about –1.1 gives total benefit/surplus equivalent to the high estimate of social costs of gambling. By comparison, the average of elasticity measurements from table C.1 of the Commission's report is 1.4. For this value, the total benefit/surplus is around $4,500 million, equivalent to the upper third of the range of the estimate of the social costs of gambling.

By way of an alternative approach, by placing a value of $10 per hour on leisure time, an average adult gambler (non problem) would spend 2.0 hours per week gambling to approach the value calculated by the Commission, and one hour per week to obtain a value equivalent to the cost incurred.

While the Commission's cautions on the use of the estimates are clear,[5] our experience in NSW is that the estimates have been used to support applications for additional EGMs on the basis that, on average, benefits outweigh costs. Furthermore, typically such submissions seek to downgrade the Commission's estimates of the social cost of gambling while unreservedly accepting the estimates of net consumer benefit. It is apparent that despite the Commission's reservations, its estimates are used to inform public policy and hence are deserving of greater accuracy.

It is our view, that, rather than relying on complex calculations based on sweeping assumptions (e.g. assuming a normal level of gambling is twice the average for normal gamblers, assumptions regarding elasticities of demand), a better approach would be to assume that people get what they pay for,[6] that is that the private benefit to gamblers is equivalent to the private cost, but that problem gamblers incur a loss for expenditure above some normal level. By this approach, and using the normal level as twice the average, the cost to problem gamblers would be around $3,300 million, giving a net consumer benefit of $1,023 million (including taxation) to be offset against the calculated social costs of $1,800 - $5,586 million. While equally sensitive to assumptions, such an approach is much more transparent, and does

[5] Productivity Commission (1999), *Australia's Gambling Industries*, Box 11.2 and 11.4.

[6] A reasonable conclusion in that gambling consumption, at least for EGMs, appears to be driven by changes in demand rather than changes in prices with empirical evidence suggesting the main determinant of consumption is availability of EGMs.

not give an illusion of precision arising from the complexities of calculating consumer benefit via consumer surplus.

The social impacts of the gambling industries

We are of the view that the major social impact of the gambling industries lies in the diversion of household income away from other expenditure and into gambling. While such a diversion is defensible in terms of individual freedom, it may also be the case that expenditure on gambling represents the decision of one member of a family or household at the expense of the expenditure choices of other members of the family or household. The effects of gambling, as recognised previously by the Productivity Commission, are felt much more widely than the individual gambler.

By way of support, we attach a survey carried out in Fairfield in late 2000 regarding the existence and effects of problem gambling within the community (Stubbs, 2000). It should be noted that Fairfield has a very high per capita expenditure on EGMs. We estimate that in 2006 around 13% of household income in Fairfield went into EGMs (Storer and Stubbs, 2007b). What is most surprising about the study is the number of people reporting experience of the effects of problem gambling and the wide spread community opposition to an increase in EGMs in the area, particularly given the generally low prevalence rates of problem gamblers of the order of 1.0% of adults.

The contribution of gambling revenue on community development activity and employment

We are supportive of the position adopted by the Commission in 1999 that employment generation is at best a substitution. We are also of the view that in many cases, EGM income is used to support inefficient enterprises. We have not investigated this systematically, however as part of the review of SIAs, we have found, on a limited review of annual reports, that clubs supported by EGM income appear to have more than twice the staff per member compared to that found in a club without EGM income. We also note the high salaries attracted by managers of such clubs, with salaries in the hundreds of thousands of dollars reported. At the same time, there appears to be limited evidence of EGM income being returned to club members in the way

of benefits with prices of meals and drinks only slightly below prices in equivalent commercial operations.

The effects of the regulatory structures governing the gambling industries

We attach our submissions to the 2003 NSW Independent Pricing and Regulatory Tribunal review of the effectiveness of gambling harm minimisation measures (Stubbs and Storer 2003) and to the 2007 review of the NSW Gaming Machine Act (Storer and Stubbs 2007b).

The submission to the 2007 review, based on an analysis of empirical data, concludes that in the absence of regulation the likely outcome would be increasing numbers of EGMs, a proportional increase in community expenditure and with those impacts felt disproportionately across LGAs. Maintenance of caps and forfeiture rules in an environment of free trading will result in reducing numbers of EGMs with maintenance or increase of community expenditure but increasing polarisation of impacts across LGAs.

Our 2003 submission is based on an extensive review of EGM expenditure data for NSW LGAs. We conclude that the greatest harm is likely to be incurred with the introduction of EGMs into poor communities with low densities of EGMs. The optimum strategy to maximise distributional equity, harm minimisation and industry profit within the existing regulatory environment would be to approve applications in areas with high SEIFA index, high average profit per EGM and low existing density of EGMs. We note that the mechanism proposed in our submission is effectively that adopted by the NSW government as a result of its 2007 review of the Gaming Machine Act although the recommendation to maximise industry profit (and by extension taxation) was not adopted.

Harm minimisation

We have found that the major indicator of the prevalence of problem gambling is the presence of EGMs, followed by the passage of time. This conclusion is based on two studies conducted by ourselves. The first is a meta-analysis of 34 studies of the prevalence of problem gambling across Australia and NZ, (Storer and Abbott, 2009) and the second is a linear regression analysis based on the 2005 and 2007 Queensland Household Gambling Surveys[7] (analysis print outs attached as files qlddat.pdf, qld07.pdf and qld04.pdf).

[7] Note that this analysis is a preliminary analysis conducted by John Storer

The meta-analysis found that, across the combined data set, the addition of an extra EGM into an area resulted in an additional 0.8 problem gamblers (measured as SOGS5+). In the absence of any change in the density of EGMs, the prevalence of problem gambling was found to decrease by around 0.09% per annum, taking eleven years to drop by 1.0%. Results were strong with p values for both variables less than 0.000 and R^2 of 0.72. An additional finding was the apparent existence of inverse heteroskedasticity relative to EGM density. The variance in the prevalence of problem gamblers appears to be greater in areas with lower density of EGMs. We hypothesise that this may be because in areas of low densities there may be a few dense clusters of EGMs or, alternatively, EGMs may be more evenly spread. Areas with a few dense clusters may result in higher overall levels of problem gambling compared to those with more even clusters. This is in line with the findings expressed in our submission to the *Statutory Review of the Gaming Machines Act*, where the explanation of increasing per capita expenditure in the light of reducing average densities of EGMs across NSW appears to be explained by increasing polarisation, that is densities have increased in some areas with resultant increased per capita expenditure and reduced in others. The paper also examined the question of "maturing" markets for EGMs. "Maturing" markets (no further increase in the prevalence of problem gamblers with increasing maturity) were predicted at EGM densities of 0.1 EGMs per person, well above levels found anywhere in Australia, and four times the NSW average. The finding was not statistically significant, with a p value of 0.25, that is to say, there is about a one in four chance that rather than plateauing, the rate of prevalence increase itself increases.

The analysis of the Queensland results gave similar results. For a combined data set, an additional EGM placed into an area resulted in an additional 0.3 problem gamblers (measured using the CPGI scale). Using a crude transformation to SOGS5+, this appears to be similar to the result found above. The results are less significant than those for the meta analysis, with R^2 of 0.29 and a p value of 0.000 for the density variable, but with time not found to be significant. The 2007 data set shows better alignment with the meta-analysis results with an R^2 of 0.47. The same heteroskedasticity is evident in the combined model as in the meta-analysis, but is much more obvious in the 2007 data set. The time finding is unlikely to be significant, as the Queensland data only spans three years. A decrease of prevalence of about 0.15% would be

expected and we think that it is unlikely that such a change could be detected above the measurement error. With regard to plateauing, the Queensland data supports a conclusion of accelerating prevalence of problem gambling with increasing density of EGMs, rather than plateauing or reduction.

Whilst it would be expected that the Queensland results would be a better data set than the meta-analysis due to uniformity of method and jurisdiction, this is not the case. The reason appears to lie within the much narrower range of the Queensland data and its significant overlap with the sampling error range. Again as a crude measure, the average 95% confidence interval calculated as the sampling error of the binomial distribution is equivalent to 80% of the variation in the measured values of problem gambling. That is to say, 80% of the results of the Queensland survey lie within the average 95% confidence interval due to sampling error. For the meta-analysis 35% of the results lie within the average 95% confidence interval due to sampling error.

It should also be noted that while there appears to be a relationship between CPGI problem gambling prevalence and the density of EGMs, such a relationship is not apparent for low and moderate class problem gamblers. This could be interpreted to mean that high range problem gamblers are more likely to be associated with the presence of EGMs compared to those associated with other forms of gambling.

The poor relationship between prevalence rates for low, moderate and problem gamblers when measured using the CPGI may also be worthy of note. While the answer may lie with the relationship between EGMs and problem gambling noted above, it may also be that the CPGI contains methodological flaws. Evaluation of such conjecture is outside our expertise, but seems to be worthy of investigation, particularly in the light of the increasing use of the instrument. In the alternative, this finding may have consequences for views of problem gambling as an individual pathology. If it were a pathology, we would expect it to be distributed throughout the community in a reasonably predictable way, that is a constant underlying level with reasonable constant proportions of those suffering the pathology with low, moderate and high consequences. The data do not support such a conclusion. Again, such a conjecture is outside our expertise, but the matter seems worthy of investigation.

We have further attached a paper (Stubbs and Storer 2005) reviewing the relationship between density of EGMs and percapita expenditure on EGMs for time series data across a number of LGAs.[8] This analysis supports the view that the relationship between density and expenditure holds at varying scales and for different areas.

The impacts of harm minimisation measures

We believe the most effective form of harm minimisation is controls on the number and geographic distribution of EGMs. The empirical evidence supports this position. With regard to other forms of harm minimisation such as counselling services and the like, we believe that it is highly unlikely that it will be possible to measure outcomes given the considerable sampling error associated with measurements of problem gambling. We have done some analysis of calls to "G-line" (Attachment C), a heavily promoted form of harm minimisation in NSW. That analysis shows no relationship between calls and either high expenditure on EGMs or high densities of EGMs. The latter is likely to be a good indicator of the prevalence of problem gambling based on the various empirical studies cited above. On this basis, the efficacy of the "G-line" service would seem doubtful.

An inspection of our graph at Appendix A suggests that gambling may be quite sensitive to price. An increase in the price of gambling may lead to reduced harm as measured by increased consumption of gambling.

Whilst too early to tell, the regime put in place following the recent review of the NSW Gaming Machines Act would appear to be supported by empirical evidence. That regime seeks to limit the introduction of additional EGMs to areas with high densities and expenditure on EGMs and with a disadvantaged socio-economic profile.

With regard to the various questions set out in the Issues Paper, our submission informs the following questions.

Participants are invited to draw the Commission's attention to, and to comment on, relevant Australian and international research and reports, and available data that have been produced since 1999.

[8] Note that material identifying particular SIA applicants has been removed.

We refer the commission to the meta-analysis of Australian and NZ studies, the analysis of the results of the Queensland Household Gambling Survey and the various analyses based on NSW expenditure data and cited throughout our various submissions.

What have been the changes to gaming machines (numbers, location and characteristics)? Why have these occurred and what have been the impacts? What future trends are likely in the characteristics of gaming machines?

We refer the Commission to our submission to the 2007 review of the NSW Gaming Machine Act demonstrating a tendency for EGMs to concentrate in particular locations. The effect of that concentration is an increased expenditure on EGMs in the local area.

What factors explain trends in gambling expenditure, particularly in gaming machine expenditure, since 1999? Has the gaming machine market 'matured'? What roles have harm minimisation measures played?

The major determinant of expenditure on EGMs is the density of EGMs. There is no evidence as to any maturing of the gaming machine market, both with respect to expenditure and with respect to prevalence of problem gambling. Whilst there is a long term trend for problem gambling prevalence to decrease given constant density of EGMs, such a decrease could as well be explained by the difficulty of financially supporting a gambling problem as demonstrating that harm minimisation measures have made a difference. It should also be noted that trying to measure whether harm minimisation measures have made a difference would seem to be an almost impossible task. It is difficult to measure the prevalence of problem gambling and detecting a change in prevalence of the order of 10% would require large samples with those samples being around 26,000 people.

What factors explain the increased share of gaming machine expenditure in total gambling expenditure since 1999?

The primary determinant of expenditure on EGMs is the density of EGMs. The data suggest that the increase in numbers of EGMs has resulted in increased expenditure.

What surveys of the participation and profile of gamblers have occurred since 1999 and what do they show? What methodology was applied in these surveys? How robust are the results?

Our meta-analysis shows an increase in the prevalence of problem gambling with an increase in the density of EGMs, and a trend towards a reduction of the prevalence of problem gambling

with time. The results seem robust, particularly in the light of the significant sampling errors involved with most studies. That sampling error means that individual results are not particularly robust, however trends from a combined sample will account for this variation as a result of the central limits theorem. Similar results are found from our analysis of the Queensland studies.

What changes have occurred to the incidence, prevalence and profile of problem gamblers once account is taken of the potentially different thresholds used to define problem gambling? What has happened to 'at risk' groups? Have new groups of problem gamblers emerged? Have problem gambler spending patterns changed? What factors are likely to have affected problem gambling prevalence?

The major indicator of the prevalence of problem gambling is the density of EGMs. Given no change in the density of EGMs, there is a reduction in the prevalence of problem gambling with time. Explanatory hypotheses may include psychological theories of adaptation or simply the difficulty of funding a career as a problem gambler for any length of time.

What other Australian or overseas surveys of problem gambling prevalence and profiles have occurred since 1999? How robust are the results?

Individual results are not particularly robust because of the high relative errors attributable to sampling error. However analysis of combined samples or of large samples gives relatively robust results. The high variation due to sampling error appears to drown out any variation arising from differences in methods and jurisdictions.

Have the nature and extent of impacts from gambling on the gambling industries, other industries, gamblers and the wider community changed since 1999? In what way? What factors have contributed to any changes? For example, have measures introduced by governments to address problem gambling and those at risk of problem gambling reduced the extent of social costs of gambling?

Gambling expenditure has increased, as has the prevalence of problem gamblers, as the density of EGMs has increased. Given that the social costs of gambling are largely to do with the diversion of income, it is likely that the social costs of gambling have increased.

What are the regional impacts (for example in low income areas, outside major metropolitan areas, or in remote or Indigenous communities)?

Impacts are likely to vary markedly as a result of disparate geographical distribution of EGMs.

What Australian or overseas studies have been undertaken since 1999 on the impacts of gambling? What do they show? What methodologies and assumptions were applied in these studies? How robust are the studies' estimates of impacts? To what extent has the resolution of problems faced by former problem gamblers mitigated the social impacts?

We refer to our 2000 survey showing the impacts of gambling in the community of Fairfield. This study shows wide ranging impacts of problem gambling on members of the community and the degree of community concern regarding increases in EGMs in an area with very high per capita expenditure on EGMs .

We note the trend in our meta-analysis (Storer and Abbott 2009) for the prevalence of problem gambling to decrease with time in an environment of constant EGM densities with density expressed as EGMs per capita of adult population. A number of mechanisms could account for this ranging from psychological theories of adaptation to the difficulty associated with maintaining high levels of expenditure on gambling over time, and hence placing a natural limit on the life time of problem gamblers. We note the trend was not evident in the analysis of the Queensland surveys.

What have been the main developments in state and territory regulations applying to gambling since 1999? What are the rationales, benefits and costs of any new regulatory measures?

We note the recent amendments to the NSW Gaming Machines Act. This Act classifies LGAs as low risk, medium risk and high risk based on an assessment of SEIFA of disadvantage, the number of EGMs per adult and the EGM expenditure per adult. These amendments are reflective of our position in our 2003 submission to IPART. We also note that our 2007 submission to the review of the Gaming Machines Act appeared to be given some weight, along with the finding of the OLGR that when additional EGMs were introduced to a venue, the average takings per EGM increased.

What have been the main changes to state and territory regulatory frameworks for gambling since 1999? How have the governance and administration of regulatory frameworks changed? What impacts have any changes had on the quality of policy and regulation-making in the jurisdictions?

We note particularly the changes in the regulatory framework in NSW and the impacts as discussed in our 2007 submission to the review of the Gaming Machines Act.

To what extent have these measures been supported by research, especially field trials and evaluations? What has been the quality of this research against such criteria as validity, reliability and transparency?

We note that changes to the NSW Gaming Machine Act are supported by analysis of an extensive empirical data set. The state of NSW itself has been in effect a field trial of different regulatory regimes.

How effective has the Ministerial Council on Gambling been in addressing its objectives? To what extent has the National Framework on Problem Gambling been applied by state and territory governments? How effective has Gambling Research Australia been in addressing its objectives? What changes, if any, should be made to the various national initiatives?

We have conducted a preliminary review of information published on the Gambling Research Australia Web Site and the "Snapshot of Harm Minimisation Strategies". We have a number of concerns regarding both the priority research areas and the harm minimisation strategies.

Priority Research Areas

1 National approach to definitions of problem gambling and consistent data collection.

The primary problem with obtaining data on problem gambling is taking sufficiently large sample sizes. Whilst concerns regarding definition and consistent data collection are laudable, the variance arising from different definitions and inconsistent data collection is likely to lie within the measurable accuracy of problem gambling. For example, for the best available study, the 2007 Queensland Household Gambling Survey, the accuracy of the measurement of problem gambling is reported as 0.3-0.6, a relative error of about 30%.[9] In other words, variation arising from definitions and data collection would need to account for more than 30% of the variation to be detectable. For smaller samples, such as the NSW 2006 survey, the variation would need to be much larger. We note that across our meta-analysis, only two studies appeared to be doubtful in terms of the results obtained and both these studies were early studies. The primary methodological problem relates to sampling error and size rather than on fine points related to instruments.

[9] That is the error is +/- 30% of the measured value.

2 Feasibility and consequences of changes to gaming machine operation such as pre-commitment of loss limits, phasing out note acceptors, imposition of mandatory breaks in play and the impact of linked jackpots.

It is not possible to measure outcomes due to lack of sampling size. Measurement could be improved by use of expenditure as a proxy for problem gambling.

3 Best approaches to early intervention and prevention to avoid problem gambling.

It is not possible to measure outcomes due to lack of sampling size. Measurement could be improved by use of expenditure as a proxy for problem gambling.

4 Major study of problem gamblers, including their profile, attitudes, gambling behaviour and the impact of proposed policy measures on them.

Studies that we are aware of focus on laboratory type studies of people in gambling situations. The finding of our meta-analysis that problem gambling prevalence decreases with time needs explanation. Such explanation could be found in longitudinal tracking of problem gamblers to form a view as to the mechanisms likely to lead to reduction in problem gambling. There is likely to be a methodological flaw in studies of this type, as anyone presenting as a problem gambler is likely to be looking for behavioural change. Ideally, such a case study would contact problem gamblers identified in large surveys and interview them at regular periods. Such an approach would be difficult, as for example, the 2007 Queensland survey of 30,000 people found around 150 problem gamblers, hence samples are likely to be small.

5 Benchmarks and ongoing monitoring studies to measure the impact and effectiveness of strategies introduced to reduce the extent and impact of problem gambling, including studies of services that exist to assist problem gamblers and how effective these services are.

It is not possible to measure outcomes due to large relative errors arising from sampling errors. Measurement could be improved by use of expenditure as a proxy for problem gambling.

We have previously looked at the relationship between G-line calls and indicators of problem gambling including density of EGMs and per capita expenditure on EGMs on an LGA basis for NSW. That analysis is attached at Attachment C. It can be seen that a reasonable assumption is that a constant percentage of the population contacts G-line. If the service were reaching its target, that is problem gamblers, a greater number of calls would be expected from LGAs with greater densities of EGMs and/or with greater per capita expenditure on EGMs. No such trend

is evident, and what trends are evident suggests that G-line is likely to get fewer calls from LGAs with indicators of increased prevalence of problem gamblers. (Note the G-line calls are expressed on a per capita basis).

6 To research patterns of gambling and consider strategies for harm reduction in specific communities and populations, such as indigenous, rural, remote or culturally and linguistically diverse communities, young people or older people.

The primary indicator of gambling harm is the density of EGMs. On this basis the conclusion is obvious. Harm can be minimised by minimising the density of EGMs.

Harm minimisation strategies

Based on empirical data, the most effective form of harm minimisation is likely to be a reduction of EGM numbers. This is not included in the list of harm minimisation strategies although quantity restrictions are noted in the Interstate Comparison Table. The recent changes to the NSW Gaming Machines Act is, in our view, an appropriate response to harm minimisation and is founded on analysis of empirical data.

To what extent have the development of harm minimisation measures reflected regulatory best practice (such as clear objectives, evidence of likely efficacy, consultation with stakeholders, co-ordination with other measures, and cost effectiveness)? What changes, if any, in regulatory processes in this area are warranted?

It is evident that the major method of minimising gambling harm, as reflected either in the prevalence of problem gambling or in expenditure, is the reduction in access to EGMs. Whilst a wide range of other measures are considered, they are likely to have only a limited impact on gambling harm. The apparent sensitivity of gambling to gambling price is also noted. An inspection of the graph at attachment A suggests that a small increase in price will lead to significantly reduced expenditure on gambling. At the same time there may be pressure to reduce price. The graph suggests that an operator of gaming machines may increase total profit with a small reduction in price. In our view, the recent changes to the NSW Gaming Machine Act reflect best practice based on available empirical evidence.

What have been the impacts of harm minimisation measures that have been introduced? What have been their impacts on problem gamblers and those at risk of problem gambling? Have the measures led to a reduction in the incidence and prevalence of problem gamblers and of those

at risk of problem gambling? Have the measures enhanced consumer protection more generally? Have they provided gamblers with informed choice or greater control over their gambling? Do the measures adversely affect recreational gamblers? Have there been any unintended consequences arising from the measures? What other benefits and costs of the measures are there?

Harm minimisation measures appear to have had an insignificant impact on the prevalence of problem gambling and on gambling expenditure. By far the greatest impact on problem gambling and gambling expenditure is the density of EGMs. While there appears to be a trend for reduction in the prevalence of problem gamblers with time, this trend is not understood, and it appears that increases in EGM numbers will counteract other trends towards decreasing prevalence with time.

There are a range of issues surrounding market failure with regard to gaming. These are discussed in the paper "Assessing the impact of electronic gaming machines: A conceptual critique of the Productivity Commission's methodology". Particular issues include the recognition of price.

To what extent are comorbidities (such as depression and substance abuse) in problem gamblers and those at risk of problem gambling relevant to the effectiveness of harm minimisation measures?

The major predictor of problem gambling prevalence is access to EGMs. If problem gambling were reflective of underlying morbidity, then we would expect problem gambling prevalence rates to be constant across jurisdictions where access to gambling exists and with the prevalence of problem gambling in line with the prevalence of the underlying morbidities. The lack of a relationship between problem, moderate and low problem gambling categories in the Queensland data should also be noted in this regard.

What evaluation, research or trials relating to the effectiveness, or benefits and costs, of harm minimisation measures have been conducted and what do they show? What has been the adequacy of such evaluations against such criteria as validity, reliability, independence and transparency? How have such evaluations informed policy?

The major predictor of problem gambling prevalence is access to EGMs. It is highly unlikely that the effects of other harm minimisation measures will be measurable for reasons discussed

above. We note that recent changes to the NSW Gaming Machines Act have been informed by empirical evaluation.

What key developments have there been since 1999 to regulating access to gaming machines in the states and territories? Have there been any data or studies showing what impacts regulating access to gaming machines has had on problem gambling or on the broader social impacts of gambling? Are there changes in prospect that would increase or decrease access to gaming machines (for example increasing caps or extending the location of gaming machines)? What changes should be introduced?

There is a clear and demonstrated link between access to EGMs and the prevalence of problem gambling and per capita expenditure on EGM gaming. This conclusion arises from the empirical studies noted above. The recent changes to the NSW Gaming Machines Act are particularly noted, and are likely to minimise further increases in prevalence and the further social impacts of EGMs.

What key developments have occurred to government programs since 1999? What changes, if any, have taken place in respect of funding the programs? What changes should occur to government programs? Should greater attention be given to the education of young people about gambling, particularly in relation to financial literacy? How successful would such an approach be?

We have not systematically reviewed policy shifts, however the context of government policy appears to have moved away from the utilitarian approach adopted by the Productivity Commission in 1999 and towards a model characterised by individual responsibility and harm minimisation. In particular assessment around economics appears to have disappeared. Two examples include the 2003 NSW IPART inquiry framed entirely in terms of responsible gambling and the 2001 British gambling review report. This appears to have been accompanied by a similar shift in public policy. For example, in NSW the Community Casino Benefit fund has been relabelled the Responsible Gambling Fund. Journal articles appear to be slanted towards psychological inquiry around gambling behaviour, and to some extent this may reflect a covert acceptance of problem gambling as an individual pathology rather than as a result of an exposure to a public hazard.

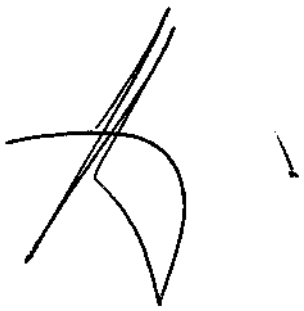
To some degree, the formulation between these two views will determine public policy responses. As an example, forty years ago as a society we were very forgiving of smoking but now it is viewed as a public hazard and is heavily controlled. Similarly in the area of industrial safety, 150 years ago safety was seen as an individual responsibility but now an unsafe workplace is seen as a public hazard and is heavily controlled. There appears to be two sides to such policy positioning. The first is scientific research and policy response to such research and the second is the capture of public policy by vested interests. We are of the view that empirical analysis of the relationship between EGMs and the prevalence of problem gambling is supportive of a view of EGMs as a public hazard rather than as an individual pathology. As a minimum, if it were an individual pathology, prevalence rates would be expected to be relatively constant, provided there was some level of access to gambling. As the same time there is considerable pressure from vested interests to capture public policy. EGM gaming in NSW is worth $1.0 billion yearly to the NSW state government and around $4.0 billion to the hotel and club industry. On an analysis of NSW data, additional EGMs in a venue lead to additional income.

With respect to these concerns, it should be kept in mind that collection of taxation through EGMs is inefficient (it might cost the community $3.0 billion for the government to obtain $1.0 billion in taxation) and it is highly inequitable, with problem gamblers providing around half the income (based on the 1999 PC study) and with some LGAs in NSW contributing large amounts and others almost nothing depending on the geographical location of EGMs. There is a further inequity in that some LGAs with significant EGM expenditure have lower household incomes and hence are more likely to experience greater relative impacts.

Have government programs relevant to gambling been evaluated? What do these evaluations show?

The major indicator of the prevalence of problem gambling is the density of EGMs. There is a trend towards a reduction in the prevalence of problem gambling with time however there is no evidence to suggest this trend may be associated with harm minimisation programs. Any increase in EGM density is predicted to result in increased prevalence of problem gambling, at a rate of 0.8 problem gamblers for each EGM.

Yours faithfully,



Dr Judith Stubbs

John Storer

Attachment A

Estimation of demand curve for EGM expenditure for NSW.

1.

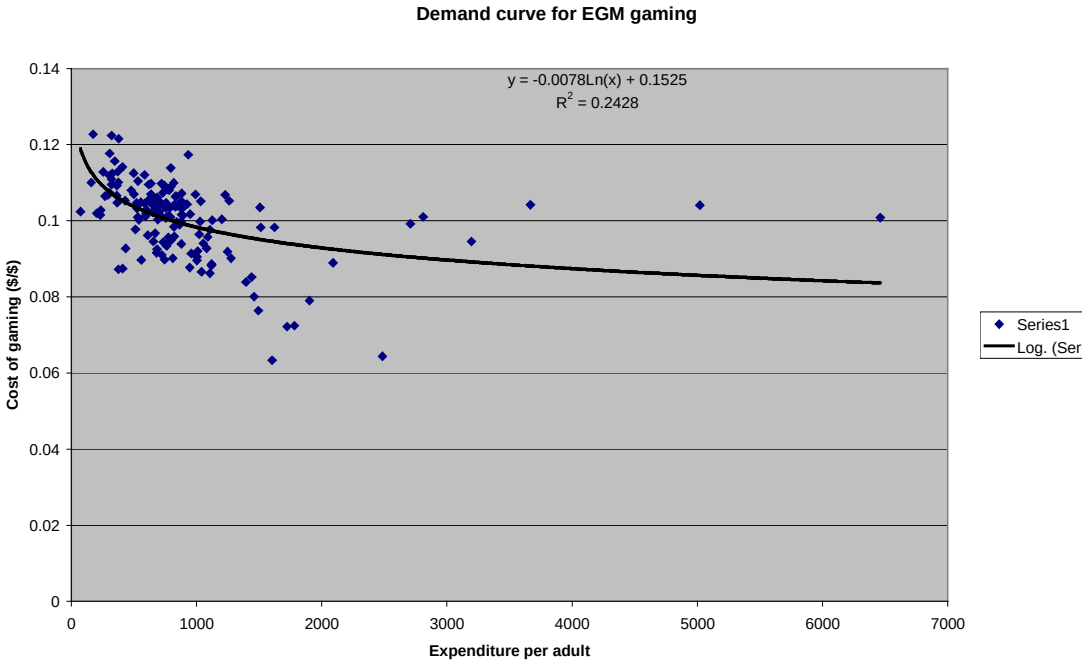


Figure 1: Demand curve for EGM expenditure NSW.

2. We have analysed 2005-06 data for NSW across LGAs relating expenditure per adult on gaming with the price of gaming. That data and analysis is shown in Figure 4. Using the log curve fitted above, the elasticity of demand at a price of 10c per dollar for gaming can be calculated as –13,[10] much lower than the relatively steep curves assumed by the Productivity Commission, and suggesting that the Productivity Commission assumptions of elasticities in the range –0.3 to –0.8 are not supported by empirical evidence and that their estimates of consumer surplus are excessive. We further maintain that this measure of the price of gambling is probably flawed, as the price is not visible to the EGM player.

[10] E = 1/(dP/dQ) x P/Q

P=-0.0078 ln Q + 0.1525

dP/dQ = -0.0078/Q

E = Q/-0.0078 x P/Q

= P/-0.0078

For P = 0.10, E = -13.

Attachment B

Calculation of Consumer surplus using PC model and empirical elasticity for EGMs.

Recreational gamblers	
Expenditure	7,209
Price elasticity	13
Sn	277
Income elasticity	0.79
Expenditure share	0.025662483
Adjustment	3
Consumer surplus (adjusted)	274
Problem Gamblers	
MPG	
Expenditure	889
Price elasticity	13
Sn	34
Income elasticity	0.79
Expenditure share	0.216895796
Adjustment	3
Consumer surplus (adjusted)	31
SPG	
Expenditure	2,673
Price elasticity	13
Sn	103
Income elasticity	0.79
Expenditure share	0.823351265
Adjustment	33
Consumer surplus	69
Consumer Surplus - PG (rational)	101
Adjustment for Problem Gamblers	
MPG	
Expenditure (Normal)	210
Price elasticity	13
Sn	8
Income elasticity	0.79
Expenditure share	0.216895796
Adjustment	1
Consumer surplus	7
$p1^0_p$	0.17
$q1^0_p$	1,203
E	192
Loss on excess spending	
Total expenditure	889
Expenditure (Adjusted Normal)	192
a	7
Normal tax b (Fig 7)	80
c+e+d+f (Fig 7)	697
Total Tax	339

c+d Excess tax (Fig 7)	259
q at price 0	77,788
c+e (Fig 7)	6,127
Net loss for MPG (Benefit)	5,776

Adopting curve of the form P=mQ+b

ε	m (=P/(Qε))	P	Q	P/Q	b (=P-mQ)	Q for P=0
-13	- 0.00000222	0.16	5,556	0.00002880	0.172307692	77,788

SPG

Expenditure (Normal)	167
Price elasticity	13
Sn	6
Income elasticity	0.79
Expenditure share	0.823351265
Adjustment	2
Consumer surplus	4
$p1^0_p$	0.17
$q1^0_p$	702
E	112

Loss on excess spending

Total expenditure	2,673
Expenditure (Adjusted Normal)	112
a	4
Normal tax b (Fig 7)	64
c+e+d+f (Fig 7)	2,561
Total Tax	1,019
c+d Excess tax (Fig 7)	956
q at price 0	233,888
c+e (Fig 7)	18,655
Net loss for SPG (Benefit)	17,118

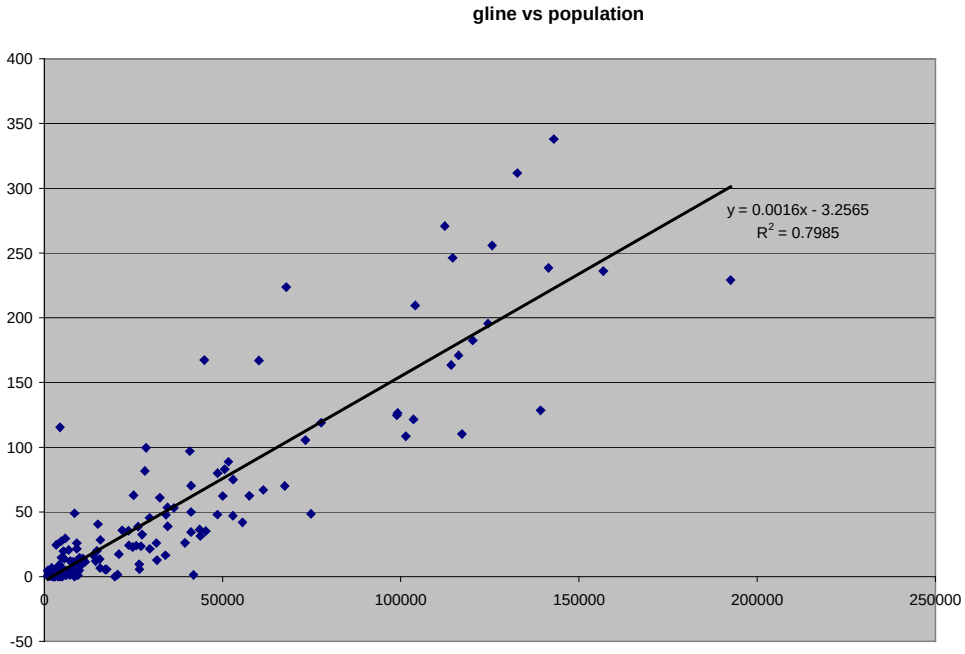
Adopting curve of the form P=mQ+b

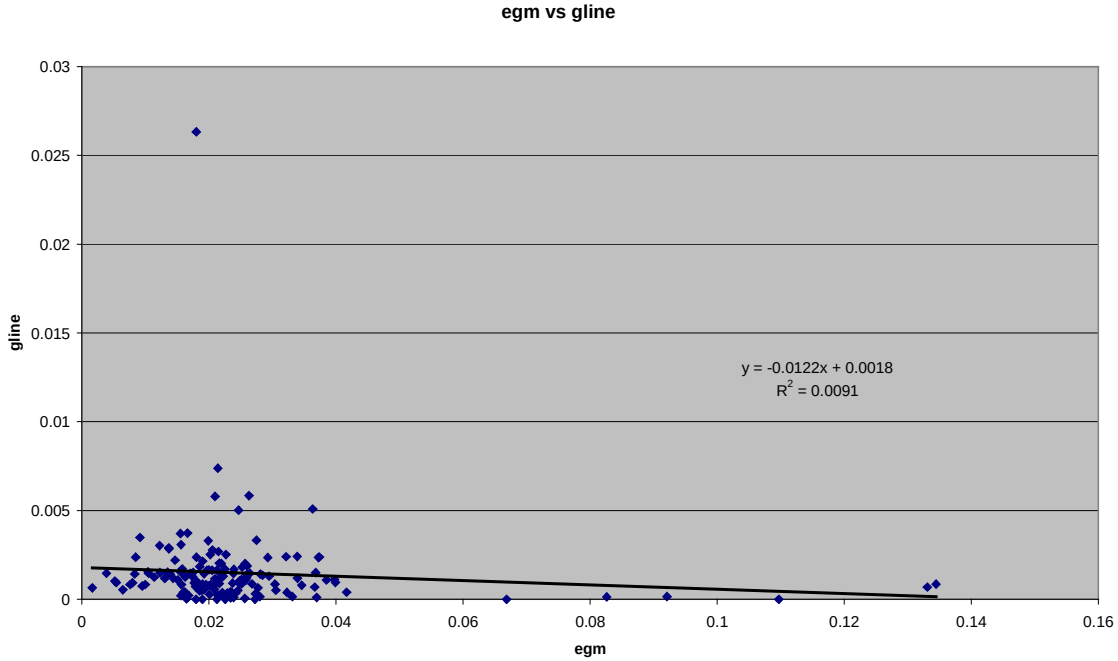
ε	m (=P/(Qε))	P	Q	P/Q	b (=P-mQ)	Q for P=0
-13	- 0.000000737	0.16	16,706	0.00000958	0.172307692	233,888

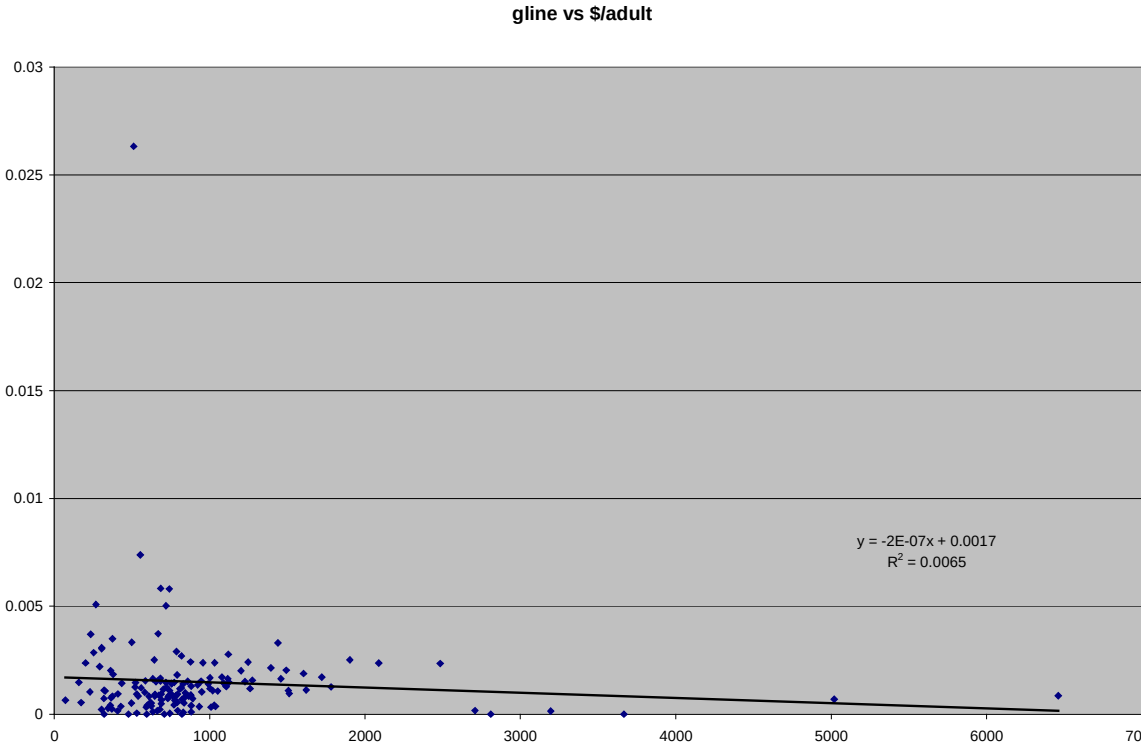
Summary:

Consumer surplus for recreational gamblers	274
Tax, licenses and community contributions	4,312
Consumer loss for problem gamblers	22,894
Net total loss	18,308

Attachment C






gline vs $/adult
0.03
0.025
0.02
0.015
0.01
0.005
0
0
1000
2000
3000
4000
5000
6000
70
y = -2E-07x + 0.0017
R2 = 0.0065

Attachments

Dollery B and Storer J (2008), *Assessing the impact of electronic gaming machines: A conceptual critique of the Productivity Commissions methodology*. Gambling Research Volume 20(1), 1-12.

Stubbs J and Storer J (2005), *Increased Expenditure Arising from the introduction of Additional Gaming Machines to a Local Community:Review of the 'Density Hypothesis'*, NSW, Australia: Author.

Storer J, Dollery B and Stubbs J (2007a), *Consumer Surplus as a Measure of Consumer Benefit*, NSW, Australia: Author.

Storer J and Stubbs J (2007b), *Submission to Statutory Review of the Gaming Machines Act 2007*, NSW, Australia: Author.

Stubbs J and Storer J (2003), *Gaming prevalence as an indicator of gaming harm in local communities: Some policy implications for gaming harm minimisation in NSW*, NSW, Australia: Author.

Storer J and Abbott M (2009), *A meta-analysis of surveys of problem gambling prevalence in Australia and New Zealand with respect to concentration of Electronic Gaming Machines*, NSW, Australia: Author (In draft)

Analysis files for Queensland Household Gambling Expenditure Surveys – QLD07.pdf, QLD04.pdf and QLDDAT.pdf.

Stubbs J (2000), *CV Hotel Survey*, NSW, Australia: Author.