



COMMONWEALTH GRANTS COMMISSION

DISCUSSION PAPER CGC 2002/16

THE GAMBLING ASSESSMENT

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CONTENTS

Introduction	1
Description Of The Category	2
Current Assessment	5
History Of The Gambling Assessment	4
State Concerns	5
Implications For The Assessment	6
Policy Differences Among The States	7
The Relationship Between Gambling Expenditure and Income	9
Other Issues	11
Conclusion	13
Attachment A: State Gambling Policies	14
Electronic Gaming Machines	14
Casinos	15
Lotteries	16
Racing and Sports Betting	16
Other Gambling	17
Attachment B: The Relationship between Gambling Expenditure and Gross Household Disposable Income	18
Refinements To The Regression Model	19

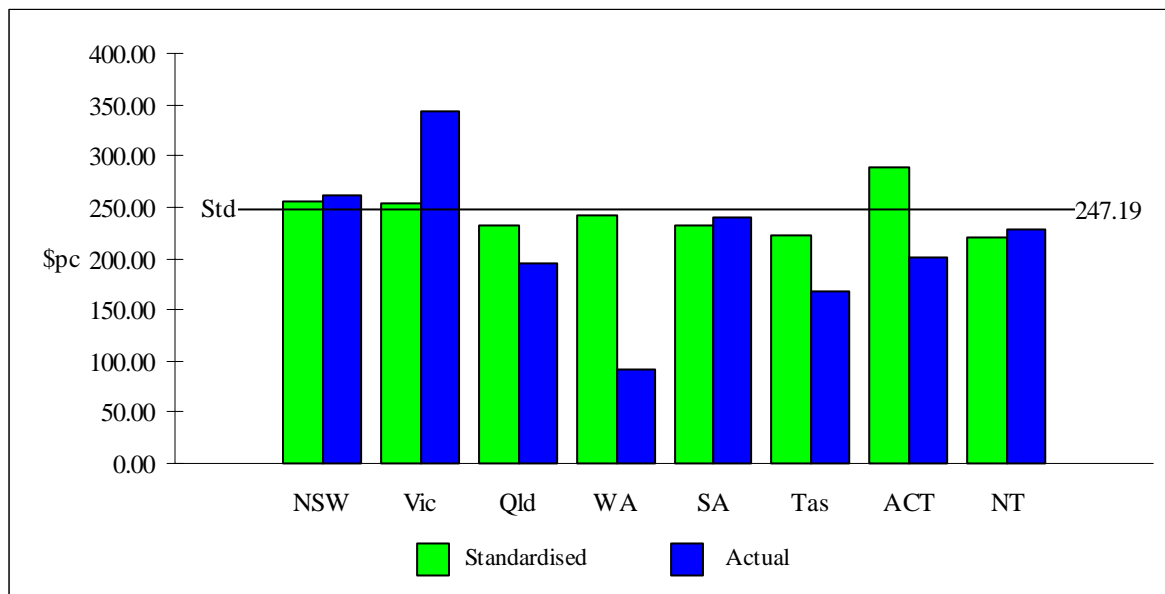
INTRODUCTION

1. This paper provides an overview of the proposed Gambling Taxation assessment for the 2004 Review. It presents issues raised by States in their 2004 Review submissions and staff responses to them.

2. Gambling revenues accounted for nearly 10 per cent of State own-source revenues in 2000-01¹. They have also grown fairly rapidly (on average, by about 9 per cent per year) since 1990-91.

3. The Gambling assessment results in a relatively modest redistribution of grants between the States, particularly for a category for which there are significant differences between the States in actual revenue collections (see Figure 1). This is largely because the revenue base (measured as gross household disposable income but with the per capita differences between States and the national average discounted by 50 per cent), does not differ by very much from State to State on a per capita basis.

Figure 1 GAMBLING TAXATION: STANDARDISED, ACTUAL AND STANDARD REVENUES PER CAPITA, 2000-01



4. New South Wales, Queensland and Western Australia did not comment on the Gambling assessment in their submissions. Of the other States, opinion was divided on whether gambling expenditure, gross household disposable income (suitably adjusted) or a

¹ The GST and FAG assessments used the same method, but the category standards differed. For illustrative purposes, the discussion in this paper is, unless indicated otherwise, based on financial assistance grants (FAG) rather than GST data.

form of Equal Per Capita assessment (based on, for example, population aged 18 and over) should be used as the basis of the Gambling assessment.

5. This paper addresses the issues of:
 - (i) the use of gross household disposable income (GHDI) as the base for the assessment compared to, say, expenditure on gambling; and
 - (ii) the appropriate adjustments to GHDI, including the current GHDI discount, or any other indicators.

DESCRIPTION OF THE CATEGORY

6. The Gambling Taxation category comprises revenues from the licensing and taxing of activity of gambling operators. It includes:

- Casino taxes — the taxes and levies on the holders of casino licences, including one-off premiums/licence fees and taxes on poker machines at casinos;
- Lottery taxes — the net proceeds from State lotteries, taxes on lottery subscriptions (including soccer football pools) and keno and other minor lotteries, and shares of profits of private lotteries operators;
- Poker machine (sometimes called Electronic Gaming Machines (EGMs)) taxes — the net proceeds from taxes and licences associated with poker machines in clubs and hotels, and taxes on Club Keno games operated from clubs and hotels; and
- Bookmaker and TAB taxes — the net proceeds from all taxes or commissions from bookmakers and totalisators, unclaimed totalisator dividends and fractions (excluding revenue retained by clubs or credited to racecourse development funds). It encompasses taxes on sports betting and other events with bookmakers or TABs.

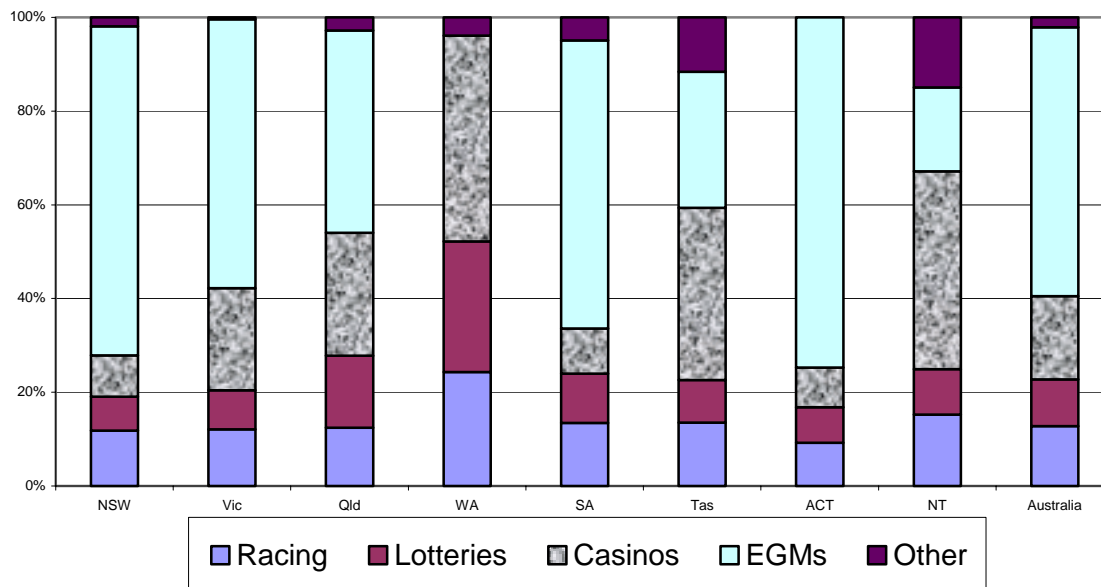
7. The importance of the various forms of gambling is shown in Figure 1, which is based on gambling expenditure data compiled by the Tasmanian Gaming Commission (TGC).

8. As can be seen from Figure 2, EGMs and casinos account for approximately 75 per cent of total gambling expenditure. Lotteries and racing account for virtually all of the remainder.

9. The pattern of expenditure does, however, vary markedly across States. In the Northern Territory for example, the share of expenditure on EGMs and casinos is well

below the Australian average, while ‘other gambling’ (which covers keno, sports betting and minor gaming) accounts for a far bigger share of total gambling expenditure than for Australia as a whole (see Figure 3).

Figure 2 GAMBLING EXPENDITURE IN AUSTRALIA: 1999-2000



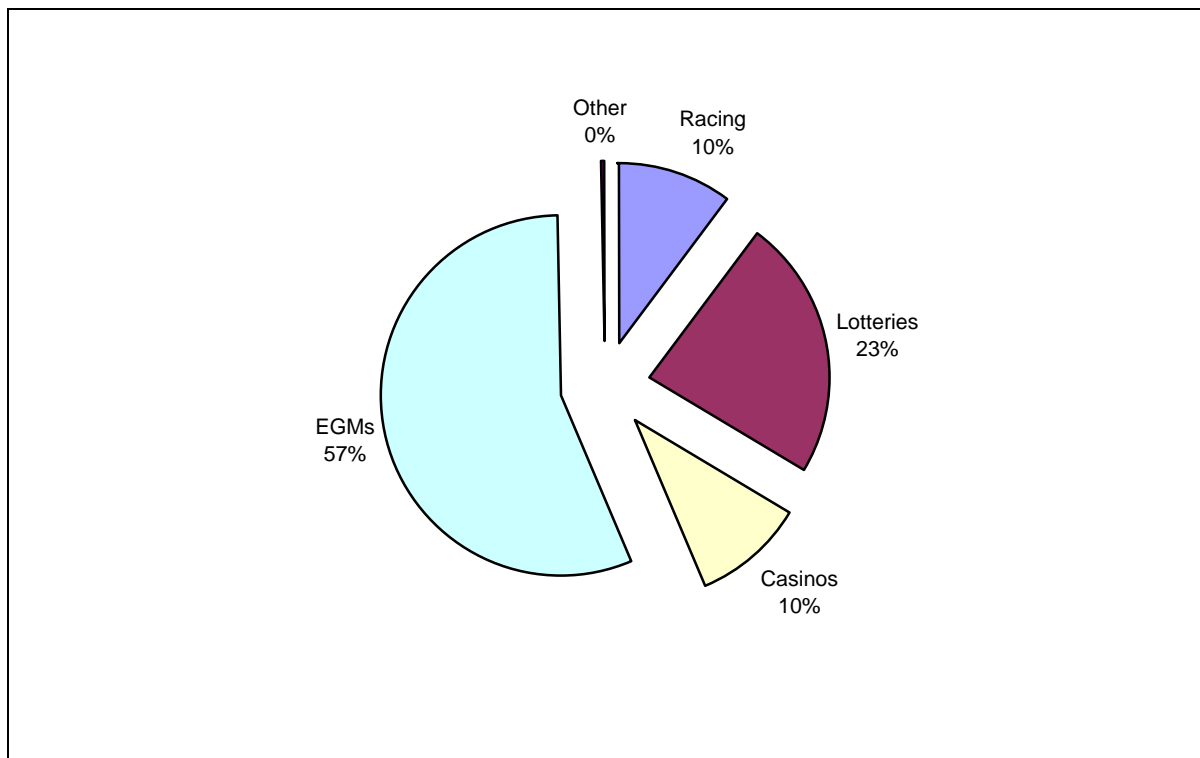
Source: The Tasmanian Gaming Commission: *Australian Gambling Statistics 1975-76 to 2000-01*.

10. Alternatively, we could view the pattern of gambling in terms of State revenues. When viewed from this perspective (which is important for State revenue collections) lotteries increase significantly in importance relative to other forms of gambling, apart from electronic gaming machines (see Figure 3). This reflects the relatively high effective tax rate on lotteries compared to the tax rate on casinos, racing and other gambling. Conversely, there is a relatively low effective tax rate on casino gambling.

11. **Implications of Tax Reform.** In June 1999, the States and the Commonwealth signed an *Intergovernmental Agreement on the Reform of Commonwealth-State Financial Relations (IGA)*. Under the IGA, the Commonwealth imposed the Goods and Services Tax (GST) on gambling activity from 1 July 2000 and the States reduced their gambling taxes so that the overall tax on gambling did not increase. Actual gambling revenues collected by the States in 2000-01 were lower because of the reduced gambling taxes. States are, however, compensated by the Commonwealth (through the return of GST revenues) for the reduction in gambling revenue.

12. As part of the transitional arrangements agreed in the IGA, the Commission makes two gambling assessments, a GST and a FAG assessment. The only difference between the two assessments is the standard used: in the case of the GST assessment, the standard is based on the GST gambling revenue arrangements (with the reductions in State taxes backcast into the years before 2000-01). In the FAG assessment, the standard is calculated assuming no change in State gambling tax rates after July 2000.

Figure 3 CONTRIBUTION OF DIFFERENT FORMS OF GAMBLING TO TOTAL GAMBLING REVENUE



Source: The Tasmanian Gaming Commission: *Australian Gambling Statistics 1975-76 to 2000-01*.

HISTORY OF THE GAMBLING ASSESSMENT

13. **1988 and 1993 Reviews:** In the 1988 Review and subsequent updates, this category was assessed on the basis of calculations for:

- (i) racing taxation, the aggregate turnover of on-course and off-course bookmakers and totalisators (adjusted to exclude the effects of differences in the coverage of local and interstate racing events) used as the revenue base; and
- (ii) lottery revenue, poker machine licence fees and casino taxation, with gross household income used as the revenue base.

14. In the 1993 Review, the Commission examined the forms of gambling in each State, movements in the level of gambling turnover (especially after the introduction of a new form of gambling) and the nature and extent of gambling taxation. It observed that:

- (i) the different forms of gambling were highly substitutable;

- (ii) the level of gambling was influenced by government policy in many respects; and
- (iii) gambling taxes were intended to raise revenue from a broad cross-section of the community and to access household disposable income, at least partly.

15. These observations led the Commission to conclude that the assessments for all forms of gambling taxation should be made, as far as possible, on the basis of a similar indicator of the revenue base. Although most gambling taxes were imposed on measures of either the gross or net amounts invested, the Commission considered that household disposable income (HDI) would be a more appropriate starting point for the measurement of the revenue base. It then adjusted HDI for:

- (i) differences between States in the cost of living;
- (ii) diseconomies of scale faced by the smaller States in relation to on-course racing and lotteries; and
- (iii) the constraints on the ACT's ability to apply the standard revenue effort arising from the mobility of gambling activities and the ACT's location within New South Wales.

CURRENT ASSESSMENT

16. In 1999 Gambling Taxation was assessed as a single category with the revenue base measured as Gross Household Disposable Income (GHDI), adjusted for:

- a 50 per cent discount of the differences in GHDI between States because gambling levels are not directly linked to gamblers' incomes;
- differences in access of population to gambling (the remote population adjustment); and
- for the years prior to 1999-2000, revenue sharing arrangements for lotteries.

STATE CONCERNS

17. In their submission, **Victoria** argued that: research pointed to little correlation between GHDI and gambling expenditure; that most gambling was done by lower income groups; and gambling was heavily concentrated in a small part of the population – 90 per cent of gambling expenditure was by 10 per cent of the population. Victoria preferred an equal per capita (EPC) assessment based on population aged 18 and

over. If GHDI was used as the base for the assessment, the current discount of 0.5 should be increased to move the assessment closer to EPC. Victoria also believed that the current remote population adjustment was no longer relevant as a result of electronic access to gambling.

18. **South Australia** considered that GHDI was an inferior measure of revenue capacity compared to actual gambling expenditure. It noted that the proportion of disposable income devoted to gambling varied significantly from State to State even though the 'price' of gambling was substantially the same in all States. It found it hard to believe that non-price policies accounted for the wide variation in per capita gambling expenditure between States. South Australia proposed the use of gambling expenditure as the revenue base, with expenditure estimated for Western Australia to account for its gaming machine restrictions.

19. If gambling expenditure was not used as the base, South Australia proposed that expenditure on Recreation and Culture be used as the sub-global base:

- for Gambling as a whole, or
- for Casinos and Gaming Machines, with the revenue base for Other Gambling being Other Gambling expenditure.

20. **Tasmania** proposed the retention of the current assessment but without the GHDI discount of 0.5.

21. The **ACT** was concerned that there was a limited relationship between GHDI and gambling expenditure. They argued that low income groups and people in non-metropolitan areas gambled more than those on high incomes. If GHDI continued as the base, the ACT wanted it adjusted for income distribution. They also wanted the discount of 0.5 increased. Finally, the ACT wanted the small State lotteries adjustment retained for those years for which it applied.

22. The **Northern Territory** believed that the current assessment should be retained, but with some refinement of the remote area adjustment. They also wanted revenues paid to Racecourse Development Funds included in this category.

IMPLICATIONS FOR THE ASSESSMENT

23. The main task of the Commission's revenue assessments is to identify and measure the revenue base of each State. In doing so, the Commission is guided by 'what States do'. It attempts to identify and measure what activities or transactions are actually taxed under the average taxation policies of the States².

² The average taxation policies are determined following an examination of the definition of the tax base, exemptions, concessions and tax rates specified in the taxation legislation of each State. A standard (or uniform) definition of the revenue base is prepared by reference to the most common definitions among the States.

24. In some cases, however, it is not possible to accurately measure the revenue base in a way that reflects 'what States do' and that also excludes the effects of differences between the taxation policies of individual States and the average policy. In these cases, the Commission measures the revenue base using proxy or sub-global measures which broadly reflect the activity that States tax. It may also adjust sub-global measures to exclude elements of them which States can not tax.

25. To the extent that State gambling taxes are based on either net or gross turnover, measures of expenditure on gambling would be the normal starting point for the gambling taxation revenue base if it is to reflect 'what States do'. However, past Commissions have considered that it was not possible to accurately adjust measures of expenditure on gambling to exclude the effects of differences between the actual policies of each State and the average policy. Moreover, because of the interrelationships between expenditure on different forms of gambling, a State policy that impacts on, say, gaming machines will also impact on expenditure on racing, with consequent implications for the need to make adjustments to expenditure across the range of gambling activities. As a result, they chose to use GHDI as the revenue base because gambling expenditure is generally drawn from income.

26. State concerns with the current assessment continue to revolve around the problems of adjusting gambling expenditure to eliminate policy effects and the related questions of whether:

- GHDI has any relationship with the level of gambling activity (and thus the capacity of States to raise revenue from gambling);
- whether the 50 per cent discount of the interstate differentials in GHDI is an appropriate adjustment for influences that weaken the relationship between GHDI and the level of gambling activity, or whether it should be replaced by other adjustments that more accurately reflect the propensity of different groups of people to gamble; and
- whether the adjustment for the lesser access of remote communities to gambling opportunities is still necessary.

Policy Differences Among The States

27. Attachment A indicates that there are significant differences in State policies relating to the regulation and promotion of gambling. For example, policies for EGMs and casinos, which accounted for about 75 per cent of total gambling expenditure in 2000-01, differ substantially from State to State. It would be expected that these policy differences would exert a significant impact on interstate differences in the level of gambling. As a result, if gambling expenditure were to be used as the revenue base it would need to be adjusted to remove the effects of differences in State policies.

28. If forms of gambling were perfect substitutes, a policy distortion in the level of expenditure on one form of gambling would be offset by an equal and opposite impact on

the other forms of gambling and aggregate expenditure on gambling would be unchanged. Unfortunately, while there is substitutability in expenditure on various forms of gambling, that substitutability is far from perfect.

29. In part, this reflects the impact of expenditure by ‘problem’ gamblers. Based on the survey undertaken for the Productivity Commission inquiry into *Australia’s Gambling Industries*, problem gamblers account for around a third of total gambling expenditure. That survey also found that problem gamblers heavily favoured EGMs and, to a lesser extent, wagering (racing) over other forms of gambling. As a result, policy differences between the States that affect access to EGMs are also likely to have had a significant impact on other forms of gambling expenditure, even where State policies for those forms of gambling are the same across the States.

30. If gambling expenditure were to be used to measure the revenue base, extensive policy adjustments would be required because of the extensive influence of State policies on gambling expenditure, the variation in policies from State to State and the substitutability of expenditure between forms of gambling.

31. This point is well-illustrated by the example given by South Australia. South Australia noted that expenditure on Lotto/Tattslotto products varied significantly from State to State as a share of GHDI. While policies on this form of gambling were fairly similar across the States, policies on other forms of gambling (particularly gaming machines and casinos) could affect Lotto/Tattslotto expenditure. In Western Australia, for example, electronic gaming machines are not allowed in clubs or hotels. As a result, EGM expenditure outside casinos is zero. Conversely, reflecting the substitutability between forms of gambling, expenditure on Lotto/Tattslotto products in Western Australia is well above the national average. Expenditure is also above average for other forms of gambling in that State.

32. As well, tax rates on gambling differ significantly between the various forms of gambling (see Table 1). As a result, the impact of policy differences between the States may be amplified or attenuated, depending on whether the policy differences result in increased expenditure on higher or lower taxed forms of gambling.

33. Against this background, it is difficult to see how there could be any confidence in direct adjustments to gambling expenditure aimed at excluding interstate policy differences. An alternative, if expenditure were to be used as the base, would be to adjust it indirectly — say by discounting expenditure in the same way that we discount GHDI in the current assessment. The question then arises — what discount rate should be applied? While it may be tempting to choose a 50 per cent discount, another more difficult question may arise: — would this achieve a better degree of policy neutrality than the existing method? The answer to this is: probably no.

34. There are also problems with the South Australian alternative proposal to use expenditure on recreation and culture as a sub-global base for the category. Expenditure on gambling accounts for around 25 to 30 per cent of household expenditure on recreation and culture. Hence, policy distortions to gambling expenditure would also have a significant impact on expenditure on recreation and culture as a whole.

Table 1 AUSTRALIAN AVERAGE EFFECTIVE GAMBLING TAX RATES

	%
Racing	26.44
Lotteries	77.53
Casinos	18.84
EGMs	32.15
Other	2.72
Total	32.86

Source: Calculated by CGC based on States' gambling revenues and net expenditure (turnover less winnings) on each form of gambling from *Australian Gambling Statistics 1975-76 to 2000-01*.

The Relationship Between Gambling Expenditure and Income

35. On the question of whether there is a relationship between gambling expenditure and GHDI, the answer is: yes, especially at the aggregate level. Ordinary least squares regression analysis by Commission staff using pooled time series/panel data (see Attachment B) indicated that there was a statistically significant relationship between gambling expenditure and GHDI, particularly if allowance was made for policy restrictions in Western Australia and the ACT.

36. This is a similar position to the 1999 Review, when the Commission noted:

Some research does suggest a relationship between gambling and income. Queensland cited an American report that attributed the continued growth in gaming there to increases in disposable income. A Tasmanian study found that people with annual incomes of \$50 000 plus reported spending higher amounts per session on Tattsлото, raffles, bingo, off-course TABs and casino table games. Regression analysis of gambling expenditure and HDI suggested that there is a relationship. However, in the light of the mixed evidence on propensities, we decided as a matter of judgement to moderate the differential capacities implied by HDI per capita by discounting them by 50 per cent.

37. The statistical results in Attachment B are also consistent with the evidence presented by Victoria against any relationship between gambling expenditure and GHDI. Most obviously, while the average propensity to gamble varies significantly from State to State, gambling expenditure also moves in line with GHDI over time, as the chart presented by Victoria (p.256, Victoria Treasury, Review 2004, Main Submission) shows.

38. This seems to suggest that gambling expenditure of similar households under similar conditions is positively related to GHDI. The differences between States in the relationship between gambling expenditure and GHDI could be a result of other factors, such as policy differences.

39. The fact that there is a (statistically significant) relationship between gambling expenditure and GHDI indicates that an assessment based on GHDI would better reflect relative revenue raising capacity than an Equal Per Capita (or EPC) assessment. In any case, the current assessment, by discounting GHDI, is arithmetically equivalent to a weighted sum of an EPC assessment (which is approximately equal to an assessment based on population aged 18 and over) and an assessment based on GHDI.

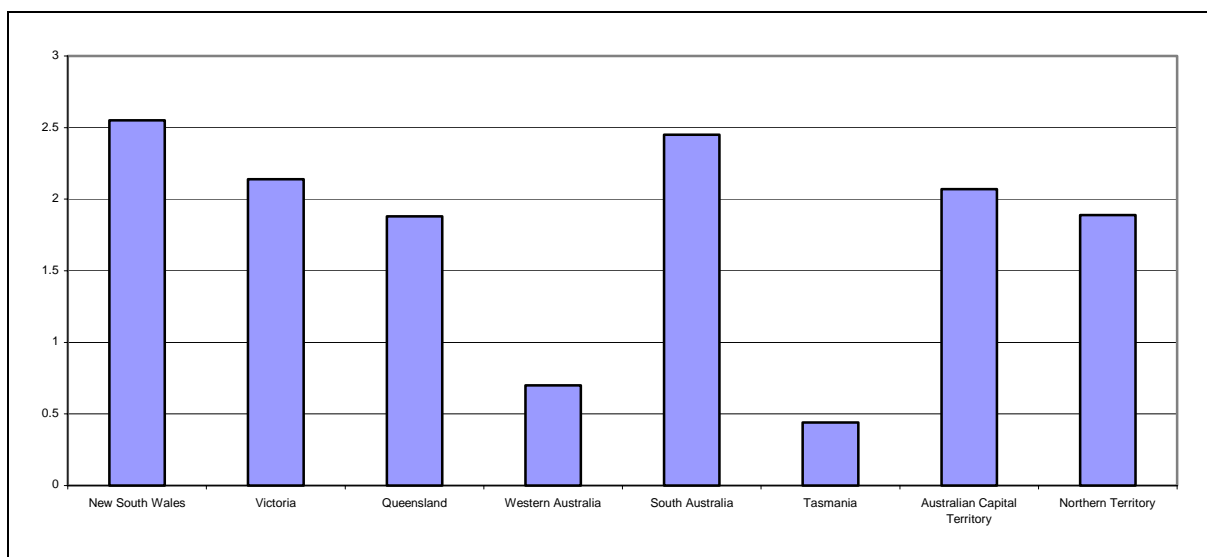
40. From the regression analysis outlined in Attachment B, GHDI explains 55 per cent (or just over half) of the variation in gambling expenditure. In this sense, those results provide strong heuristic support for the current discount of 0.5. This is reinforced if we consider the importance of factors such as problem gambling, spending by overseas visitors and ‘highrollers’ that may influence gambling expenditure. In aggregate, these three groups of gamblers account for just under half of total gambling expenditure.

41. **Problem gamblers.** The Productivity Commission found that problem gamblers accounted for around a third of total gambling expenditure, even though they were only about 2 per cent of the total population. On a per capita basis, expenditure by problem gamblers averaged \$12 200 compared to just under \$650 for other gamblers.

42. The proportion of problem gamblers varies from State to State (see Figure 4) and appears to influence differences in gambling expenditure between the States. However, it is not clear whether States that have a high proportion of these gamblers (and hence a high level of per capita gambling expenditure) do so because of the greater access to gambling (particularly those forms such as EGMs which are popular with problem gamblers) or whether it is simply by chance. The Productivity Commission noted that:

There appear to be few socio-demographic factors that significantly affect the likelihood of someone being a problem gambler: neither gender, ethnicity, education nor income appear to be significant guides. The main exception is age, with young people being more highly represented.

Figure 4 PROBLEM GAMBLERS AS A PERCENTAGE OF THE ADULT POPULATION^a



(a) Based on results from the National Gambling Survey by the Productivity Commission.

43. ***Overseas visitors.*** The Productivity Commission inquiry indicated gambling expenditure by overseas visitors accounted for about 4.5 per cent of total gambling expenditure³. However, GHDI already reflects differences between States in international visitor spending to the extent that it contributes to the level of economic activity and income in a State. In this sense, GHDI is itself a proxy for expenditure by overseas visitors⁴. As well, while a State such as Queensland may benefit from a greater than population share of overseas visitor expenditure, it is not clear that it will benefit to the same extent in terms of gambling revenues from these visitors.

44. ***'Highrollers'.*** There is little publicly available data on 'highrollers'. However, these gamblers can and do influence the level of gaming expenditure at particular casinos, accounting for around 20 per cent of total expenditure at some casinos and sometimes accounting for as much as 50 per cent of expenditure on particular forms of gambling expenditure.

45. The level of expenditure by these gamblers can, however, vary significantly. Because of their resources and skill, these gamblers are a much higher risk for the 'house' than the average patron, with casinos sometimes suffering quite significant losses (or negative expenditure). This is partly because the games favoured by highrollers return among the lowest theoretical yields offered by casinos. Baccarat for example offers casinos a theoretical yield of only 1.2 to 1.25 per cent compared to a theoretical yield on Money Wheel of 7.7 per cent. Unless the casino has a high turnover, it may not want to carry the risk of playing against highrollers (who could 'break the bank'). Their level of expenditure also appears to be dependent on the 'price' of packages offered (including tax concessions) and on the facilities available. Nor does their spending appear to be highly correlated with overseas visitor spending in aggregate. While Victoria, for example, accounts for a smaller share of overseas visitor spending than implied by its population share, Victoria's casino accounts for a greater than population share of highroller expenditure, along with casinos in New South Wales, Queensland and Western Australia. As a consequence, while some adjustment for highroller activity may be justified, the level of the adjustment would be a matter of subjective judgement.

OTHER ISSUES

46. Two other issues — treatment of Racecourse Development Funds (RDFs) and changes to the remote population adjustment — were mentioned as concerns for this review.

47. ***Racecourse development funds.*** States appear to see RDF monies as a necessary contribution to the infrastructure and maintenance of racecourse facilities, particularly in non-metropolitan areas. In this sense, they are a cost of racing and of raising racing revenue and they have been excluded from the Commission's equalisation budget.

³ *Australia's Gambling Industries*, Volume I p. 9.

⁴ When expenditure by overseas visitors was included in the regression analysis, the coefficient of this variable was negative, probably reflecting its co linearity with GHDI.

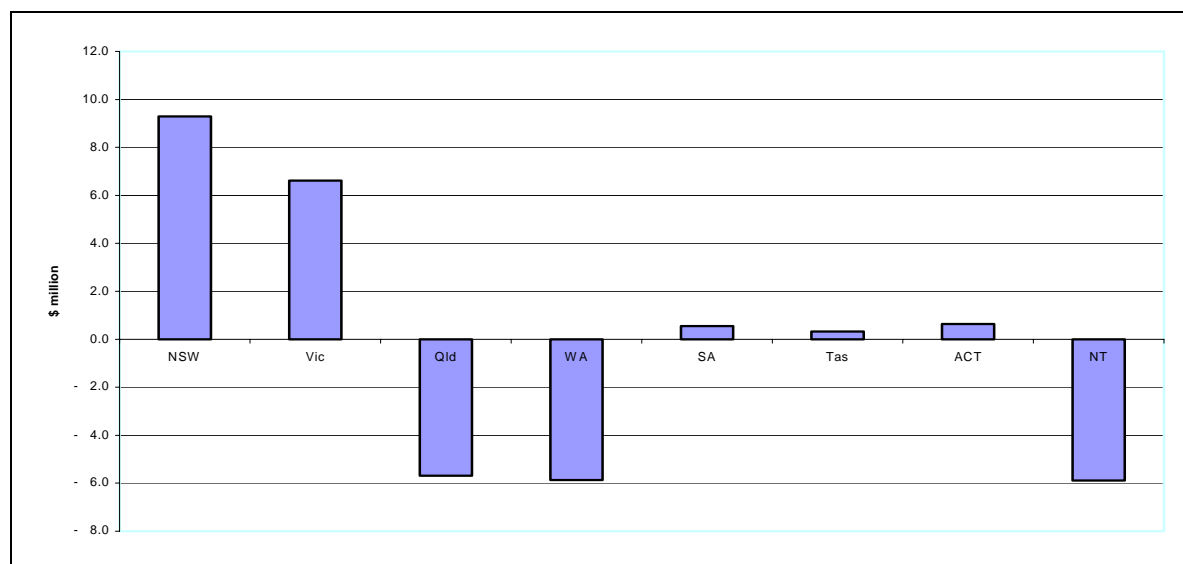
48. Under GFS, however, RDF contributions are included in gambling revenue and payments from these funds are counted as expenditure on culture and recreation. It may be theoretically preferable to maintain the current treatment but, for practical reasons, Commission staff propose to recommend that the Commission adopt the GFS treatment. This will have a negligible impact on State grants.

49. **Remote population adjustment.** This adjustment had a significant impact on the Northern Territory's assessed revenue base. In the 2002 Update, for example, it reduced that State's assessed base by 13 per cent. For all other States, the adjustment accounted for less than 2 per cent of their base.

50. The remote population used in this adjustment was calculated as the population in remote areas, as defined by the RRMA classification, excluding centres with a population of more than 1000. However, the reasons for the adjustment (the limited access of small, remote communities to gambling opportunities) appear to be weakening as a result of improved communications and the Internet. As well, gaming machines are being installed in small clubs and hotels. Commission staff will investigate whether a different threshold for small communities, say 500 people, would be more appropriate. Advice from States on the availability of gambling opportunities in small centres would assist this review.

51. Elimination of the remote population adjustment would have a significant impact on the distribution of State grants. Figure 5 shows the change in State grants that would have arisen if the adjustment had been eliminated in the 2002 Update.

Figure 5 CHANGE IN STATE GRANTS AS A RESULT OF THE ELIMINATION OF THE REMOTE POPULATION ADJUSTMENT



CONCLUSION

52. In this paper, Commission staff have separated State concerns with the Gambling assessment into two broad questions:

- the choice of base; and
- adjustments to the base.

53. On the question of the choice of base, the normal starting point for the assessment would be gambling expenditure. However, the extent of gambling policy differences between the States implies that gambling expenditure would not form a sufficiently policy neutral measure of the revenue base and it would be difficult to devise adjustments to make it so.

54. On the other hand, GHDI is policy neutral and there appears to be a reasonable relationship between it and gambling expenditure. When account is taken of other factors that influence gambling expenditure (such as overseas visitors, problem gamblers and highrollers), there is strong support for the current 50 per cent discount applied to GHDI. Subject to any further discussion, Commission staff intend to recommend to the Commission that it continue to use discounted GHDI as the base for Gambling tax.

55. On the question of adjustments to the base, it was noted that the non-remote population adjustment had a significant impact on the distribution of State grants. It was also noted that there may be a case for modifying the adjustment to account for the increasing access to gambling opportunities in smaller remote communities. One approach to changing the adjustment would be to reduce the size of remote population centres that are considered to have reduced access to gambling from centres of less than 1000 to centres of less than 500. We would appreciate State comment on this possible change.

56. Finally, for practical reasons, including improved consistency with GFS, Commission staff propose to recommend that revenues paid into racecourse development funds be included in gambling revenue, and that recurrent expenditure from those funds be treated as culture and recreation expenditure.

ATTACHMENT A

STATE GAMBLING POLICIES⁵

1. There are strong and often widely divergent community views on gambling. On the one hand, gambling is viewed as a leisure or recreation activity, similar in ways to other forms of entertainment. At the same time, it is acknowledged that gambling can be addictive and can result in serious social costs as a result of family hardship and crime. For the States, gambling is also an important source of taxation revenue.

2. Reflecting its importance as a source of taxation revenue and a potential cause of social costs, the States have developed detailed and comprehensive regulatory regimes for gambling.

Electronic Gaming Machines

3. EGMs are the most important form of gambling in Australia and according to ABS data now account for over 60 per cent of total expenditure on gambling. Regulation of EGMs by the States is detailed.

4. Most importantly, there are restrictions on the total number of machines in most State. In New South Wales, for example, the limit on the total number of gaming machines is 104 000 machines. States also restrict the number of machines in regions and in venues. Victoria, for example, has capped the number of machines in its sole casino at 2500 within a global cap of 30 000 machines. Clubs and hotels are also restricted to 105 machines in a single venue. New South Wales on the other hand has no restriction on the number of EGM in clubs, but limits individual hotels to a maximum of 30 machines and its casino to 1500 machines.

5. Other States also have venue restrictions. Queensland has no global cap on machine numbers, but caps EGM numbers in clubs at 280 and hotels at 35. Western Australia has no explicit global or casino cap on EGMs, but does not allow them in clubs or hotels. South Australia limits individual clubs and hotels to 40 machines but, like Western Australia and Queensland, has no explicit restriction on machine numbers in its casino. Tasmania and the Northern Territory also have no caps on the number of EGMs in the State

⁵ The material in this Attachment draws heavily on Chapter 13 of *Australia's Gambling Industries*

as a whole or in the casinos, but restrict individual clubs (to 25 machines in Tasmania and 45 machines in the Northern Territory) and hotels (to 15 and 6 machines, respectively). On the other hand, the ACT prohibits EGMs in Casino Canberra, has no restriction on EGM numbers in clubs (subject to a global cap of 5200 machines) but restricts individual hotels to a maximum of 13 machines.

6. States also regulate the types of machines allowed in particular venues. In Western Australia, the casino is allowed to have only those machines that emulate casino games, with poker machines not allowed. In the ACT, hotels are only allowed 'draw card' and 'draw and hold' machines.

7. Restrictions also apply to who can manage EGMs. Victoria, for example, has only two licence holders, Tattersall's and Tabcorp, and clubs etc contract their EGMs from these two licence holders. Tasmania has only a single licence holder, the Federal Group, and in the Northern Territory, all EGMs are owned by the government.

8. As well, States regulate payouts, advertising by EGM venues, where machines may be placed in venues, who can sell and service machines, probity standards for staff at venues and monitoring arrangements. While these regulations differ from State to State, their overall intent is fairly similar — to maintain probity and public confidence. Hence their impact is unlikely to differ much from State to State.

Casinos

9. As with EGMs, regulation of casinos by the States is also extensive, with regulations covering:

- number of licences;
- type of operation (resort, hotel or stand alone casino);
- number and type of gaming tables;
- the commission or premium player (highroller) market;
- game rules, 'house' take and prizes;
- monitoring and probity standards for staff; and
- design and layout.

10. While regulation of casinos varies from State to State, it appears to be more uniform than for EGMs. The major difference in regulation between the States for casinos appears to relate to the number of licences issued in each State, the size of individual casinos and the relative importance of gaming tables compared to EGMs.

11. Five States (New South Wales, Victoria, Western Australia, South Australia and the ACT) have each issued only a single casino licence. The other three States have

multiple licences. Queensland has issued four casino licences while Tasmania and the Northern Territory have issued two each.

12. Regarding the ratio of EGMs to gaming tables, casinos appear to fall into three broad categories:

- those with fewer than about 10 machines to 1 table (Star City, Crown Casino, Burswood Resort and Lasseters Casino) which are probably oriented to a mix of local, domestic and international players);
- those with 10 to 12 machines to 1 table (Conrad Treasury Casino, Sheraton Townsville Hotel and Casino, Reef Hotel and Casino, Hotel Conrad and Jupiters Casino and Adelaide Casino), which are more oriented to domestic tourists and local players; and
- those with more than around 20 or more machines to 1 table (Wrest Point, Country Club Casino and MGM Grand), where the emphasis is on local players

13. The size of casinos is important as a means of reducing the risk associated with the highroller market. Star City, Crown Casino, Burswood Resort and to a lesser extent the Conrad Treasury Casino are significantly larger than the other casinos in terms of both numbers of EGMs and gaming tables. It is thus not surprising that New South Wales, Victoria, Western Australia and Queensland, the States where these large casinos are located, apparently account for most of the highroller market.

Lotteries

14. State policies towards lotteries are fairly uniform, with the most important form of regulation being that most States only licence a single provider. Because of the importance of the pool size to the success of lotteries, there are usually pooling arrangements across State borders, with the smaller States of Tasmania, the ACT and the Northern Territory drawing their lotteries from New South Wales and Victoria.

Racing and Sports Betting

15. State policy restrictions on racing are fairly consistent across States and cover:

- State-based TABs which conduct off- and on-course totalisator wagering;
- Racing clubs which may operate on-course totalisators (although this is generally undertaken by TABs); and
- Licensed bookmakers who take fixed odds bets, both on-course and by telephone.

16. The States also regulate the number of race meetings and may provide financial support to some clubs in the form of, for example, development funds.

17. Currently, sports betting is only a minor form of gambling and in most States is restricted to bookmakers, TABs and some other licensed agencies. There is some variation in licensing conditions from State to State.

Other Gambling

18. State policies towards other forms of gambling such as raffles and art unions are also fairly consistent, although there are some minor differences such as what is trade promotion as distinct from a raffle.

ATTACHMENT B

THE RELATIONSHIP BETWEEN GAMBLING EXPENDITURE AND GROSS HOUSEHOLD DISPOSABLE INCOME

1. Gambling expenditure for most households other than ‘problem’ gamblers forms only a small percentage of gross household disposable income (GHDI). For these households, the decision on gambling expenditure (GE), may be written as a function of income (GHDI), and the ‘price’ of gambling (p):

$$GE = f(\text{GHDI}, p)$$

2. While tax rates may vary significantly between States, the price of gambling has been relatively fixed both over time and across States. As a result, the impact of price can be taken as fixed and we can simplify the above function to one that only covers GHDI.

3. In assessing this simplified relationship between GE and GHDI, we used ordinary least squares (OLS) regression analysis to estimate the relationship:

$$GE_t = a + b * GHDI_t + u_t \quad (1)$$

where u is the stochastic error term and is assumed to be distributed identically and independently over States and time, t .

4. To test for the impact of differences between States as a result of, for example, differences in State policies, we also estimated the relationship:

$$GE_t = a + \sum d_i * D_i + b * GHDI_t + u_t \quad (2)$$

where D_i is a dummy variable with the value 1 if the State is State i , and zero for all other States.

5. Because data for all States are only available since 1989-90, we estimated models 1 and 2 using pooled time series for all the States for the period 1989-90 to 1999-2000. The data were also deflated by State population to remove the impact of State size on gross expenditure.

6. The results for model 1 are given in Table B.1 and for model 2 in Tables B.2. Table B.2 corresponds to model 2 with dummy variables for Western Australia, the ACT and the Northern Territory (when dummies for the other States were include in model 2,

their estimated coefficients were found to be not significantly different from the intercept and hence are not reported here).

7. As can be seen from Table B.1, there is a statistically significant relationship between per capita GHDI and per capita GE. Model 1 also explains 55 per cent (or just over half) of the total variation in per capita gambling expenditure over the estimation period and across the eight States.

Table B.1: REGRESSION RESULTS FOR MODEL 1

<i>Regression Statistics</i>						
Multiple R	0.750278					
R Square	0.562917					
Adjusted R Square	0.557834					
Standard Error	0.146617					
Observations	88					
<i>ANOVA</i>						
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	2.380926	2.380926	110.7588	3.96931E-17	
Residual	86	1.848698	0.021496			
Total	87	4.229623				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-0.33386	0.088078	-3.7905	0.000278	-0.508954533	-0.158767372
ghdi	0.036183	0.003438	10.5242	3.97E-17	0.029348496	0.043017893

8. The relationship is even stronger statistically when we allow for differences between the States using model 2. Of the State differences, only those for Western Australia, the ACT and the Northern Territory were statistically significant and are reported here (see Tables B.2). These results indicate that per capita GE in these States are lower than would be expected as a result of per capita income alone. Whether this is a result of State policies or some other factors is, however, not explained by the model.

Refinements to the Regression Model

9. It is possible to estimate models 1 and 2 using generalised least squares (GLS) rather than OLS. This would have allowed us to relax the assumption regarding the

uniformity of the stochastic variance across States. However, when we tested this, it did not change the results significantly and hence these results are not reported here.

Table B2: REGRESSION RESULTS FOR MODEL 2 AND A DUMMY VARIABLE FOR WESTERN AUSTRALIA, THE ACT AND THE NORTHERN TERRITORY

<i>Regression Statistics</i>						
Multiple R	0.913233669					
R Square	0.833995734					
Adjusted R Square	0.825995528					
Standard Error	0.091975344					
Observations	88					
<i>ANOVA</i>						
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	4	3.527487729	0.881872	104.246788	1.54E-31	
Residual	83	0.702135501	0.008459			
Total	87	4.22962323				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-0.898735459	0.076830737	-11.6976	3.0606E-19	-1.05155	-0.745922
ghdi	0.062366876	0.003244259	19.22376	2.6026E-32	0.055914	0.0688196
WAD	-0.157489767	0.03057267	-5.15133	1.7152E-06	-0.2183	-0.096682
ACTD	-0.505525769	0.045304054	-11.1585	3.4126E-18	-0.59563	-0.415418
NTD	-0.099083815	0.032211932	-3.076	0.00284095	-0.16315	-0.035016