REPORT

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Gambling with policy

The economic contribution of gaming machines to the Australian economy

Prepared for

Gaming Technologies Association

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Executive summary

The Centre for International Economics has been engaged by the Gaming Technologies Association to evaluate the economic contribution of gaming machines to Australia. The contribution of gaming machines to the Australian economy reflects:

- the value that people place on using gaming machines as a source of entertainment, with a third of Australian adults using gaming machines and more than $10 billion spent on gaming machines annually;
- the value of gaming machine exports from Australia's world leading manufacturers; and
- the contribution of gaming machines to supporting government expenditure through the more than $5 billion annual tax revenue that flows directly and indirectly from gaming machine use and production.

In making these contributions, the gaming machine industry, defined broadly, directly employs around 60 000 people, with the majority employed in pubs and clubs. Gaming machine revenues also directly affect casinos, gaming machine manufacturers and operators. They indirectly affect a whole range of businesses that provide services to pubs, clubs, casinos and others.

Against the above contributions of gaming machines are the costs of problem gambling. Australia's heavily regulated environment for gaming machines is, in part, an attempt to reduce the costs of problem gambling. The nexus of regulations around gaming machines in Australia include where gaming machines can be used, how many can be in operation, how gaming machines can be designed and what environment machines can be placed in. Some of these regulations may reduce the costs of problem gambling. Some will even reduce the costs of problem gambling by enough that they have economic net benefits (their benefits are higher than their costs). But the state of knowledge of the effectiveness of these regulations has not allowed the good regulations to be weeded out from the bad, and has not led to increasingly effective and targeted regulation since the Productivity Commission's 1999 review.

In many cases, regulations have been put in place without considering the costs of regulation. But the imprint of regulation on industry across Australia's states and territories is clear. NSW has more than three times the clubs per capita as Western Australia, where gaming machines are not allowed in clubs and pubs. The clubs

outside of Western Australia employ almost four times as many people per club and provide more service to the community as a venue for food and beverages and a provider of other community activities. These differences largely reflect the regulatory environment in different jurisdictions.

Not all regulation of gaming machines is aimed at reducing the costs of problem gambling. Such regulation includes National Standards and other technical documents, amounting to more than 1000 pages of documentation. This is an onerous regulatory burden, both for industry and for government, with little purpose or benefit and little involvement by industry.

The current state of the regulatory environment for gaming machines suggests that there could be win-win situations for the industry, economy and problem gamblers and their families. Improving the regulatory environment could allow recreational gamblers to gain more enjoyment from gaming machine services, while reducing the prevalence and costs of problem gambling. Such an outcome would require the replacement of ineffective regulations with effective ones. This can only be achieved if the Productivity Commission puts in place a process that allows rigorous review and evaluation of regulations over time.

As a contribution to this process, this report considers the economic impacts of gaming machine regulations on the industry and wider economy. These costs are often ignored by regulators in making their decisions. The economy-wide costs provide a benchmark against which the avoided costs of problem gambling can be assessed, on a case-by-case basis.

We estimate the removing that gaming machine industry would reduce consumption, a measure of welfare, in the short-run by $10 billion per year, reduce employment throughout Australia by 140 000 people and reduce gross domestic product (GDP) by $13.5 billion annually. In the long-run, people would move to new jobs and locations and capital would be reallocated across the economy. This would ameliorate the short-term costs, resulting in consumption being $2.4 billion below what it would have been and GDP being $1.3 billion lower in the long-run. Turning these figures around, the contribution of the industry to economic welfare in the long-run is $2.4 billion per year.

But many regulations would not lead to the removal of the industry, but some contraction smaller than this. The economy-wide impacts of different sized shocks to the industry have been calculated, to provide a benchmark for regulators. For instance, a 10 per cent reduction in the gaming machine industry has economy-wide costs of $0.7 billion per year in the short-run and reduces employment by 12 000 people. In the long-run, the economy-wide costs are $30 million per year (using consumption as the measure of welfare).

The economy-wide costs provide a benchmark against which the benefits of regulatory options can be assessed. For good policy, policymakers are required to

have an understanding of how each regulatory option impacts on problem gambling and the economy, in order to assess the net benefits. Improving the understanding of the impact of regulation on problem gambling will be a big step towards effective regulation and will allow ineffective regulation that restricts the value of the gaming machine sector to be removed.

From the current position of ad hoc regulation, the best regulatory approach will involve removing regulations that are not effective and imposing regulations that do effectively target the costs and prevalence of problem gambling. As technology evolves, the set of regulatory options will also expand, providing more effective ways of regulating the industry. This can be a win-win for industry, recreational gamblers, problem gamblers and their families and the broader Australian community.

1 *The gaming machine industry*

The gaming machine industry includes manufacturers of gaming machines, clubs and hotels with gaming machines, casinos and operators such as Tabcorp, Tattersalls and Federal Hotels. The services provided by this industry are a source of entertainment for many people — more than 30 per cent of Australians use gaming machines. Furthermore, the taxation revenues collected from gaming machines provide support for many government services.

This chapter sets out the background to the industry, as follows:

- the number and location of gaming machines;
- participation and expenditure on gaming machines;
- pub and club revenues from gaming machines;
- casino and operator revenues from gaming machines; and
- tax revenues from gaming machines.

The number and location of gaming machines

Gaming machines are any device, mechanical or electronic, that allows a user a potential return greater than the amount risked. In Australia, gaming machines are predominantly 'pokies' — electronic devices that map the selection of random number generators onto a screen display.[1] These machines are operated in casinos and in clubs and pubs/hotels. Comprehensive statistics on gaming machines in clubs and pubs are collected by the Queensland Government Treasury and reported in *Australian Gambling Statistics: 1980-81 to 2005-06.*

Gaming machines are currently allowed in clubs and pubs in all Australian states and territories except Western Australia, although they are subject to differing jurisdictional restrictions as set out in chapter 2. They are allowed in casinos in every state and territory except the ACT. There are currently over 200 000 gaming machines operating in Australia, with about half of these in NSW (table 1.1). The number of machines has been broadly stable since 2001-02, reflecting caps on gaming machine numbers.

1 Australasian Gaming Council (2008).

1.1 **Number of gaming machines by state and territory**

Year	*NSW*	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*ACT*	*NT*	*Total*
	No.	No.	No.	No.	No.	No.	No.	No.	No.
2001-02	102 958	29 900	39 761	15 430	1 283	3 194	4 970	1 506	199 002
2002-03	100 969	29 760	40 836	15 740	1 286	3 409	5 020	1 618	198 638
2003-04	100 656	29 632	41 824	15 624	1 300	3 447	5 000	1 672	199 155
2004-05	100 233	29 624	43 590	15 001	1 500	3 566	5 144	1 849	200 507
2005-06	100 034	29 647	45 396	13 581	1 500	3 680	5 150	1 862	200 850

Source: Queensland Government Treasury (2007).

Of the 201 000 gaming machines in Australia in 2005-06, 58 per cent were located in clubs, 35 per cent in pubs and 6 per cent in casinos (table 1.2). The allocation of gaming machines across venue types is very different in each state depending on the regulations. For instance, almost three quarters of gaming machines in NSW were located in clubs in 2005-06, while in Victoria less than half of machines were located in clubs.

1.2 **Number of gaming machines by venue by state** 2005-06

Year	*NSW*	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*ACT*	*NT*	*Total*
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Clubs	74 280	13 490	22 024	1 595	-	183	5 066	706	117 344
Pubs	24 254	13 657	19 496	11 003	-	2 217	84	344	71 055
Casinos	1 500	2 500	3 876	983	1 500	1 280	-	812	12 451
All venues	100 034	29 647	45 396	13 581	1 500	3 680	5 150	1 862	200 850

Source: Queensland Government Treasury (2007).

Consumption of gaming machine services

About 30 per cent of Australian adults use gaming machines as a source of entertainment (various years, table 1.3). Usage is fairly similar across the states and territories except for Western Australia, where gaming machines are only allowed in the casino.

1.3 **Participation in gaming machine consumption**

State	*Year*	*Proportion of adult population*
		%
NSW	2006	31.0
Victoria	2003	33.5
Queensland	2007	30.0
South Australia	2005	30.0
Western Australia	1999	16.0
Tasmania	2005	29.0
ACT	2001	38.1
NT	2005	27.0

Source: Australasian Gaming Council (2008).

As the Productivity Commission put it in 1999 (section 5.1), 'In many respects the gambling industries are like any other industry." As with most products and services, gaming machines are used mainly because people enjoy using them. This is the case for the majority of users of gaming machines and other forms of gambling (Australasian Gaming Council 2008). But the use of gaming machines can be addictive and harmful to some. In this respect gaming machines share some of the attributes of products such as alcohol or tobacco.

In understanding the gaming machine industry it is useful to categorise users of gaming machines into problem gamblers and recreational gamblers. While the dividing line between these groups is fuzzy, this categorization allows the positive aspects of gaming machines (enjoyment by recreational gamblers) to be balanced against the negative aspects (problem gambling). An expanding and innovative industry is a positive outcome if it is built on increasing recreational gambling. Innovation and expansion due to increased numbers of (or spending by) problem gamblers, is, on the other hand, a negative outcome. Unfortunately, the data to understand changes in the industry according to these categorizations is typically not available.

The total amount that people spend on gaming machines is available from *Australian Gambling Statistics* up to 2005-06 and from state regulators for 2006-07 and 2007-08. Expenditure is the difference between the amount of money that people have put into gaming machines less the amount of money that they have won back. The data only captures expenditure on gaming machines in clubs and pubs, as casinos typically report only total gaming expenditure.

In 2007-08, people spent approximately $10 billion on gaming machines in clubs and pubs (table 1.4). The highest expenditure was in NSW, with $4.6 billion being spent in this state.

1.4 **Gaming machine expenditure by State** excluding casinos

	NSW	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*ACT*	*NT*	*Total*
	$m	$m	$m	$m	$m	$m	$m	$m	$m
2000-01	4 119	2 366	1 014	543	0	81	168	28	8 320
2001-02	4 307	2 563	1 129	607	0	99	174	37	8 916
2002-03	4 459	2 334	1 278	669	0	112	183	42	9 077
2003-04	4 673	2 291	1 499	724	0	124	192	45	9 547
2004-05	4 915	2 393	1 677	749	0	126	185	50	10 096
2005-06	5 024	2 472	1 776	751	0	109	192	57	10 381
2006-07	5 206	2 543	1 677	793	0	112	Na	64	10 586
2007-08	4 644	2 612	1 802	758	0	117	Na	72	10 198

Note: ACT equivalent figures unavailable for 2006-07 and 2007-08. Total figures for 2006-07 and 2007-08 based on ACT gaming machine expenditure for 2005-06.

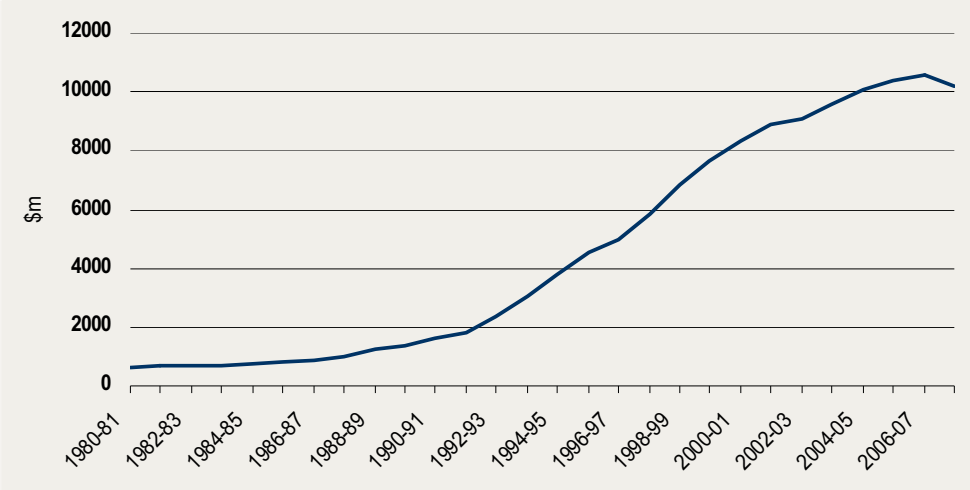
Source: Queensland Government Treasury (2007), State and territory gambling regulators.

It is difficult to determine the exact amount spent on gaming machines in casinos, as casino figures are often reported only in aggregate. We estimate that approximately $1bn was spent on gaming machines at casinos in 2006-07.[2]

Gaming machine expenditure in clubs and pubs has risen significantly since the 1980s (chart 1.5). Up to 2000-01, this rise reflected gaming machines being allowed into more venues and in more states. From 2000-01 the number of gaming machines was fairly stable. Rising expenditure was underpinned by increased expenditure per machine. Expenditure per machine rose from $45 000 in 2000-01 to $52 000 in 2005-06.

Gaming machine expenditures have been broadly stable since 2004-05, largely due to the implementation of smoking bans in many states and territories.

1.5 **Gaming machine expenditure Australia** excluding casinos



Data sources: Queensland Government Treasury (2007), State and territory gambling regulators.

The amount spent on each gaming machine differs between states and between venues. For instance, expenditure per machine was about $48 000 per machine in NSW clubs, $71 000 per machine in NSW hotels and $100 000 per machine in Victorian pubs and clubs.[3]

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2 Tabcorp (2007) states that its four casinos gained revenue of $485 million from gaming machines in 2006-07; 2007-08 figures from the state regulators indicate that the Western Australian casino received $136 million from gaming machines and the Tasmanian casino $88 million (Tasmanian Gaming Commission 2008; Gaming and Wagering Commission of Western Australia 2008). Casinos for which data are not available include Crown Casino (Victoria), Lasseters and SkyCity Darwin (NT), Reef casino (Queensland) and Skycity Adelaide (SA).

3 Victorian Commission for Gambling Regulation web site (http://www.vcgr.vic.gov.au), NSW Office of Liquor Gaming and Racing (2007a).

Pubs and clubs

In 2005-06 there were an estimated 2385 clubs with gaming machines and 3448 hotels with gaming machines across Australia (Australasian Gaming Council 2008). The majority of Australia's gaming machines were located in these venues.

Gaming machines contribute a substantial share of income for many pubs and clubs. In 2004-05, the latest year for which Australian Bureau of Statistics data is available, revenues from gaming machines comprised more than half of the income for clubs and a quarter of the income of pubs (table 1.6).

1.6 **Contribution of gaming machine income to clubs and pubs in Australia** 2004-05

	Clubs	***Pubs***
Gaming machine income ($m per business)	2.0	0.8
Total income ($m per business)	3.5	3.2
Gambling income as a share of total income (%)	57.2	23.5

Note: Excludes smallest clubs and pubs.

Source: ABS (2006), Cat. No. 8687.0.

More recent figures for NSW suggest that 63.2 per cent of club revenue is from gaming machines (ACG 2008).

Most people visit clubs and pubs for a social outing. For instance a survey of Victorians in 2003 reported that 75.5 per cent went to venues with gaming for this reason. A smaller proportion of people (13.8 per cent) reported that their primary reason for visiting a venue was to play gaming machines and 6.8 per cent of people thought that both gaming machines and a social outing were important reasons for visiting venues. [4] Gaming machines also impact on visits to clubs and pubs because they cross-subsidise food, drinks and other facilities, making these places more attractive venues.

Pubs and clubs employ a substantial number of people in Australia. During 2004-05, the ABS estimated that pubs employed about 70 000 people and clubs employed 60 000 people (ABS 2006). These estimates are likely to understate current employment. Total employment is likely to be higher now than it was in 2004-05. For instance, ACG (2008) estimates that clubs employed 43 318 people in NSW in 2007, compared with the ABS figure of 39 170 in 2004-05.

Clubs and pubs would face significantly more difficult business conditions if they did not have access to gaming machines.

The importance of gaming machine revenues to clubs, particularly those in the NSW and ACT, is widely acknowledged. As noted by IPART, clubs are '…very vulnerable

4 Gambling Research Panel (2003), p. 81.

to any change related to the regulation of gaming machines'.[5] IPART found that gaming machine revenue accounted for 175 per cent of profits, indicating that other activities were cross-subsidised by gaming machine revenue.[6] IPART recommended that changes to gaming machine regulation in NSW be preceded by consultation with the clubs industry.

A significant share of the revenues from gaming machines that clubs and pubs receive are either directly or indirectly put back into the community. Gaming machine revenues are directed to:

- providing services such as sporting facilities, function rooms, memorials, playgrounds;
- providing employment;
- improving and upgrading facilities;
- funding community activities;
- government (taxes, health benefit contributions);
- subsidising food and beverages; and
- government directed schemes including:
  - 8.33 per cent of hotel revenue from gaming machines is put into a community services fund and $4333.33 per gaming machine is put into a health benefit levy in Victoria;
  - 4 per cent of hotel and club gaming machine revenues in Tasmania are put into a community service levy;
  - up to 20 per cent of hotel revenue from gaming machines in Queensland go into a health services levy; and
  - 10 per cent of hotel revenues from gaming machines in the Northern Territory go into a community benefit levy.

The government directed community contributions are in addition to the voluntary contributions made by clubs, such as the $71.5 million put into the community by NSW clubs in 2006-07 through the NSW Community Development and Support Expenditure Scheme (CDSE).[7]

Unfortunately, information on all states is not available about the value of the social contribution of clubs and pubs. For NSW, IPART (2008) found that clubs' contribution to social infrastructure in 2007 was valued at approximately $811 million.

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5 IPART (2008), p. 3.

6 IPART (2008), p. 93.

7 Allen Consulting Group (2008).

Casinos

Casinos generate revenue from gaming machines, table games, entertainment, accommodation and food and beverage sales. About $1 billion is likely to be earnt by casinos from providing gaming machines.

For TabCorp casinos (StarCity Sydney, Conrad Treasury Brisbane, Conrad Jupiters Gold Coast and Jupiters Townsville), 36 per cent of revenues, or $485 million were from gaming machines in 2006-07.[8]

The Western Australian casino earnt $136 million from its gaming machines in 2007-08.[9] The Tasmanian casinos earnt $88 million from their gaming machines over the same period.[10]

Australian casinos, in total, employed 19 917 people in 2007-08, were visited by 2.1 million international tourists, paid $482 million in taxes to state and local governments and $524 million in Australian Government taxes.[11] At least a third of these contributions are attributable to gaming machines, based on the sources of casino revenue.

There are a number of schemes linking casino revenue from gaming machines to community contributions. For instance:

- 2 per cent of casino revenue from gaming machines in NSW is put into a community services levy;
- 1 per cent of casino revenue in Victoria is put into a community services fund and $4333.33 per gaming machine is put into a health benefit levy; and
- 1 per cent of casino gaming machine revenue in Queensland is put into a community benefit levy.

In 2006-07, casino community benefit levies amounted to $33 million, with casinos contributing an additional $9 million to other community activities.[12] Some portion of these contributions is directly related to gaming machines.

Manufacturers

Gaming machines used in Australia are predominantly supplied by the Australian manufacturing sector. In 2006-07, gaming machine manufacturing employed approximately 2900 people with reported revenue of $610 million. Exports of gaming

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8 TabCorp (2007).

9 Gaming and Wagering Commission of Western Australia (2008).

10 Tasmanian Gaming Commission (2008).

11 Australian Casino Association (2008).

12 Australian Casino Association (2008).

machines are an important source of revenue, accounting for over half of revenue in 2006-07 ($310 million).[13] Employment, revenue and exports have fallen since 2004-05, as the Australian market matured and the Australian dollar appreciated against other currencies, thereby making exports less competitive.

Most of the manufacturing activity in the gaming machine sector is in Victoria and NSW, which together account for approximately 80 per cent of manufacturing activity.[14]

Aristocrat, Australia's largest gaming machine manufacturer, is Australia's third biggest spender on research and development, although a substantial component of R&D expenditure reflects regulators compliance costs (see chapter 2).[15] Its R&D spending in 2006 was US$72 million, higher than R&D spending by other major Australian companies such as Telstra.

Other businesses

There are many other businesses directly connected to the gaming machine industry. Some of these businesses are involved in monitoring machines, others in operating machines, repairing machines etc. Tabcorp and Tattersalls have the right to operate gaming machines in pubs and clubs until 2012. Federal hotels in Tasmania have the monopoly rights to operate gaming machines in Tasmania. Tabcorp operating revenue from its gaming operations was $1134 million in 2007-08 (including keno).[16] Tatts Pokies, whose revenue also includes keno operations, earned $1269 million in 2007-08.[17]

Many other businesses are indirectly affected by gaming machine revenues. For instance, businesses that supply to clubs and pubs, such as those engaged in building and refurbishment, would feel flow-on effects on any changes to the gaming machine revenues collected by clubs and pubs.

Gaming machines and government revenues

The operation of gaming machines are taxed in many different ways. The main source of revenue is from taxes directly levied on the revenues from gaming machines.

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13 Gaming machine manufacturing data is derived from IBIS World (2008) figures for gaming and vending machine manufacturing.

14 IBIS World (2008).

15 Booz Allen Hamilton (2007).

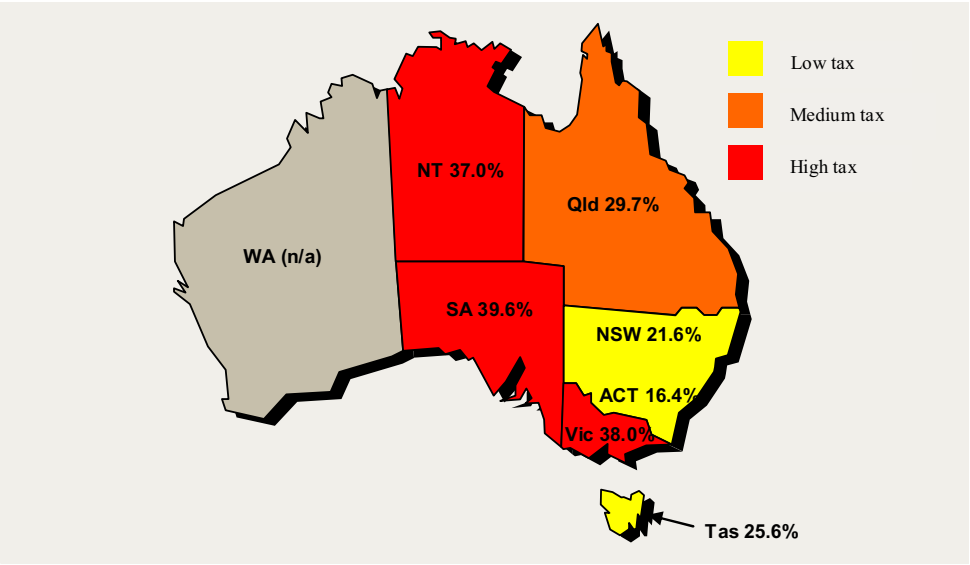
16 Tabcorp (2008), p. 7.

17 Tatts Group (2008), p. 4.

One way of measuring overall tax rates on gaming machines at pubs and clubs is through average tax rates — the amount of tax collected as a share of gaming expenditure. These rates are shown for clubs and pubs in the map below (chart 1.7). ACT and NSW were the lowest taxing states in 2007-08 and the Northern Territory, Victoria and South Australia the highest taxing states. The average rate of taxation in South Australia, the highest taxing state, is more than twice that in ACT, the lowest taxing state.

The average tax rate hides substantial variation within the taxation of clubs and pubs and venues of different size. For instance, while NSW has a low average rate of taxation of 21.6 per cent, its highest marginal rate of taxation for pubs is 44.5 per cent. This is discussed in more detail in the next chapter.

1.7 **Average tax rates on gaming machine revenue in clubs and pubs** 2007-08



Note: ACT figure is for 2005-06. GST is excluded from calculations.
Data source: State and territory gambling regulators and budget papers.

Gaming machine operations also provide governments with revenue through GST on gambling expenditures, payroll tax on employment, income tax on the wages of people who work in manufacturing and in clubs, pubs and casinos, company tax on the profits of clubs, pubs, hotels, operators (such as Tabcorp and Tatts Group) and manufacturers and other payments to government such as land tax.

Estimates of the total taxation related to gaming machine operations can be made through an assessment of taxes paid by clubs, pubs, casinos, manufacturers and operators. The proportion of taxes such as payroll and income tax attributable to gaming machines is based on the share of revenue derived from gaming machines.

For 2006-07, gaming machines are estimated to have generated over $5 billion in revenue for Australia's governments. A large share of this is directly from taxes on

gaming machine revenues ($3.15 billion). GST collections from the operation of gaming machines are estimated at $1.1 billion in 2006-07 and company and personal tax are estimated to have also contributed substantial government revenues of more than $300 million each.

1.8 **Estimated tax receipts related to the operation of gaming machines** 2006-07

Type of tax	*Clubs*	*Hotels*	*Casinos* [a]	*Manufact.*	*Operators*	*Total*
	$m	$m	$m	$m	$m	$m
Gaming machine taxes [b]	1 064	906	201		976	3 148
Payroll taxes	42	14	21	7	11	95
Land taxes	23	14	9			45
Personal income tax [c]	164	51	96	23	39	373
Company tax [d]	71	53	123	37	137	421
Other taxes	10	4	17			30
Sub-total	**1 374**	**1 042**	**467**	**67**	**1 163**	**4 112**
GST						1 067
Total						**5 180**

[a] Data on the break up of casino operations between gaming machines and table gaming is not available for all casinos. We assume a figure of 40 per cent of gambling revenues and taxes are from gaming machines based on available data. [b] Gaming machine tax data for clubs and pubs is from 2006-07 and is allocated to clubs and pubs based on ABS estimates in 2004-05. [c] Calculated using tax paid on average earnings for each of the sectors (clubs, pubs, casinos, manufacturers and operators). [d] Calculated based on a 30 per cent company tax rate.

Note: 2004-05 payroll and wage data are rolled forward to 2006-07 using the increase in average weekly earnings. Other tax collections are increased in line with nominal GDP.

Source: CIE estimates based on ABS (2006), *Clubs, Pubs, Taverns and Bars 2004-05,* Cat. no. 8687.0; IBISWorld (2008), *Gaming and Vending Machines Manufacturing in Australia;* Australian Casino Association (2008), *The Australian Casino Industry: Economic Report 2006-07,* Annual Reports for Tatts Groups and Tabcorp 2007-08, State Budget papers 2007-08.

The largest portion of tax revenue from gaming machines is from direct taxes on gaming machine revenues of clubs and pubs. In 2006-07, total revenue from taxing gaming machine revenues in clubs and pubs (including operators' taxes) was $2.95 billion. This accounted for six per cent of total state and territory tax revenues.[18] (Direct taxes on casino revenue from gaming machines amounted to an additional $201 million in 2006-07.)

Western Australia received no revenue from taxing gaming machines in clubs and pubs as gaming machines are not allowed in these venues. South Australia received the largest share of its revenue from taxing gaming machines in clubs and pubs, with almost 10 per cent of its tax revenue coming from this source, reflecting the high tax rates in this state.

If we consider the additional tax take from other taxes related to gaming machine activity then the tax revenue from gaming machines is equivalent to about 9 per cent of the total tax revenues collected by state and territory governments.

18 The GST payments to states are not included as state tax revenue.

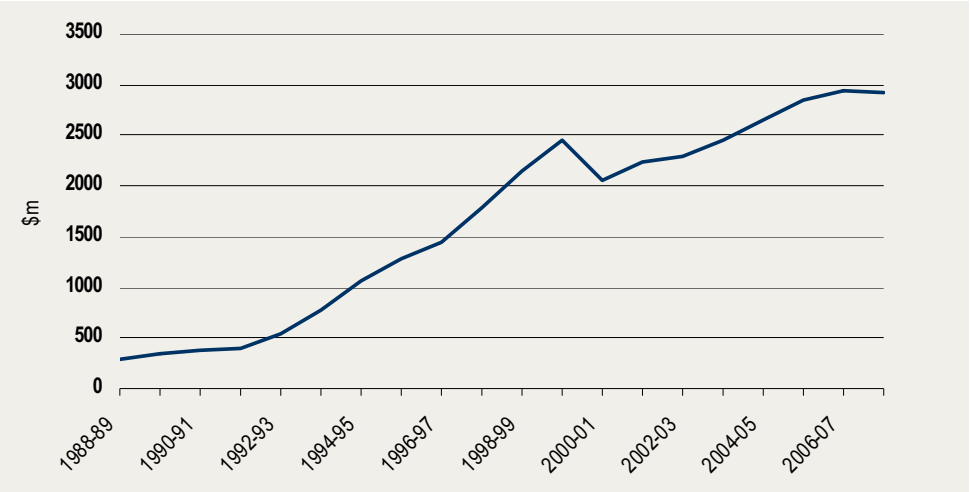
1.9 **State government revenues from gaming machine taxes on clubs and pubs** 2006-07

State	*Revenue from direct taxes on gaming machines in clubs and pubs*	*Total tax revenue (exclusive of GST)*	*Gaming as a share of total*
	$m	$m	%
NSW	1 115	17 713	6.3
VIC	948	11 702	8.1
QLD	489	8 484	5.8
SA	312	3 250	9.6
WA	0	5 718	0.0
TAS	29	748	3.8
ACT	31	929	3.4
NT	23	446	5.2
Total	2 947	48 990	6.0

Source: State government Budget Papers 2007-08 and 2008-09.

Good statistics have been collected for the tax revenue that state and territory governments have received from direct taxes on gaming machine revenues since 1998-99. The total amount of tax revenues collected from direct taxes on gaming machine revenue in clubs and pubs has risen from less than $500 million in the early 1990s to almost $3 billion in 2007-08 (chart 1.7). The reduction in revenue in 2000-01 reflects a transfer of revenue collection to the GST — when the GST was imposed on gambling state taxes were reduced by an equivalent amount. Revenue from gaming machine taxes fell slightly in 2007-08 due to the introduction of indoor smoking bans in a number of jurisdictions.

1.10 **Revenue from direct gaming machine taxes from clubs and pubs** 1988-89 to 2007-08



[a] Includes tax revenue from Keno, except for 2006-07 and 2007-08.

Data source: Queensland Government Treasury (2007); State government Budget Papers 2007-08 and 2008-09.

In the absence of revenue from gaming machines, state governments would either need to increase debt, reduce the level of services that they provide, or find other sources of revenue, such as increasing other taxes.

Key points

Many people enjoy using gaming machines. They spend upwards of $10 billion per year on this activity, equivalent to 1.7 per cent of household disposable income. A large share of this revenue is directed to clubs and pubs, with gaming machine revenue providing a substantial component of revenue for many clubs and pubs.

Governments also collect a substantial share of gaming machine revenues. In 2006-07, governments received over $5bn in revenues related to the use of gaming machines. About $3 billion of this is directly from gaming machine taxes, with additional tax revenue from the GST, payroll taxes, income taxes and company taxes. Average tax rates vary considerably between the states. South Australia has average taxes on gaming machine revenues of almost 40 per cent, compared with 16 per cent in the ACT.

The revenue from gaming machines is used to employ people in clubs, pubs, casinos, manufacturers and operators. Gaming machine activities and revenues employ more than 60 000 people in Australia directly in these businesses.

2 *Regulation of the gaming machine industry*

The gaming machine sector is highly regulated and regulations are subject to considerable flux through time and considerable difference between states and territories. The regulations and changes in regulations are documented in *A National Snapshot of Harm Minimisation Measures in Australia* and Australasian Gaming Council (2007). This chapter sets out the main regulations that affect the gaming machine industry and how the regulatory environment has evolved. It also considers the impact that the Productivity Commission's 1999 inquiry had on gaming machine regulations and weaknesses in state and territory approaches to regulation.

Main elements of the regulatory environment

The nexus of regulations around gaming machines include rules about who can own and operate machines, how many machines can be operated and how much of the revenue is appropriated through taxes. They also include more specific measures about the characteristics of the venue and machine. In this section we broadly outline the regulatory environments across the different states and territories.

Ownership of machines

Only particular types of businesses are allowed to own and operate gaming machines. In most states and territories registered clubs, pubs and casinos can own gaming machines, subject to regulatory approval. TabCorp and Tattersalls are currently the only companies allowed to own the gaming machines used in clubs and pubs in Victoria, although this will change in 2012. In Tasmania, only Federal Hotels is able to own gaming machines.

Gaming machines are not allowed to be operated outside of pubs, clubs and casinos in any state. In Western Australia, gaming machines can only be located in the casino. In the ACT, gaming machines can be located in clubs and pubs, but not in the casino.

Caps on machine numbers

All states and territories have caps of one form or another on gaming machine numbers. Often the caps work at several levels — there are caps on the total number

of machines and caps on the number of machines per venue. The caps are summarized in table 2.1.

Western Australia has no gaming machines in clubs and pubs. New South Wales and Queensland are the least regulated in terms of numbers of machines and venues with a maximum of 99 000 machines allowed in clubs and pubs in NSW and a limit being imposed in Queensland only recently (April 2008 for clubs).

The venue caps are very different across the jurisdictions and between venue types. Queensland, NSW, NT and the ACT have much less stringent venue caps for clubs than for hotels. Victoria and SA have equal restrictions for hotels and clubs. Victoria allows more gaming machines per hotel than any other state.

2.1 **Restrictions on gaming machine numbers**

	Venue caps		***Global caps***	
	Pubs	Clubs	Pubs/clubs	Casinos
NSW	30	Unlimited	99 000	1 500
VIC	105	105	27 500	2 500
QLD	40	280	44 023	Ratio to number of gaming tables
WA	0	0	0	1 750
SA	40	40	12 900 (applying to pubs/clubs and casinos)	
TAS	30	40	2 500	1 180
ACT	10	Unlimited	5 200	0
NT	10	45	1 190	Unlimited

Sources: Australasian Gaming Council (2008), Ministerial Council on Gambling (2008).

Taxation of gaming machine revenues

Gaming machine taxation arrangements vary considerably depending on the jurisdiction, type of venue (casino, club or hotel) and amount of revenue the venue receives from gaming machines. These tax arrangements are summarized in box 2.2. There is little consistency in the taxation of gaming machines across jurisdictions and across venues. There are many additional fees related to gaming machine licensing, exchange etc as well.

2.2 Gaming machine tax rates

The taxation arrangements for gaming machines are complex. They differ considerably depending on the jurisdiction, the venue or operator and the amount of revenue the venue receives from gaming machines. The tax rates that apply for 2008 are shown below, not including GST which applies to all gaming machine revenues. For simplicity the thresholds to which tax rates apply and licensing fees etc are not shown.

	Clubs	*Hotels*	*Casinos*
NSW	0%-29.4%	5.3%-44.5%	13.41% +
			2% community service levy
VIC	24.24% (Tabcorp)	24.24% (Tabcorp)	21.25% +
	31.24% (Tattersalls) + $4333.33 per machine health benefit levy	31.24% (Tattersalls) +	1% community benefit levy +
		8.33% community support fund +	$4333.33 per machine Health Benefit Levy
		$4333.33 per machine health benefit levy	
QLD	0%-35.91%	35.91%+	20% (Brisb./ Gold Coast)
		0%-20% health services levy	10% (Townsville/ Cairns) + 1% community services levy
SA	0%-55%	0%-65%	34.41%
WA	NA	NA	20%
TAS	20.88%-25.88%+	24.88%-29.88%+	20.88%-25.88%
	4% community services levy	4% community services levy	
ACT	0%-21%	25.9%	NA
NT	13%-42.91%	42.91%+	20% (Lasseters)
		10% community benefit levy	21% (Skycity Darwin)

Note: Gaming machine revenue is also subject to GST in all states and territories.

Data sources: State Departments of Racing and Gaming (or equivalent) web sites, Australasian Gaming Council (2008).

Payout ratios

Gaming machines have requirements on the amount of money that must be returned to players. Currently between 85 per cent and 87.5 per cent of revenues must be returned to players as winnings in each state (Australasian Gaming Council 2008). Actual payout ratios are higher than regulatory requirements averaging over 90 per cent across Australia and over 91 per cent for NSW. This suggests that there is some competition between operators based on gaming machine payout rates.

Regulations aimed at improving information

Since the Productivity Commission review in 1999, most state and territory governments have required additional information disclosure to players, as recommended by the 1999 inquiry. These regulations are reasonably consistent across states and territories. All jurisdictions require gaming machines or gaming machine areas to provide:[19]

- information on the odds of winning;
- warnings on machines about the dangers of gambling;[20] and
- information about helplines.

All states have a gambling hotline (as well as the national gambling hotline), gambling awareness week, gambling information website, face to face counseling, financial counseling, online counseling, a media campaign and problem gambling information materials.

Some states have also implemented various information requirements for player loyalty schemes, such as provision of expenditure statements.

Regulations aimed at game design/venue design

The Productivity Commission (1999) noted deficiencies in gaming machine regulations related to controls on advertising and availability of ATMs and credit. The states and territories have implemented regulations in these areas, as well as a raft of additional regulations on what gaming machines can and cannot do (table 2.3).

The regulations vary considerably across the jurisdictions (and across venue types).

2.3 Regulations of machines and venues

Regulation	*State coverage*
Restriction on autoplay	All states
Restriction on availability of credit to play machines	All states
Provision of clocks on machines or in gaming areas	All states
Payout of winnings by cheque	ACT requires payout by cheque for winnings greater than $1200; NSW $2000, NT $500, QLD $250 (for new licenses), VIC $1000. Other states require that customer can get cheque payment if requested.
Lighting rules in gaming areas	ACT, NT, VIC, WA have specific lighting rules for gaming areas

(Continued on next page)

19 See Ministerial Council on Gambling (2008) for details.

20 WA casino has implemented this on a voluntary basis.

2.3 **Regulations of machines and venues** (continued)

Regulation	*State coverage*
Restrictions on availability of ATMs in gaming areas	All states
Restrictions on availability of ATMs in gaming venues	No ATMs in gaming venues in TAS, limits on withdrawal amounts and frequencies in NT, SA, VIC.
Maximum bet limits	ACT, NSW, SA, TAS $10; NT QLD $5; VIC new machines $5, existing machines $10.
Maximum win limits	NSW, QLD, SA, WA non-jackpot stand alone machine win limits of $10 000. Higher limits if linked. No limit ACT, NT, TAS, VIC.
Limits on frequency of games	TAS and QLD require game to take more than 3 seconds; SA requires spin rates of greater than 3.5 seconds; VIC requires spin of more than 2.14 seconds.
Ban on notes accepted	ACT, QLD limits to $20 or less; VIC limits to $50 or less; WA limits to $100; NT, SA and TAS limit to coins.
Restrictions on advertising and external signage	All states except WA have some sort of advertising restrictions. The most restrictive rules include the total ban on off-premises and outside gaming machine advertising in NSW.
Restrictions on time of operation in clubs and hotels	All states limit the time of operation of gaming machines, typically requiring a continuous break of over four hours.
Ban on inducements	NSW, NT, SA and ACT ban all or some types of inducements. No bans in other regions.

Source: Ministerial Council on Gambling (2008).

Regulations aimed at consumer commitment

The Productivity Commission noted in 1999 that pre-commitment options, including self-exclusion arrangements were typically not available to gamblers. Pre-commitment allows gamblers to set their limits outside of the influence of the gaming environment.

The states are currently in trials of such schemes (QLD and SA). NSW has the capacity for pre-commitment on its cashless/card-based gambling. Victoria expects to mandate pre-commitment mechanism on new machines from 2010.

National standards

The regulators in each Australian state and territory and New Zealand have developed a Gaming Machine National Standard. This standard is accompanied by additional (and overriding) documentation for each particular jurisdiction.

The National Standard is a composite of policy requirements and technical requirements. For the technical requirements, it sets the characteristics of the gaming machine hardware such as the integrity of the gaming machine cabinet and video screen and the type of cash input systems and testing and metering requirements for the software. But the standard also encompasses policy such as the maximum win limits, maximum credits, thresholds for wins when staff should be called etc.

At the end of the National Standard is an appendix detailing parameters within the standard that differ by jurisdiction.

In addition to the National Standard, each state and territory (except ACT) has its own Appendix to the National Standards. The jurisdictions also have additional technical documentation particular to their jurisdiction.

The 'technical' documents related to gaming machines in Australia amount to over 1000 pages of documentation in 34 documents. While standards are often valuable, the extensive differences between the states and territories regarding how a gaming machine and its software can be made impose compliance costs on the industry. The different technical specifications do not typically reflect different approaches to harm minimisation (except for the state and territory parameter differences in the National Standard). The standards often impose restraints on competition, such as Queensland setting the brand and type of locks that can be used on gaming machines. It is difficult to identify any benefits from these restrictions on competition.

2.4 **Technical standards**

Jurisdiction	*Documents*	*Total pages*	*No of docs*
Australia-wide	National Standard	119	1
NSW	Appendix to National Standard	33	4
	Other technical documents[21]	189	
	Total	**222**	
VIC	Appendix to National Standard	24	2
	Victorian Systems Document	68	
	Total	**92**	
QLD	Appendix to National Standard	27	23
	Other technical documents[22]	585	
	Total	**612**	

(Continued on next page)

21 Other technical documents include NSW Jackpot Standard; NSW Communications Protocol; and NSW Ticket-in Ticket-out Specifications.

22 Other technical documents include: Approved locks for gaming machines; Approved seals; Console specifications; Requirements for the Commissioning and Ongoing Provision of Gaming Machine Services; Requirements for the Provision of Power to EGMs; EGM card and card reader requirements; Program Storage Device Verification; EGM Program Signature Algorithms; Principles for Remotely Upgradeable EGMs; Random Number Generators: Minimum Technical Requirements; Requirements for the Use of Hard Drives; Hashing Algorithms; Data Requirements for Monitored EGMs; Monitoring System Minimum Technical Requirements; EGM Communications Interface; Gaming Venue Electronic Meter Access; Electronic seal: Minimum requirements; Jackpot systems: Minimum technical requirements; Jackpot Display Systems Requirements; Site controller minimum requirements; Local Area Electronic Communications Protocol QCOM; and QCOM site controller operating procedures.

2.4 **Technical standards** (continued)

Jurisdiction	*Documents*	*Total pages*	*No of docs*
SA	Appendix to National Standard	15	1
WA	Appendix to National Standard	16	1
TAS	Appendix to National Standard	9	1
ACT		0	0
NT	Appendix to National Standard	9	1
Total		**1 094**	**34**

Source: State government gambling web sites and correspondence with State gambling authorities.

The burden of unnecessary red tape has been widely acknowledged in recent years.[23] The Productivity Commission has reported on the regulatory burden of a number of sectors, IPART has also reviewed the regulatory burden in NSW. These reviews have identified that regulation can be improved by:

- removing redundant, complex or unnecessarily burdensome regulations; and
- enhancing regulatory consistency across jurisdictions.

These are relevant goals for the regulations of gaming machines. It is not immediately clear why state and territory governments have to impose standards governing the ability of machines to resist spills, resist break-in, cope with temperatures from 10 degrees to 40 degrees and be able to be installed by buyers. It is also not clear why these standards would differ across jurisdictions.

While many of the attributes discussed by standards are valuable, buyers of gaming machines and gaming machine software and manufacturers are in a much better position than governments to identify valuable attributes and ensure product quality. The government may have a much more limited role in the process through its part in improving health and safety (CIE 2006).

Currently, the standards impose considerably compliance costs on industry, are likely to reduce innovation and waste scarce government (and taxpayer) resources in compliance processes.

Approval by gaming machine regulators

Manufacturers have responsibility for gaining approval of new gaming machine software and hardware. Approving new software and hardware is duplicated in each of Australia's eight states and territories (as well as in New Zealand).

Approval processes for gaming machines are long and costly. Approving new software can take anywhere from 3 months to 3 years. Approving a new game console can take up to five years, although typically this process takes 3 years.

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[23] Productivity Commission (2008b, 2008c, 2008d); IPART (2006).

Approval of new software and hardware also imposes financial costs on gaming machine manufacturers in the order of $30 million per year. For each product for which approval is required, each of the eight Australian regulators will require an Accredited Testing Facility (ATF) to undertake testing of the product. This can cost $15 000 to $20 000 for a new game or up to $1 million for a new hardware platform. The gaming machine manufacturer is required to pay the costs of the accredited testing facility eight times over. Gaming machine manufacturers also pay fees to regulators, although these are smaller than the financial costs associated with ATFs.

Such lengthy times and financial costs, as well as manufacturers' internal costs of compliance, impose a considerable burden on gaming machine manufacturers. A substantial share of the R&D expenditure of gaming machine manufacturers reflects this compliance burden rather than investment in innovation. While there is a need to ensure that gaming machines meet appropriate regulations, removing unnecessary red tape could reduce these times and reduce the costs imposed on manufacturers.

Variation between the states and territories

The states and territories do not have a consistent set of policies for gaming machines. Gaming machines are viewed differently depending on the state or even region and venue in which they are located. These differences do not appear to reflect differential impacts of gaming machines on problem gambling in the different states and territories. In fact, they more likely reflect the lack of an evidential base on which the states and territories have made their decisions, resulting in many policy experiments.

Navigating the complexity of regulations is costly. While the states and territories should be able to make their own policy decisions, there is likely to be considerable scope to remove regulations that are not impacting on problem gambling. A stronger base of evidence about what does and does not work would allow state and venue regulations to converge and remove many of the compliance costs to gaming machine manufacturers.

Impact of the Productivity Commission's recommendations

The Productivity Commission concluded in 1999 that:

- policy approaches for the gambling industries need to be directed at reducing the costs of problem gambling while retaining as much of the benefit to recreational gamblers as possible;
- the regulatory environment at the time was complex, fragmented and inconsistent;
- past policy decisions in many cases lacked access to objective information and independent advice;

- venue caps are preferable to state-wide caps but more targeted consumer protection measures have the potential to be much more effective; and
- restrictions on competition have not reduced the accessibility of gambling other than for casino games.

The Productivity Commission's findings could easily be echoed today. Regulations remain complex and fragmented, although perhaps less so than they were in 1999. Regulatory assessments have been of a low quality, both before regulations are put in place and when regulations are reviewed. While consultation has improved, in some cases this has largely been for appearances only. States and territories have continued with and even tightened restrictions on competition and state-wide caps.

The implementation of policy since 1999 suggests that the states and territories may need ongoing efforts to hold policymakers to account.

A particular worry is that there is little evidence of which policies have and have not been successful (see box 2.5).

2.5 Evidence base for policy making

The Productivity Commission's 1999 inquiry established a framework and baseline estimates that could have provided an evidence base for policy actions. Presumably as policies were tried, and evidence mounted, regulations that worked could be expanded and those that didn't could be removed. Unfortunately, the evidence base for policy has not improved since the Productivity Commission's 1999 inquiry. While policymaking in this area will always face significant uncertainties, learning should allow policymaking to improve through time.

A number of regulatory and industry bodies have noted the lack of evidence linking policies to problem gambling and the need for a stronger evidence base.

> …the Tribunal is of the view that the NSW policy framework should include a more evidence-based approach to evaluating, selecting and modifying the measures implemented under that policy (IPART 2004, p. 32)
>
> IPART found no firm evidence that the provision of gaming machines in clubs has led to a higher overall level of gambling or incidence of problem gambling in NSW than in other states. (IPART 2008)

(Continued on next page)

2.5 **Evidence base for policy making** (continued)

It is unclear whether any such testing was undertaken and I have seen no assessments yet of how well these regulatory requirements are working. (Banks 2002, p. 26, regarding informed choice)

To date, there has been no systematic research into the concept of informed choice in gambling or the type of data necessary to facilitate healthy decision making. (Australasian Gaming Council 2007, p. 15)

The findings in Queensland and the ACT suggest that the effect of limiting note acceptors will only be limited to players making adjustments and no meaningful long term impact has been demonstrated. (Australasian Gaming Council 2007, p. 21)

…there is a burning need for more research on what actually works among the many possible harm minimisation measures. (This is particularly important for those which can involve significant compliance and other costs.) If we are serious about doing things that are effective, rather than just being seen to be doing things, trialing and testing of different approaches is critical. In many cases, this needs to be done *before* measures are introduced. (Banks 2002, p. 30)

Overall, there is insufficient evidence or consensus between the various groups and individuals interviewed for this study to sufficiently understand the effectiveness of the measures in minimising the potential harm from gambling. Further, while the study has provided indicative findings on each of the three measures, we do not consider that the evidence provides a sufficient basis on which to make firm recommendations for improvements. (Centre for Gambling Research 2005, p. 132)

Assessing the impact of regulations on problem gambling and recreational gambling

Gambling regulations often impact on both recreational and problem gamblers. Good policy would ideally target the impacts only on problem gamblers. Policies that are not targeted will have the opposite effect, as recreational gamblers are more responsive to changes in the effective price of gambling (they have higher price elasticities of demand).[24]

Policies that are not targeted at problem gamblers are likely to have low benefit-cost ratios for this reason. For instance, limits on where gaming machines can be located, caps on numbers of machines in each state and venue and gaming machine taxes are all likely to have a greater impact on recreational gamblers versus problem gamblers.

On the other hand, policies that are well targeted will have higher benefit-cost ratios, as they affect problem gamblers more than recreational gamblers. The Productivity Commission recommended in 1999 that more targeted policies would replace less

[24] Productivity Commission (1999, section 5.17) used a price elasticity of demand for recreational gamblers of 0.8 to 1.3. Severe problem gamblers responded much less to price, with a price elasticity of demand of 0.3 to 1.0.

targeted policies as states and territories learnt about what did and did not work (see Banks 2002, p. 29).

The states and territories have put in place many regulations aimed at the way in which the gaming machines are operated and the characteristics of the venue. There has been little work to evaluate whether these measures are well targeted. This is likely to mean that regulations do not minimize the costs of problem gambling with the lowest costs to the economy, community and gambling industry.

State and territory evaluations of gaming machine regulations

Many state and territory evaluations of gaming machine regulations are not meeting basic requirements of policy analysis. The NSW Minister of Gaming and Racing's (2007) *Report on the Five-year Statutory Review of the Gaming Machines Act 2001* is a prime example. There is no framework for the analysis and no evidence about the efficacy of particular regulations aimed at harm minimization. For example, the response of the review to submissions regarding caps is set out below.

> Increases to venue-level caps are not supported. Information presented in a number of SIA [social impact assessment] applications submitted to date, as well as in the submissions to this review, indicates that venues with more gaming machines are more profitable *per machine* than venues with fewer machines. Therefore, it is not proposed to increase venue-level caps.
>
> Given the reduction over time in the overall number of gaming machines in NSW, it is proposed that the state-wide cap be reduced to the current level of entitlements. It is also proposed to introduce a mechanism that would automatically reduce the state-wide cap over time. (Proposal 4)
>
> Reducing the state-wide cap is one method of reducing the potential for harm arising from gaming machines, and reaffirms the Government's commitment to harm reduction strategies. (Minister for Gaming and Racing 2007, p. 14)

The logic of not increasing venue caps because venues with more machines are more profitable is unclear. If the machines are used by recreational gamblers then allowing machines to move to where they make the most revenue would be welfare enhancing. Whether state-wide caps do or do not contribute to the harm minimization strategy is an open question that requires more than a throw away line.

The Productivity Commission provided a clear framework for assessing regulatory actions in 1999.

> Policy approaches for the gambling industries need to be directed at reducing the costs of problem gambling — through harm minimization and prevention measures — while retaining as much of the benefit to recreational gamblers as possible. (Productivity Commission (2008a, p. 42)

Ensuring that state and territory agencies understand this framework and the evidence that it requires will allow a better mix of harm minimisation policies.

Key points

The regulatory arrangements have changed markedly since the Productivity Commission's 1999 review. There have also been positive changes to the industry's attitude to problem gambling.

But the nexus of regulations aimed at reducing the costs of problem gambling has not been well formulated, evaluated and reviewed. Regulations differ significantly between states and territories and by venue. In part this reflects different community preferences for the costs of problem gambling. But in areas such as technical standards, the inconsistencies and over-regulation increase business costs for no purpose.

The nexus of regulations has not been subject to useable evidence-based cost benefits analyses in many areas, despite this framework being supported by the Productivity Commission in 1999. This means that we do not know whether we have the best mix of regulations in place. In all likelihood, without better information, we will not have the best mix of regulations in place.

The regulatory changes since 1999 suggest that, for this review, it is important that the Productivity Commission put in place a process for the future. This process should aim to engage the relevant stakeholders on a continuing basis, improve evaluation and review of policies and ensure that we learn and improve on regulating gaming machines.

3 *Regulation and the pattern of economic activity*

Gaming machine regulations impact on the gaming machine industry and the economy. By looking at the pattern of regulations and the pattern of economic activity, we can trace out these impacts. For instance, Western Australia allows no gaming machines in its clubs. As a result there are many fewer clubs relative to its population and the clubs are smaller and employ fewer people.

Changes in regulations through time can also be mapped to economic impacts. For instance, the smoking bans in clubs and pubs reduced expenditure on gaming machines and led to job losses. This is not to say that many regulations should not exist, but that the economic costs should be considered as well as the impact on problem gambling in future evaluations.

Differences in regulation between jurisdictions and venues

Clubs and pubs with and without gambling

Clubs and pubs that have gambling facilities employ more people and attract more revenue from beverage and food sales, according to ABS (2006). Clubs without gambling facilities:

- employ 64 per cent less people per club than clubs with gambling facilities;
- receive 77 per cent less income per club; and
- receive 41 per cent less non-gambling income per club comprising:
  - 61 per cent less revenue from liquor and beverage sales on the premises; and
  - 44 per cent less revenue from takings from meals (table 3.1).

Clubs with gambling facilities are much more successful at providing employment and providing services other than gambling that people want.

Pubs with gambling facilities have similar advantages over their counterparts without gambling, although the differences are smaller. Pubs without gambling:

- employ 44 per cent less people per pub than pubs with gambling facilities;
- receive 65 per cent less income; and
- receive 51 per cent less non-gambling income comprising:

- 17 per cent less in liquor and beverage sales on the premises; and
- 73 per cent less in takings from meals.

These findings for clubs and pubs can be broken down on a state by state basis and confirm a pattern of size differences between venues with and without gaming, particularly for clubs.

3.1 **Clubs and pubs with and without gambling** 2004-05

Per business	*Clubs*			*Pubs*		
	With gambling	*Without gambling*	*Difference*	*With gambling*	*Without gambling*	*Difference*
			%			%
Employment (No.)	33.2	11.8	-64	27.5	15.4	-44
Total income ($m)	3.9	0.9	-77	4.1	1.4	-65
Non-gambling income ($m)	1.5	0.9	-41	2.9	1.4	-51
- Liquor sales on the premises ($m)	0.8	0.3	-61	1.1	0.9	-17
- Takings from meals ($m)	0.4	0.2	-44	0.4	0.1	-73

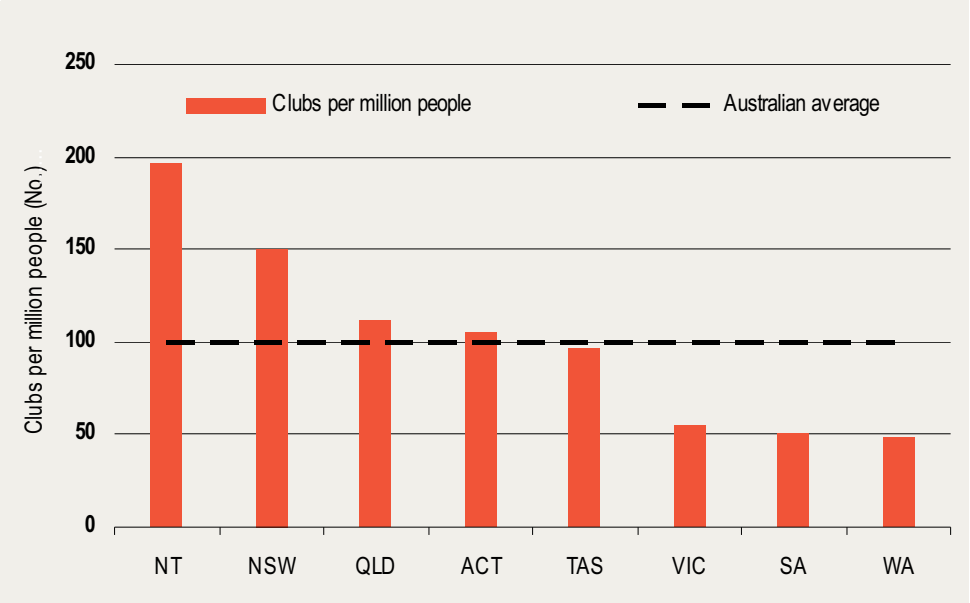
Sources: ABS (2006), Cat. No. 8687.0, *Clubs, Pubs, Taverns and Bars 2004-05;* CIE calculations.

Clubs and pubs subject to different state regulations

Clubs and pubs with gambling may be different than their counterparts without gambling because of factors other than gambling. For instance, larger clubs might find that putting in gambling facilities is more profitable for them than for smaller clubs. This is not true of patterns between states where regulatory arrangements are different.

The most striking comparison is between Western Australia, where no gaming machines are allowed in pubs and clubs, and the other states with varying levels of restrictions. Western Australia has about half the number of clubs per million people as the Australian average (chart 3.2).

3.2 **Clubs per million people, by state** 2004-05



Data source: ABS (2006), Cat. No. 8687.0, *Clubs, Pubs, Taverns and Bars 2004-05.*

Clubs in Western Australia employ many fewer people and have smaller revenues from non-gambling activities (table 3.3). They employ 74 per cent less people than clubs in the rest of Australia, their average income is 83 per cent lower and their non-gambling income is 59 per cent lower.

The differences between pubs in Western Australia and the rest of Australia are smaller. While they receive less overall revenue they receive more revenue from non-gambling activities. This finding accords well with the relative vulnerability of clubs and pubs to gaming machine revenues and suggests that pubs may perform better without competition from clubs in areas such as food and beverage sales.

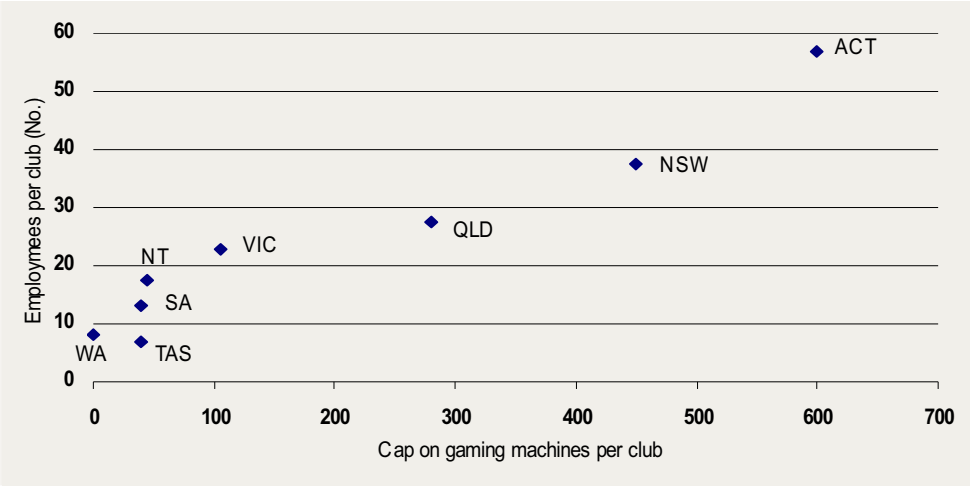
3.3 **Clubs and pubs in Western Australia and the rest of Australia** 2004-05

Per business data	*Clubs*			*Pubs*		
	WA	*Rest of Australia*	*Difference*	*WA*	*Rest of Australia*	*Difference*
			%			%
Employment (No.)	8.3	31.2	-74	23.5	22.2	6
Total income ($m)	0.6	3.6	-83	2.5	2.9	-14
Non-gambling income ($m)	0.6	1.5	-59	2.5	2.0	20

Source: ABS (2006),Cat. No. 8687.0, *Clubs, Pubs, Taverns and Bars 2004-05.*

The analysis can extend beyond a comparison of WA and the rest of Australia. There is a clear relationship between the number of employees per club and the cap on gaming machines (chart 3.4).

3.4 Employment and gaming machine caps in clubs

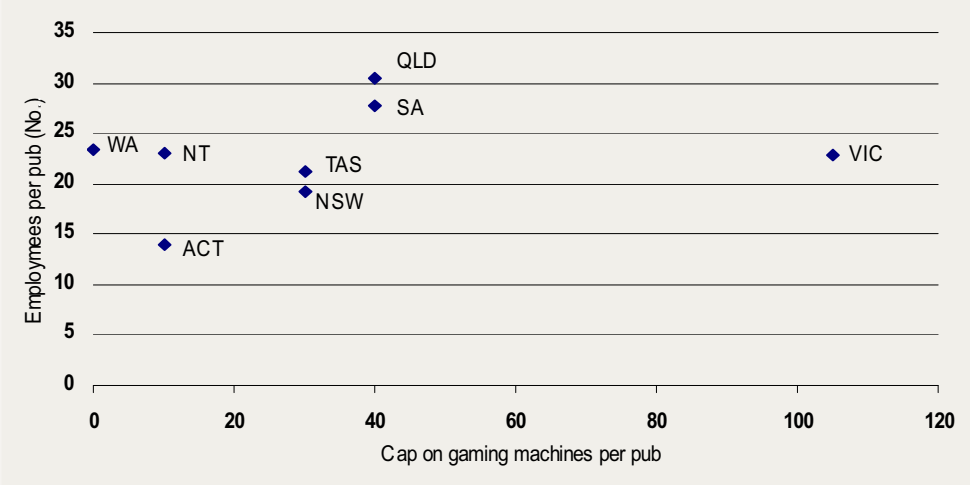


[a] ACT has no limit on gaming machines per club — the figure of 600 is assumed for the purposes of the chart. NSW had a limit of 450 in 2004-05, which is the period over which the survey of employment per club is taken.

Data sources: ABS (2006), Cat. No. 8687.0, *Clubs, Pubs, Taverns and Bars 2004-05;* The CIE.

The link between employment and the venue caps on gaming machines in pubs is weaker, although tighter caps still generally appear to be associated with fewer employees (chart 3.5). Victoria, which has a much greater venue cap than the other states, does not have significantly greater employment. This is likely to reflect the constraint imposed by the total number of gaming machines allowed in Victoria, meaning that few pubs can actually have such large numbers of gaming machines. For example, for all clubs and pubs with gaming machines, the average number of gaming machines per venue in Victoria is 52 — less than half the cap of 105 machines per venue.

3.5 Employment and gaming machines in pubs



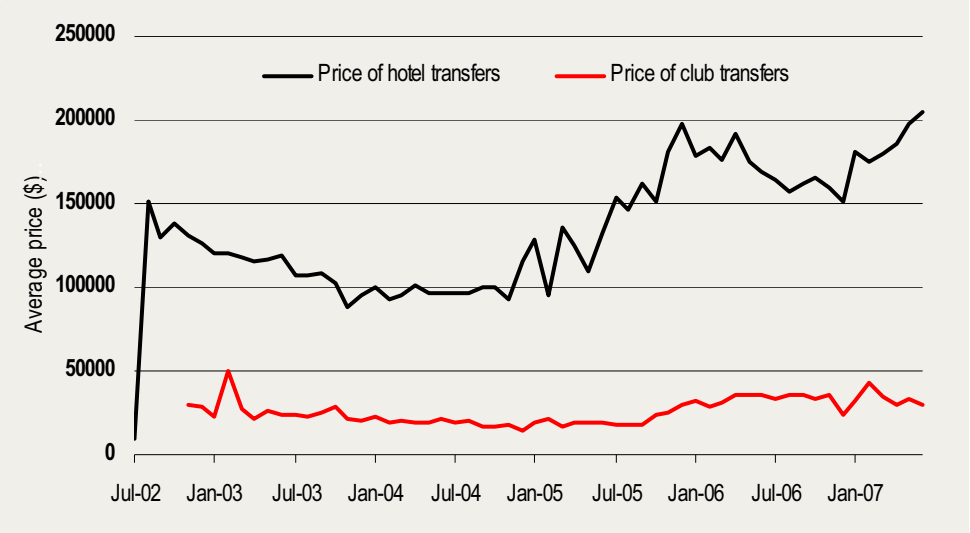
Data sources: ABS (2006), Cat. No. 8687.0, *Clubs, Pubs, Taverns and Bars 2004-05;* The CIE.

Clubs and pubs in NSW

Clubs in NSW are much less restricted in their access to gaming machines than pubs. Clubs have historically been restricted to 450 machines per club, although this restriction is being removed. Pubs are restricted to 30 machines per venue. The statewide cap also favours clubs, with clubs allocated about three times as many machines as pubs.

The impact of these restrictions can be observed in gaming machine data. Trading of gaming machine entitlements for hotels in 2007 occurred at a price of six to seven times that for clubs (chart 3.6). In the most recent trades for which data are available, the cost of buying an entitlement to a gaming machine for hotels was $200 000, compared with $30 000 for clubs (although these figures are likely to have fallen following the introduction of smoking bans in NSW pubs and clubs). The different values reflect the impact of regulations — the regulatory environment has generated different scarcity values of gaming machine entitlements for hotels relative to clubs.

3.6 **Prices at which gaming machine entitlements are traded in NSW**



Data source: Liquor Administration Board, Annual Reports 2002-03 to 2006-07.

The revenue per machine at pubs and clubs also reflects the different scarcity values imposed by the uneven regulations. According to the NSW Department of Gaming and Racing Industry Statistics, machines located in pubs provided revenue per machine of $71 000 in 2006-07, compared with $47 000 for machines in clubs.

Changes in regulations through time

Many of the regulatory changes that have been brought in since the Productivity Commission inquiry in 1999 have been incremental, making it difficult to ascertain the impacts on the gaming machine industry.

Probably the most important change in regulations for the gaming machine industry is unrelated to problem gambling. This was the banning of smoking in pubs and clubs. This occurred in different states at different times, often incrementally and resulted in substantial impacts on pubs and clubs (table 3.7).

3.7 Total smoking bans in pubs and clubs

State	*Date smoking banned in gaming areas of clubs and pubs*
NSW	2 July 2007
Victoria	1 September 2002 [a]
Queensland	1 July 2006
South Australia	1 November 2007
Tasmania	1 January 2006
ACT	1 December 2006

[a] Smoking was banned in gaming areas in Victoria in 2002 and banned in licensed premises on 1 July 2007.

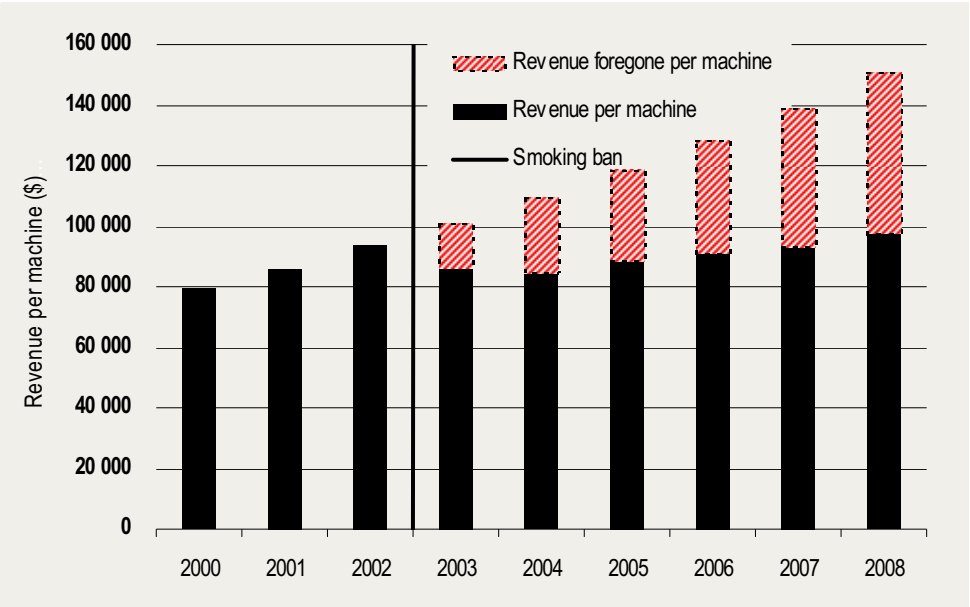
Source: State Health Department web sites.

The ban on smoking reduced club and pub revenues from gaming. The resulting industry changes can in some cases be traced through. These effects clearly show that reductions in gaming machine revenues require restructuring of pubs and clubs and losses in employment. Clubs, for example, are not-for-profit organisations. If they receive less revenue from gaming machines then they will either have to gain revenue from another source or reduce their expenditure. This will often involve lower wages, employing fewer people, giving less money to community concerns or spending less to upgrade facilities. The industry impacts of the smoking ban show some of these effects.

In Victoria, smoking was banned in gaming areas of pubs and clubs in September 2002. Expenditure per machine in 2002-03 was 8.5 per cent lower than in 2001-02. Chart 3.8 shows expenditure per machine in Victoria. The revenue foregone per machine is calculated assuming that Victoria's expenditure per machine would have grown in line with South Australia in the absence of the smoking ban.[25]

[25] South Australia is used as a comparator as the number of machines per capita is broadly similar in South Australia and Victoria.

3.8 **Revenue per machine Victoria**



[a] Revenue foregone is based on Victorian expenditure per machine growing at the same rate as South Australia.
Data sources: Victorian Commission for Gambling Regulation website (http://www.vcgr.vic.gov.au); The CIE.

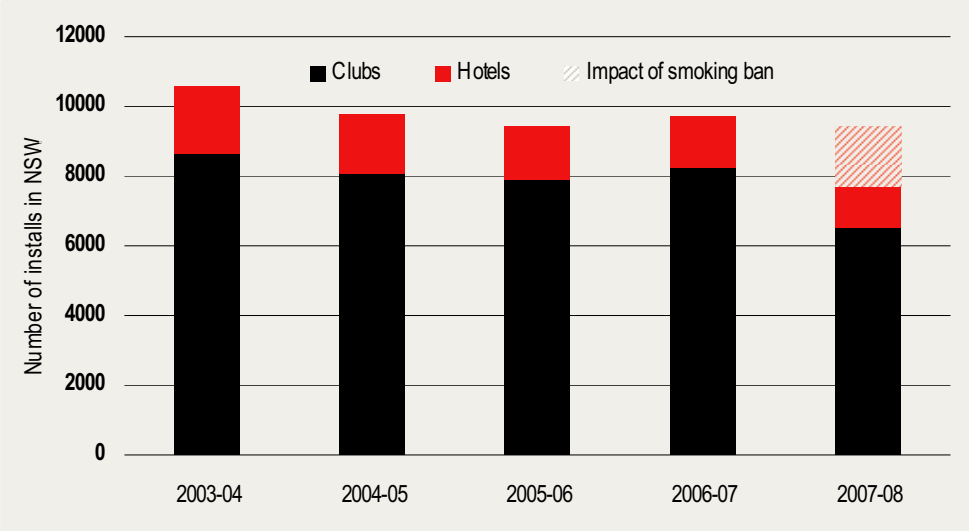
The lost revenue in Victoria reduced the ability of clubs and pubs to provide employment opportunities and to subsidise community activities. Up to 3000 people were stated to have lost their jobs in Victorian clubs following the introduction of the smoking ban (Sydney Morning Herald 2004). Clubs and pubs often had to redirect revenues away from other activities towards building new facilities for smokers.

Other states have put in indoor smoking bans more recently than Victoria. In NSW indoor smoking bans were implemented (for the entire venue) in July 2007. These bans had a considerable impact on manufacturers of gaming machines. Clubs and hotels slowed the rate at which they replace machines, resulting in a 20 per cent fall in gaming machine installs in the 12 months following the introduction of the smoking ban. The impact was fairly similar for clubs and pubs (chart 3.9).

The smoking bans also reduced gaming machine revenues for clubs and pubs. Club, pub and casino revenue from gaming machines fell by about 10 per cent in 2007-08 compared with 2006-07 (NSW Office of Liquor Gaming and Racing 2007a and 2008).

Three hundred of NSW's 2084 hotels have applied to defer payment of their gaming machine taxes, having experienced an average decline of 24.5 per cent in their gambling revenue (Sydney morning Herald 2008). Over sixty clubs have taken part in the tax deferral scheme (NSW Office of Liquor and Gaming 2008a). Clubs NSW estimates that 2100 jobs were lost from clubs in the first 12 months of the bans (Sydney Morning Herald 2008).

3.9 Installs of gaming machines in NSW

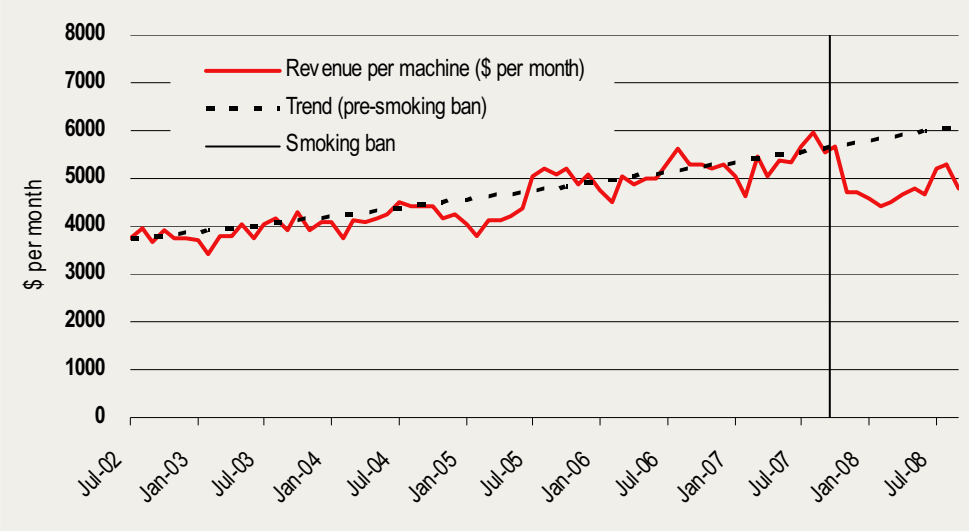


Note: Impact of smoking ban based on trend in installs from 2003-04 to 2006-07.

Data source: NSW Office of Liquor Gaming and Racing (2008b).

In South Australia, smoking was banned in clubs and pubs on the 1st of November 2007. There was a 17 per cent fall in expenditure on gaming machines in the month following the introduction of indoor smoking bans (chart 3.10). The steady trend upwards in expenditure per machine is also interesting. This likely reflects the imposition (and tightening) of caps.

3.10 Revenue per machine in South Australia $ per month



Data source: South Australian Office of the Liquor and Gambling Commissioner website (http://www.olgc.sa.gov.au/).

Key points

The regulations around gaming machines have economic effects. Gaming machine revenues employ people in clubs, pubs, casinos, manufacturers and operators. While in the long-term, people will find jobs in other industries, changes to gaming machine regulations nevertheless have a cost in reducing the pleasure that recreational gamblers get from playing machines. In this chapter we have shown that:

- regulations impact on the nature and pattern of economic activity;
- clubs are smaller and fewer where there are less gaming machines and contribute less to the community and to employment;
- caps on gaming machines distort economic activity making machines more valuable in some types of venues and locations than others; and
- changes to gaming machine revenues affect venue profitability and lead to lower employment.

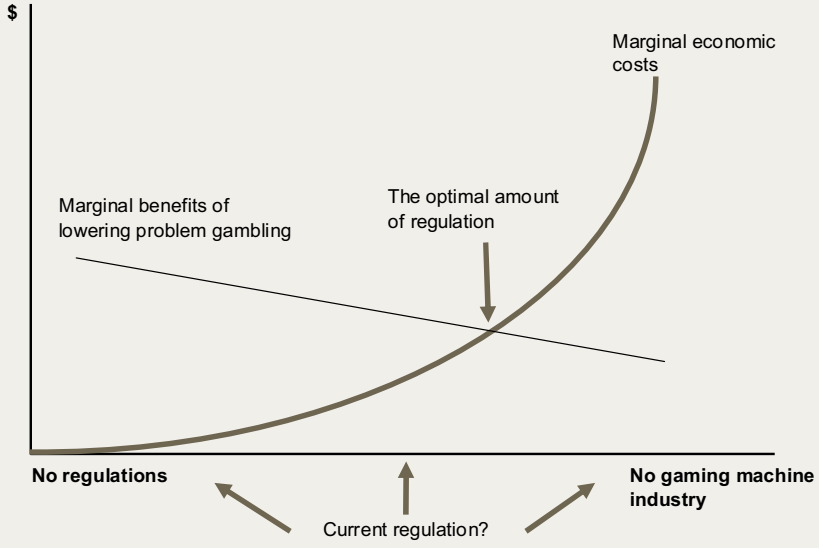
4 *The task of the Productivity Commission*

The Productivity Commission is tasked with reviewing the regulation of the gambling industry, with a view to achieving better economic and social outcomes. This could involve additional regulations, removal of ineffective regulations or implementing processes to improve the regulatory environment on an ongoing basis. In this section we outline the framework that we think the Productivity Commission should use in framing its conclusions.

Most reviews of regulations related to gaming machines focus solely on issues of problem gambling. While it is important whether regulations effectively reduce the costs of problem gambling, the impact of regulations on recreational gambling, which provides entertainment to many, should also be considered.

This chapter shows how these impacts can be jointly considered and weighed for policy analysis, to ensure that policies lower the costs of problem gambling while maximizing the benefits to recreational gamblers. This requires assessing the costs and benefits of policy change. Additional regulation should only proceed if the benefits of the regulation can be shown to exceed the costs. Current regulations

4.1 The optimal amount of regulation



Source: The CIE.

should be removed if their benefits do not exceed their costs. This regulatory problem is set out in chart 4.1. Regulations should proceed until the additional benefits of more regulation are equal to the additional costs of this regulation.

The benefits curve for regulation of gaming machines reflects lowering the costs of problem gambling. This could include:

- reducing the prevalence of problem gambling;
- reducing the personal costs of problem gamblers and the costs of excess consumption of gaming machine services; and
- reducing the costs of problem gambling to families, friends, the broader community and government.

The costs curve for regulation of gaming machines reflects reducing the value of recreational gambling. This includes:

- reducing the entertainment people get from gaming machines;
- reducing the social benefits related to community support provided by clubs and other venues from gaming machine revenue;
- increasing other taxes or reducing government services to compensate for lost tax revenue from gaming machines; and
- transition costs as people employed through gaming machine activities seek new employment.

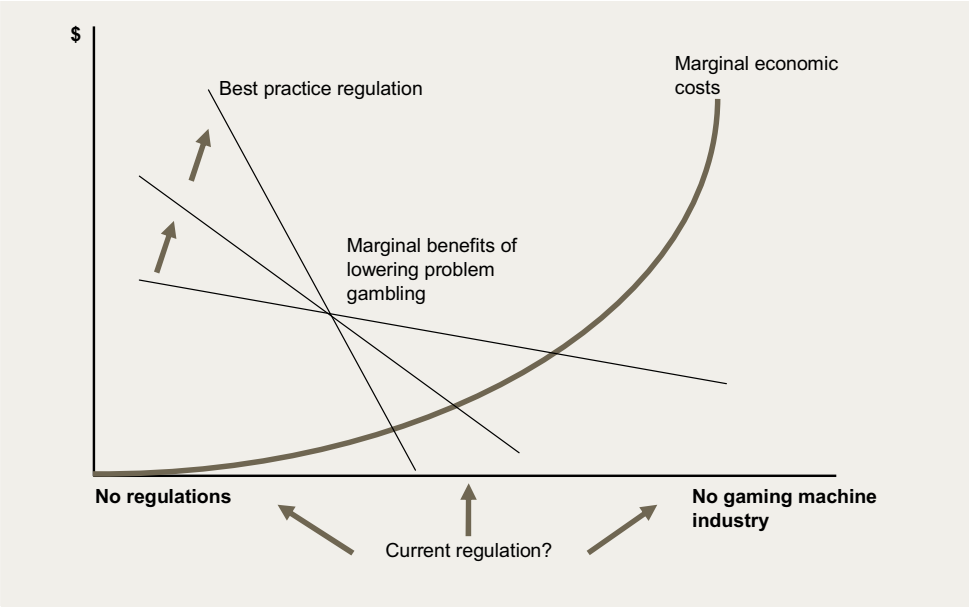
In practice, the major problem with gaming machine regulations is likely to be that we are not on the 'best' benefits curve. Not all regulations will have the same benefits in terms of reducing problem gambling, or at the same cost. (That is, some regulations will be more effective and less costly than other regulatory measures.) Regulations will be more valuable that reduce the costs of problem gambling without affecting recreational gamblers. These targeted regulations provide the most bang for their buck, or the highest benefit cost ratio.

At the other extreme, many regulations are likely to impact most on recreational gamblers, with little impact on problem gamblers. These regulations have the lowest benefit cost ratio and are unlikely to be worth doing.

In large part, the regulation of gaming machines reflects the search for the best mix of regulations — those that have high benefits with little impact on the industry or broader economic costs. These good regulations are shown in chart 4.2 as best practice regulation. The main challenge is to move from the current regulatory mix to a best practice mix of regulations. This could well mean lower costs of problem gambling than is currently the case, combined with a thriving and innovative sector for recreational gambling.

As gaming technology evolves, it is also likely that new technologies can improve the set of regulatory options.

4.2 Regulatory costs and benefits



Source: The CIE.

The social benefits of past regulatory efforts to lower the costs of problem gambling have been muted by unintended consequences. Regulations restricting the way gaming machines are used (an effective price increase) are likely to impact on recreational gambling more than problem gambling. This reflects the greater price responsiveness of recreational gamblers.

In addition, the analogy of squeezing a balloon is relevant to gambling regulation — regulating one part of the gambling industry may lead to activity shifting to other less regulated parts of the industry. Regulations that restrict gambling on gaming machines may push problem gamblers into horse racing, online gambling or other forms of gambling. The extent to which this regulatory leakage occurs is a key determinant of the benefits of regulations. For instance, IPART (2008) notes that gaming machines in clubs change only the location of problem gambling but not its extent. In this case, banning gaming machines in clubs would have zero impact on problem gambling.

The current regulatory review needs to better understand these problems. It should provide the processes for these problems to be solved on an ongoing basis and the frameworks that policymakers should use to choose policies.

Key points

The current review by the Productivity Commission provides an opportunity to lock-in better regulation of gaming machines for the future. The key features required to achieve this are:

- evidence of the impact of regulations on problem gambling;
- assessment of the costs of regulation against the benefits that regulation can provide, both before and after regulations are put in place;
- an ongoing process for review of regulations; and
- replacement of non-targeted regulations by targeted regulations as we find better ways to reduce the costs of problem gambling without impacting on recreational gambling, possibly through solutions from networked technology.

5 *The cost curve for gaming machine regulations*

The previous chapters have highlighted that the gaming machine industry provides jobs, provides entertainment to many people and provides revenue to governments to support the services that they provide. These are some of the economic contributions of the industry to Australia. Regulations that reduce these contributions are costly.

In this chapter we measure the cost to the industry and economy of regulations that restrict the use of gaming machines. This provides a benchmark against which social benefits can be assessed. Measuring the cost involves considering how the resources currently used to provide gaming machine services (such as people and capital) would be reallocated and how the industries that provide inputs into gaming machine services would be affected, amongst other things. Tracing out these impacts requires the use of a general equilibrium model.

The modeling does not capture all economic effects. It does not capture social benefits and costs. These would include the social value of the services that clubs provide to the community, the costs of problem gambling to the families of problem gamblers, the costs to the problem gambler beyond their excessive consumption and the cost of government funding of social services. For each different regulation the impact on social costs will be different. The modeling does not capture the individual costs to the problem gambler, such as excess consumption of gambling and personal costs (see appendix C for further information on measuring the costs of excessive consumption). These will be determined by the impact of the regulation on the prevalence and cost of problem gambling and should be measured on a case-by-case basis.

Framework for analysis

The economic cost curve of regulations that impact on the gaming machine industry should assess the economy-wide costs. Economy-wide costs capture the economic flow-on effects resulting from changes in activity — impacts on suppliers to clubs, pubs and casinos, substitution by consumers to spending on other activities and, in the longer term, the re-use of resources in other sectors and regions as people change jobs.

To calculate these economy-wide impacts we use MMRF-CIE. MMRF is a model of the Australian economy developed by the Centre for Policy Studies. It has been adjusted by CIE to reflect economic conditions in 2006-07 and the government sector data has been updated to better reflect the imposition of taxes on the economy.

The MMRF model has been widely used by Australian Treasury, the Productivity Commission, CIE and others to measure the impacts of policy changes.

The MMRF model can be operated to capture a long-run economic environment or a short-run economic environment. In the short-run wage levels are fixed, unemployment can occur and capital is not necessarily allocated to those areas where it is most profitable — that is, the short run also captures adjustment costs. In the long-run, there is full employment and capital has been reallocated to those sectors where it is best used.

We present both a short-run and a long-run economic cost curve. Given the current Australian and world economic conditions it is likely to be more difficult for labour market adjustments to occur quickly. This means that the short-run economic conditions may be in place for longer than would otherwise be the case.

The technical methods used to model the changes to the Australian economy if there were no gaming machines are detailed in appendix B. The key elements of the analysis are outlined below.

- The contribution of gaming machines is measured through the changes to the Australian economy if gaming machines were to be banned. The cost curve reflects marginal changes to the industry.
- Clubs and pubs are likely to lose revenue from gaming and from other sources such as food and beverage sales. The degree to which these revenue streams are complementary to gaming is not well understood, although it is clear that there are substantial differences between clubs with and without gambling facilities (chapter 3). The estimates presented here assume a conservative 30 per cent decrease in non-gambling revenue from clubs following the removal of gaming machines and no change in the non-gambling revenue of pubs.[26] The analysis is not substantively changed by this estimate.
- Australian manufacturers of gaming machines export approximately $310 million of machines per year. This comprises an important part of the economic contribution of the gaming machine industry. It is likely that Australian manufacturers would shift operations offshore if there were no gaming machines allowed in Australia. Australia's largest manufacturer, Aristocrat, already has manufacturing operations in the US and Japan. We model this as the most likely

[26] Note that Farley (2003) finds complementarity of gaming and other revenue in Tasmanian hotels and clubs, although the econometric analysis captures only a very small time period.

scenario. The analysis is not substantively changed if manufacturers continue to undertake export activity in Australia.

- State governments will have to raise other taxes, provide fewer services or go into debt to replace lost tax revenue from gaming machines. The most likely alternative is that state governments will increase taxes. For simplicity of presentation, we model tax increases through an increase in the GST (directed to states through grants).
- The consumption of gaming machine services by problem gamblers was modeled by the Productivity Commission as excess consumption. That is, rather than having value, which would be offset by many other costs, the consumption itself had negative value. In order to evaluate this economically, we need to know whether regulations that reduce the use of gaming machine activity increase gambling in casinos, racetracks and online. We do not have sufficient evidence to evaluate this point — indeed it is a key question for the Productivity Commission in this review. The results reported assume that excess consumption by problem gamblers in gaming machines is replaced by excess consumption in other forms of gambling. Information on expected reductions in problem gambling from regulatory change should be netted off the results presented, on a case-by-case basis. (See appendix C for further details.)

Measuring the cost curve

The cost curve can be measured along a number of dimensions, regions and time frames.

- The most appropriate measure of welfare, in the model that we use, is real consumption. Given the importance of employment for Australia in the current difficult economic climate, we also report employment impacts of differing changes to the gaming machine industry.
- We take an Australia-wide perspective in reporting on the cost curve to the gaming machine industry. A discussion of the impacts on particular states and territories is included in appendix D.
- We report both the short-run cost curve and a long-run cost curve, as discussed in more detail below. The average cost curve will be a weighted combination of these, depending on the adaptability of the economy and the time preferences of the policymaker. In the current economic environment, where there is excess supply and flexibility is likely to be stretched, the short-run economic environment may be a better indicator of economic impacts for the next four or five years.
- We also report the implications to government of changes in the gaming machine industry. This includes the increase in the GST required to replace lost

government revenue from gaming machine taxes (and revenue reductions from the resulting fall in economic activity).

Changes to the cost curve since the 1999 review

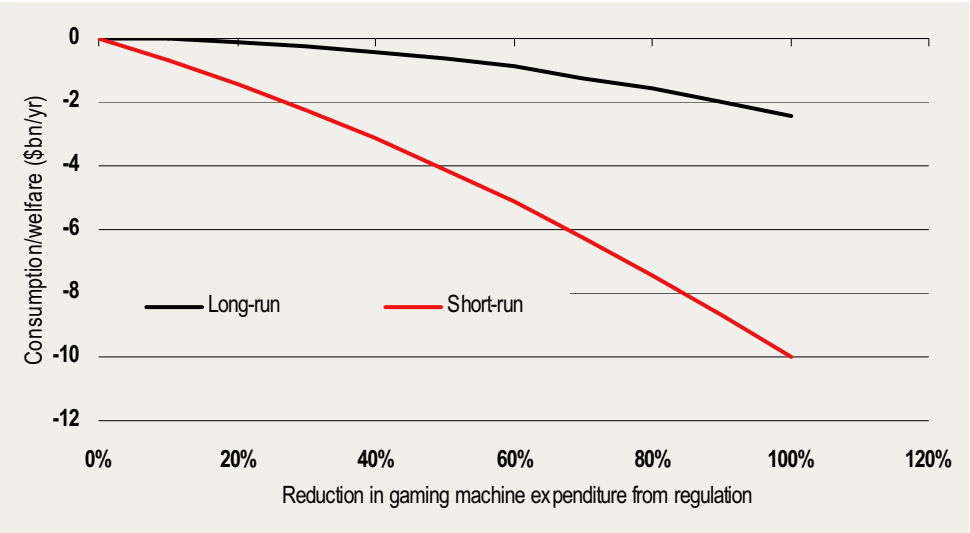
The cost curve for the gaming machine industry has changed substantially since 1999. The gaming machine industry is larger than it was in 1999 and more highly taxed (chapter 2). These factors suggest that changes to the industry are now more costly (in economy-wide costs) than they were in 1999. In particular, changes to the industry likely:

- have a greater impact on recreational gambling which people enjoy; and
- require greater increases in other taxes or reductions in government services to replace taxes from gaming machine activities.

The cost curve for government regulation of gaming machines

The cost curve for government regulation of gaming machines measures the economy-wide costs of reductions in gaming machine use caused by regulation. It is the benchmark against which any benefits from lowering the prevalence of problem gambling should be measured. Chart 5.1 plots the cumulative cost curve in the short-run and long-run.

5.1 **Cost curve for regulatory change** long run and short-run



Note: Cost curve based on consumption losses of incremental regulations that reduce the size of the gaming machine industry.
Data source: The CIE.

Regulations that resulted in gaming machines being removed from all clubs, pubs and casinos would result in lost consumption in the short-run of $10 billion per year.

These costs represent the lost value of consumption of an activity that people enjoy, as well as substantial adjustment costs as people who worked in clubs, pubs and casinos look for new employment, potentially in new locations.

In the long-run, businesses will adjust their activities and people will find new jobs that will ameliorate the substantial short-term impacts of gaming machine regulation. The period of time required for this to occur will depend on the ability of the economy to adapt. The types of adaptation that would reduce the economic impact of regulatory change include a reallocation of capital to more productive sectors, adjustments in wage rates so that employment levels returns to 'full employment' and the migration of people between Australia's states and territories according to differentials in the wages offered. The time required to ameliorate short-run effects is therefore dependent on the flexibility of labour, capital and wages and the extent of job creation in industries other than clubs and pubs.

The financial crisis and global recession are likely to considerably slow the time taken for new jobs to be created. Businesses will be less willing to invest and less able to access credit, increasing the time taken for capital to shift into new sectors. The flexibility of the economy will be stretched by the impact of changes in global conditions on the Australian economy. It is reasonable to expect that the economy will take upwards of five years to adjust to a removal of gaming machines from pubs and clubs. Once these adjustments have occurred — people have retrained into new sectors, some clubs and pubs have been replaced by other businesses and people have moved to regions where employment can be found — the consumption losses are estimated at $2.4 billion per year. These losses reflect the value that people place on using gaming machine services and having to substitute to an activity that they enjoy less. They also reflect the imposition of higher taxes in other areas of the economy, to make-up the revenue no longer available from gaming machines.

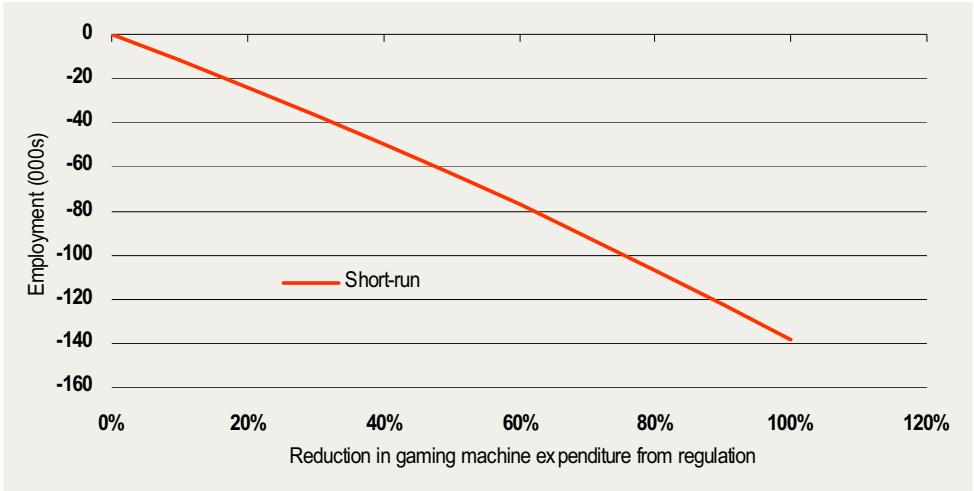
Practical regulatory options are unlikely to result in the removal of all gaming machines. The cost curve allows regulators to benchmark regulations with different levels of effect on the industry. For example, regulations that resulted in a 10 per cent contraction in spending on gaming machines would have economy-wide costs in the short-run of $0.7 billion per year. The long run costs are estimated at approximately $30 million per year. These changes would also approximate the economy-wide gains for removing regulations, equivalent to generating a 10 per cent increase in gaming machine revenues.

In the short-run, employment across the economy would contract significantly if gaming machine activity were halted. This reflects the direct employment losses in clubs, pubs, casinos and machine manufacturers, as well as indirect employment losses flowing on from reduced consumption of goods and services across the economy. Employment losses from a full ban of gaming machines are estimated at 140 000 people in the short-term. In the long-run, the economy will return to full employment. People who have lost their jobs would gradually move into other

occupations. The costs of retraining are not captured by the analysis (nor the prospect of an increase in the long-term unemployed).

A 10 per cent reduction in the industry (across Australia) is estimated to lead to job losses in the order of 12 000 people. The direct job losses in Victoria from an 8.5 per cent reduction in gaming machine expenditure were reported as being 3 000 people, suggesting that the modelling results compare well with past real world evidence (Sydney Morning Herald 2004).

5.2 Employment impacts of regulation in the short-run

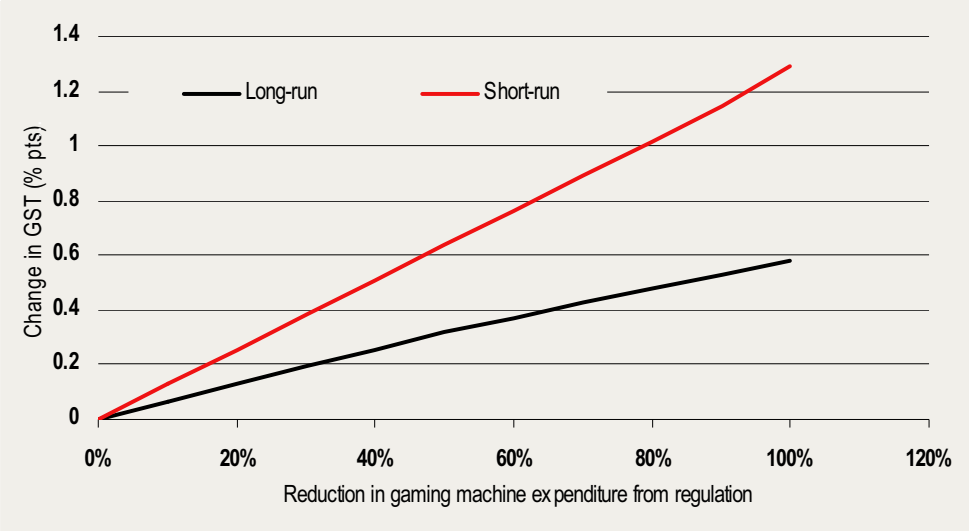


Data source: The CIE.

Gaming machines provide substantial tax revenues to state governments, and indirectly to the Australian Government. If this revenue were not to come from gaming machines, it would have to be sourced from other sectors. The reduction in consumption and economic activity that results from increasing regulation of gaming machines also has negative flow-on impacts to government revenues. For instance, payroll taxes and income taxes fall as economic activity and employment decline. For simplicity, we estimate the tax impacts if the additional revenue were sourced from a GST and returned to states through grants. In the short-run, if no revenue were to come from gaming machines then the GST would have to be increased by 1.3 percentage points (to 11.3 per cent). In the long-run, the GST would have to be maintained at 0.6 percentage points higher than it is now (10.6 per cent).

If the state governments chose to collect revenue through their own taxes, such as payroll, stamp duties etc, then the economic outcomes would likely be worse than under a GST. This reflects the greater economic distortions associated with most state taxes.

5.3 **Required increases in government taxation** long run and short-run



Data source: The CIE.

There would also be some production losses from regulations that restrict gaming machine use. If there were no gaming machines in Australia then Gross Domestic Product (GDP) is estimated to be 0.1 per cent or $1.3 billion lower per year in the long-run. In the short-run, removing gaming machines is estimated to result in a likely fall in GDP of 1.2 per cent or $13.5 billion per year. The changes in GDP are sensitive to how people spend their money if they are not spending it on gaming machines.

Appendix D contains full details of the modelling results, including the impacts on each state and territory and on particular sectors of the economy.

Benchmarking the costs and benefits

The cost curve provides a benchmark for policymakers against which the benefits of additional regulation should be measured. A regulation that is expected to reduce the industry by about 10 per cent has an economy-wide cost of $0.7 billion per year in the short-run and $30 million per year in the long-run. If the regulation has offsetting benefits through reduced costs of problem gambling that are greater than this level, then it is likely to be worth undertaking, subject to a consideration of alternative regulatory options. The benefits of a particular regulation will chiefly depend on the extent to which the regulations reduce problem gambling versus recreational gambling.

The benchmark can also be used to assess current regulations. If these regulations have benefits that are smaller than their benchmark cost of their impact on the industry then they should be removed.

In assessing the costs and benefits, regulators should seek to identify:

- the impact of the regulations of gaming machine use, with costs then identified based on the cost curves estimated above;
- the impact of the regulations on the number of problem gamblers; and
- the impact of the regulations on the costs of problem gambling, both to the individual and to others.

Regulators should also follow this process in assessing whether current regulations should remain in place. If the avoided costs of problem gambling are small, then the regulations should be removed and replaced with more effective regulations.

Key points

The gaming machine industry makes a substantial contribution to the Australian economy. We estimate that eliminating the industry would result in economy-wide fall in consumption of $10 billion per year in the short-run. Without the gaming machine industry, Australia's employment would be 140 000 people lower, before the economy had time to adjust (equivalent to 1.3 per cent) and economic activity would fall by $13.5 billion (or 1.2 per cent).

In the long-run, once people have found new jobs and investment has reallocated to its most productive uses, the removal of the gaming machine industry would lead to consumption being lower by $2.4 billion annually and GDP being lower by $1.3 billion annually. Turning these figures around, this is the long-run contribution of the industry to the Australian economy.

The point to highlight from the analysis is that regulations have a cost. This cost reflects removing an activity that many people enjoy, having to collect taxation revenue through raising other taxes and the adjustment process as people find new jobs. These costs should be balanced against the benefits of lowering problem gambling.

From the current position of ad hoc regulation, the best regulatory approach will involve removing regulations that are not effective and imposing regulations that do effectively target the costs and prevalence of problem gambling. This can be a win-win for industry, recreational gamblers, problem gamblers and their families and the broader Australian community.

A The MMRF Model

This study has used the Monash Multi-Regional Forecasting (MMRF) model to model the regional impacts of removing gaming machines from clubs and pubs (box A.1). The MMRF Model has been used widely by the CIE, Productivity Commission and others to analyse the effects of public policy in Australia.

A number of versions of the MMRF Model are available for use. The version used in this study is from the Centre of Policy Studies (CoPS) at Monash University. The model builds on the basic structure and operation of the original MMRF model, and includes facilities to account for modelling of government finances that aligns as closely as practicable to the ABS government finance data.[27]

The core of the MMRF model is its database. The database is based on 2001-02 input-output tables.[28] This captures the economic inter-relationships in Australia post GST. The model has been updated to 2006-07 by CIE to better reflect the current size of the Australian economy.

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27 These developments are based in part on the MMRF-Green model, described in Adams, Horridge and Wittwer (2002).

28 See ABS (*Australian National Accounts: Input-Output Tables - Electronic Publication, 2001-02*, Cat. no. 5209.0.55.001, Canberra).

A.1 Monash Multi Region Forecasting model

The MMRF model is a multi-regional dynamic computable general equilibrium (CGE) model. MMRF models the behaviour of economic agents in each Australian State and Territory. It models the six States and two Territories as separate regions, recognising:

- domestic producers classified by industry and domestic region;
- eight region-specific household sectors;
- an aggregate foreign purchaser of Australia's exports;
- eight State and Territory Governments; and
- the Australian Government.

The database can be thought of as being composed of:

- a production core comprised of eight input-output tables that are linked through interstate trade; and
- fiscal accounts comprised of a set of nine government accounts.

The production core of the MMRF model database shows how each industry in each State economy is linked to other industries within the State and in other States. The database used has 53 industries in each region, each producing a single commodity. The database has one representative private consumer, State government consumer and Federal government consumer in each State.

The database provides a detailed description of the structure of production and demand in each State and Territory. The database shows for each State economy:

- the flow of industry outputs to other industries (termed 'intermediate inputs'), final demands by households (consumption), government, investment (for capital formation purposes) and exports; and
- the cost structures of industries in terms of intermediate inputs of commodities (goods and services supplied by domestic industries and by imports), primary factors of production (labour, capital and agricultural land), other costs to production and commodity taxes and subsidies.

(Continued on next page)

A.1 **Monash Multi Region Forecasting model** (continued)

Additionally, unlike some other CGE models which provide only comparative statics (a single solution period), MMRF can also be used in recursive dynamic mode. It thus produces a sequence of annual deviations from a reference case in response to a policy change. Within the modelling framework, MMRF accounts for both capital accumulation over time and structural lags in the adjustment process.

Key outputs from the model include:

- the major national and regional variables including GDP (GSP), total employment, household consumption and investment;
- output and employment by industry sector, both nationally and for each region;
- international and interregional exports, imports and trade balances; and
- Federal, State/Territories revenues and expenditures.

The MMRF model is based on a post-GST database for the reference year 2001-02 and contains a detailed treatment of government finances. More detailed information about the MMRF can be found in Productivity Commission (2006) and Adams, Horridge and Wittwer (2002).

Treatment of government revenues

The MMRF model reports government finances for the Australian and State and Territory governments. We adjust taxes, as set out in each Scenario, so that the budget positions of each government are unaffected by the changes in gaming regulations.

The revenue data embedded in the model is derived from CIE (2008).

The economic environment

The MMRF model can be adjusted to reflect different views about the way that the economy will adjust to economic changes.[29] In the short-run, the economy is less able to respond by adjusting the composition of industrial activity and wages. In this case there can be unemployment. In the longer-term, the economy will fully adjust. All labour will be used and capital is allocated to the sectors according to required rates of return. In the modelling we report both short-run and long-run implications of

[29] In technical terms this is referred to as the model closure. Model closure is used to refer to the assignment of the model's variables between those determined outside the model (ie exogenous variables) and those determined by the model (ie endogenous variables).

changes in gaming regulations. The technical model parameters that reflect these economic environments are provided in detail below.

Long-run economic environment

The key elements of the longer-run economic environment adopted in the model are as follows:

- The model nominal exchange rate is the numeraire. The model index of consumer prices is flexible.
- The real wage adjusts to ensure that national employment is fixed. Wage relativities between occupational groups and industries are also fixed. Employment by occupation, industry and State adjusts.
- Each industry adjusts its capital stocks in order to equilibrate its expected and actual rates of return on capital. The base line expected rates of return are determined by values in the MMRF database. Industries' demands for investment goods are linked by an exogenous investment/capital ratio to changes in their capital stock.
- Nominal household consumption in each region is a constant share of post-tax household disposable income, while the balance of trade as a ratio of GDP in local currency prices is allowed to vary.
- Most government expenditure is treated as discretionary and fixed in real terms. Exceptions, which are driven by changes in economic activity are:
  - unemployment benefits move in proportion to national unemployment;
  - other benefits, such as age and disability benefits, move in line with national population; and
  - 'all other expenditure' (including grants to local governments, universities and private industries, property expenses, subsidy expenses and capital transfers) move in proportion to State GSP or national GDP.

Short-run economic environment

The short-run/dynamic economic environment, for which the impacts of tax reform portfolios are shown, differs from the long-run in that:

- wages are fixed and unemployment is possible; and
- capital stocks are fixed and can adjust only slowly to the new optimum as new investment occurs.

B Modelling the contribution of gaming machines

As set out in Appendix A, the MMRF model is used to assess the economic contribution of gaming machines. This is done by considering the Australian economy in the absence of gaming machines. The cost curve reflects marginal reductions in the amount of expenditure on gaming machines.

In this appendix we document the shocks to the sectors of the model and the way that gamblers change their consumption in the absence of gambling opportunities.

Three main sectors are directly affected by greater restrictions on gaming machines.

- Accommodation, hotels etc — this sector contains the clubs and hotels in which many gaming machines are located.
- Other services — this sector contains the casinos and gaming machine operators.
- Other manufacturing — this sector contains the gaming machine manufacturers.

Revenue from gaming machines makes up a part of these sectors. This share varies depending on the jurisdiction, as set out in the body of the report.

The contribution of the gaming machine sector is modelled by a prohibitively high tax that reduces all use of gaming machine services in Australia. This directly reduces the activity in the sectors in which gaming machine activity is located, indirectly affects sectors that provide inputs to gaming machines (such as operators, manufacturers) and removes the taxes collected from gaming machines (both taxes specific to gaming machines and taxes related to the activities of the businesses that get revenue from gaming machines). The marginal changes to the industry reflect a proportion of this shock.

The contribution of the industry is measured through the short-run and long-run economic impacts of imposing these 'shocks' to the model. The model imposes uncompensated price elasticities of demand of -0.48 for other services and -0.55 for accommodation, hotels and cafes.[30]

The Productivity Commission (1999) surveyed gamblers about where they would spend their money if they did not gamble it. The responses to this survey are used to

[30] Note that while we model gaming machine revenues going to zero, this amounts to less than 20 per cent of the relevant sector. As such, there is less need to alter the demand elasticity for the modelling of a ban.

guide the substitution of consumers into other economic sectors in the absence of gaming machines. Sensitivity testing using the models' unmodified demand system results in changes to the sectoral and state composition of activity but makes little difference to the aggregate welfare impacts of changing gaming machine activity.

C *Modelling consumer surplus for problem gamblers*

The Productivity Commission outlined its preferred approach to estimating the consumer surplus from problem gamblers in its 1999 review. Gambling by problem gamblers was assessed as irrational and therefore their consumption of gambling services would not necessarily enhance their welfare.

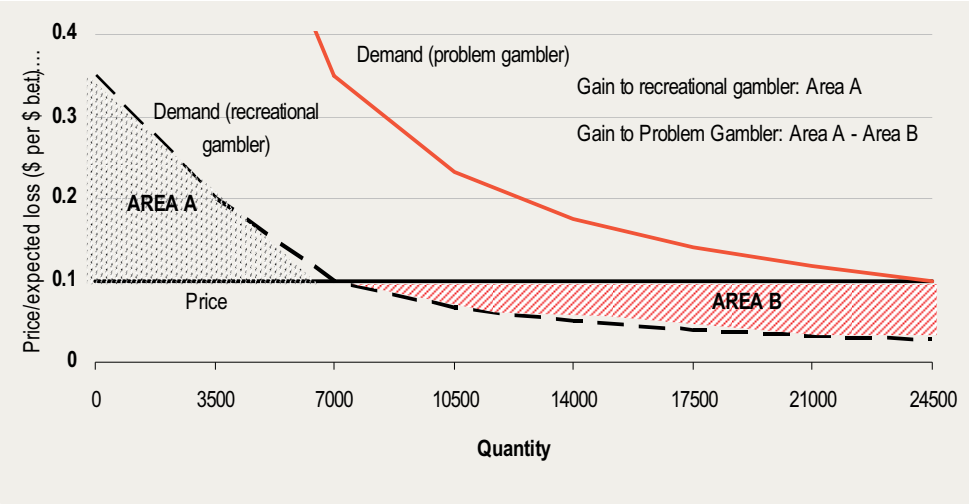
In this report we benchmark only the costs of regulation. The approach implicitly assumes that problem gambling levels are unaffected by regulation, as is appropriate for a benchmark of costs.

The benefits of regulation would include reducing the excess consumption of problem gamblers, as set out in Productivity Commission (1999). We briefly discuss how this should be done and how these measures might have changed since 1999.

Recreational gamblers receive consumption benefits from gaming machines. For problem gamblers, initial consumption also has consumption benefits. But for large amounts of gaming, the consumption benefits are lower than the price of the gambling. This scenario is set out in chart C.1.

Recreational gamblers gain consumer surplus as they get entertainment from gambling. Problem gamblers are assumed to have the same demand curve as recreational gamblers but they consume more than is optimal. This results in a welfare loss relative to recreational gamblers as shown in Area B.

C.1 **Consumption benefits by type of gambler**



[a] Quantities are not reflective of actual amounts gambled. Problem gamblers gambled about $12 000 per year on average according to the figures in Productivity Commission (1999).

Data source: The CIE.

The amount of problem gamblers and expenditure by problem gamblers will determine the overall consumption benefit. The Productivity Commission has not yet conducted a survey to identify the current position of the industry.

In 1999, the Productivity Commission found that 43 per cent of revenue from gaming machines was from problem gamblers. It found that 2.1 per cent of the population were problem gamblers, based on a score of greater than 5 in the South Oaks Gambling Screen (SOGS). A SOGS score of greater than 5 to 9 captures 'at risk' gamblers, which accounted for more than three quarters of problem gamblers. In 1999, the Productivity Commission estimated that there were 0.33 per cent of the population with a SOGS score greater than or equal to 10, which the productivity Commission termed 'problem gamblers' in Australia. Problem and at-risk gamblers accounted for 42.3 per cent of the spending on gaming machines, according to the Productivity Commission's survey in 1999. The Productivity Commission assumed an elasticity of -0.8 to -1.3 for recreational gamblers.

Since the 1999 review, all jurisdictions except Western Australia have conducted surveys to assess the prevalence rate for problem gambling. It is difficult to compare these estimates to those of the Productivity Commission. In many cases the measure used differs from that used in 1999. In addition, with only a small portion of the population being problem or at-risk gamblers, survey sizes have to be very large to provide robust measures. Surveys have often not been large enough to do this.

Despite these reservations, on balance it is likely that the prevalence of at risk and problem and at-risk gambling has fallen (table C.2).

C.2 **Prevalence rates for problem and at-risk gambling**

Jurisdiction	*Productivity Commission 1999*		*Most recent estimate and year*
	Problem gamblers	Problem and at-risk gamblers	Problem and at-risk gamblers
	% of population	% of population	% of population
NSW [a]	0.33	2.55	2.4 (2006)
VIC	0.35	2.14	1.1 (2003)
QLD [a]	0.38	1.88	2.27 (2006/07)
SA	na	2.45	1.9 (2005)
WA	0.00	0.70	na
TAS	0.00	0.44	1.41 (2005)
ACT	0.07	2.06	1.9 (2001)
NT	0.10	1.89	1.06 (2005)
Australia	0.33	2.07	na

[a] Most recent NSW and QLD figures use CPGI rather than SOGS. The figure presented is the sum of problem gamblers and at-risk gamblers.

Sources: Productivity Commission (1999); *A National Snapshot of Harm Minimisation Strategies;* Australian Gaming Council (2007).

The approach above is likely to understate consumption benefits for a number of reasons. First, problem gamblers are different to recreational gamblers. As Mizerski, Jolley and Mizerski (2001) show, substantial deviation in spending by different individuals on a given activity is normal, rather than an unusual characteristic of gambling. This is likely to mean that the demand curve for problem gamblers, before accounting for addiction and non-rationality, is to the right of the demand curve for recreational gamblers — prior to addiction they liked gambling more than the rest of the population. Second, the demand curve for a recreational gambler captures an average of all people, regardless of whether they gamble or not. If this was restricted only to those who gamble, then the benefits would be larger for recreational gamblers and problem gamblers.

When policymakers seek to identify these benefits, these points should be accounted for.

D Complete modelling results from MMRF-CIE

This appendix reports more detailed results for the contribution of the gaming machine industry, measured through the economic impacts if gaming machines were not allowed to be used in clubs, pubs or casinos throughout Australia.

The aggregate results are relatively robust to differences in how people spend their money if they are not spending it on gaming machines. However, state results and industry results can vary considerably depending on these assumptions. For instance, if people spend more of their money on dwellings than estimated from the Productivity Commission's survey in 1999 then there is a bigger shift to investment and a greater tax impact on states as the dwelling sector (rent and imputed rent from home ownership) is not subject to GST.[31]

Aggregate impacts

Removing gaming machines from Australia is expected to lead to a short-run fall in consumption of $10 billion or 1.6 per cent. Export sectors grow as people switch consumption to imports and requiring offsetting export movement through exchange rate adjustment.

D.1 **Aggregate contribution of gaming machines**

Variable	*Short-run*		*Long-run*	
	%	Units	%	Units
Consumption ($bn)	-1.6	-10.0	-0.4	-2.4
Gross domestic product ($bn)	-1.2	-13.5	-0.1	-1.3
Employment (no.)	-1.3	-138.7	0.0	0.0
Exports ($bn)	4.2	9.8	6.1	14.4
GST (% points)	1.3	-	0.6	-

Source: The CIE.

[31] Note that investment in dwellings is subject to GST.

Impacts by jurisdiction

In the short-run all jurisdictions face consumption losses and production losses (GDP). Western Australia faces the smallest production losses as it has fewer gaming machines. But consumption falls in Western Australia because of a higher GST.

D.2 **Short-run state and territory impacts from removing gaming machines**

Variable	*Consumption*		*Gross state product*		*Employment*	
	%	Units	%	Units	%	Units
NSW	-1.9	-4.0	-1.7	-6.2	-1.8	-61.0
VIC	-1.4	-2.2	-1.0	-2.8	-1.1	-28.9
QLD	-1.5	-1.8	-1.1	-2.5	-1.3	-28.9
SA	-1.3	-0.6	-1.1	-0.8	-1.1	-8.7
WA	-1.4	-0.9	-0.3	-0.5	-0.4	-4.1
TAS	-1.4	-0.2	-1.0	-0.2	-1.2	-2.8
NT	-1.2	-0.1	-1.0	-0.2	-1.6	-1.8
ACT	-2.2	-0.3	-1.7	-0.4	-1.8	-3.4

Source: The CIE.

In the long-run, NSW and ACT are the worst hit jurisdictions. Western Australia booms as investment shifts into export sectors.

D.3 **Long-run state and territory impacts from removing gaming machines**

Variable	*Consumption*		*Gross state product*		*Employment*	
	%	Units	%	Units	%	Units
NSW	-1.3	-2.7	-1.6	-5.9	-1.3	-44.3
VIC	-0.1	-0.2	0.1	0.1	0.2	5.3
QLD	-0.2	-0.2	0.1	0.2	0.2	3.6
SA	0.0	0.0	0.0	0.0	0.2	1.7
WA	1.1	0.7	3.0	4.7	2.7	31.8
TAS	0.0	0.0	0.3	0.1	0.4	0.9
NT	0.5	0.0	1.7	0.3	0.6	0.7
ACT	-1.3	-0.2	-1.2	-0.3	-0.8	-1.5

Source: The CIE.

Impacts by industry

The industries directly affected, such as accommodation, other services and other manufacturing face falls in output and employment (although the service sectors increase exports slightly). The loss in exports of gaming machine generates an 11 per cent fall in exports of other manufacturing.

In the long-run, many other industries benefit as resources devoted to directly affected sectors switch. This is particularly true of sectors reliant on exports such as sea freight and iron ore.

D.4 **Long-run sectoral impacts from additional gaming taxes**

Sector	***Industry output***	***Employment***	***Exports***
	%	%	%
Accommodation, hotels and clubs	-22.6	-23.2	0.7
Other services (including casinos)	-2.0	-2.2	0.7
Other manufacturing (incl. gaming machines)	-3.2	-3.1	-11.0
Sea freight	4.8	5.3	7.9
Iron ore	5.0	5.4	5.3

Source: The CIE.

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