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# 11 Game features and machine design

## Key points

- The majority of people who experience problems with gambling do so on electronic gaming machines (EGMs), reflecting their design and wide accessibility:
  - EGMs have the potential for high intensity play, at a very high cost per hour, which may not be well understood by players (a broad consumer issue)
  - problem gamblers generally play more intensively and for longer.
- Governments regulate many aspects of EGMs, both to inform consumers and to minimise harm. But some proposals to regulate aspects of EGMs more tightly would diminish the enjoyment for recreational gamblers, without clear benefits to problem gamblers or those at risk.
- There is a strong case on net social benefit grounds for a much lower bet limit:
  - a limit of around \$1 (which would still be equivalent to an average \$120 per hour of play if the gambler plays quickly) would reduce harm from high intensity gambling without unduly affecting recreational gamblers (who typically bet at quite low levels).
- Restrictions on the denominations of note acceptors has good ‘face validity’ and some empirical evidence in its favour:
  - but would be partly circumvented by gamblers, given current high cash input levels and the use of ‘note splitters’ in venues.
- Lower cash input limits would oblige those playing at sustained high intensities (often problem gamblers) to insert notes frequently. This would prompt them to think about whether they wanted to continue playing, and slow their rate of play, without affecting most recreational gamblers:
  - the cash input limit should be set to \$20
  - it would make changes to note acceptors redundant.
- Some features of jackpots are problematic and may impact disproportionately on problem gamblers:
  - this should be the subject of further research.
- Gaming technologies of the future will be substantially different to those of today, and are likely to provide improved ways of delivering effective harm minimisation, at much lower cost.

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## 11.1 Introduction

A large proportion of people who get into serious problems with their gambling do so on EGMs (chapter 5), which also appear to present particular problems for consumers generally. In part, this is a symptom of their complex features. But it is hard to pinpoint the exact features of EGMs, or combination of features, that give rise to problems. One participant noted:

... I am very aware that speaking the way I do in some areas I risk being thought of as someone who just needed to be schooled in the 'right thinking' about it all. However, this greatly oversimplifies the situation. ... it is the conglomeration of all aspects of these machines interacting together which creates the ensuing chaos for numerous people. (sub. 172, pp. 2, 3)

Governments already accept that EGMs cause considerable problems for some people, and regulate their technical characteristics and the parameters of game play in an attempt to reduce those harms. Among other things, they regulate the numbers of machines, their rates of return to player, bet limits, maximum prizes and spin rates. Governments also limit hours of accessibility, and access by minors, and there are rules about note acceptors and how prizes may be collected. This reflects that governments and the community see the need for a level of regulation of EGMs in excess of that required for most other consumer products. The state and territory government submissions to this inquiry reinforce this point, and cite ongoing policy changes they have made as they respond to the broad range of problems that consumers face in this area.

A dilemma for policy is that the characteristics of EGMs that lead some players into serious harm can be much the same characteristics that make them fun for many to play (fast games, attractive graphics, free games, variable payouts and the capacity to win cash prizes, including jackpots). As one of the state regulators observed:

Features are developed and refined to attract gamblers to the machines and keep them engaged with the machines. Vulnerable gamblers are captured by these specifically designed features. (Tasmanian Gaming Commission 2008, p. 6)

The harm that people with gambling difficulties experience relates to the losses they incur relative to their personal financial resources, and the personal, legal and workplace consequences for them. As Blaszczynski et al. observed:

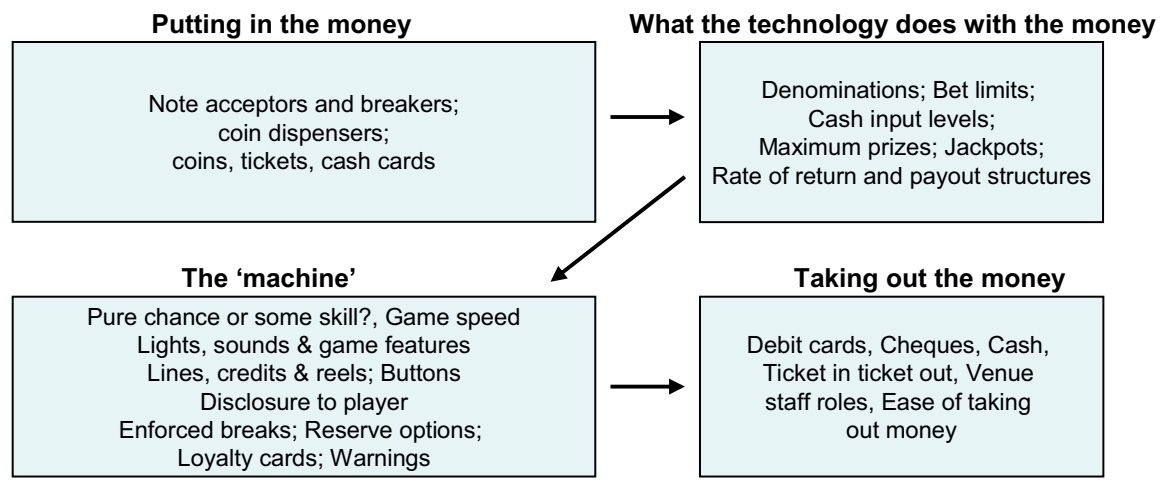
The source of gambling-related harm has its origin in an individual's personal decision to access and risk funds in excess of that which can be afforded. (2004, p. 13)

But close regulation can also be supported on consumer protection grounds. There is a large body of literature that shows that, among EGM players, there can be a lack of understanding of: how 'return to player' works; the nature of random

independent games; the true chances of winning overall (as opposed to winning small prizes along the way); how much a typical game costs to play for a given period of time; and the inability of players to influence the outcomes of games. Such misunderstandings, which can lead players to spend more than they would if they were better informed, are not confined to problem gamblers (chapter 4). However, they exhibit more misperceptions than most and suffer more adverse effects.

Gaming machines involve complex design features (figure 11.1) that influence how players interact with the machine, how information is conveyed to the player, and the betting and reward structure of the game. This chapter looks at certain features of game design (such as bet limits and spin rates) and the configuration of the machines that can generate highly intensive or problematic game play. In considering these features, a key goal is to address particular aspects of EGMs and their environment that are problematic for some players, ideally without having an adverse impact on other EGM players.

**Figure 11.1 Gaming machines involve complex design features**



## 11.2 The intensity of play

To place a bet on an EGM, players choose the number of ‘lines’ they wish to play, and the number of ‘credits’ they wish to bet on each line. The cost of a credit is determined by the ‘denomination’ of the machine (1 cent, 2 cent etc).<sup>1</sup> So playing

<sup>1</sup> Venues commonly have many 1 and 2 cent EGMs, but may also have smaller numbers of EGMs that cost up to \$1 per credit (higher in casinos).

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ten lines and betting five credits per line on a 2 cent EGM costs \$1 per ‘spin’ (or button push).

By their choice of lines, credits and machine denomination, players can bet as little as 1 cent per spin (one line, one credit on a 1 cent machine) or as much as the game design permits, subject to a maximum allowable bet set by governments. The regulated maximum bets are commonly \$5 or \$10 (table 11.1).<sup>2</sup> For such reasons, the denomination of the EGM is something of a misnomer — a 1 cent machine can be played at dramatically varying intensities, from 1 cent to \$5 or \$10 per spin, depending on the jurisdiction. About 60 per cent of Australia’s EGMs are in jurisdictions that currently permit a maximum bet of \$10.

Current arrangements allow individual bets that dwarf what was possible when EGMs were first introduced in New South Wales, when for many years only a single coin could be bet at a time. In recent years, governments have restricted many aspects of EGMs, including the allowable maximum bet per spin, to contain the intensity of play. Moreover, in practice, an EGM may be designed to accept a maximum bet that is lower than the maximum permitted by regulation. The GTA said that about half of Australia’s EGMs are in this category (sub. DR344, p. 20).<sup>3</sup>

As well as bet limits, the ‘return to player’ percentage is also regulated in all states and territories, with a set minimum of 85 per cent. While this varies among EGMs, the average return to player across Australia was about 90.6 per cent in 2006-07 (Australian Gaming Statistics 2006-07, summary tables A and D).

Most jurisdictions do not limit the number of lines on which gamblers can bet. However, Queensland<sup>4</sup> currently specifies a maximum of 50 lines (FaHCSIA 2009b, p. 17) and Tasmania is to reduce the maximum it permits to 30 lines.<sup>5</sup>

In jurisdictions that have a minimum regulated spin rate, these are set at 2.14, 3, 3.5 or 5 seconds, implying a maximum of 12 to 28 button pushes per minute

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<sup>2</sup> Casinos in some jurisdictions are not subject to bet limits for some of their EGMs.

<sup>3</sup> A high bet limit also permits a game designer to accommodate many different preferred styles of play. The designer can include sufficient buttons to allow players to choose many lines with few credits, few lines with many credits, or combinations in between, without the need to disable some buttons for some combinations.

<sup>4</sup> In the case of Queensland, games that offer more than 25 possible lines may be accepted as long as there is sufficient clarity for a player to accurately identify all wins. To date, the maximum number of lines approved is 50.

<sup>5</sup> This will take effect for new EGMs from 1 April 2010. A transition period of up to three years is proposed before existing games must be updated, and consultation with affected stakeholders has commenced.

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(table 11.1). However, actual rates of play are likely to be slower on average, reflecting free games, gamble options and natural pauses in play. In conjunction with the industry, the CIE estimated an average spin rate of 5.5 seconds (implying 654 button pushes per hour) (CIE 2001, p. 17). The GTA said that ‘since then, free games and similar features have increased, which results in slower spin rates’ (sub. DR344, p. 20).

Nevertheless, it remains the case that a sustained period of play at close to the regulated maximum spin rate is clearly possible, as participants have affirmed and Commission tests have shown. Without free games, it is easily possible to play 19 button pushes per minute (that is, a push every 3.15 seconds). If a machine offers free games (and not all do), then free games extend the average, but not significantly, given they are not that frequent. Real data also shows that some gamblers play at fast rates. Based on loyalty card data, one gambler at a club played for 102.6 hours in a month, laying bets of \$832 056. If it is assumed that this gambler bet the maximum \$10 per button push for every one of the thousands played, then the average spin rate would be 4.4 seconds. In all likelihood, given some lower intensity betting, the average spin rate for this gambler would have been faster.

In addition, each line played effectively represents a different game. That means that someone playing 30 lines a button push at a 5.5 second rate is effectively playing 19 636 games per hour — showing that the combination of multi-line machines and even a modest rate of play can lead to a very fast pace of gambling.

Other influences on the intensity of play include the presence of jackpots, the availability of note acceptors, the amount of credit that can be loaded into an EGM at any time, the proximity of ATMs and their interaction with note acceptors, and rules concerning the withdrawal of prizes or their use on other EGMs. Some of these influences are discussed later in this chapter.

### **How much can the cost of play vary?**

Using the regulated limits applying to EGMs, it can be shown that the cost of play can vary immensely, depending on the intensity and speed of play. For example, playing:

- one line and one credit per button push every three seconds (a rapid playing speed) on a 1 cent machine with a 90 per cent rate of return would cost an average of \$1.20 cents per hour
- \$5 or \$10 per button push at the maximum game speed permitted by state regulations would cost an average \$600–\$1200 per hour (table 11.1).

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Indications of the expected average net cost of EGM play at different bet limits and game speeds is shown in table 11.2.

*Expected and observed loss rates are different*

A machine's virtual reels and its payoff table underpin the player rate of return. Observed outcomes on any button push depend on where these virtual reels stop, and that is determined by random number generators. This means that the outcomes from each spin are random (and independent from button push to button push), as are the player returns. In many cases, a player will lose their entire stake on a button push and sometimes they will win an amount that is a large multiple of their stake.

Accordingly, there is enormous variation in game outcomes from one button push to the next. So, a machine set to provide a 90 per cent player return does not mean that each bet returns 90 cents in the dollar. The amount actually returned to players in any one hour or day, or even week — and therefore the cost of play — will differ from this significantly. As IPART and others have reported, the return to player reflects statistical expectations that will only be closely realised after playing many thousands of games. For any practical session length, the cost of play can be considerably higher or lower than the average expected loss (box 11.1).

Individual observations reveal the inherent volatility of gaming machines. Loyalty card data from a New South Wales club that was provided to the Commission showed that one gambler lost \$16 285 in around 10.5 hours, or around \$1550 per hour, demonstrating that volatile returns can lead to large hourly losses.<sup>6</sup> Paul Bendat (Pokiewatch.org) said that on one occasion he 'watched a gambler lose over \$900 in 13 minutes on a \$1 machine' (trans., p. 558). Commission inquiry team members observed a person staking \$200 in one minute and losing \$90. A personal submission said:

If taken out of context a 'bet' of \$10, \$5, \$1 or less does not seem very much. ... [however] I think it is very hard for many people to really appreciate how much money can be lost in these machines ... For various reasons ... I upped the ante ... to playing \$3 a spin and on several occasions I lost \$2000 within a couple of hours. It was horrendous and quite unbelievable bearing in mind that this was on a 1 cent machine. (sub. 172, p. 32)

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<sup>6</sup> In fact, observed player losses in any given hour for a person playing at high intensity will often exceed \$1500, given the volatility in game returns. Averaging over more than 10 hours of play, as in the case of this player, masks the underlying variations.

**Table 11.1 Indications of the possible cost of playing an EGM**

Under different intensities of play and assuming 90 per cent return to player<sup>a</sup>

State/ territory	Maximum bet per spin (button push)	Regulated minimum spin rate (seconds)	Maximum number of spins per minute	Expected average cost of play at maximum game speed	
				Play at one line / one credit per spin on a 1 cent EGM	Play at maximum bet per spin <sup>b</sup>
NSW	\$10	none	not limited <sup>c</sup>	\$1.20 per hour	\$1200 per hour
Vic	\$5	2.14	28	\$1.68 per hour	\$840 per hour
Qld	\$5	3	20	\$1.20 per hour	\$600 per hour
SA	\$10	3.5	17	\$1.02 per hour	\$1020 per hour
Tas	\$10 <sup>d</sup>	3	20	\$1.20 per hour	\$1200 per hour
NT	\$5	none	not limited <sup>c</sup>	\$1.20 per hour	\$600 per hour
ACT	\$10	none	not limited <sup>c</sup>	\$1.20 per hour	\$1200 per hour

<sup>a</sup> The average EGM return to player across Australia in 2005-06 was about 90.4 per cent (Australian Gaming Statistics 2005-06, summary tables A and D). <sup>b</sup> For EGMs that permit the maximum bet to be placed. <sup>c</sup> Calculations assume 20 button pushes per minute, as per Queensland and Tasmania. <sup>d</sup> To be reduced to \$5 for new EGMs from 1 April 2010, with a transition period of up to three years before existing games must be updated.

Source: Commission calculations.

**Table 11.2 Cost of EGM play at different bet limits and game speeds**

Assuming 90 per cent return to player and one game per 3 and 5.5 seconds

Maximum cost per button push	Average cost per hour to play a 90% return to player EGM at one button push every 3 seconds or 1200 button pushes per hour <sup>a</sup>	Average cost per hour to play a 90% return to player EGM at one button push every 5.5 seconds or 654 button pushes per hour <sup>b</sup>
\$1	\$120	\$65
\$2	\$240	\$131
\$3	\$360	\$196
\$4	\$480	\$262
\$5	\$600	\$327
\$6	\$720	\$392
\$7	\$840	\$458
\$8	\$960	\$523
\$9	\$1080	\$589
\$10	\$1200	\$654

<sup>a</sup> Calculated as (1200 \* cost per button push \* 10% average cost to player). <sup>b</sup> Calculated as (654 \* cost per button push \* 10% average cost to player, rounded to nearest \$1). Allows for pauses in play and free spins as per CIE (2001) report commissioned by the gaming industry.

Source: Commission calculations.

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### Box 11.1 The potential cost of play

The indicative costs given in tables 11.1 and 11.2 are averages only. If a large group of people played EGMs at the same intensity (amounts bet, speed of play, etc) for a long period, there is a high probability that the average loss among the group will be close to the statistical average associated with that style of play.

- Some people in the group will win money during that session, but most will lose more than the average amount.
- Some will lose substantially more than the average.

This is an unavoidable consequence of the mathematics of the game — the in-built set of probabilities of winning different prizes, including the standard deviation (the ‘volatility’) of the game.

- For individual sessions or a small number of sessions, wins or losses will vary widely around the statistical averages relating to that style of play. (That is shown in the top left hand graph on the next page.)
- And if a person plays for long enough, their hourly loss rate approaches the expected average loss rate for their style of play — the share of people who win over a large accumulated set of games is close to zero. (That is demonstrated by the distribution of losses show in the bottom right hand graph.)

Based on 10 000 simulations of an actual game with over a 90 per cent rate of return, and with free features (whose lapsed time is considered in the results):

- just moving from 1 hour to 16 hours of play reduces the group of people winning from 30 per cent to 7 per cent.
- at 64 hours of play, less than 1 per cent of people win — and when they do, not by much.

The changing shares of wins and losses is likely to be a major contributing factor to people’s underestimation of player losses. In many specific sessions, people will remember winning sometimes and losing sometimes.

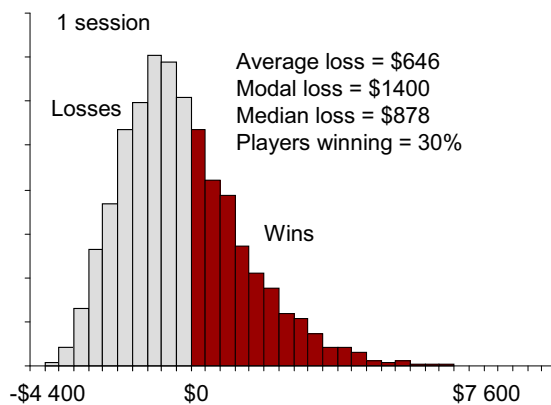
Given this, it is easy for them to infer, that over a year, they come out ‘about even’. However, that neglects the greater tendency for losses than gains. Over many sessions, net losses are almost inevitable.

This provides strong grounds for the on-screen display of player transaction records that inform people about the total cost of play they have experienced over the last year, not just the cost of the current session (chapter 10).

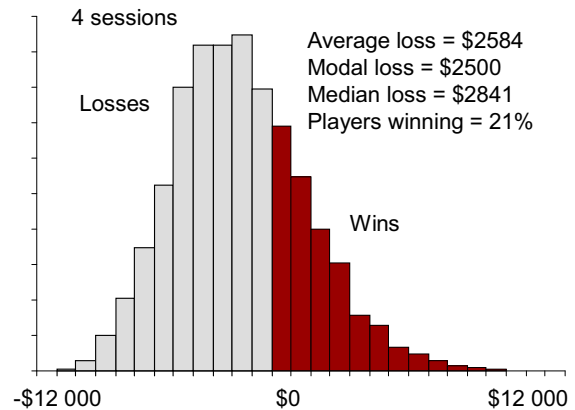
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**Box 11.1 (continued)**

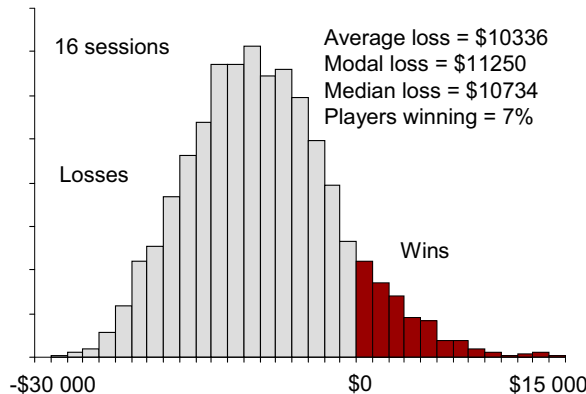
One hour of play, 20 lines, 50 credits per line, 1 cent machine (5 seconds per paid button push)



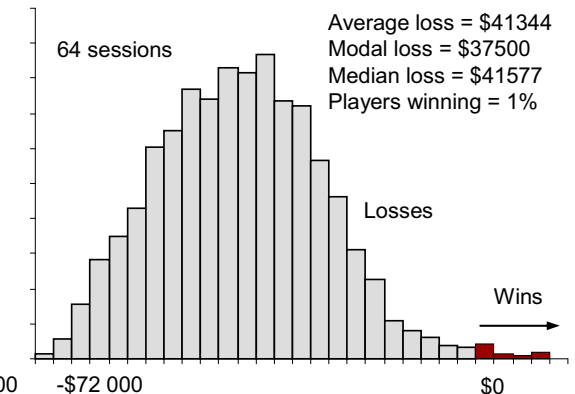
One hour of play, 20 lines, 50 credits per line, 1 cent machine for 4 times a year (5 seconds per paid button push)



One hour of play, 20 lines, 50 credits per line, 1 cent machine for 16 times a year (5 seconds per paid button push)



One hour of play, 20 lines, 50 credits per line, 1 cent machine for 64 times a year (5 seconds per paid button push)



Another consideration is that an EGM returning 90 per cent to players costs an average of 10 per cent of turnover to play. The cost of playing an EGM that pays 85 per cent is double that of one that pays 92.5 per cent (15 per cent compared to 7.5 per cent). Another way of looking at this is to say that, on average, a player can achieve a longer session of play for the same money on an EGM with a higher return to player. While it is not wholly clear that players can always perceive differences in return to player, the benefit to them is there, nonetheless.

Several industry participants took issue with the Commission's estimates in tables 11.1 and 11.2, arguing that they were not true indications of the actual average cost of play. The GTA said that for jurisdictions with a \$5 bet limit and an assumed spin rate of 5.5 seconds, the (theoretical) expected cost is about \$315

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(which, in any case, broadly accords with table 11.2).<sup>7</sup> But it added that the \$1200 per hour estimate in table 11.1 is ‘patently wrong as a measure of the actual cost of play’ (trans., p. 732):

The GTA estimates that the actual revenue per hour is less than \$11 or less than 1 per cent of the Commission’s quoted ‘expected cost of play’. This is a significant point of divergence that calls into question the Commission’s draft recommendations. (sub. DR344, p. 5)

The GTA said that this ‘is the real expected cost of play per hour, not \$1200’ (trans., p. 733). However, \$11 per hour is just an average of the hourly revenue take per machine, over all EGMs over an assumed 15 hours per day of play. It reveals nothing about the typical loss rates experienced by gamblers, let alone the capacity of EGMs for high cost play and for players to ramp up spending 1000-fold, from 1 cent per button push to \$10 per button push every few seconds (which is the point of tables 11.1 and 11.2).

Again, the Commission emphasises that, against a background of generally low intensity play by recreational gamblers, the current parameter settings on EGMs permit periods of very high cost play.

### **Intensity of play and problem gambling**

Studies of the behaviour of EGM players suggest that they usually prefer low denomination EGMs,<sup>8</sup> most commonly play multiple lines and prefer machines with free games and other bonus features. While playing at low intensity allows longer play for the same cost, free spins, other bonus features and jackpots add to the enjoyment of games and are said to provide an incentive to play more intensively. As noted above, each line is effectively a separate ‘game’, and someone playing multiple lines is covering multiple combinations of the icons that appear on the screen after the button is pushed. (This kind of high intensity play also has implications for the rate at which the cost to the player converges on the EGM’s built-in percentage return to player.) Delfabbro noted that:

Players tend to bet on as many lines as possible because they cannot bear the thought of missing out on any outcomes occurring on other lines not chosen. An alternative explanation is that this behaviour results from a player preference for more consistent rates of reward. Each line is, in effect, an additional game, so that players who play

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<sup>7</sup> The difference between the \$315 and the \$327 in the table is due to minor differences in the parameters chosen (see GTA, sub. DR344, p. 20).

<sup>8</sup> For example, three quarters of EGM players in Victoria and over 80 per cent in South Australia prefer 1 cent, 2 cent or 5 cent machines. In the ACT, about 85 per cent are 1 cent machines.

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more lines tend to receive more frequent rewards than those who bet on a fewer lines. (Delfabbro 2008b, p. 118)

Much the same features attract problem gamblers. Like recreational gamblers, they prefer to bet on low denomination EGMs — but on multiple lines, to obtain greater opportunities to win bonus prizes and because it gives more playing time.

While the major behavioural difference between problem gamblers and recreational gamblers is the duration (and number) of playing sessions, rather than intensity of play (appendix B and table 11.3), there is evidence that problem gamblers bet on more lines and more credits per line. As the GRA noted:

... the balance of evidence suggests that problem gamblers do tend to gamble more intensively as well as for longer periods than other players. (GRA report, pp. 104–105)

The tendency for higher intensity play by problem gamblers is supported by the Commission's national gambling survey (1999), by research on gamblers' intensity of playing (box 11.2) and evidence from recent prevalence studies (appendix B). For example, analysis of the unit record data in the recent Queensland prevalence survey shows that higher risk and problem gamblers play for longer and spend more per button push (table 11.3). Indeed, only around 10 per cent of recreational gamblers had a playing style that would lead to average stakes of one dollar per button push, whereas around half of problem gamblers played at this rate. Evidence from one large Australian casino was consistent with this finding, showing that around 45 per cent of the self-excluded patrons at this casino had an average bet of more than \$1 in the period leading up to them excluding themselves (based on analysis of gaming machine data for loyalty card members only).

There is also a wealth of anecdotal evidence from gambling counsellors and others in the community sector about the behaviour of problem gamblers, including that they can progressively increase their bets when 'chasing wins or chasing losses'.

The important point remains that if few players bet above \$1 per button push on average, and they are more likely to be problem gamblers, it becomes difficult to justify a bet limit much above that level, in view of the harm that problem gambling generates. Put another way, there would be little harm to most players from a significant reduction in the maximum bet limit, and a considerable reduction in harm for some. (Of course, since many problem gamblers also spend under \$1, as shown by the data from the casino and table 11.3 above, other measures, such as pre-commitment, will also be necessary.)

**Table 11.3 Problem gamblers play more intensively<sup>a</sup>**

Percentage of risk groups

	<i>Recreational gambler</i>	<i>Low risk gambler</i>	<i>Moderate risk gambler</i>	<i>Problem gambler</i>
Spends \$1 or more per button push	12	22	31	50
Spends less than \$1 per button push	88	78	69	50
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Session length 2 hours or more	11	22	48	78
Session length less than 2 hours	89	78	52	22
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

<sup>a</sup> These are estimates based on 'typical' playing styles. The value spent per button push is based on players' choices concerning lines played, credits per line and the machine denomination, with the methods for deriving these explained in appendix B. Risk groups are defined as per the CPGI.

Source: Analysis of unit record data from the 2006-07 Queensland prevalence survey.

One of the few experiments conducted in actual venues provides further evidence about how players responded to alternative machine designs (Blaszczynski et al. 2001). While that work is now some years old, the Gaming Technologies Association, which is otherwise very critical of research in this area, said that:

The only research report on operational gaming machine activities conducted since 1999 in which GTA and its members are confident is [Blaszczynski et al. 2001] precisely because of its validity, reliability, independence, and transparency. (sub. 147, p. 23)

The research was funded by the gaming industry to assess the likely impacts of provisional recommendations made by the NSW Liquor Administration Board in November 2000 to reduce harm from EGM gambling. The measures considered included reductions in the spin rate, limits to note acceptors and a reduction in the maximum bet size on standalone EGMs from \$10 to \$1 on a trial basis.

The study concluded that a reduction in the bet limit was the only modification likely to be effective as a harm minimisation strategy (Sharpe et al. 2005, p. 503). Speed of play was found to be an important element in player enjoyment and EGMs with slower spin rates were perceived as less exciting and less enjoyable (although many players did not notice the change in speed on the modified EGMs). The researchers concluded that slowing the spin rate in the manner proposed would adversely affect recreational and problem gamblers alike, without any clear benefits for problem gamblers.

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**Box 11.2 Recreational and problem gamblers: some evidence on intensity of play**

The Commission's national gambling survey found that problem gamblers were significantly more likely to bet multiple credits per line (over 70 per cent, compared to 36 per cent for non-problem gamblers) and bet on more lines than non-problem gamblers (9 versus 6). Problem gamblers were also much more likely to play \$1 machines (PC 1999).

Blaszczynski et al. (2001) found that the number of credits wagered 'was a consistent predictor of problems with gambling and severity of problems'. Relatively few participants bet in amounts greater than \$1 and 'those that did were relatively more likely to be problem gamblers' (see discussion in text).

The SA Department of Human Services (CPSE 2001, p. 100) found that problem gamblers were more likely to bet more than one line per spin (80 per cent compared to 69 per cent for frequent non-problem gamblers), and to bet more than one credit per line (27 per cent said 'often' or 'always' compared to 16 per cent of frequent non-problem gamblers).

South Australia's 2005 prevalence study (Office for Problem Gambling 2006, pp. 155–157) found no significant difference in the number of lines played, but problem and moderately at risk players were more likely to bet more than one credit per line (47 per cent said 'often' or 'always' compared to 34 per cent for low risk frequent players). Problem gamblers and moderately 'at risk' gamblers (using the CPGI) were more likely to play \$1 machines than 'low risk' gamblers.

Walker (2001), in a study of over 200 players in NSW clubs and hotels, reported that both regular (weekly) and non-regular players tended to bet on multiple lines with minimum credits per line (a 'maximin' strategy) (cited in Delfabbro 2008, p. 118). A possible reason for this is to increase the chance of obtaining bonus features (mainly free spins).

Delfabbro noted that this tendency is consistent with overseas research that suggests that slot-machine players are very sensitive to near miss events.

Haw, in a study of data on 700 machines in NSW clubs that differed in such characteristics as the availability of note acceptors and the maximum number of lines playable, also found that players preferred a 'maximin' strategy. However:

... as with Walker's study, Haw did not provide any indication as to whether these features differentially influence the behaviour of problem gamblers as opposed to non-problem players. (Delfabbro 2008, p. 119)

In 2005, Delfabbro, Falzon and Ingram used a simulated EGM in which players were given the choice of sound (on or off), the level of illumination (low, high), play speed (5 second or 3.5 seconds), the number of lines playable (1 or 3) and the number of credits that could be bet per line (1 or 3).

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**Box 11.2 (continued)**

The results showed that players preferred faster machines, disliked the absence of sound, preferred to play maximum lines rather than one line with maximum credits, but were indifferent between machines with varying levels of illumination.

A 2005 study of ACT gaming found that very few players ever bet at the maximum \$10 (noting that many EGMs do not allow for bets of that size):

... the most common bets range from 25 cents to \$1, although problem gamblers indicated that the possibility of betting \$10 could encourage them to increase the size of their bets when they were on a 'winning streak' or losing. (Centre for Gambling Research 2005, p. 133)

The study noted the views of the gaming industry that a reduction in the size of maximum bets would be unlikely to reduce problem gambling and that researchers and the club industry disagreed about the impact on industry earnings. They also found that most players (over 84 per cent) usually bet \$1 or less at a time, 69 per cent normally bet 50c or less, while none usually bet more than \$3:

While evidence supports a reduction in the size of the maximum bet, further information about the betting patterns of problem gamblers ... and the circumstances in which gamblers risk high bets is required to determine the optimal bet size and its effects. (Centre for Gambling Research 2005, p. 134)

Svetieva et al. (2006) examined the playing habits of 102 EGM players in NSW clubs whose gambling was tracked electronically using membership cards. They found that problem gamblers (defined as those who scored 5+ on the SOGS) spent significantly longer in EGM venues in a given week than non-problem players (280 minutes compared to 192 minutes), played more days per week (2.28 compared to 1.79), and lost significantly more (\$65 compared to \$26). The two groups did not, however, differ in many other aspects of play, including how often they changed EGMs, stayed on the same EGM, or gambled continuously.

Other studies reported the views of players on whether certain modifications to EGMs would be effective in reducing problem gambling. AIPC (2006), New Focus Research (2005) and Rodda and Cowie (2005) showed that limiting the number of lines, setting maximum bets and slowing play speed were rated as potentially effective or very effective by over half of problem gamblers, counsellors or loved ones of the gamblers. However:

... it is unclear as to the extent to which these responses were influenced by socially desirable responding. Although these modifications may be intuitively appealing ... it is not clear whether there is any evidence that they work in practice, or whether problem gamblers would alter their behaviour in the face of such modifications. (Delfabbro 2008, pp. 153–154)

*Source:* Delfabbro (2008, pp. 117–120).

The study found that relatively few participants bet above \$1 per spin, so only a small percentage of players would be affected by this limit. Those who did 'were relatively more likely to be problem gamblers', with the study finding that 2.3 per

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cent of non-problem gamblers and 7.5 per cent of problem gamblers typically bet more than \$1 per button push. Moreover, on the modified EGMs:

- players gambled for shorter periods, made fewer bets and lost less money
- the change did not appear to lead to sessions being prolonged, although some players may have switched to other EGMs with higher bet limits or to other forms of gambling
- few players noticed the lower bet limit although it may have affected satisfaction and enjoyment for some
- ratings of satisfaction were higher for machines where high maximum bets were accompanied by high bill acceptors, or the reverse where the machine had both low maximum bets and bill acceptors.

The study concluded that there was consistent evidence that ‘increased bet size is associated with problematic levels of gambling’ and that ‘lowering the available credits ... markedly reduced time spent gambling, number of bets and losses’. From the perspective of the problem gambler:

.... reducing the maximum bet size would produce the intended benefits with no evidence of unintended negative consequences. (Blaszczynski et al. 2001, p. 67)

Several participants drew attention to the unavoidable limitations of this study (which the authors acknowledge). Clubs Australia noted that the authors had qualified the results by noting that a lower bet limit ‘potentially might’, ‘for a small number of players’, reduce the development and the severity of gambling problems. It noted the report’s view that this measure ‘may’ prove to be an effective harm minimisation strategy for a very small proportion of players (‘7.5 per cent of the 20 per cent in the total sample who were found to be problem gamblers in terms of SOGS scores of 5 and above’), but that further research was desirable:

In fact, using the Productivity Commission figure of 2.1 per cent of Australian adults being problem gamblers with severe and moderate problems, the [study] suggests that it is possible that the reduction of maximum bet to \$1.00 ‘may’ help only 0.16 of one percent of the adult population. (Gaming industry submission of February 2002 to LAB, quoted in Clubs Australia, sub. 164, p. 234)

But as pointed out at several places in this report, a focus on the prevalence rate among the whole population, most of whom do not play EGMs, is misleading. The target group for harm minimisation measures is not the Australian population or even the population of gamblers, but a much narrower subset of regular gamblers who are experiencing harm — and for whom even small reductions in that harm would amount to large aggregate and probably long-term gains to themselves and the community (as shown in chapter 6).

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## Should maximum intensity of play be limited?

The tendency for problem gamblers to play at higher intensities suggests scope for harm minimisation measures in this area. McMillen argued that even though research has been inconsistent and inconclusive, and variations between games, venues and jurisdictions may mean that gamblers behave differently in different contexts, the evidence suggested that factors such as bet size should be ‘restricted and regulated’ (sub. 223, p. 25).

The concerns about the playing intensities of problem gamblers may sometimes apply to recreational gamblers. Many recreational gamblers will be aware of the different costs of play at different intensities, and will gamble accordingly (for example, using low denomination EGMs and betting few credits per button push). However, with little other than the ‘return to player’ percentage and their own experience on EGMs to guide them, it can be difficult for some to appreciate fully the total out-of-pocket cost of playing an EGM relative to the prizes gained along the way. Players will talk about ‘wins’ without necessarily acknowledging that they have lost overall. As shown in box 11.1, the difference between average outcomes for a single session and average outcomes for an entire year of playing are quite different, though many players would probably not realise this.

As noted elsewhere in this report, problem gamblers will, over time, typically win many large prizes, simply because of the sheer intensity and duration of their sessions of play. In addition, there may be a natural tendency for ordinary consumers to ramp up bets to win greater prizes. For example, a consumer playing 1 cent per bet (one credit) may achieve a win of a few credits, but may then reason that, had they been playing at \$1 (100 credits) per bet, they would have won 100 times as much.

The price of playing an EGM varies dramatically with the intensity of play (table 11.1). The risks this poses are accentuated by the fact that bets on EGMs may be as little as a few seconds apart and for some players may be undertaken while playing in a sense of unreality and dissociation, perhaps exacerbated by alcohol. (The phenomenon of being ‘in the zone’ is frequently mentioned in the research literature, by gambling counsellors and by problem gamblers, and many players acknowledge that they play EGMs to ‘escape’ or ‘tune out’ from a variety of personal situations.) Studies have confirmed that:

... gamblers lose track of time, enter a trancelike dissociative state and use this state as an emotional escape from emotional stresses ... However ... dissociation phenomenon

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are not unique to problem gamblers but also prevalent albeit not to the same degree among recreational gamblers. (Blaszczynski et al. 2004, p. 36).<sup>9</sup>

For all these reasons, there can be a case for limiting intensity of play.

This could be achieved by reducing the spin rate, mandating lower-denomination EGMs or reducing machine credits or lines, as suggested by several participants. (It may also be achievable through player information displays that periodically request continued consent to play.) Harrington suggested that, in addition to a lower bet limit, the spin rate should be slowed to five or six seconds and the volatility of games further constrained (for example, by having fewer larger prizes and more smaller prizes) (Pokiewatch, sub. DR386, attachment, pp. 5–7).

A simpler way of achieving the same outcome would be to restrict the maximum bet per spin. A \$10 bet on an EGM is not comparable with a \$10 bet on a horse race or on a lottery, which is typically made after at least some consideration and in a much more extended timeframe. By contrast, EGMs have the capacity for rapid repetition of games — some hundreds per hour (figure 11.2).

Providing better information to players about the cost of playing EGMs (especially when that information relates to the cumulative losses over the past 6 to 12 months) may help address player misconceptions. However, it remains the case that a bet limit of \$5 or \$10 is very high in view of the potential high average cost of an hour's play, and evidence that:

- people with gambling problems bet more than recreational gamblers and may ratchet up bets when they 'chase' wins or losses
- recreational gamblers consistently bet well below those limits, suggesting that a reduction in the bet limit would have little effect on most players
- many players are not fully aware of the possible maximum spend per hour.

Clubs Australia emphasised that the real value of a \$10 bet has fallen significantly since it was introduced in New South Wales in 1988.

The real maximum bet (that is, discounted for inflation) is now \$5.60 and will continue to decline over time. Put another way, if the maximum bet were indexed to inflation it would now be \$18. This ... should be factored into any analysis of a maximum bet ... (sub. DR359, p. 79)

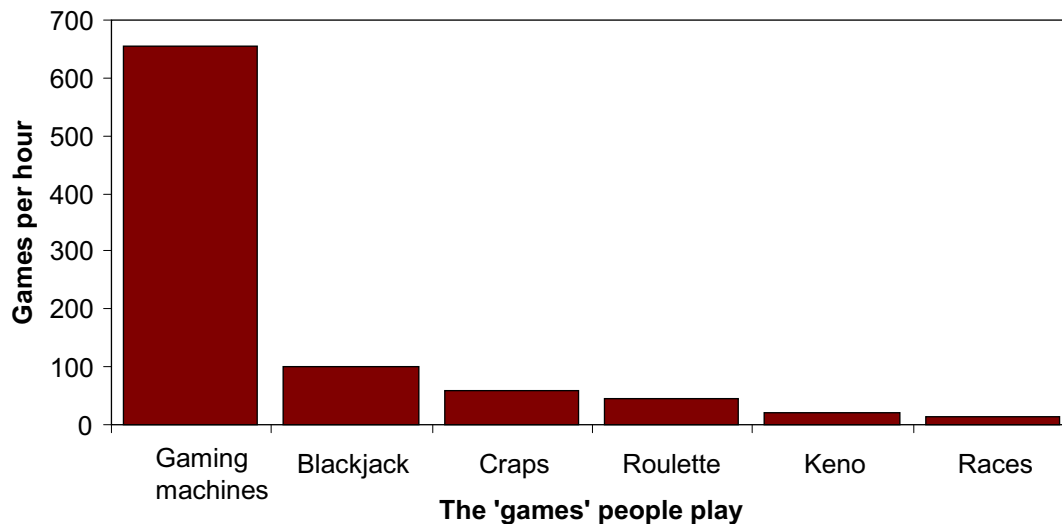
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<sup>9</sup> The 4<sup>th</sup> edition of The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) of the American Psychiatric Association defines dissociation as the process whereby the usually integrated functions of consciousness, memory, identity, or perception of the environment are disrupted.

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However, this simply underlines the Commission's point about the potential high cost of EGM play, as it means that the expected average cost of play at maximum game speed in 1988 was closer to \$2000 *per hour* in 2010 terms. Significantly, no government has chosen to increase the \$10 limit in the intervening years.

**Figure 11.2 Indicative speeds of play<sup>a</sup>**



<sup>a</sup> These attempt to indicate play in actual settings. Actual play can be faster or slower.

In its 1999 report, the Commission concluded that:

... any measure to reduce intensity should use a large dataset of gambling sessions by problem and non-problem gamblers to set the appropriate level of controls on denominations, credits and total amount bet per button press. (PC 1999, p. 16.80)

In the decade since that report, this has not been done systematically (see, for example, box 11.2), although considerable piecemeal evidence can be gleaned from the various studies and state prevalence surveys. But notwithstanding the succession of policy changes introduced in each jurisdiction to address problem gambling, EGMs continue to be a source of severe problems for many. Importantly, as shown in chapter 5, there are strong indications that the percentage of total spending on EGMs that is accounted for by problem gamblers remains inordinately high. While participants debate the numbers, the costs of problem gambling remain significant and concentrated — on a small proportion of the population, but a larger proportion of regular gamblers.

*Would it help problem gamblers?*

Some participants questioned the effectiveness of a lower bet limit in addressing problem gambling. In a report for the Australasian Gaming Council, KPMG

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Econtech argued that a \$1 bet would not tackle the causes of problem gambling (sub. DR 377, attachment, p. 5). However, its argument has several flaws:

- machine design features, such as the capacity to play at high intensity, create the losses that lead to the harms experienced by players (the essence of problem gambling). In that context, lower dollar bet limits act as a preventative measure, addressing directly the causes of problem gambling
- even if problem gambling reflects a prior mental health condition (as it does sometimes), in many cases it may not be possible to easily address that condition. However, as in many other public health areas, it may be possible to ameliorate the detriments accompanying problem gambling through harm minimisation.

Other industry participants argued that players would be likely to compensate by playing longer:

Lower bet limits may only lead to more prolonged periods of play and thereby result in no net reduction, or even a net increase, in gambling related harm (Allens Consulting Group for the Australasian Casino Association, sub. DR365, attachment, p. 31)

KPMG Econtech cited attitudinal work by Schottler (2009), which found that problem gamblers said they would spend more time, and the same or more money, if the number of lines (and thus the bet size) were restricted. While not the same as a \$1 bet limit, KPMG Econtech argued this was evidence that the case for such a limit is at best unclear (p. 21). However, in a survey based on actual play, Blaszczyński et al. (discussed above) did not find evidence that problem gamblers significantly extended their playing duration in response to lower bet limits.

Clubs Australia cautioned that the 2001 Blaszczyński et al. study was subject to ‘the significant qualification’ that in a real world setting, players might respond by playing longer, thereby reducing any harm minimisation benefits from the lower bet limit. But gamblers would have to play for a *lot* longer to generate the losses that are now possible. As an illustration, someone playing at \$10 per button push for one hour would be unlikely to extend their play to ten hours were the limit reduced to \$1. If gamblers did significantly extend their playing durations, venue staff would more easily recognise them, raising the potential for sensitive interventions (where the staff have appropriate training or can access expert services).

So, while it is likely that some gamblers would play for longer, it is improbable that this effect would be so great as to nullify the impact of the reduced bet limit. Were that to be the case, it would not be consistent with the industry’s claim that there would be large adverse revenue effects from implementing the measure. As the CIE acknowledged:

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The higher the proportion of players who engage in compensating behaviour, the less gaming machine revenue and hence club and hotel revenue is directly at risk. (2001, p. 26)

### *Effects on recreational players*

Most recreational gamblers would not notice a significantly lower bet limit, as they typically bet at low levels anyway (as shown in table 11.3 and box 11.2). This is supported by data from a sample of New South Wales players using loyalty cards, which showed that, over a month of play, about 98 per cent of gamblers bet an average of \$1 or less, with a median bet of about half this amount (appendix B). Information from one regulator indicated that the average bet on a popular game was just over 50 cents per button push.

Indeed, the attitudinal survey (Schottler 2009) cited by KPMG Econtech in another context, found that most changes to EGM design would have a negligible impact on them. But it observed that:

... the impact on low risk gamblers of most measures is generally higher and this highlights the need to continue to view low risk gamblers as an ‘at-risk’ gambling segment. In many respects, this also challenges the assumption that low risk gamblers are ‘recreational players’. (Schottler 2009, p. 9)

However, average bets among a group can conceal variations in playing styles that sometimes take them over a dollar for some plays (box 11.3). Clubs Australia said that players ‘on a broad range of incomes and “thrill levels” like to choose how much they want to bet, and may change their bet limit from spin to spin:

If they have a win and are playing above their ‘stake amount’ ... players often choose to increase their bets in the hope of leveraging off their win to have a bigger win. Alternatively they may simply decide to ‘have a go’ at a higher bet limit for a number of spins. While a reduction to \$1 maximum bet may therefore not seem to affect average bet, it will affect the upper end of the playing style and will potentially modify spend and playing behaviour. (sub. DR359, pp. 81–82)

The Commission agrees that low bet limits would be likely to prevent short periods of higher intensity, but benign, playing. This might lead to frustration at times, reducing recreational players’ enjoyment of game play. For example, one responsible gambling manager said that \$1 denomination EGMs that allowed bets of \$5 or \$10 per button push appeared to be used in his venue by groups of young men who would together play one EGM, but were unlikely to play for extended periods. He thought such groups enjoy the larger bets, perhaps averaging about \$3 on his EGMs.

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The question is not whether there are *any* adverse effects on recreational gamblers, but whether these are so great as to disregard the benefits of lower bet limits for gamblers experiencing harm. The evidence about average bet sizes and the results of the existing research suggests that the adverse effects on recreational gamblers would not be extensive.

Participants in the community sector supported a bet limit to minimise harm from EGM play. For example, the Council of Gamblers Help Services said that the potential losses that can currently be incurred ‘are in excess of community expectations’:

... both in terms of what community members believe is likely to happen when they play machines and in terms of acceptability of outcomes for those who experience financial harm as a result of play. (sub. DR326, p. 28)

A personal submission said that, in view of the ‘substantial and quite damaging’ losses that can occur even at \$1 or less a spin, making \$1 ‘the most expensive/extreme bet available’ would provide ‘a bit of a reality check’:

When spending \$1 or less becomes the norm people may be more inclined to see that spending at much lower levels is really more appropriate for them. (sub. DR299, pp. 2–3)

### **What bet limit is appropriate?**

In the Commission’s view, there is a strong *prima facie* case for a much lower bet limit on EGMs than the current regulated maxima of \$5 and \$10 per button push. But a small reduction would have minimal benefits given the cost per hour that would still be possible (table 11.2).

It is not possible to determine the most appropriate bet limit exactly, yet the incapacity for fine calibration should not be a justification for inaction. The limit should be low enough to constrain the spending rate of problem gamblers and limit the harm that can occur when betting escalates, but not so low as to adversely affect the enjoyment of recreational gamblers (who typically bet at quite low levels, but may also enjoy the option of higher bets at times).

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### Box 11.3 Effects on recreational players: participants' views

The Australasian Gaming Council sought to distinguish between 'low spending' and 'high spending' recreational gamblers, arguing that 'recreational gambling is not categorised merely by low spend':

Recommendations ... should encompass the needs of those gamblers who may, within a carefully considered and appropriate budget, evidence a high spend that remains consistent with their personal recreational choice and means. (sub. DR377, p. 2)

Allens Consulting Group for the Australasian Casino Association also said that 'non-problem gamblers may enjoy varying their bet sizes on occasion — a lower bet limit denies them this variability'. In addition:

... the level of enjoyment derived by non-problem-gamblers may be influenced by the knowledge that they have the ability to place high individual bets, even though they choose to bet well below the maximum. (sub. DR365, attachment, p. 31)

Caboolture Sports Club said that maximum intensity play would be achieved only during 'extreme play', for example, where a player 'may have a desire to play the machines for only 10 minutes and place a higher than average bet to provide responsible entertainment for their circumstances' (sub. DR334, p. 4).

The GTA argued that the maximum bet value 'is an irrelevant measure from the point of view of player protection':

Players allocate the size of bet with which they feel comfortable and this flexibility is one of the pleasurable aspects of the game. (sub. DR344, p. 21)

It argued that a \$1 bet limit would reduce the participation of recreational players by diminishing the range of choices available to them, and would 'consign Australia's gaming machines to an entertainment level no different to pinball, resulting in an unappealing recreational activity' (sub. DR344, p. 5). Similarly, Clubs Australia said that such a limit would 'turn poker machines into amusement devices rather than gambling devices' (sub. DR359, p. 79).

As can be seen from table 11.2, a reduction from \$10 to \$5 (or \$4 or \$3) would still provide the scope for significant losses and hence would have weak impacts on the harms that some players experience. To have a significant impact requires that the capacity for high cost play be curtailed significantly. In the Commission's judgment, a bet limit of \$2 or less could be expected to make some useful inroads into reducing harms.

- at \$2 per spin, the cost of short bursts of play would coalesce around \$240 per hour, or \$130 at a more average speed of play
- at \$1 per spin, these costs reduce to \$120 and \$65 per hour.

All governments have already variously set \$10 or \$5 per spin (and in many cases also regulated the spin rate itself). Several governments have also recently reduced

those limits, explicitly for harm minimisation reasons. The Commission’s proposals should be seen as a further recalibration of these existing limits.

It is also notable that bet limits have been reduced in the United Kingdom and New Zealand. The much lower maximum bet sizes (and prize limits) that apply in the United Kingdom, which has about 248 000 gaming machines, are shown in table 11.4. In New Zealand, where it has also been concluded that problem gambling is overwhelmingly associated with EGMs, the maximum bet in clubs and pubs is now limited to \$2.50 and prizes are limited to \$500.

**Table 11.4 UK gaming machines, maximum bet and prize limits**

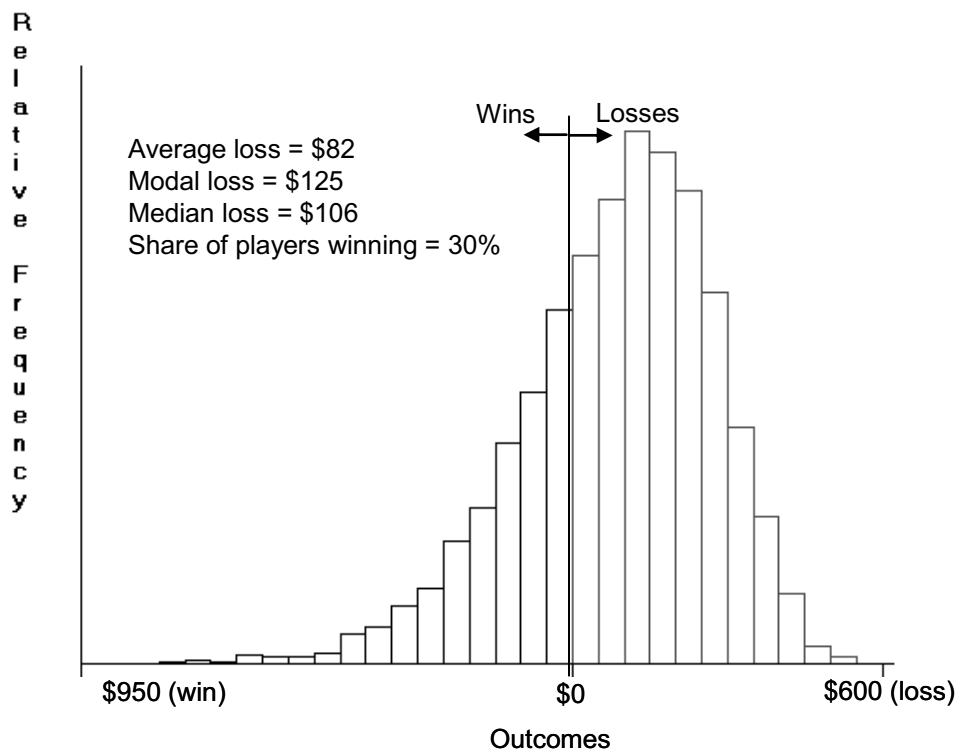
<i>Machine category<sup>a</sup></i>	<i>Maximum stake</i>	<i>Maximum prize</i>	<i>Machine numbers at 31 March 2009</i>
A	unlimited	unlimited	0
B1	£2	£4 000	2 500
B2	£100 (in multiples of £10)	£500	27 500
B3	£1	£500 ]	11 800
B3A	£1	£500 ]	
B4	£1	£250	15 000
C	£1	£70	121 000
D <sup>b</sup>	10p to £1	£5 to £50	71 000

<sup>a</sup> Category A machines are permitted in regional casinos only. Adult gaming centres, family entertainment centres (licensed and unlicensed), casino, betting, and bingo operators are entitled to offer a set number of gaming machines of certain categories, depending on their premises. For example, alcohol licensed premises, such as pubs are only entitled to offer machines in categories C and D. <sup>b</sup> Category D machines provide various cash and non-monetary prizes.

Source: <http://www.gamblingcommission.gov.uk>.

EGMs are marketed as recreational devices and the cost of playing them should be consistent with that claim. But even under a \$1 bet limit it would still be possible to lose several hundred dollars in an hour. Indeed, simulating a 1 cent gaming machine played every four seconds at ten lines and ten credits per line, the average cost over one hour was \$82, the mode (the most common outcome) was \$125 and it was not uncommon for people to lose \$300 or more (figure 11.3). This is inconsistent with the claim that a machine with a \$1 bet limit would be akin to ‘pinball’ or ‘an amusement device’ (box 11.3). Few would contend that pokies are an adult entertainment for which people should expect to pay — the key issue remains the rate of loss that is acceptable for such a device, in the face of good evidence of the harmful effects of EGM play for many people.

**Figure 11.3 Even low bet limit machines have a wide dispersion in actual amounts lost<sup>a</sup>**



<sup>a</sup> Based on 10 000 simulations of a real gaming machine played for an hour at ten lines and ten credits per line (1 cent denomination), with four seconds between button pushes that involve a monetary stake. (Free games means that the gambler cannot actually lay 15 bets per minute, and the simulation takes account of this.)

*Data source:* Commission simulation model of a gaming machine, based on machine details provided by a gaming machine manufacturer.

FINDING 11.1

*Current bet limits imposed by all jurisdictions are set too high to be effective in constraining the spending of problem gamblers, given the speed and intensity of play that a modern gaming machine allows. The maximum bet needs to be low enough to constrain the spend rate of problem gamblers, but not so low as to adversely affect recreational gamblers (who typically bet at quite low levels).*

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### Box 11.4 Research in NSW on bet limits

As early as November 2000, the New South Wales Liquor Administration Board proposed a reduction in the maximum bet size on standalone EGMs to \$1 on a trial basis in an attempt to reduce the harms from EGM gambling.

The gaming industry funded a study by Blaszczynski et al. (2001) to assess the likely impacts of this and other provisional recommendations by the Board. That study, one of the few undertaken in 'naturalistic' settings, observed patterns of play of 779 participants in clubs and hotels during regular gaming sessions. It looked at player satisfaction and enjoyment, behaviour, expenditure and the perceptions of self-identified problem gamblers, using EGMs with some key characteristics modified and operating side-by-side by similar machines that had not been modified. In their later submission to the IPART inquiry, Blaszczynski et al. (2004) said that the available evidence suggests that a reduction in the bet limit to \$1:

... would reduce the rate of expenditure for players and that these reductions would be greater for problem gamblers than non-problem gamblers.

However:

Whether or not such a change is likely to translate into a decrease in overall expenditure for problem gamblers is not known. (Blaszczynski et al. 2004, p. 32)

The gaming industry also commissioned a report from the Centre for International Economics (CIE) on the impact of the proposed changes on the revenues earned by clubs and hotels (see discussion in text).

The NSW Department of Gaming and Racing commissioned the Centre for Gambling Studies at the University of Auckland to review both reports to assess their methodological integrity and the appropriateness of their conclusions. The review concluded that a reduction in bet size showed a 'strong potential' as a harm minimisation measure (Tse et al. 2003).

IPART reviewed all of this material and agreed that 'the evidence of the effectiveness of reducing the maximum bet supports a reduction'. But it expressed concern as to what the optimal bet limit might be, and the likely impacts of any reduction on recreational gamblers and the economics of the gaming industry, and any potentially unintended consequences such as prolonging gambling sessions. It called for research to be commissioned by the Ministerial Council for Gambling into the effects of a range of bet limits below \$10, noting that:

The optimal level would provide the greatest balance between reducing the harm associated with problem gambling while minimising unnecessary effects on recreational gamblers and the industry. (IPART 2004, p. 92)

The NSW Government accepted this recommendation, and said it would refer the matter to the Ministerial Council for Gambling (NSW Government 2005, p. 39). However, in the ensuing five years, no research has been undertaken on this apparently most promising harm minimisation measure.

*Sources:* Blaszczynski et al. (2001); CIE (2001); Tse et al. (2003); Blaszczynski et al. (2004); IPART (2004) and NSW Government (2005).

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## Some implications of a lower bet limit

### *Revenue losses*

Many clubs and hotels and their representatives said that reducing the maximum allowable bet size would have dramatic effects on venue revenues and could lead to employment losses and venue closures (box 11.5). Clubs Queensland said that:

Such a reduction ... could have a devastating impact on community clubs and their capacity to meet their objects — for example, supporting sport, surf lifesaving and RSL welfare — and their support for charitable institutions would also be put in jeopardy. (trans., p. 507)

One club in metropolitan Sydney provided data on the average expenditure on each of its 500 EGMs over a month, showing that about 44 per cent of its EGM revenue came from machines that recorded an average bet of \$1 or more and at least 23 per cent came from that part of each bet that exceeded \$1 per button push.

Clubs in particular would be most heavily hit. As many submissions from individual clubs confirmed, their existence and activities are primarily financed by revenues from poker machines (more than 80 per cent of revenue in some cases), supported by taxation concessions and preferred access to poker machines.

Clubs Australia pointed to the significant losses expected from imposing a \$1 maximum bet in New South Wales, based on estimates from the CIE in 2001 (describing it as ‘the most reliable research on the impact of a \$1 maximum bet’ (sub. DR359, p. 83)). These were estimated at 17 per cent of club EGM revenue and 39 per cent of hotel EGM revenue (CIE 2001, p. 15). (In contrast, a related study, Blaszczynski et al. 2001, suggested that revenue losses could be small, on the basis that so few players were found to bet above \$1.) Clubs Australia added that:

By comparison, the indoor smoking bans resulted in a revenue drop in NSW of around 11 per cent for clubs and 13 per cent to 14 per cent for hotels. Assuming 17 per cent and 39 per cent revenue declines ... the impact on clubs and hotels in NSW alone is estimated to be a revenue decline of over \$1,100 million, with a decline in gaming machine tax of approximately \$388 million. (sub. DR359, p. 83)

The Australasian Casino Association said that a \$1 bet limit would have ‘a major impact on casino industry employment and investment’. It said that 43 per cent of all casino EGMs had an average bet of more than \$1, and that these generated 60 per cent of total EGM revenue for Australian casinos. (In VIP areas, the corresponding figures were 91 and 97 per cent.) However, the Association did not provide an estimate of how much of its EGM revenue came from that part of each bet that exceeded \$1.

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### Box 11.5 Industry views of the effects of proposed changes

Mittagong RSL said that the average bet on its EGMs can vary between \$0.90 and \$1.40, and a \$1 bet limit would have 'a dramatic effect' on its revenues. And at an estimated \$3000 in programming and technical changes for each of its 158 EGMs in order to comply with changes to maximum bet limits:

... the capital cost of changing ... to a \$1 max bet limit will be at least \$474,000. How can the Commission see this as an acceptable cost to ... our business? (sub. DR312, p. 6)

Riverina Australian Football Club said that each of the 'extreme measures' contained in the draft report would put enormous pressure on its ability to make enough revenue to continue to support the community to the extent that it currently does:

In fact, we believe that any one of the measures listed would impact so severely on our Club that it would not be able to remain open. (sub. DR305, pp. 1–2)

The Magpies Club said that if EGM revenue dropped by 10 per cent it would no longer be profitable and would have to reduce community contributions (sub. DR342, p. 3).

The Parramatta Leagues Club said that a \$1 bet limit would remove the patronage of all high intensity recreational players from all clubs 'and force them to go to Star City for their high intensity recreational gaming':

The result of the limiting of player losses to \$120 per hour will lower ... revenue by approximately 32%. This one change will lower our gaming revenue about \$18 million ... If all the recommendations are implemented ... we expect our gaming revenue to drop 42.5% (or \$25 million) ... These changes will destroy the viability of the Parramatta Leagues Club (sub. DR341, p. 2)

Canterbury Bulldogs League Club said that the recommendations in the draft report would lead to a loss of revenue of at least 30 per cent, with the loss of 120 to 130 jobs (sub. DR409, p. 1). Similarly, the Bermagui Country Club said that the recommendations would put severe financial strain on the club, which is already under pressure due to rising operating costs and the introduction of smoking bans. Bermagui Country Club, like most clubs is reliant on gaming machines and may cease to be viable if this income is further affected by new legislation. (sub. DR325, p. 9)

Redcliffe Leagues Club said that in 1992 it was very close to closing its doors but the introduction of EGMs allowed the Club to survive and to thrive (sub. DR309, p. 3).

ALH Group said that reducing the bet limit to \$1 would decimate the legitimate spending of responsible players without necessarily reducing that of problem gamblers:

... the massive reduction in consumer surplus equates to a drop in industry revenue of approximately 40% with no demonstrated or proven beneficial impact for problem gamblers. ... For the same reasons, reducing the amount of cash that can be deposited into a machine at any one time to \$20 is not a sensible proposition. Queensland introduced \$20 limits in 2001 and revenue fell by almost 20%. they reversed that decision within weeks recognising the negative impact on the expenditure and enjoyment of responsible, social players (sub. DR340, p. 3)

The Juniors said the \$1 bet limit alone would reduce club revenue by \$7.6 million (sub. DR332, p. 1)

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Reduced revenues for gaming venues from a lower bet limit are neither unintended nor undesirable from a broader perspective. The considerable evidence that a significant proportion of EGM revenue comes from problem gamblers or those at risk (chapter 5) makes a reduction in venue revenue (and in the taxation take by governments) *inevitable* for any effective form of harm minimisation measure. Blaszczynski et al. pointed out, the reverse conclusion is also likely to be true:

... unless a harm reduction intervention causes a significant (noticeable) decrease in revenue, it is unlikely to be having any major impact on problem gambling. (Blaszczynski et al. 2004, p. 39)

The Tasmanian Gaming Commission agreed, adding that:

In fact, such revenue reductions must be seen as perhaps the primary indicator that any further interventions have worked. (2008, p. 6)

Nevertheless, it remains the case that venues would be adversely affected. Such effects could include reduced services and facilities and temporary employment effects, although the evidence is that short-term ‘shocks’ do not have protracted economy-wide employment effects (CIE 2009). However, recreational gamblers may then find the venues they frequent to be improved places in which to play EGMs, and allow the venues to market themselves as providing safe community gaming. As Livingstone observed:

... there are many advantages to being able to market yourself as providing a very safe and welcoming environment to people where there is little risk, if any, of experiencing adverse consequences from a night out. Unfortunately we can’t say that at the moment. Even the best-run clubs are not in a position to be able to guarantee that, whereas the sort of recommendations that the Commission has made would put those clubs in that position, if well managed, I think. (trans., p. 624)

Either way, policies addressing business practices that generate harm — such as pollution and hazardous products — do not give much weight to the resulting revenue impacts of raised standards. Notably, clubs were generally supportive of changes to smoking laws, though these affected their revenues. The revenue impacts associated with effective policies addressing problem gambling and other harms are analogous to this.

### *Costs of implementing changes to EGMs*

There are strong grounds to reduce the maximum intensity of play per button push well below the current \$5 and \$10 regulated limits. A limit of \$1 would strongly target problem gamblers. However, there are practical obstacles to its early, widespread implementation.

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In discussion with government experts in this area, the Commission understands that a significant number of (lower denomination) EGMs could be converted to \$1 machines — in some cases remotely through central monitoring systems, but with a technician to change the decals on the lines/credits buttons (a relatively low cost option). Similarly, it would be feasible for *new* machines to be limited to a \$1 bet limit (albeit with some development). However, a partial shift to lower bet limits would run the considerable risk that problem gamblers would shift to the remaining higher intensity machines, undermining the policy. Moreover, venues would have weak commercial incentives to invest in new machines. Accordingly, it would be desirable for lower bet limits to apply simultaneously to all (or nearly all) EGMs within a jurisdiction.

However, immediately implementing a much lower maximum bet limit for all existing gaming machines would not be feasible for regulators and gaming machine manufacturers, and not cost effective for venues:

- Given current technologies, many existing EGMs would need to be replaced and others retrofitted with new software/hardware. Where the depreciated value of machines was low (such as machines close to retirement), the need to bring forward their replacement would not represent a significant cost. However, the early retirement (or significant upgrading) of newer machines would be expensive.
- There is only a limited capacity for gaming machine manufacturers to re-design existing games to be compatible with such a bet limit. (The lower the new bet limit and the higher the denomination of the machine, the more likely it is that the game would have to be completely redesigned, rather than just having some of its parameters adjusted.)
- Regulatory approval for new games takes considerable time (chapter 17).

The Commission proposes that the capacity for low bet limits, including \$1, be included in all new EGMs from 2012. New EGMs could also be designed to have bet limits up to the regulated ceiling of \$5 per button push common in many jurisdictions, for use in the interim. The \$1 bet limit need not be activated immediately, but would need to be ‘switched on’ by 2016, at which time all EGMs would be required to operate at a \$1 bet limit.

RECOMMENDATION 11.1

***Governments should require that by 2012, all new EGMs include the capability of being played at a maximum intensity of \$1 per button push, with this being activated in 2016.***

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- *In 2016, all EGMs should be limited to a \$1 bet, with an exemption until 2018 for venues with less than ten machines that also face significant implementation costs relative to revenue.*

The intent of this recommendation is to limit the cost of play per hour to an average maximum of around \$120. But over time, gaming machine manufacturers may be able to devise games that allow players to make individual bets above \$1, while remaining within the constraint of an hourly cost that is based on an average of \$1 per button push. For example, a game might permit a player to push a succession of buttons to accumulate more than \$1 before making a subsequent (higher) bet. This would not affect the average hourly cost if all button pushes occurred at the game's usual spin rate. Equally, greater use of free games, or a higher return to player, might also be used to achieve this. Indeed, there may be many ways for EGM manufacturers to provide such betting flexibility in future, and there will continue to be strong incentives for them to be innovative in order to retain and entertain their customers.

### **11.3 Note acceptors and cash input limits**

Note acceptors are not permitted in three jurisdictions, are subject to denomination limits in others, but unrestricted in New South Wales (table 11.5). Victoria has banned note acceptors that accept \$100 notes, while Queensland limits its note acceptors to \$20 notes. Such limits are intended:

... to provide a break in play which would give players with a gambling-related problem the opportunity to think about whether they wished to insert more into the gaming machine. (Review of Gaming in Queensland 1999, quoted in Brodie et al. 2003, p. 5)

Some stakeholders expressed concern that the availability of EGMs that accept large denomination notes may be detrimental to those wishing to control or limit their gambling. Note acceptors may lead to an increase in spending by allowing players to insert large sums into an EGM, reducing the time a player needs to be away from the EGM, allowing ongoing spending and avoiding breaks in play. And there may be an inclination by some to continue to play while credits are in the EGM, notwithstanding facilities for taking wins or recovering unused credits. Problem gamblers in a focus group in Victoria saw the availability of note acceptors (and ATMs) as problematic:

... because they allowed people to gamble silently without inserting coins and drawing attention to the amount they were spending. It reduced the need for interaction with venue staff such as cashiers, and allowed very large amounts of money to be inserted

into the machine very quickly. (Delfabbro 2008, p. 126, citing Livingstone and Woolley 2006)

The Commission's 1999 report found that problem gamblers were much more likely to use note acceptors than other gamblers, with about 62 per cent of problem gamblers using this feature 'often' or 'always' compared with 22 per cent of non-problem gamblers. The report concluded that:

... until evidence that they do not present risks is substantiated, the Commission considers that there are grounds that bill acceptors not be included in the design of poker machines, with any cash dispensers being located outside the gaming area.

**Table 11.5 Note acceptors and cash input limits**

Limits applied by jurisdiction

<i>State/territory</i>	<i>Limits on note acceptors?</i>	<i>Cash input limit<sup>a</sup></i>
NSW	none	\$10 000
Vic	maximum \$50 notes, except for some EGMs at the casino	\$9949, but from October 2009, the limit in hotels and clubs is to be reduced to \$1000
Qld	maximum \$20 notes	\$100 in clubs and hotels; not specified for casinos
SA	not permitted	note acceptors not permitted
WA	na for hotels and clubs;	na for hotels and clubs; \$100 in casino
Tas	not permitted in hotels and clubs; permitted in casinos	note acceptors not permitted in clubs and hotels; \$9899 in casinos (to be reduced to \$500 (sub. 224, p. 4))
NT	not permitted in hotels and clubs; permitted in casinos	note acceptors not permitted in clubs and hotels; not specified for casinos
ACT	maximum \$20 notes	not specified

<sup>a</sup> Defined as the maximum credit balance which may exist on a gaming machine or account beyond which a note acceptor must be disabled due to a High Credit Balance condition (GMNS rev. 10, para 3.20).

Source: FaHCSIA (2009b, p. 19); Australian/New Zealand Gaming Machine National Standard Revision 10.0, (pp. 116–119).

The studies that have been undertaken since do not give clear guidance on these issues. Blaszczynski et al. (2001) undertook a careful examination of the effects of several modifications of gaming machines, including limiting note acceptors to \$20. Using a variety of study methods, they found that changes to note acceptors reduced spending by gamblers significantly, and resulted in a reduction in the overall take on the modified gaming machines of 42 per cent (pp. 9, 57–58). Tse et al. (2003, p. 22), in a review of the study, argued that such a reduction in expenditure makes it very likely that the modification was having an impact on player behaviour, including that of problem gamblers.

Blaszczynski et al. (2001) also found that the modification had little noticeable impact on the levels of enjoyment or satisfaction of players, and suggested that

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removing note acceptors was not likely to have a major effect on recreational gamblers. This finding was supported by a recent study of the effects on recreational gamblers of limiting players to putting a maximum of a \$20 note into EGMs.<sup>10</sup> Schottler Consulting found that:

... most players reported no or very limited impact of such a change on their play (although a very, very slight decrease was the overall trend). (2009a, p. 25)

The Blaszczyński study found that two predominant themes were the ease with which gamblers used large denomination notes without realising the true extent of their expenditure, and that note acceptors allowed them to avoid having to return frequently to the cashier and face the potential embarrassment of being recognised or labelled as a loser or problem gambler (2001, pp. 84–85).

[One] respondent stated that the removal or reconfiguration of bill acceptors would help him considerably because once he commenced gambling and became mesmerised, he would insert any note in his possession and only later realise the amount he had spent. Changing notes to coins, he stated, would force him to reconsider his decisions. (Blaszczyński et al. 2001, p. 84).

The report also noted that for a number of gamblers it was the combination of note acceptors and the close proximity of ATMs that posed a hazard (p. 85).

Nevertheless, the authors concluded that modification of note acceptors would be ‘of limited effectiveness’. Two decisive issues here were that:

- the small sample and the associated variability in the effects meant that the results were not *statistically* significant. This meant that there was the risk (potentially small, but in any case, larger than 5 per cent) that modification of note acceptors would, in fact, have no effect. The authors adopted the usual approach of using a standard of proof that avoids false positives (see chapter 3 about whether that is always appropriate)
- problem gamblers could subvert the limit by splitting higher denominations into lower ones.

As IPART noted, the CIE estimated a much lower impact on revenue (2 per cent for clubs and 6 per cent for hotels). For such reasons, IPART found the research in relation to note acceptors to be contradictory and recommended further work. It noted that, while there is evidence that this measure would not be effective, there is also some evidence that it could be effective, particularly in conjunction with controls on ATMs.

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<sup>10</sup> The question posed was: ‘How about if you could only put in a maximum of a \$20 note in the pokies (ie as the highest note taken)?’ (Schottler Consulting 2009a, p. 91)

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... banning note acceptors could have very significant effects on the economics of the gaming industry, but that there is very little evidence regarding the effectiveness of the measure. (IPART 2004, pp. 101, 102)

The New South Wales Government accepted this recommendation and said it would bring it to the attention of the Ministerial Council on Gambling. In April 2009, the NSW Office of Liquor, Gaming and Racing invited proposals for research to assess, among other things, the effectiveness of limits on note acceptors and ATM withdrawals in minimising or preventing gambling-related harm, noting that prevalence research had identified that problem gamblers were significantly more likely than other gamblers to use \$50 notes in EGMs (OLGR 2009, p. 4 and sub. 247, pp. 34–35).<sup>11</sup> More specifically, the NSW gambling prevalence study found that:

... there is a significantly high frequency with which problem gamblers ... insert notes into machines, compared with all other gamblers (84% of problem gamblers versus 54% of low risk gamblers who insert notes often/always). Furthermore, the problem gamblers are nearly eight times as likely to insert \$50 notes into machines compared with pokies/gaming machines players overall (41% versus 5%). ... Moderate risk gamblers also display some of these expenditure patterns, however, to a lesser degree. (AC Nielsen 2007, p. 12)

In the ACT, a review commissioned by the ACT Gambling and Racing Commission recommended removing large denomination notes from EGM note acceptors (Centre for Gambling Research 2004b and 2005). (At the time of the study, EGMs in ACT clubs accepted \$100 notes.) The review found that ‘removal of note acceptors was no longer a practical reality in the ACT’ but ‘a limit on the size of notes that can be used for note-acceptors on gaming machines could be an effective harm minimisation strategy’ (Centre for Gambling Research 2004b, p. 16). The report also recommended evaluation of these policy changes to monitor their impact and effectiveness. Subsequently, the ACT Government limited the use of note acceptors to a maximum of \$20, but there has been no independent evaluation of this change:

Moreover, some ACT venues promptly installed ‘note-breakers’ that exchange high denomination banknotes for low denomination notes, thus making it more convenient for gamblers to use smaller denominations more frequently. (McMillen, sub. 223, p. 27)

In a submission to this inquiry, McMillen recommended trial control studies of removal of note acceptors in different jurisdictions and localities (sub. 223, p. 28).

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<sup>11</sup> In the event, this process has since been deferred.

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In 2001, Queensland set a \$20 upper limit on the denomination of notes that could be accepted in EGMs. A subsequent evaluation found that, while a majority of people reported no change in their gambling behaviour, a significant proportion (15 to 20 per cent) reported reductions in the amount spent on EGMs, the time spent playing EGMs and the size of bets. Further, the evaluation found that:

... people in the high risk to problem gambling group experienced the greatest changes in behaviour with approximately 30%-40% reporting changes in amount of money spent on EGM's each visit and each month, amount of time each spent playing EGM's visit and each month, level of enjoyment, frequency of visits and money spent on other entertainment at gaming sites. (Brodie et al. 2003, p. 3)

The authors reported that about 60 per cent of survey respondents approved of the \$20 limit and another 28 per cent believed that the limit should be restricted even further. However, analysis of EGM spending data showed no clear evidence that the self-reported decrease in harmful gambling behaviours had resulted in a long-term decrease in metered win. The authors suggested that either people were not actually behaving as they reported, or that the impact of the behaviour change was of only marginal economic consequence (thereby calling into question the view that problem gamblers contribute heavily to gambling revenues) (Brodie et al. 2003, p. 4).

However, when Norway removed note acceptors from gaming machines in 2006, the Commission was told that this led to a significant drop in gambling problems, which was corroborated in subsequent data. And a more recent study of 20 000 students, undertaken in 2004, 2005 and 2006 (after the change), found no change in gambling frequency and expenditure on slot machines before the change. But after removal of note acceptors, the proportion that gambled frequently on the machines fell by 26 per cent and there was a 20 per cent reduction in gambling frequency (Hansen and Rossow 2010, p. 70).

In sum, there is good face validity that prohibiting note acceptors or limiting their use to low denomination notes would be a useful harm minimisation measure, and this is supported by some evidence and the testimony of problem gamblers. Their presence or absence is unlikely to have much effect on recreational gamblers, given their lower intensity of play.<sup>12</sup> On the other hand, problem gamblers may partly circumvent note acceptor limitations by:

- bringing lower denominations of notes to the venue
- obtaining change at the cashier or the bar

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<sup>12</sup> See, for example, Schottler Consulting 2009a, p. 27.

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- using ‘note splitters’ provided by venues (though this is only permitted in some jurisdictions). Note splitters are machines placed in or near gaming areas that will break a larger note into the denominations accepted by EGMs (and the use of which obviates the need for the gambler to draw attention to himself or herself by approaching staff to change notes).

If the removal of note acceptors leads to reduced spending — as appears to be supported by evidence — it suggests that players more often pause to think about whether they really wish to continue playing. That some people change their behaviour simply because of lower note denominations reinforces the view that EGMs are not like other products. For example, were people required to pay in low denomination notes when buying restaurant meals, it is hard to believe that this would significantly reduce their demand.

But uncertainty over impact does not necessarily imply inaction (chapter 3), and jurisdictions have variously implemented different approaches (table 11.5). The cost of implementation would be a factor in a decision to proceed — Queensland, for example, was able to introduce (and quickly change) this measure remotely and cheaply, but other jurisdictions would incur much higher implementation costs.

There may be a role for restrictions on note acceptors in a package of harm minimisation measures. But one question is whether a better way would be through other measures, such as cash input limits.

### **Cash input limits**

A limit on the denomination of the notes that consumers can insert into an EGM does not prevent multiple notes being inserted at any one time, thereby loading up credits at the beginning of play.

The maximum cash input level in Queensland is \$100 (five \$20 notes). The maximum in New South Wales is \$10 000 (that is, a player could insert one hundred \$100 bills before commencing play). During this inquiry, Victoria and Tasmania both announced that they will reduce cash input limits (table 11.5), albeit by amounts that may not have sizeable impacts.

There is some evidence that appropriately set cash input limits might usefully form part of an effective harm minimisation package.

In Queensland, the policy of limiting note acceptors to \$20 notes was first implemented such that EGMs in clubs and hotels could accept a maximum of one \$20 note at the start of play and only accept a further \$20 note when the value of

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credit was less than \$20, allowing an effective maximum cash input of just under \$40. Clubs Australia said that ‘clubs, hotels and the Queensland Treasury noticed a dramatic and immediate drop in revenue statewide of approximately 30 per cent’ (sub. DR359, p. 85). Similarly, Clubs Queensland claimed that ‘the decrease in metered win for that first week was 37 per cent’ and added that:

It could be argued that some of the decline was attributable to the change in denomination but as the metered win gradually recovered after the credit limit was lifted, it was felt that the main factor was the limitation on the number of notes in the machine, not the change of denomination. (trans., p. 506)

However, the decision to allow players to insert only one \$20 into an EGM was adjusted shortly afterwards, making it hard to determine whether the apparently significant short-run revenue effect would have persisted. The new decision allowed players to insert up to five \$20 notes sequentially, with the decision based on concern about the disparity of treatment with casinos, where multiple \$20 notes could be inserted.<sup>13</sup> The result was that revenue returned to the level prior to any changes in the cash input level. An evaluation that drew upon two studies by the Office of the Government Statistician<sup>14</sup> found ‘no long term changes in EGM metered win’ (Brodie et al. 2001, p. 4). While there was ‘an irregular movement’ in the data at the time:

This ‘shock’ was only experienced in the short term and no long term effects were found affecting EGM metered win. Data mining analysis concurred with these results finding no statistically significant relationships linking the introduction of note acceptor limits to EGM metered win. (Brodie et al. 2001, p. 3)

The evaluation report noted that one interpretation of the observed initial drop in metered win was that it was a consequence of the initial policy measure, and that after the policy was adjusted, ‘revenue returned to trending values’:

The other possibility is that the short term ‘shock’ and subsequent return to trend would have occurred without the policy adjustment. This would again open up arguments for the reintroduction of the original limit (allowing only one \$20 note to be inserted when the total credits amount to less than \$20) if it encourages harm minimising behaviours amongst people with a gambling problem. (Brodie et al. 2003, pp. 17–18)

In New South Wales in 2001, the Liquor Administration Board recommended a 98 per cent reduction in the cash input limit, from \$10 000 to \$200, one of a number of recommendations that the Board said was ‘acceptable to industry’ (LAB

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<sup>13</sup> Questions Without Notice, Hansard, 11 December 2001.

<sup>14</sup> One of these studies comprised an analysis of EGM metered win, or net loss to consumers. This involved analysis of metered win data from July 1997 to October 2002 and attempted to discover any relationship between metered win and the implementation of the upper limit to note acceptors (Brodie et al. 2001, p. 3).

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submission to IPART review, p. 36). IPART was unwilling to make a recommendation on this matter, in view of the lack of evidence and stakeholder views on the matter, but proposed that the Government consult with the gaming industry, gambling counsellors and gamblers on its potential introduction (IPART 2004, p. 107). In its response, the NSW Government said that:

... this proposal will be referred to an advisory group of stakeholders ... to be convened by the Department of Gaming and Racing. This group will also be asked to consider any emerging technology in the course of providing its advice. It is envisaged the group would finalise its advice on these matters and furnish it to the Minister for Gaming and Racing during 2005. (NSW Government 2005, p. 46)

As noted in table 11.5, the New South Wales cash input limit remains at \$10 000.

Broadly, industry representatives opposed the Commission's draft report proposal for a cash input limit of \$20. The AHA referred to \$20 as a 'ridiculously low level' (sub. DR385, p. 42), notwithstanding that several jurisdictions currently operate coin-only EGMs, which have much the same effect in interrupting high intensity play. Clubs Queensland said that there would be 'devastating consequences' for industry revenues:

... resulting in job losses, community club closures and a dramatic downturn in support to sporting clubs and charities. The effects will be far-reaching. (trans., p. 506)

On the other hand, community groups supported a \$20 limit. One perspective from a private individual with a problem gambling history was that:

... if one has to wait until credits fall below \$20 then this takes care of a few problems. It stops people loading up, it stops people topping up particularly at higher levels (which can also be bad news) and it is a further positive step in making people a bit more aware of the money they are spending. (sub. DR299, p. 3)

In the Commission's view, a cash input limit would have a useful role as a brake on high intensity play by preventing players from loading up EGMs with multiple high denomination notes, but should be set at a level that does not hinder continual play for most players at their preferred betting style.

To the extent that such a change were to have a large effect on gaming revenues obtained from problem gamblers, it would be performing a valuable harm minimisation role. But if, as the industry asserts, a requirement to use \$20 or less at a time significantly reduced the amounts that recreational players bet, it would raise serious questions about the nature of the EGM product and the extent to which true 'informed consent' has been obtained from the player who is currently using (potentially, multiple) \$50 or \$100 notes to play.

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FINDING 11.2

*The limits on the maximum amount of cash that can be inserted into gaming machines are set too high. A lower cash input limit would not hinder the preferred betting style of most players, but would act as a brake on high intensity play by preventing players from loading up gaming machines with multiple high denomination notes.*

The Commission's assessment remains that a cash input level of \$20 would not have adverse implications for most players who do not have problems with their gambling. The average duration of play between recharges for a recreational gambler playing five lines and five credits per line on a 2 cent machine (the most popular), with a 90 per cent player return would be 20 minutes if the spin rate was 3 seconds. It would be 37 minutes if the CIE estimate of an average realised spin rate of 5.5 seconds applies. Moreover, under this proposal, a player could insert one \$20 note, play a few games, and then add a second \$20 note once the available credits fall below \$20. So in practice, the effective cash input limit would be just under \$40, and it would not limit the amount of credits that could be accumulated by wins. Moreover, cash input limits would still allow gamblers to play at high intensity for short periods — which some enjoy doing.

The constraint on the cash input level would also incidentally act as a restriction on the maximum denomination of note acceptors to \$20, but be more effective (since current restrictions allow patrons to insert multiple notes of the maximum denomination of the acceptor).

The advantage of a \$20 cash input level is that gamblers who sustain high intensity play would have to reinsert cash continually. This would act as a succession of short breaks in play and would make it clearer to them how much they were spending. It would also require problem gamblers repeatedly to consider whether to continue gambling. And it may irritate them. However, an arrangement that places obstacles in the way of problem gamblers, but not recreational gamblers, is likely to be desirable in helping to curb problematic expenditure. It would also help make problem gamblers more visible to venue staff.

KPMG Econtech, for the Australasian Gaming Council, speculated that problem gamblers would be likely to compensate by playing longer (2009, p. 22). In fact, a more plausible response would be to lower the intensity or duration of play to avoid the irritation of constant re-charging of the machines. In effect, low cash input levels and the irritation associated with them, represent a high 'price' for dissociated gamblers or those playing at a frenetic pace. That high price should reduce the occurrence of those behaviours. In contrast, the change would represent a low price

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for recreational gamblers playing at lower average intensity, with minimal anticipated behavioural changes.

A high cash input limit also undermines the intent of restrictions on note acceptors. Having a limit on the denomination of notes that players can insert into an EGM is less likely to have a policy-relevant effect if many notes can be inserted at any one time (perhaps facilitated by the presence of note splitters at venues). Put another way, without a much more limited cash input level, there are stronger grounds for mandating lower denominations for note acceptors (or removing them altogether), prohibiting the use of ‘note breakers’ and setting low bet limits.

RECOMMENDATION 11.2

***Governments should restrict to \$20 the amount of cash that a player can insert into a gaming machine note acceptor, with no further cash able to be inserted until the maximum credit on the machine falls below \$20, with implementation:***

- ***undertaken without delay in Queensland, where the capacity already exists***
- ***by 2016 in all other jurisdictions using note acceptors***
  - ***with an exemption until 2018 for venues with less than ten machines that also face significant implementation costs relative to revenue***
- ***of alternative approaches that have the same effects for cashless systems as these alternatives develop.***

Were governments not to implement this recommendation, there would be strong grounds for not allowing note acceptors on gaming machines where these are not already present and for not increasing the denominations of existing note acceptors. In addition, ‘note splitters’ should not be permitted where the denomination of the note acceptor is \$20 or less, as they are likely to undermine any harm minimisation benefits of low denomination note acceptors. However, they may have a useful role in jurisdictions where high denomination note acceptors are used.

## **11.4 A novel proposal for safer play: an ‘airbag’ EGM?**

The bulk of measures aimed at problem gambling are either preventative (as in information provision, pre-commitment, controls on cash in venues and lowered EGM intensity), or treatment-oriented (as in the provision of help services). Given that most of the problems from gambling hinge on the financial consequences, an alternative strategy is to minimise the costs to gamblers from persistent heavy betting. Such a strategy is like airbags or safety belts in motor vehicles in that it

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does not stop risky behaviour, but reduces the adverse consequences of that behaviour.

One option for such a strategy is to develop a feature that is already present in so-called ‘progressive’ gaming machines — in which the rate of return increases with continued play. A lateral policy option to address problem gambling is to take progressive machines to their natural limit — with machines paying an expected (statistical) rate of return of 100 per cent when the accumulated annual expenditure levels of a player exceeds a given high risk threshold. In effect, heavy EGM gamblers would be able to access a game with no house advantage.

There are different ways this could be done. One possible approach would involve the following:

- using a player loyalty card to track a player’s total spend on EGMs in a given year
- reconfiguring (at least some) EGMs in a venue with a card reader (if not already present) and new gaming software such that, once a player exceeds an expenditure limit for that year, those EGMs would then pay out at a *theoretical* rate of 100 per cent to *that* player for the remainder of the year. A theoretical rate means that in any single game a player could still win or lose, but that with repeated play, their losses would converge on the threshold level
- selecting an amount of total annual spending on EGMs that is judged to reasonably separate safe from hazardous behaviour (say, \$5000). The evidence shows that high spending EGM players have a much higher risk of experiencing problems with their gambling. While some may indeed play safely if they have sufficient financial resources, many high spenders are not in this position, and it is this group around which policy should be centred. An analogy is speed limits on highways. Highly trained drivers may be able to safely travel at speeds well above the regulated limit, but the fact that many other drivers cannot, means that regulators impose speed limits on all drivers
- limiting the annual *volatility* of losses to achieve the goal of reducing the financial consequences of excessive gambling. This is important because there are many ways that a 100 per cent rate of return could be achieved — for example, by significantly increasing the prize levels on rare events (for example, jackpots). But that approach would mean that many heavy spenders would still face large losses while a few would have extremely big wins. Accordingly, a critical practical element of any application of the loss-limiting approach would be that 100 per cent theoretical rates of return should be achieved through additional high frequency payouts

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- resetting the EGM's usual features and game parameters when the loyalty card was withdrawn, with the machine operating normally for subsequent users. The progressive feature would only be re-activated when a loyalty card was inserted by a gambler eligible for this feature.

Such an approach should not diminish the enjoyment of playing for anyone, merely the harm from doing so. In fact, it would encourage more gambling by people who were close to the progressive threshold, which would reduce the erosion of revenue to venues, while causing little harm to consumers.

Implementation of this approach would by itself address many of the concerns raised in this chapter, and might reduce the need for some other modifications the Commission has proposed. However, as this proposal would probably not have much effect on lower-spending problem gamblers, it is best seen as one part of a package of measures to address problem gambling.

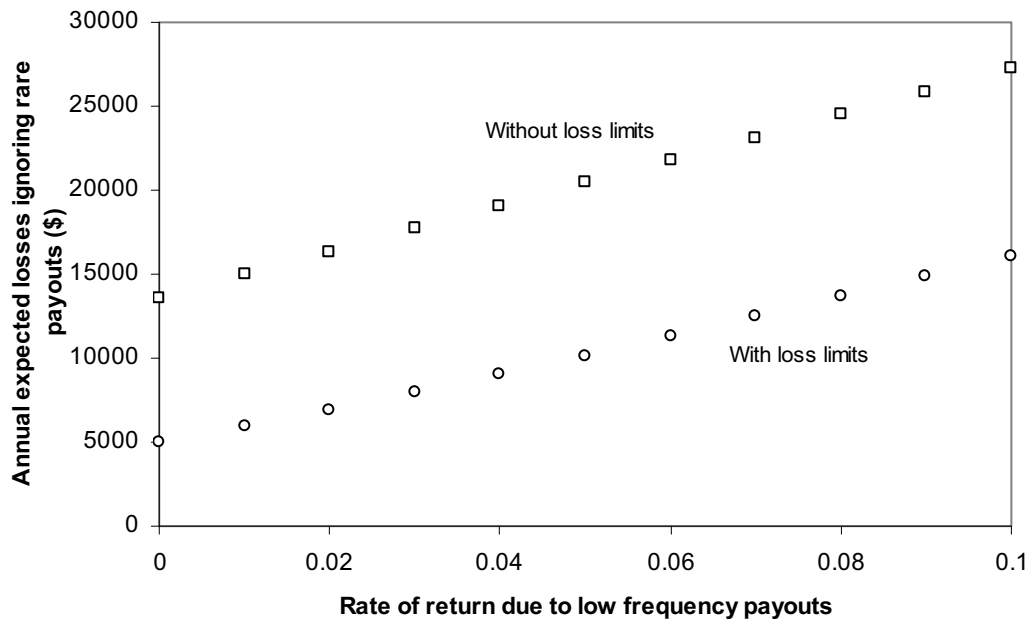
A loss-limiting measure could be implemented by incorporating the function into new machines, while making no modifications to machines already in venues. That would considerably reduce the costs of introducing the measure, since the only change required would be software development for new games. While this would mean only the gradual diffusion of 'airbag' machines into venues, this need not matter. Gamblers with likely high expenditure would tend to self-select to use a loyalty card on machines offering the progressive feature. Recreational gamblers would generally not care which machine they played on because they would not expect to exceed the annual spending threshold that triggered the 'progressive' features.

The prize structures of *some* existing games may reduce the benefits of airbag machines. Some existing machines pay more than 10 per cent of their total rate of return as low probability prizes. For instance, suppose one machine pays 80 per cent of its returns through reasonably frequent payouts and 10 per cent through jackpots and other rare prizes. Suppose that the total rate of return was increased to 100 per cent by increasing the high frequency payout rate to 90 per cent. In this instance, many heavy spenders would still face large losses in a given period — though periodically they would be likely to make large wins. However, they would still end up spending much less than in non-airbag machines (figure 11.4).

Industry participants rejected the 'airbag' machine (box 11.6), though they did not seem to understand it. A 100 per cent machine is a better price for consumers, not a limit on the prize they could win. They would simply win more often. Clubs Australia argued that a 100 per cent machine would reduce the thrill to players. However, it could only do so if there was a thrill associated with losing more often,

which appears doubtful. The arguments presented by industry participants are also contrary to the apparent interest gamblers show in progressive machines when the rate of return approaches (and exceeds) 100 per cent.

Figure 11.4 The effect of rare prizes on loss limits<sup>a</sup>



<sup>a</sup> This is based on a gambler who plays 10 lines with 5 credits per line on a 2 cent machine, with a 5.5 seconds spin rate for 4 hours a week. Without loss limits, it is assumed that the machine has an overall rate of return of 90 per cent, which is made up of relatively high frequency payouts and very low frequency big prizes. The figure shows that the expected losses from relatively high frequency payouts without loss limits varies from around \$14 000 annually to around \$28 000 annually, depending on the composition of the rate of return. (This ignores the rare prizes, which by definition, even heavy gamblers would not usually get in a year of playing.) Where loss limits are applied, it is assumed that there is a 10 percentage points increment to high frequency payouts, but that the rate of return due to low frequency payouts remains at its old level. In this case, the expected losses from relatively high frequency payouts with loss limits varies from \$5000 annually to around \$16 000 annually, depending on the composition of the rate of return.

Data source: Commission calculations.

## What impact on venues?

An ‘airbag’ machine would necessarily reduce revenues for venues. This is because the average losses of the group of people currently spending more than the threshold for activation of the airbag, say \$5000, would converge to \$5000.<sup>15</sup> The arguments about the desirability of such revenue reductions is discussed above.

<sup>15</sup> Of course, individuals in this group would face significant variations around this average amount. Some would lose much less or even win, and others would lose more. But it would be the average for the group that would affect venue revenues.

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Implementation of ‘airbag’ features into new machines would require some software development. The software would either have to include a second set of virtual reels that increased the probability of payouts, or a change in the pay table, with these features activated when the loyalty card indicates that the amount spent by the gambler exceeded the appropriate threshold. Such software development and its approval by regulators would take several years.

In addition, gamblers would ideally be able to use their loyalty cards in different venues, but this would realistically only be possible with full pre-commitment (chapter 10).

So effective implementation of airbags would be some years off. A long run shift to new communication protocols and networks means that it would be possible to remotely set different thresholds for triggering the ‘airbag’ feature at nearly zero cost.

Airbag EGMs would also change the incentives faced by venues. Once a gambler exceeded the threshold, he or she would no longer be a highly attractive consumer as the venue would receive no net revenue from their gambling. (As the Australasian Gaming Council put it, the proposal is ‘not really compatible with a business model’ (trans., p. 770).)

Accordingly, venues would have strong motivations to control any residual problem gambling behaviours by these patrons (as described in other chapters), including encouraging them to seek help from external problem gambling counselling services.

As with stronger approaches to pre-commitment, implementation of this proposal would require venues to implement measures to stop theft or borrowing of other players’ cards. (Some players may seek to share cards, including with low spending friends, to get to the 100 per cent player return faster.) The proposed regulations on redeeming winnings discussed in chapter 13, with an associated requirement to identify oneself, would reduce these risks, as would penalties for fraud.

Airbag machines are technically feasible and, if phased in over time through changes made only to new machines, the costs of implementation would be low. Nevertheless, their introduction would represent a radical change to gaming, and there is no information about how gamblers might respond to them. Given that, the Commission is not recommending their implementation at this stage. However, the concept and its potential future incorporation in machines should be left open for future consideration.

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## Box 11.6 Industry views on loss-limited EGMs

Clubs Australia argued that club-goers do not want to play loss-limited machines:

They want machines which allow them to spend how much they choose, with a concomitant potential win. People choose to spend their money on what they like and poker machines are far more popular than other, loss-limited, entertainment options. Very few people would participate in a lottery if the maximum prize were \$20; the 'thrill' would not be sufficient for most gamblers. The same is true for gaming machines. (sub. DR359, p. 87)

It also argued that 'there is no evidence whatsoever that loss-limiting is an effective harm minimisation measure: it simply limits likely losses on poker machines':

There is a multitude of measures which have minimal financial impact on venues, such as counselling, staff training and limits on credit betting. While the ultimate impact of their effectiveness is reducing problem gambling (and thereby venue revenue), the impact is targeted at problem gamblers alone and therefore less harmful to venues than those measures which affect all gamblers;

It distorts the operation of gaming. Payouts to players can only be high enough to attract patronage if the risk is also relatively high. If RTP is set at 100 per cent for some people it increases the frequency of payouts as well as the likelihood of large payouts to those people. This reduction of risk will force venues to reduce the RTP for other players and, thereby, reduce the attractiveness of gaming in the first place;

It added that:

Gambling is not a children's lucky dip. Simply because you enter does not mean you will win a prize. Gambling is inherently risky. It is not the responsibility of venues to limit the losses of those who choose to spend a lot. Individuals must accept personal responsibility that they gamble at their own risk. (sub. DR359, p. 88)

Australasian Casino Association said the proposal 'would turn EGMs into computer games' (sub. 365, pp. 14–15)

GTA said the strategy would not be effective for the gaming industry because:

Prolonging problem gamblers' use of gaming machines might exacerbate harm.

Return to player within a game is not a variable in any Australian gaming machines and cannot be approved for use. Such variation would most likely undermine players' trust in the integrity of gaming.

It inhibits recreational play, thereby creating adverse outcomes for recreational gamblers and venues. (sub. 344, pp. 21–22)

## 11.5 Other features

Like producers of other entertainment services, EGM manufacturers design gaming machines to be attractive to consumers. EGMs also involve potential conditioning effects through such features as free games and random and intermittent payouts, which, together with the capacity for rapid repetition, can encourage sustained gambling. For such reasons, some have likened the effects of EGMs on some people to that of a Skinner box (a laboratory apparatus used to study the operant

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conditioning of animals). Machines that are commercially successful, will by their nature, tend to have superior conditioning effects. While such features may indirectly contribute to the intrinsic risks of EGMs, they are, at the same time, intrinsic to their recreational value. Nevertheless, some features of EGMs are sometimes said to be particularly problematic for some consumers.

## Game names and icons

Some commentators argue that EGM manufacturers use game names and icons that induce vulnerable people into gambling, or into gambling for longer (see, for example, Tim Falkiner, subs. 2 and 61). Falkiner argued that the majority of EGM problem gamblers are not ‘action gamblers’ (who play a wide range of EGMs, particularly those with linked jackpots, for excitement and to win) but ‘escape gamblers’, who seek time on the EGMs:

There is now clear evidence that escape gamblers have favourite machines based on archetypal symbols such as: hearts, dolphins, gods, goddesses, dragons and unicorns. (sub. 2, p. 5)

He referred to, for example, the symbolism of dolphins as healing animals, and of life/death/rebirth themes, and argued that that such ‘archetypal symbolism’ has particular appeal to vulnerable people. He added that, among the escape gamblers:

... are women suffering from a range of traumas including ... childhood sexual assault, childhood physical or emotional abuse, rape, abusive relationships, post partum depression, loss of a loved one, menopause and fear of death. ... carers seem to be particularly susceptible. (sub. 2, p. 8)

Falkiner also referred to supporting anecdotal evidence from problem gamblers and counsellors, and to Livingstone (2005), which also reported the views of problem gamblers.

It does appear that EGMs with identical pay tables and machine software, but with different themes — reflected in the artwork, sounds and graphics — have significantly different levels of popularity among players. But the reasons why recreational and problem gamblers choose particular EGMs are far from clear. Dickerson and O’Connor said that:

A visit to the art department of a well-known EGM manufacturer would have been a salutary experience for anyone wanting to select the most ‘addictive’ aspect of the machine: at one time the walls were covered with sets of artwork from EGM display panels of machines that had failed to be popular with gamblers. *Apart from the artwork, these failures were identical in every respect to existing, successful machines.* (p. 117)

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Without further evidence, it seems improbable that changes to symbols and artwork would be an effective harm minimisation measure. (For example, vulnerable players may simply switch to other, albeit less preferred, EGMs if they were denied access to EGMs designed around the icons they prefer.) In the Commission's view, the consumer protection measures recommended in this report are more effective ways of addressing the financial harm that gamblers can experience, without affecting the recreational value of EGM gaming.

### **'Near misses' and 'reel starving' (unbalanced reels)**

A near miss is an outcome on an EGM that is very close to the desired or winning combination (for example, having all but one winning symbols in a row, or winning symbols appearing on a line that has not been bet upon). Near misses have long been thought to induce players into believing that they have just missed a prize and that a win must be imminent, and is seen as encouraging continued play. For such reasons, it is illegal in Australia to *deliberately* design a game such that the way symbols are displayed on the screen falsely convey the impression of a near miss (GMNS, p. 50).

EGMs typically have five (virtual) reels with a multiple of symbols on each reel. The number and frequency of symbols on any particular reel is dictated by the design of the game and the underlying mathematics of its structure. One participant expressed concern that, because the reels are not uniform, players are misled.

Players expect the reels to be the same. Just as a dice player expects the dice not to be loaded, so the gaming machine player assumes the reels are equal. (Tim Falkiner, sub. 2, p. 16)

He cited evidence from problem gambler groups to this effect, noting their outrage when told of this lack of uniformity. Falkiner argued that there is no way the player can tell this because they cannot read the reel strips and can only see a small part of each reel at any one time. In his view:

Gaming machines are cheating devices because they use concealed asymmetry. Cheating involves deception. This involves making the player see something wrongly. This is done by a combination of concealment (the player cannot see the reels are different) and asymmetry (the reels, which the player consciously or unconsciously believes are the same, are different). ... The cheating is accomplished by making the odds look better than they are by starving reels so the player keeps thinking he or she just missed. (sub. 61, p. 7)

While this issue has been discussed for many years, the research on the extent to which gamblers believe that they experience near misses and whether that affects their behaviour is limited (Sharpe et al. 2005, p. 17). And studies on overseas EGMs

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such as fruit machines may have little relevance to the much more complex Australian EGMs.

Modern EGMs allow for betting on multiple lines, and playing multiple lines is a common strategy. Multiple line betting constrains how the game designer can place the symbols on particular reels. For example, were a highly valued symbol to appear adjacent to any one bet line it would necessarily also form part of a different bet line, for which there is a payout structure.

One recent Australian study found that the majority of players taking part did not recognise near misses ‘even under conditions when one could argue that they have been primed to do so’, and it did not influence their play. The authors concluded that, while it was possible that the near miss influences play in some forms of gambling, ‘the emphasis that has been placed on this concept may not have been warranted’:

... the present study has provided relatively strong evidence across a range of designs that demonstrate that it has little relevance to modern day electronic gaming machines. It may be that these machines have become so complex, with so many features (including sound and vision) that simple characteristics that may once have influence play are no longer relevant. (Sharpe et al. 2005, p. 70)

It is not possible to avoid the impression of occasional ‘near misses’ on EGMs, simply because of the way the machines work and the desire of game designers to include a range of smaller prizes during a course of play. This impression cannot be eliminated without destroying the nature of EGM games. And, in any case, it is very difficult for a player to identify what they might perceive as a near miss as virtually every symbol shown on the screen at any one time may be part of a bet line.

Nevertheless, to the extent that such misperceptions do affect the intensity or duration of play, the Commission’s proposals in this report should help minimise any resultant harm.

### **Free spins (bonus games)**

As noted earlier, both recreational and problem gamblers find free spins attractive features of EGM playing. Some evidence comes from focus group discussions that support the view that such features are particularly important to problem gamblers:

Being able to obtain bonus games and to trigger subsequent sequences (i.e., a bonus within a bonus) was very attractive to players, and many reported that was a strong incentive to keep playing. (Delfabbro 2008b, p. 126, drawing on Livingstone et al. 2006)

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Another study involving interviews with pathological gamblers found that the pursuit of the free spin appeared to be a factor in prolonging their play through the operation of the ‘gambler’s fallacy’, that is, the belief that a win was imminent. And more notable to the researchers were the ‘consistent spontaneous statements’ made by pathological gamblers regarding the attractive quality of the free spin feature, which ‘was described by some as the predominant reason contributing to their loss of control’ (Blaszczynski et al. 2001, p. 88). However, the researchers cautioned that these comments arose in the context of focus group discussions and were not systematically evaluated in the course of empirical and observational studies. Nevertheless:

... there is sufficient indications that warrant further detailed study on the impact of free spins as a variable contributing to persistence in play and ultimately, to the development of problem gambling. (2001, p. 88)

Delfabbro referred to studies by Williamson and Walker (2000), Walker (2003) and Livingstone and Woolley (2006) that suggested that bonus sequences, and in particular, free games, are very potent reinforcers for regular EGM players:

Indeed, the tendency of players to select a greater number of lines appears to be strongly motivated by the fact that this strategy increases the likelihood of them obtaining the required symbols to trigger bonus sequences. (Delfabbro 2008b, p. 156)

The research was unable to indicate whether these features have a differential impact upon problem gamblers. However, a personal submission provided the perspective of one problem gambler on the issue of free spins:

On the surface these free spins may seem like a harmless bonus but I found them to be one of the most insidious aspects of the machines. ... As with all these bonus type games they are there to make it more ‘interesting’ and at the same time to encourage play and this in itself is inherently problematic. However, the way free spins operate in their current format they can be particularly detrimental. (sub. 172, p. 5)

The Victorian InterChurch Gambling Taskforce argued for a ban on free spins, referring to GRA research that found that one factor that caused gamblers to break their pre-commitment decisions and exceed their self-imposed limits was to obtain free spins:

The research found that setting a goal to obtain a certain number of free spins before leaving was one of the critical factors that caused people to continue gambling on EGMs beyond their self-imposed limits. The report recommended that the reinforcement schedule of free spins in the context of EGM gambling should be examined. (sub. 220, p. 16)

States variously regulate the capacity of EGMs to produce free spins. For example, New South Wales, in its Gaming Machine Prohibited Features Register, noted a trend in game design whereby the number of free games being offered was

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increasing significantly. It decided to place a limit of 40 free games on gaming machines. The reason was given as follows:

The typical number of free games being offered by machines was rapidly increasing (some offered 100 free games and the probability of winning the 100 free games was remote). This was considered both a harm minimisation and player fairness issue. (NSW OLGR)

Similarly, in Queensland, free game features are subject to close regulatory scrutiny, with a particular concern to avoid misleading players about the likelihood of achieving the advertised number of free games (GMNS, Queensland appendix, p. 9)

A key issue would be whether it is likely that any such features have a disproportionately adverse effect on people with gambling problems. Again, it is difficult to be clear one way or the other. The proposals in this report provide more direct and targeted ways to address the harm that can come from EGM gambling. Nevertheless, if more direct harm minimisation measures are not introduced, this matter should be the subject of future research.

## **Jackpots**

EGMs with jackpots are much more numerous than was the case at the time of the Commission's 1999 report. There can be jackpots on standalone EGMs, but most commonly they operate across linked EGMs within a venue. (There are also some that operate on EGMs linked across a number of venues.) Linked jackpots are collective pools of money that accumulate steadily across a number of connected EGMs. As bets are placed on these EGMs, a small proportion of each bet is added to the displayed jackpot pool (box 11.7).

Jackpots can operate in different ways. For example, New South Wales and the ACT have:

- 'random link' or 'mystery link' jackpots — whereby a random number generator selects a value (not seen by the gambler) between a minimum and maximum amount where the jackpot will be won. When this value reaches the preselected amount, it is paid to the EGM that triggered the jackpot
- 'standard linked progressive system' or 'linked jackpots' — with payment triggered by a winning combination of symbols on a machine, with the likelihood of this determined by the reel specifications of the jackpot-linked machines.

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Some jurisdictions set limits to maximum prizes on standalone EGMs, but allow much higher prizes as jackpots on linked EGMs. Some jurisdictions have no maxima, while some others are capped at \$500 000 or \$1 million (FaHCSIA 2009b, p. 22).

Jackpots are attractive to many gamblers. The large maximum prizes they offer can encourage gamblers to continue to gamble in the belief that they could win a life-changing sum. In the case of problem gamblers, it may exacerbate their tendency to chase losses. Delfabbro drew attention to 1997 survey evidence to the effect that over 30 per cent of problem gamblers specifically went to venues in order to play linked jackpot machines, compared with only 3 per cent of non-problem gamblers (cited in PC 1999), but added that this does not necessarily mean that the removal of these machines would reduce expenditure amongst problem gamblers (Delfabbro 2008b, p. 156).

The way jackpots operate may accentuate chasing losses because of the prospect of a large prize and because the expected payoff from playing *increases* with further bets, and indeed may actually exceed 100 per cent (box 11.3). As Delfabbro put it:

... gamblers know that the closer that the balance gets to the maximum possible trigger point ... the more certain the outcome.

He expressed concern that progressive jackpot features were ‘potentially the most problematic features’ on modern EGMs, for two main reasons:

The first is that it further encourages gamblers to spend more per spin in order to increase the accumulation rate. The second is that it provides a very strong justification for chasing and continued gambling. ... This feature also may serve to reinforce the view that one is more likely to obtain a jackpot the longer one persists; and, in this case, this is true. (Delfabbro 2008b, p. 157)

In addition, progressive jackpots can add to existing false cognitions about EGMs, as they are one area where the history of past plays is relevant to the decision to play on (for example, a mystery jackpot close to the maximum pool size is truly a ‘hot’ machine). This undermines a key harm minimisation message about the randomness and independence of EGM games.

As a result of these risks, some groups recommended regulations prohibiting jackpots. The Gambling Impact Society (NSW) called for a ban on linked jackpots, arguing that:

The Gaming Machine Manufacturers Association ... regularly purports that EGM’s are ‘just a form of entertainment’. However, we do not believe ... that the current offers of linked jackpot prizes and individual machine prizes of over 10,000 are justifiable incentives to ‘play’. (sub. 59, p. 5)

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### Box 11.7 How do jackpots work?

Although there are differences in arrangements between jurisdictions, events that trigger jackpots and the outcomes are generally as follows:

In *random or mystery link jackpots*, a jackpot between \$x and \$y is paid. The actual amount paid is determined ahead of time by a random number generator (RNG) — for example, it might pick \$7000 if the min/max were \$2000/\$10 000. As people bet on linked machines, a small proportion (typically less than 2 per cent) of their bet amount is added to the jackpot pool. When the pool reaches the amount pre-specified by the RNG, it is paid out to the machine that triggered the payout.

- As a result of this process, someone betting, say, a 1 cent per button push has a chance of winning the prize, but someone betting \$1 (say through multiple lines, multiple credits per line or both) has a proportionately bigger chance of winning.

The expected payoff to players increases on mystery link jackpots as further bets are made. This is because:

- the prize pool grows as more bets are made
- given that the prize must be paid at or before the jackpot ceiling, the likelihood of winning increases as the pool size increases.

(Note, however, that the game structure — its underlying virtual reels — and the probability of any outcome appearing on the gaming machine remains unaltered.)

Indeed, with such jackpots, the expected payoff on further play exceeds 100 per cent once the pool gets sufficiently close to the maximum amount. As an illustration, say that the jackpot must go off at an amount less than or equal to \$10 000, and the electronic display on the machine shows that the current pool is \$9 999.99. Suppose that 2 per cent of any bet goes into the pool. At that point, gamblers would *know* that any bet of more than 50 cents would win the jackpot. The first player to bet this or a larger amount on the bank of linked machines would win the jackpot. Say that there are 5 linked machines being played. Each gambler would lay a bet of 50 cents, hoping that they would be the first to trip the jackpot. Each gambler would have a one in five chance of winning \$10 000 (with an expected value of \$2000) for a stake of 50 cents: an expected rate of return of 399 900 per cent.

In *standard linked progressive systems or linked jackpots*, a proportion of each bet is added to the (displayed) pool. Payment of the jackpot is triggered when a given combination of symbol occurs on a given machine. Unlike mystery linked jackpots, the probability of the winning combination is fixed — and is determined by the underlying nature of the reels on the gaming machines. The expected payoff from a given bet still increases progressively because the jackpot pool increases.

In the event that the pool reaches the maximum allowed pool size (for example, \$100 000 in NSW), then additional bets enter a new pool. In that instance, the first machine to get the winning symbols wins the jackpot from the initial pool, but not the accumulated money in the new pool.

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The Victorian InterChurch Gambling Taskforce noted that the potential to win a large linked jackpot was one of the reasons that EGM gamblers break their pre-commitment decisions:

... the Taskforce understands that a mix of prizes encourages gamblers to gamble for longer and spend more money than they otherwise would. .... The Taskforce strongly supports a restriction of linked jackpots, as these do encourage gamblers to gamble beyond their own pre-commitment limits. (sub. 220, p. 17)

On the other hand, while McMillen considered that many regular gamblers preferred jackpot machines to other EGMs, she was unaware of research showing a link between large prize jackpots and problem gambling:

During my experience as a regulator (1990–2003), it also was clear that EGM expenditure increased in venues when they installed jackpot machines, especially machines that offered very large prizes. ... To my knowledge, there ... has been no reliable research into relationships between the size of machine prizes and problem gambling. (sub. 223, p. 27)

Moreover, she observed that the Australian gambling public has become accustomed to fast machines and large-prize jackpots and:

... it could be difficult for regulators to retrospectively slow down machines or remove linked jackpots without a consumer backlash. (sub. 223, p. 25)

Consistent with this view, the gambling industry considered that jackpots were popular and entertaining features of EGMs, with little evidence of harmful effects (box 11.8). Maxgaming, a licensed monitoring operator of EGMs and operator of jackpots (and a subsidiary of Tattsgroup), said that it had investigated the relationship between jackpot size and gambling behaviour on EGMs, but found no evidence of any research having been conducted into this matter. However, it drew attention to a UK report into lottery gambling that noted that:

It is recognised that problem gamblers are attracted to the continual reinforcement of winning that EGMs provide, and that pay schedules on individual EGMs are designed to provide ‘small and often’ wins. Large ... jackpot prizes on the other hand are triggered relatively infrequently in any given venue. Consequently, they are not regarded as particularly achievable and game play is therefore not motivated out of an expectation of winning one. The jackpot levels ... fall into the ‘nice if it happens’ category in similar fashion to prizes in the various lotteries, Lotto and Keno. (sub. DR302, p. 13)

Nevertheless, Maxgaming noted that the NSW Office of Liquor, Gaming and Racing, which has approved a jackpot of \$125 000 in clubs, will not consider higher jackpots:

... in the absence of valid and reliable research into whether larger jackpots have any impact on the level of problem gambling. (sub. DR302, p. 13)

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(The highest jackpot on offer in NSW is operated by Star City Casino featuring a \$1 million upper level (sub. DR302, p. 13).)

### **Box 11.8 The industry's view of jackpots**

The GTA said that jackpots provide 100 per cent return to players, as 'all the money shown on the jackpot meter(s) must be paid to players':

GTA and its members regard jackpots as a simple tool for increasing Return To Player ... thereby providing players with increased value for money. GTA perceives no reason that changes should be warranted. (sub. DR344, p. 23)

Clubs Australia said that people can choose whether to play a jackpot-enabled machine or not. They are used 'to increase the options and entertainment value of gaming by making it appeal to a wider audience':

... anti-poker machine commentators believe that jackpots increase problem gambling by enticing people to play for longer in the hope of a big win, while some hypothesise that small, frequent wins and free spins constitute 'reinforcement' that encourage punters to play longer. ... there is insufficient evidence to support either argument. ... ClubsAustralia cautions governments against accepting the conjecture of anti-gambling activists. (sub. DR359, p. 88)

Maxgaming said that offering large jackpots adds to a player's enjoyment 'but like winning Lotto, is not regarded as being easily achievable to win':

... and therefore large jackpots are viewed as unlikely to be a large contributing factor in player behaviour with respect to problem gambling for the majority of EGM players. (sub. DR302, pp. 13–14)

Overall, the Commission has not reached a definitive conclusion on the impacts of jackpots. They are a popular feature with consumers. However, prima facie they may accentuate harm for some consumers, particularly in the face of misperceptions about how they work, or failure to realise that the proportion of the return to player embodied in a jackpot prize implies a lower return to player for the main game, and the belief held by some that jackpots are worth pursuing as a means to recover past losses. Further research is required on the relationship between jackpots and harmful play. However, the need for this would be reduced were governments to implement some of the other harm minimisation recommendations in this report.

#### RECOMMENDATION 11.3

***Governments should initiate research on the potential for jackpots to exacerbate the problems some people face with their EGM gambling, with consideration given to the further regulation of jackpots if they pose significant risks to gamblers.***