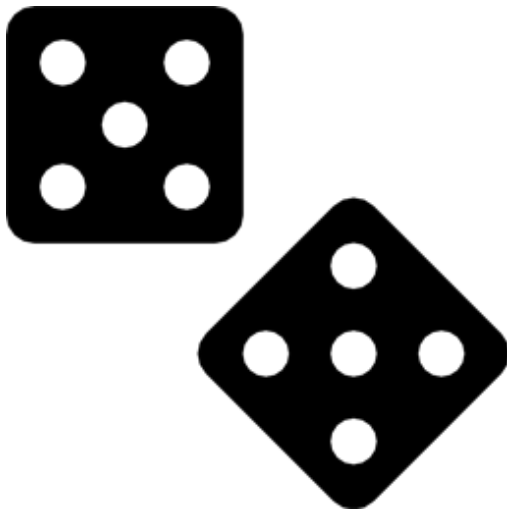# NatCen

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Patterns of play: analysis of data from machines in bookmakers

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Executive summary

Introduction

This report describes for the first time, transactional information collected by gambling machines in bookmakers, in Great Britain. Category B machines have become a key area of interest in recent years among both policy makers and the media, particularly B2 machines found in bookmakers. These machines allow gamblers to stake up to £100 at each bet. Each bet, or transaction, is recorded by the machine along with its outcome. These transactional data – how much money gamblers put into the machines and how much is paid out – have not been examined before. This report will help policy makers better understand how, when and where these machines are used.

Method

Data was provided from the five main bookmakers in Great Britain (Betfred, Coral, Ladbrokes, Paddy Power and William Hill) and was analysed from September 2013 to June 2014. The analysis presents the data from gambling machines over a number of key areas of interest: the number of bets made, sizes of stakes (including stakes at the maximum amount allowed on the machines), net expenditure, length of gambling sessions, and types of games played. Data for each area of interest were broken down by *where* the bets were placed (region, local levels of deprivation and population density) and *when* the bets were placed (time of the day, days of the week and month) and *what* types of games were played. Gambling machines allow gamblers to play games that fall into different legislative categories and the analysis divided the gambling sessions into B2 only sessions which have a maximum stake of £100 and B3 only sessions which have a maximum stake of £2.

The report refers to two key measures to describe the data: the mean, often known as the average and the median which is the middle value[1].

Findings

Number of bets

Between September 2013 and June 2014 more than 6.7 billion bets were placed on gambling machines.

- Regional analysis revealed that machine use was most prolific in London, and less so in Wales though it should be noted that this analysis might be skewed to some extent by the distribution of bookmakers across the country.

- Most bets were placed in the afternoon: around 650 million bets were placed each hour between 1pm and 5pm over this time period.

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[1] The mean is calculated by summing all of the values and dividing the total by the number of values. The median is the value in the middle when all values are listed in order from low to high. The report uses both mean and median values because means are affected by very large or small values (outliers) at each end of the range of values, whereas the median is not; reporting both measures gives an indication of the shape of the data.

- More bets were placed on Fridays and Saturdays than other days: more than 1 billion bets were placed on these days, over the months analysed.

- March, April, May and June 2014 were the months when the most bets were placed with more than 700 million bets placed on machines in each of these months, possibly a result of increased footfall in bookmakers due to major sporting events.

- The greatest number of bets was placed on sessions which involved B3 category games only (which have a maximum stake of £2): more than 2.5 billion over this time, compared to sessions involving B2 category games only where 1.9 million bets had been placed. This is very likely due to the quicker speed of play on B3 games.

Stake sizes

The median stake size per bet was £1 and the mean £5.13 indicating that the amount of money staked per bet increased dramatically at the upper end of the range. The stake sizes ranged from 20p or less at the lower end[2] to £25.25 or more at the upper end[3].

- There were large differences in stake sizes depending on the category of games that were played: sessions involving B2 games only had a mean stake size of £14.07 whilst sessions where only B3 games were played had a mean of 87p.

- London had the highest mean stake size per bet at £6.91, followed by the North West and West Midlands (both £5.04). The lowest mean stake size was in the East Midlands (£3.92).

- Mean stake sizes were higher in the most densely populated areas in Great Britain: £5.81 compared to £4.70 in less densely populated areas.

- There were sharp increases in the mean stake size in the evening: stake sizes slowly rose throughout the day to £5.76 at 8pm then rose to £6.57 at 9pm and £11.10 at 11pm.

Net expenditure

Net expenditure was calculated by subtracting the amount of money the gambler won in a session from the amount lost. The median net expenditure was £5 per session, indicating that on average gamblers lost £5 overall in each session; and the mean £7. Net expenditure ranged from a maximum loss of £13,776 in a session, to a maximum win of £13,532 and the data showed that between 70 to 80% of all machine gaming sessions resulted in a net loss to the gambler.

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[2] At the 5th centile
[3] At the 95th centile

- There was a clear north/south divide in terms of the amount of money gamblers spent on machine gambling. The highest median net expenditure was in the South East (£5.20), London, East of England, East Midlands and South West (£5) and the lowest in Scotland and the North East (£4).

- Median net expenditure was less in the most deprived areas in England (£4.50) than in less deprived areas (£5) and the same pattern was seen in Scotland and Wales.

- There was a large different in net expenditure depending on the category of game played: sessions involving both B2 and B3 games had a mean net expenditure of £14.16, compared with only £6.31 for B2 only gambling sessions and £6.37 for B3 only sessions.

Maximum stake

B2 category games have a maximum stake of £100 and the proportion of sessions involving B2 games that reached this maximum stake was analysed. The vast majority of sessions did not reach the £100 stake (97%). Only 1% of all gaming session started at the £100 stake and a further 2% reached the £100 stake before the end. Although most sessions did not reach the £100 stake, the proportion that did, doubled between 10pm and midnight.

Session length

The median gaming session was nearly 4 minutes long and the mean 11 minutes. Sessions ranged from 19 seconds or less[4] to 36 minutes or more[5].

- Gambling sessions tended to be longer in the South than the North, with the longest median sessions being recorded in the East of England at 4 minutes 35 seconds, and the shortest in the North West at 3 minutes 19 seconds.

- Sessions were shorter in the most deprived areas in England: 3 minutes 49 seconds compared to 4 minutes 8 seconds in less deprived areas, and the same pattern was seen in Scotland and Wales.

- Sessions where both B2 and B3 games were played were much longer with a median of 12 minutes 16 seconds, compared with sessions involving B2 games only (3 minutes 18 seconds) or B3 games only (3 minutes 57 seconds).

Session types

Machines in bookmakers offer gamblers a range of different game content: the main options are B2 games which have a maximum stake of £100 and B3 games which have a maximum stake of £2. Nearly three-quarters of all sessions involved gambling

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[4] At the 5th centile
[5] At the 95th centile

on B2 games only (73%), 16% B3 games only and 7% a mix of different types of games.

- B2 games were the most popular type in Great Britain, but particularly so in the North West, Scotland and the West Midlands where more than 75% of all sessions involved B2 games only. Sessions where only B3 games were played were the most popular in the East Midlands and the South West.

- The popularity of B2 games increased steadily throughout the day, with a dramatic rise in the proportion of all sessions that involved B2 games only in the evening, where the proportion rose from 75% at 8pm to 84% at 11pm.

Types of B2 games
The most popular type of B2 game played on machines in bookmaker's was roulette: nearly two-thirds of all B2 games played were roulette style games (64%).

- Roulette was most popular in London, with 75% of all B2 games played in London being roulette, compared with 56% in the East and South West of England; 56% in Wales and 55% in Scotland.

- The popularity of roulette increased in the evening. Around two-thirds of all games played were roulette until 8pm, when the proportion rose from to 72% at 9pm to 81% at 10pm.

Conclusion

This analysis has revealed detailed patterns of how gamblers play category B machines in bookmakers. Four themes were particularly salient.

First, there were some key regional differences apparent with London standing out from all other areas: here the most bets were placed, at the highest stake values and the most money was lost. Gamblers in London tended to play longer sessions and B2 games, in particular roulette, were more popular here than elsewhere in the country. Although London has a greater population density than other areas of the county, the number of bets placed per person was still higher than anywhere else suggesting Londoners who play these machines have higher levels of engagement with them than others. These regional differences are important as they point to certain factors that might be useful when looking at localised risk profiles.

Second, it was clear that those who play machines after 8pm at night have very distinct patterns of play: stake sizes rose dramatically from 8pm, the proportion of sessions that reached the maximum stake doubled between 10pm and midnight and B2 games particular roulette increased in popularity in the evening. This apparent trend needs further investigation, however it suggests that those gambling late at night might be a group at greater risk of harm.

Third, machine play appears to be affected by major sporting events – with an increase in the number of bets placed in the months where large sporting events occurred.

Analysis over a longer period of time is needed to explore seasonal effects on machine gaming.

Finally, the mixing of different types of games (i.e., B2 and B3) was also associated with differential machine play. These sessions were longer and where gamblers tended to lose more money.   Further investigation is needed to explore how and why people switch and change between B2 and B3 content in order to understand the impact of this.

This report systematically documents, for the first time, how, when and where machines in bookmakers in Great Britain are played. The data presented in this report serves as a baseline against which changes can be traced and highlights key issues which warrant further research.

1 Introduction

Category B gambling machines have become a key area of interest in recent years among both policy makers and the media. This is particularly true of category B2 machines found in bookmakers. These machines allow gamblers to stake up to £100 at each bet. Each bet, or transaction, is recorded by the machine along with its outcome. These transactional data – how much money gamblers put into the machines and how much is paid out – have not been examined before. This report describes the transactional data from category B machines found in bookmakers for the first time and will help the policy makers better understand how, when and where these machines are used.

1.1 Policy context

Interest in gambling-related harm has increased over the last ten years among policy makers, the media and the public. Since the implementation of the Gambling Act 2005, there has been increasing demand for evidence about gambling behaviour and its impact on society and individuals. Specific interest in gambling machines, especially those found in licensed bookmakers' offices, has also increased in recent years. In 2010 the Responsible Gambling Strategy Board made examination of the relationship between gambling machines and behaviour a strategic priority[6] and in January 2013 the government also called for further exploration of the relationship between category B machines and behaviour.

To date, research has focused on patterns of gambling behaviour using information collected from individuals. For example, the British Gambling Prevalence Survey series (BGPS) looked at people's participation in gambling and provided valuable data about changes in behaviour and attitudes over time. What this type of research was unable to do was to provide detailed insight into specific patterns of behaviour at a micro-level. Secondary analysis of the BGPS[7] looked at machine play and provided some insight into player types but did not contain detailed information about specific machine play

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[6] See Responsible Gambling Strategy Board (2012) *Strategy 2012.* Available at: https://www.rgsb.org.uk/publications.html

[77] Wardle, H., Sutton, R., Philo, D., Hussey, D., Nass, L. (2013) *Examining machine gambling in the British Gambling Prevalence Survey.* Gambling Commission.

behaviour. For example, a key area of policy interest is gambling expenditure. Collecting information about gambling expenditure within a survey is notoriously difficult because gamblers often do not monitor how much they are spending and, when asked, tend to overestimate their winnings and underestimate their losses. A further complicating issue is how to collect data about reinvested winnings (i.e., gambling with the house's money). Robust information about gambling expenditure could help to understand the financial impact of certain policies and may help identify those with potentially risky patterns of play.

To date, this level of detailed information has not been available to researchers or policy makers. However, detailed expenditure data <u>are</u> being routinely captured by some gambling operators and there is a growing demand to make use of this data for research purposes. Not only is this type of administrative data more reliable in terms of expenditure, and easier to collect, it also has the benefit of not incurring the usual costs associated with large scale surveys.

Increased concern over category B gaming machines and greater interest in the use of administrative data led the Responsible Gambling Trust (RGT) to commission a programme of research into these machines. This was with the specific aim of examining if and how industry data could be used to identify harmful patterns of play.

One of the first studies the RGT commissioned was a scoping study to explore how industry-held data might be able to contribute to these broader aims and objectives. This study assessed what type of data gambling industry operators hold and retain on category B gaming machines and how these data might be used for research purposes.[8] The Scoping Study found that there were three different types of data generated by operators:

- **Transactional data.** This is the financial accounting data that monitors what money is put into category B machines and what money is paid out. In licensed betting offices (LBOs) every single financial transaction is recorded, whereas in other sectors such as bingo halls, arcades and casinos these transactions are only recorded at aggregate level, for example once a day or once a week.

- **Player tracking data.** These are data that are generated from loyalty card programmes, similar to other reward card schemes. Transactional data such as how much an individual lost or won, and other data such as how long an individual played for and the time and date of play are also recorded.

- **Proxy-session data.** These are transactional data that has been sliced up by analysts into discrete chunks of play based on rules of what might constitute the start and end of a session of play. Rules governing identification of proxy sessions of play varied between operators and the accuracy of these data was largely unknown in the industry.

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[8] Wardle, H., Seabury, C., Ahmed, H., and Coshall, C. (2013) *Machines 3: Scoping the use of industry data on Category B gaming machines*. Responsible Gambling Trust. Available at: https://www.rgsb.org.uk/publications.html

One of the recommendations of the Scoping Study report was to produce descriptive statistics of these **transactional data from category B machines** in order to examine patterns of play and how they vary. The aim of this project was to fill this gap.

In consultation with the Responsible Gambling Strategy Board, the Gambling Commission and the RGT,[9] the decision was made to focus this research on category B machines found in bookmakers, as these were of most policy interest and also had better quality transactional data available than other sectors.

1.2   Aims and objectives

The overall objective of this project was for the first time to document the pattern of betting transactions on machines in bookmakers. The research questions, generated in consultation with the Gambling Commission and the RGT, and based on the gaps identified in the Scoping Study, were:

- What does the distribution of stakes look like for a given time period?
- How many bets are staked for a given time period (including stakes at the maximum level)?
- What does the pattern of expenditure look like over a given time period?

Furthermore, it was felt it was important to look at how staking and expenditure patterns varied by:

- regional considerations such as where the machine is in, levels of deprivation and population density;
- time considerations such as the time of day, the day of the week and the month when the machine was played; and
- content considerations, such as what categories and types of games were played.

In this report we focus simply on describing the patterns evident in the data, as this has never been published before. The data is anonymous as it is simply recording money in and money out of the machine and is not identifiable to individuals. Therefore we cannot make assertions about whether people with higher or lower levels of play patterns are more likely to be problem gamblers. This is being investigated in other research within the RGT's Machines Research Programme. This has shown that patterns of play between problem and non-problem gamblers overlap and even at the highest staking levels, for example, these groups are not mutually exclusive; indeed some problem gamblers bet at very low stakes.[10] We therefore caution readers against making the assumption that those with longer durations of machine play or higher expenditure or stakes are synonymous with problem gamblers. This remains to be investigated and is beyond the scope of this study.

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[9] The Responsible Gambling Strategy Board is an independent body responsible for providing advice to the Gambling Commission and government about gambling policy. The Gambling Commission is the industry regulator and the Responsible Gambling Trust is an independent charity responsible for raising money to fund research, education and treatment, and commissioned this research.

[10] See Wardle et al. (2014) *Gambling machines research programme: Report 2 – findings from a survey of loyalty card customers*. London: Responsible Gambling Trust.

1.3 Machines in bookmakers

Machines in bookmakers (formerly known as fixed odds betting terminals) offer a range of different games to gamblers with different maximum stakes and prizes, and players are able to switch between different types of game during a session of play. These games are:

- B2 games which allow a maximum stake size of £100 and a maximum prize of £500;

- B3 games which allow a maximum stake of £2 and a maximum prize of £500;

- B4 games which allow a maximum stake of £2 and a maximum prize of £400; and C games which allow a maximum stake of £1 and a maximum prize of £100.

Players can switch between these games at any point and also increase or decrease their stake size, depending on the maximum limits of the game.

1.4 Report structure

This report describes for the first time the transactional data collected by machines in bookmakers. Chapter 2 explains what data was used, and how it was analysed. Chapters 3 to 9 detail the findings from the analysis each taking a key area of interest and describing the data overall, at aggregate level and then in detail broken down by a number of key variables (such as region or deprivation). Chapter 3 looks at the number of bets that were placed over the period that the data was available. Chapters 4, 5 and 6 look at the money spent on these machines. Chapter 4 looks at sizes of stakes that were placed on gambling machines; Chapter 5 at the net expenditure, that is the amount of money gamblers put into machines during a gambling session minus the amount of money they take out. Chapter 6 examines the proportion of gambling sessions where the maximum stake (£100) was bet. Chapter 7 describes how long gambling sessions were. Chapters 8 and 9 focus on the different types of games played on machines; Chapter 8 looks at the different category B games that were played during gambling session (B2 and B3 games) and Chapter 9 looks at B2 games in more detail. The final chapter, Chapter 10, summarises the findings and draws together conclusions.

2 Method

Transactional data from gambling machines in the five main bookmakers in Great Britain (Betfred, Coral, Ladbrokes, Paddy Power and William Hill) were provided for September 2013 to June 2014. Data collected from the machines were combined with geographical data from the census to provide a detailed breakdown of data in key areas of interest. Analysis was carried out by Featurespace and reporting by NatCen Social Research.

2.1 Data

The transactional data were provided to the research team by the two suppliers of bookmakers' machines: Inspired Gaming, who supply Betfred, Paddy Power and William Hill; and Scientific Gaming, who supply Coral and Ladbrokes. Data was not requested from independent bookmakers.[11] Discussing this with operators and the Association of British Bookmakers suggests that the data obtained represents around 85-90% of gambling machines located in bookmakers in Great Britain.

2.1.1 Timeframe

Data were supplied for the ten months from the 1st September 2013 to the 30th June 2014. Initially data covering a 12-month period was requested but this was not available for July and August 2013 due to technical issues with one supplier. We acknowledge this presents a potential limitation with the data as it does not cover a full year period, meaning we cannot look fully at seasonal effects.

2.1.2 Data attributes

The data used to generate the findings for this report comprised:

- Transactional machine events: for example records relating to how much money gamblers put into machines and how much money they took out; bets placed and associated winnings.

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[11] The main five bookmakers had all agreed with the Minister for Sport to support this research and to give access to their data. Independent bookmakers were not included as this would not have been practical given a) the number of different operators to involve in the process, and b) the timescales set by the client for the research.

- Data about games: the categories and types of games available on each machine. In particular the legal category of each game (B2, B3 or other).

- Data about venues: the postcode of the venue where the machine was located.

All machine and game data were provided by Inspired Gaming and Scientific Gaming. Information about area deprivation, region and population density were added to these data using the Office for National Statistics census data and geography files. This was merged with the transactional data using the postcode of the venue.[12]

2.1.3 Data received

Featurespace were responsible for the management and analysis of the data and received data relating to:

- 8297 uniquely identifiable shops;
- 32,650 uniquely identifiable gaming machines;
- 9,550,448,367 machine events.

After receiving these data, Featurespace transferred this into a common format so that information from all operators could be combined and used consistently in the analysis.

2.1.4 Data quality

Extensive checks were carried out on the data provided. In, general no significant issues were found in the data from the machine suppliers, with the exception of data about the time at which bets were placed. A small proportion of bets are recorded as being placed between midnight and 7am when bookmakers would not have been open. After investigation these appear to have been random errors that may have occurred when the machines were first turned on, and before the correct time on the machines had been updated. Because the number of these errors appears to be relatively small (several hundred) compared to the overall number of bets placed during the core opening hours of bookmakers (tens of millions), we do not believe the overall quality of the time of day data to have been compromised. This issue has been reported back to the operators and suppliers for them to investigate and amend.

During data checking another error was identified about the maximum stake value. The checking process identified some sessions where it appeared that stakes of over £100 had been placed. Investigations revealed that there was a particular game where the maximum the player was allowed to put into a machine per bet was £100 however, they were allowed to reinvest their winnings on top of the original stake at the next bet which meant that a stake of over £100 was recorded. The supplier of the game identified this as an error in the game and as such sessions where this had happened were excluded from the analysis.

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[12] 15 bookmakers were excluded from area deprivation and population density analysis because of inaccuracies in the address and postcode information.

2.2 Analysis

The key areas of interest were agreed with the RGT prior to the start of the project and were informed by the Scoping Study report[13] which identified evidence gaps that analysis of transactional machine data could inform. These areas were:

- the number of bets placed over the ten months for which data was supplied;

- stake sizes per bet, including how many bets were placed at the maximum stake of £100 for category B2 machines;

- net expenditure per session – how much money a gambler put into the machine per session minus how much money they took out;

- session length – how long gambling sessions were, based on the proxy session algorithm calculated by Featurespace (see below and Appendix H for more details);

- the types of games that were played during gambling sessions – whether the games were a B2, B3 or other category game, and what types of games were played.

As well as looking at these data at aggregate level, each of the areas of interest are broken down by the following variables.

Geographical variables

- The region of Great Britain in which the machine was located, as defined by Government Office Region (GOR). This includes: Scotland, Wales, and within England the North East, North West, East Midlands, West Midlands, East of England, London, the South East and South West.[14]

- The level of deprivation of the area in which the machine was located: deprivation was calculated using the Index of Multiple Deprivation (IMD) and machines were assigned to either the most deprived group (in an area in the 80th centile of deprivation or greater) or the less deprived group (all other areas). England, Scotland and Wales have different indices of deprivation that cannot be combined; deprivation levels in the three countries were examined separately.

- Population density derived from census data: machines were split into being in areas which were most the most densely populated (80th centile of population density or greater) and the less densely populated (all other areas).

Time variables

- The time of day at which the bet was placed: bookmakers have a range of different opening hours depending on demand in the local area. Therefore, a wide range of hours, from 8am to midnight, was examined.

- The day of the week on which the bet was placed.

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[13] *Ibid.* Wardle, *et al.* (2013).

[14] There were a small number of machines which were located in areas such as the Isle of Man and Jersey which do not group together into a region and so are not reported in the geographical breakdowns of the data.

- The month in which the bet was placed.

In addition, the content of the session was examined. This examined whether B2 only games were played, B3 only games, or a combination of both types of games were played.

2.3 Analysis and table conventions

2.3.1 Presentation of results

Because analysis is based on many millions of transactions, formal statistical testing is not applied to these data. Formal use of statistical significance in analysing the differences could be misleading because any difference, no matter how small, can be statistically significant given a large sample size. Furthermore, these data represent a 'census' of all machine play between September 2013 and June 2014 for the five major bookmakers. It is not a sample of a broader population but rather represents the whole population for these bookmakers. Therefore, this report simply describes the patterns observed. Where other factors need to be taken into consideration, such as population density or area characteristics, this is highlighted.

All analysis on which the commentary is based is shown in the relevant appendix for each chapter. For continuous variables (e.g., stake size) the tables show the full distribution of the data, which includes:

- the minimum value observed;
- the maximum value observed;
- the distribution of the data grouped into centiles, ranging from the 5th to the 95th centile;
- the median value (the 50th centile, this is the middle value when the data is ordered from low to high);
- the mean (this is the average of all the values, so this can be skewed by extreme outliers).

In the commentary, we focus on the median and mean values, though where appropriate discussion is made of some of the maximum values and values in the 95th centile (i.e., the top 5%).

For categorical variables such as the proportion of sessions which reached the maximum stake, percentages of each category were provided. In these tables not all percentages add to 100; this is because of rounding.

2.3.2 Use and definition of sessions

To be able to analyse some of the main areas of interest, such as length of time the machines were played for, the transactional data had to be divided into discrete chunks based on what looked like a complete 'session' of play. A 'session' is defined as someone starting to play a machine, gambling continuously on that machine and then stopping. However, the transactional data is not identifiable to an individual and to identify discrete sessions a range of different conditions were created to partition data.

These conditions are broadly that a session is deemed to have started when cash is inserted into a machine which has previously been dormant for a period of time. A session is said to have ended when a player either cashes out or plays to the extinction of their funds and the machine is then dormant again. Fuller technical details are provided in Appendix H.

This process means that some error may be introduced into the classification of sessions and that we are not able track individuals. Each session is treated as an independent event as we are unable to see if a range of sessions belong to the same person. For example, it is highly likely that an individual may play a machine, stop for a short break, and then start again. Because we cannot link sessions to individuals, this is treated as two independent sessions in the data. In short, a session does not equate to an individual and a session does not equate to a visit to a bookmaker's, as people may have more than one session of play per day. This is important to bear in mind when reviewing results.

3 Number of bets placed

More than 6.7 billion bets were placed between September 2013 and June 2014. People in London placed the greatest number of bets and people in Wales and the South West the fewest. The afternoon, and Fridays and Saturdays, were the times when the greatest numbers of bets were placed. Sessions where B3 category games were played had the highest number of bets, compared with sessions that involved B2 category games.

3.1 Number of bets placed

Between September 2013 and June 2014, more than 6.7 billion bets were placed on gambling machines in the five major bookmakers.

Total number of bets between September 2013 and June 2014

6,768,053,704

How the number of bets placed varied by region, by time period and by game type is presented in the sections that follow. Tables with the full details of this analysis are shown in Appendix A.

3.2 Number of bets by region

The number of bets placed varied by GOR, with more than 1.5 billion bets being placed in London and the fewest bets being placed in Wales (227 million). Part of this difference may be due to differences in population density: more people live in London than Wales and therefore it is unsurprising that more bets were placed in London (Figure 3:1).

To take this into account, an estimate of number of bets placed between September 2013 and June 2014 per adult (aged 18 and over) for each region was computed. This divided the number of bets placed by the number of people in each area (see Figure 3:2). There was still a stark variation by GOR, with London having the highest number of bets per person and Wales the lowest. This means that when population density is taken into account, those people gambling on machines in bookmakers in London place more bets than their counterparts in other regions of Great Britain. Likewise, the North East had one of the lowest number of bets placed overall but this is related to the lower population. When this is taken into account, the number of bets placed per person in the North East is similar to areas like the North West or Scotland.

However, it should be noted that these data do not include bets from all gambling machines in Great Britain, only those placed in the five major operators: Betfred, Coral, Ladbrokes, Paddy Power and William Hill; and independent bookmakers have been excluded. Therefore, the data in Figure 3:2 and Figure 3:2 may partially reflect the distribution of the five major operators across the country. If bets from machines in independent bookmakers were included these regional differences might change. For example, the North West has a higher proportion of independent bookmakers than some other regions of Great Britain.

Figure 3:1   Number of bets by region (millions)

Base: All machine data in England, Scotland and Wales

Figure 3:2   Number of bets per adult population member, by region

Base: All machine data in England, Scotland and Wales

3.3 Number of bets by deprivation

The number of bets was broken down by area deprivation across England, Scotland and Wales (see Appendix Table A.2). Deprivation was calculated using the IMD and machines were assigned to either the most deprived group (in an area in the 80th centile of deprivation or greater) or the less deprived group (all other areas). England, Scotland and Wales have different indices of deprivation that cannot be combined so the three countries are examined separately here.

Data showed that in England 40% of all bets (2,339,082,850 bets) were placed in venues in the most deprived areas, while 60% (3,530,068,425) were placed in venues in less deprived areas. This closely reflects the distribution of bookmakers; 38% of bookmakers included in this study were in the most deprived areas of England and 62% in less deprived areas.

In Scotland 37% of bets placed were from the most deprived areas and in Wales the figure was 29%. This also closely reflects the distribution of venues by deprivation in these regions.

3.4 Number of bets by population density

The total number of bets was also broken down by population density, with comparisons being drawn between the most densely populated areas (80th centile) and the less densely populated areas of Great Britain.

Appendix Table A.3 shows that 38% of all bets placed (2,575,554,544) were placed in the most densely populated areas, and 62% (4,192,499,160) were in the less densely populated areas. This is not surprising; bookmakers tend to be located in areas that

are more densely populated. Therefore, the distribution of bets between more and less densely populated areas probably reflects the distribution of betting venues.

3.5   Number of bets by time of day

The number of bets placed by time of day is shown in Figure 3:3. Betting levels were highest in the afternoon; around 650 million bets were placed each hour between 1pm and 5pm over this period.

Base: All machine data between 8am and midnight
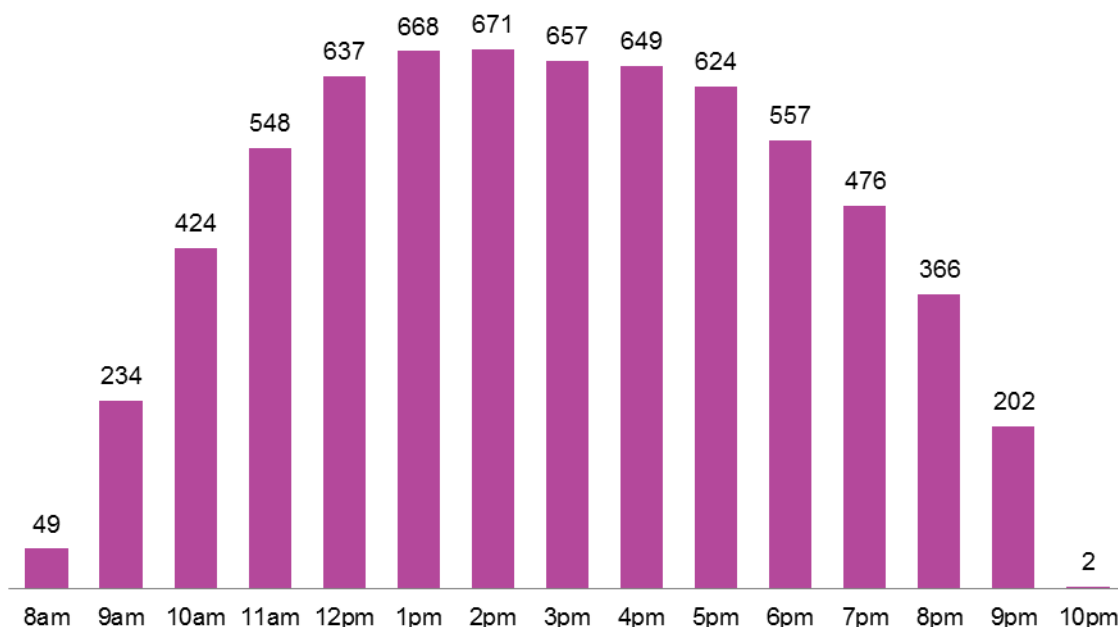
3.6   Number of bets by day of the week

The total number of bets between September 2013 and June 2014 was examined by the day of the week on which they were placed (Figure 3:4). Fridays and Saturdays were the busiest days, with more than one billion bets being placed on machines on these days, across the ten-month period. Sunday was the least busy day with three-quarters of a billion bets being placed on Sundays.

Figure 3:4   Number of bets (millions), by day of the week

Base: All machine data
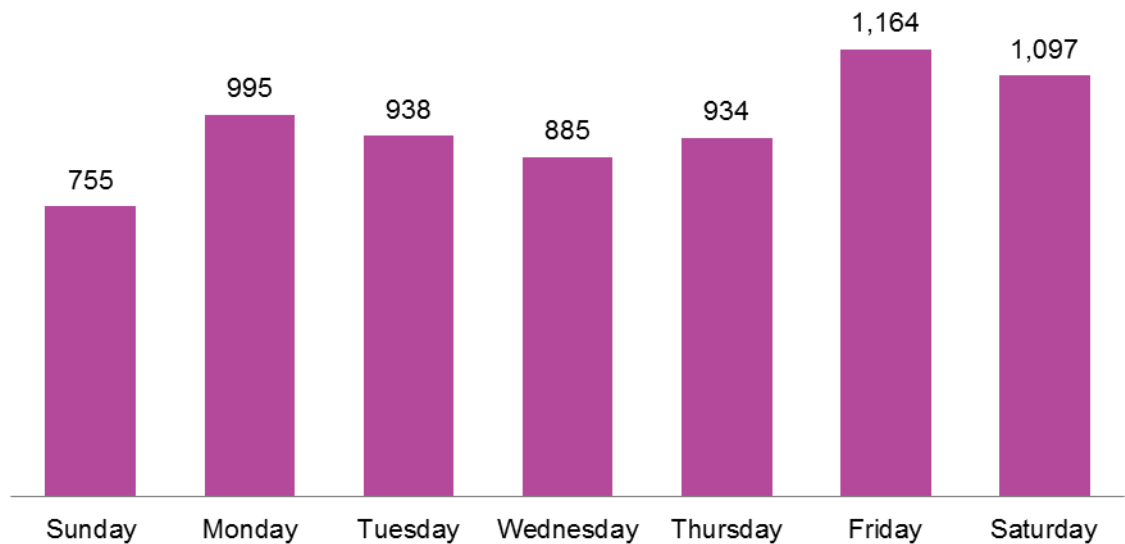
3.7   Number of bets by month

In the ten months for which data was provided, March to June 2014 were the busiest with more than 700 million bets placed on machines in these months (Figure 3:5). The fewest number of bets were placed in September, when 605.6 million bets were made.

Because data from previous years are not available, it is unclear whether this represents an upward trend or a seasonal variation. Events like the football World Cup took place in June 2014 which may account for some increased bets on machines in this period (due to increased footfall in bookmakers).

Base: All machine data

Bar chart values: Sep-13: 606, Oct-13: 638, Nov-13: 639, Dec-13: 676, Jan-14: 660, Feb-14: 648, Mar-14: 741, Apr-14: 714, May-14: 738, Jun-14: 708
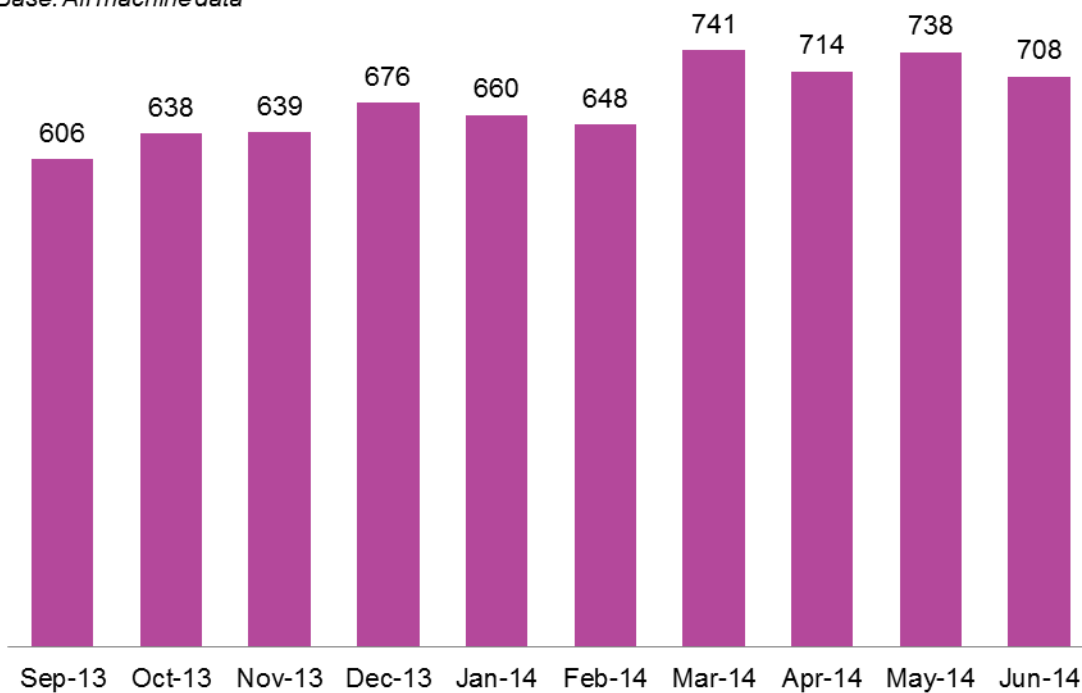
3.8   Number of bets by session type

The number of bets over the ten-month period was broken down by the different types of games played during each session (Figure 3:6). These were: sessions where only B2 games were played (maximum stake of £100); sessions where only B3 content was played (maximum stake of £2); sessions where both B3 and B2 content were played; and finally other sessions where only B4 or category D content was played.

The greatest numbers of bets were placed in sessions where only B3 games were played: more than 2.5 billion, compared to 1.9 billion placed in sessions where B2 only games were played. This is not surprising as B3 games operate on a quicker game speed than B2 games: B3 games have a game speed of 2.5 seconds whereas B2 games have a game speed of 20 seconds, meaning that for the same length of session more bets can be placed on a B3 game than a B2 game.

Figure 3:6   Number of bets (millions), by session type

Base: All machine data

Bar chart showing:

Session type	Number of bets (millions)
B2 only	1,927.7
B3 only	2,594.1
B2 and B3	1,507.3
Other	738.9
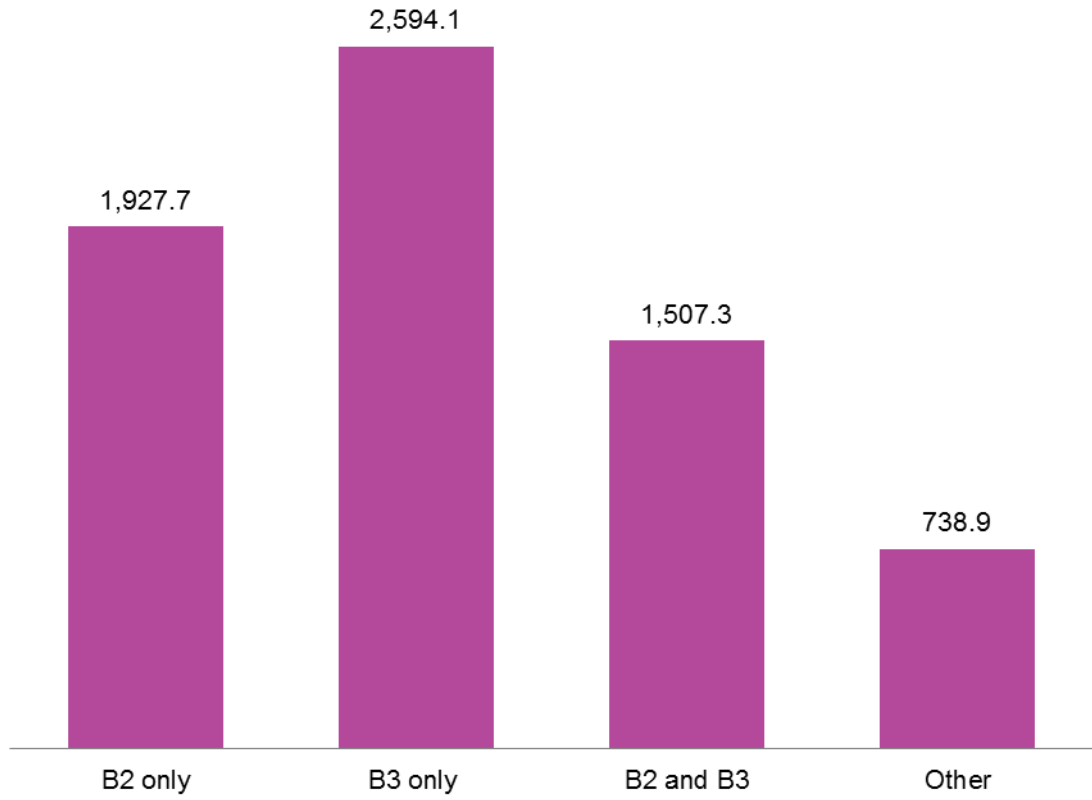
4 Stake sizes per bet

The median stake size per bet was £1 and this did not vary across most of the different groups examined. The mean stake size was £5.13 and this did vary, affected by some extremely high stake values. The highest mean stake was placed on machines in London and mean stakes increased significantly after 9pm.

4.1 Definition

This chapter presents data on stake sizes per bet. The data recorded by machines shows what the total stake size per bet was. It does not show the precise composition of the bet. For example, a bet of £5 on a roulette game could be a £5 bet on black or red or could represent five £1 bets on specific numbers. Only the total bet of £5 for that game is recorded in the data.

4.2 Stake sizes

In order to look at the range of different stake sizes per bet on machines in bookmakers, the 10th to the 90th centiles are presented in increments of 10. Minimum and maximum stake sizes per bet were heavily distorted by extreme outliers. Therefore, the 5th and 95th centiles are reported instead of the maximum and minimum to give an indication of the upper and lower ends of the range (Figure 4:1).

The median stake size per bet was £1. The mean stake size was higher at £5.13 per bet, indicating that there were some extremely high stakes bets affecting this value. Stake sizes ranged from 20p per bet at the lower end (5th centile) to £25.25 at the upper end (95th centile). The stake size remained at £2 or less up to the 70th centile, with sharp increases in the 90th and 95th centiles to £12.40 and £25.25 respectively.

The difference between the mean and median may also be partially explained by the type of games played. Whilst B2 games have higher maximum stakes and are the most popular form of activity, B3 games are played at lower stakes but bets can be placed on these games much more often (every 2.5 seconds as oppose to every 20 seconds). This difference means that median value across all game types is likely to move towards the lower end of the staking spectrum.

Base: All machine data

Median = £1.00
Mean = £5.13
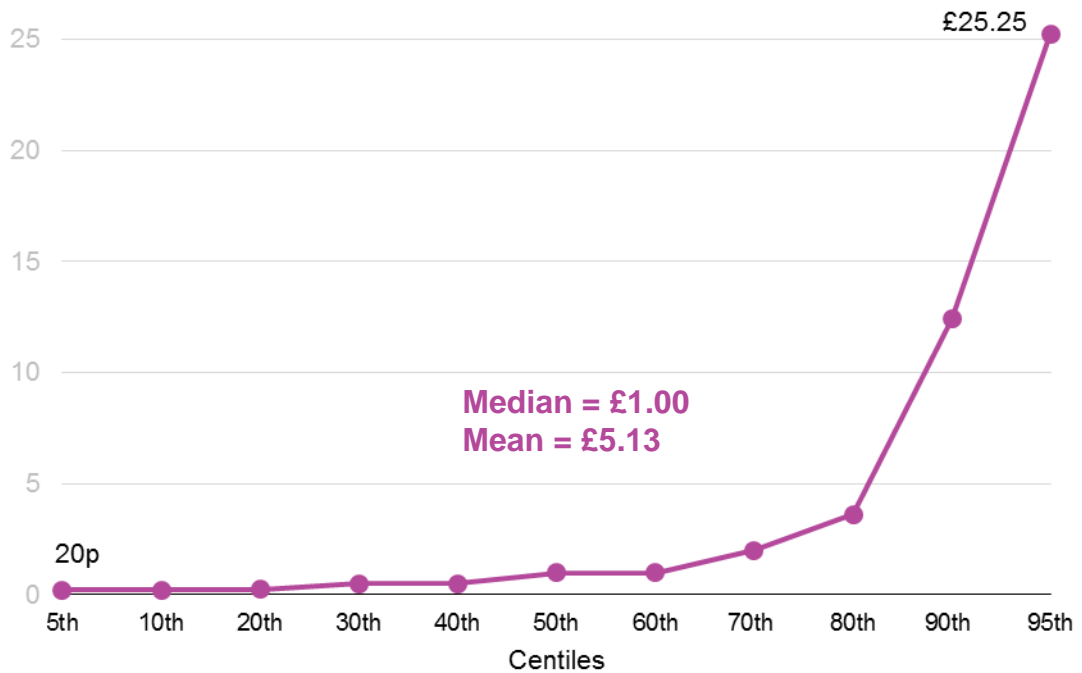
4.3   Stake size by region

To investigate patterns in stake size across Great Britain, mean and median stake sizes were calculated per GOR (Figure 4:2).

London had higher mean stakes size per bet than any other region

The median stake per bet was £1 and did not vary by region. However, mean values did vary. London had the highest mean stake (£6.91) followed by the North West and the West Midlands (£5.04). The lowest mean stake size per bet was recorded in the East Midlands (£3.92).

The distribution of stake size in London was highly skewed, with stake size ranging from 20p at the 5th centile to £38.20 at the 95th centile. These upper outliers are reflected in the difference between the mean and median values for London.

Mean stake size

Scotland
£4.31

North East
£4.07

North West
£5.04

Yorkshire
and Humber
£4.50

East
Midlands
£3.92

West
Midlands
£5.04

East of
England
£4.79

Wales
£4.49

London
£6.91

South West
£4.15

South East
£4.86
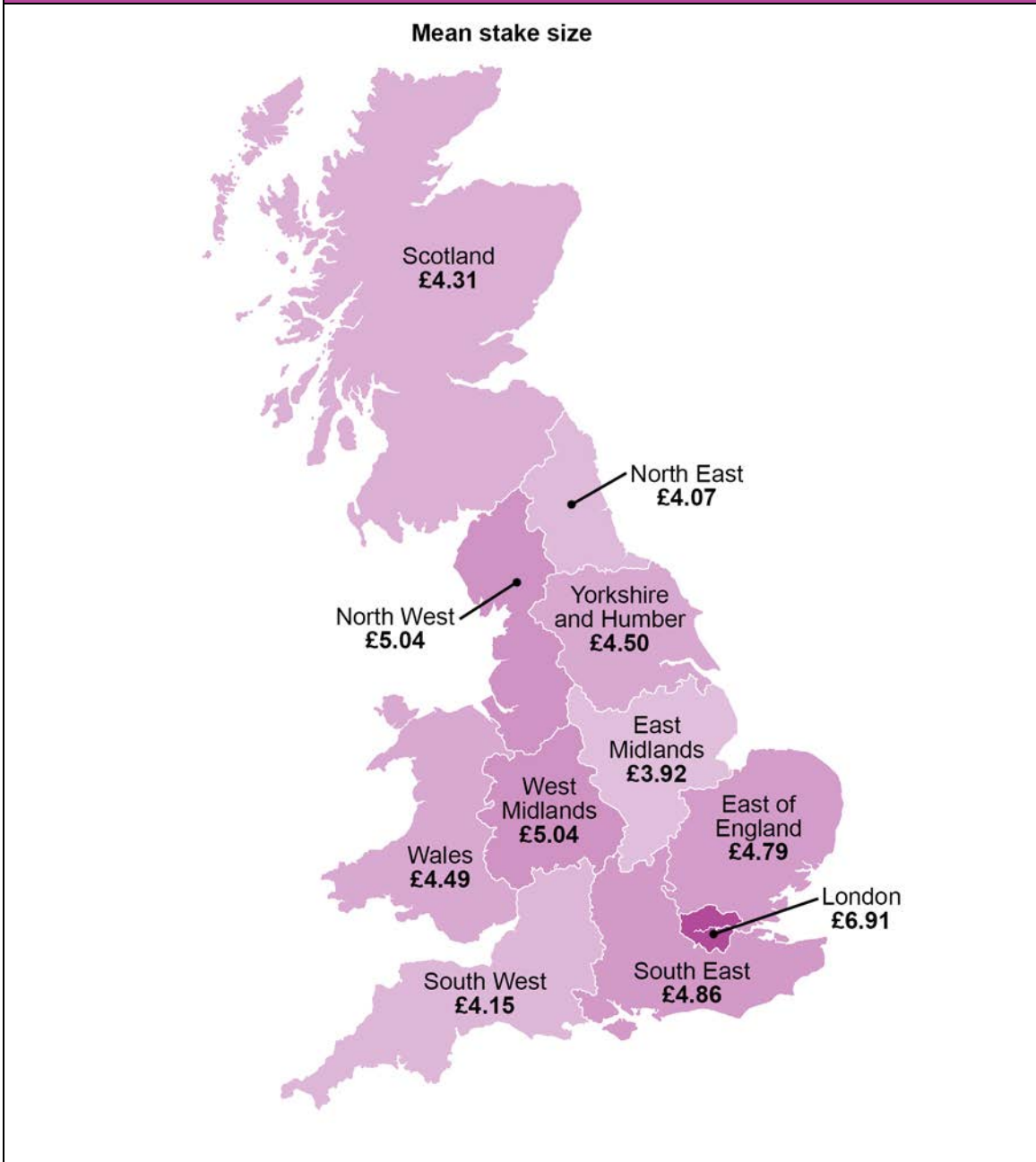
4.4   Stake size by deprivation

Stake size was assessed by area deprivation across England, Scotland and Wales (Figure 4:3). Deprivation was calculated using the IMD and machines were assigned to either the most deprived group (in an area in the 80th centile of deprivation or greater) or the less deprived group (all other areas). England, Scotland and Wales have different indices of deprivation that cannot be combined so the three countries are examined separately here.

The median stake of £1 per bet did not vary by level of deprivation across the different countries. Mean stake sizes were again higher than the median, reflecting larger stake sizes at the upper end of the range. Mean stakes were lower in the most deprived areas in England (£5.08) and Scotland (£4.00) than in less deprived areas (England £5.35, Scotland £4.48). In Wales, stake sizes were comparable between the most and less deprived areas.

Figure 4:3   Mean and median stake size by deprivation

Base: All machine data in England, Scotland and Wales

4.5   Stake size by population density

Stake size was also examined by population density, with comparisons being drawn between the most densely populated areas (80th centile) and less densely populated areas in Great Britain (Figure 4:4). Again, the median stake size per bet of £1 did not vary by population density, but mean stake sizes did vary.

Mean stakes placed in venues in the most densely populated areas were higher (£5.81) than stakes placed in less densely populated areas (£4.70).

Figure 4:4   Median and mean stake size by population density

Base: All machine data in England, Scotland and Wales
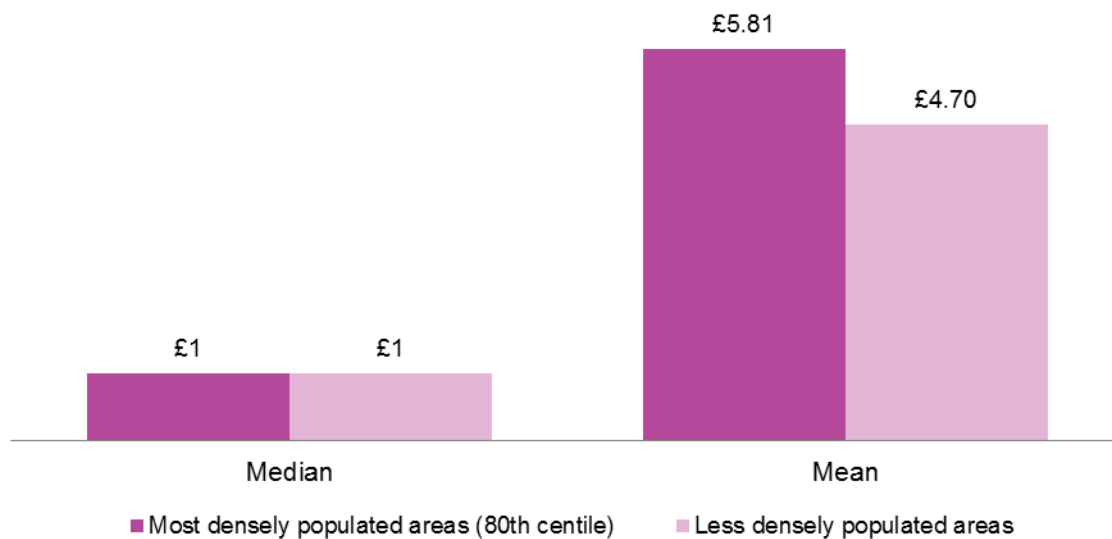
4.6   Stake size by time of day

Average stake sizes were calculated for each hour of the day (Figure 4:5). The median stake size was stable at £1 throughout most of the day until 11pm when it rose to £2. The mean stake sizes showed more variation, again affected by some very high values. Between 8am and 12pm the mean stake varied between £4.72 and £4.55 per bet. From midday onwards, mean stake size typically increased throughout the day. Hourly increases were particularly noteworthy in the evening, rising from £5.76 at 8pm to £11.09 at 11pm.

Figure 4:5	Median and mean stake size by time of day

Base: All machine data between 8am and midnight
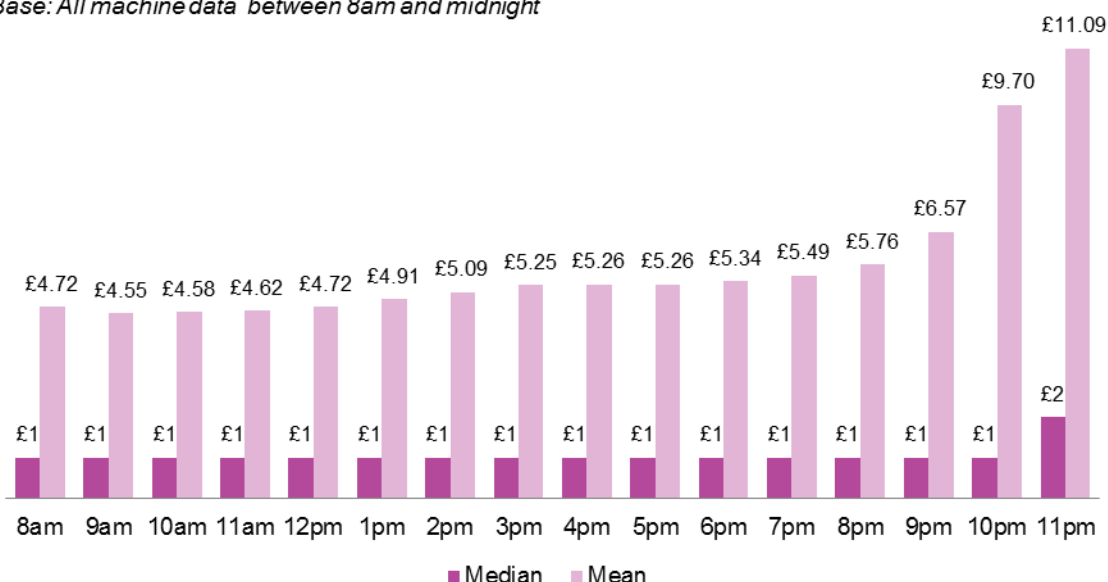
4.7 Stake size by day of the week

The median stake of £1 did not vary by day of the week, but there was a small variation in the mean values (Figure 4:6). The highest mean stake size occurred on a Monday (£5.38), with the lowest mean stake on Saturday (£4.77).

Figure 4:6   Median and mean stake size, by day of the week

Base: All machine data
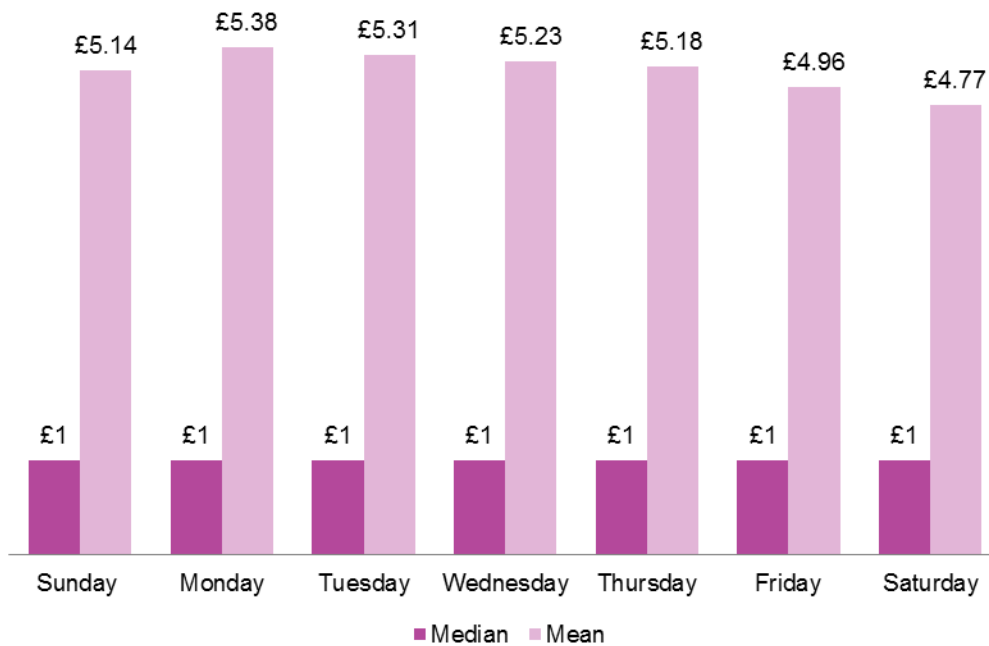
4.8 Stake size by month

To ascertain if stake value varied across different months, mean and median values were compared for each month between September 2013 and June 2014. Median stakes bets were the same across each month at £1 (Figure 4:7). The mean stake values did not show large variation across the months, ranging from a high value of £5.24 (October) to a low value of £5.06 (May).

Figure 4:7	Median and mean stake size, by month

Base: All machine data ■ Median ■ Mean

4.9 Stake size by session type

Looking at the stake size by the type of games that were played reveals a large variation in both the median and mean values (Figure 4:8). Category B3 games have a maximum stake of £2 whereas category B2 games have a much higher maximum stake of £100, and these differences are reflected in the average stake sizes. Sessions that involved B2 only games had much higher average stake size compared to other sessions: a median of £5.40 and a mean of £14.07. Sessions of B3 only games had the lowest average stake size with a median of 50p and a mean of 87p.

Mixed sessions involving both B2 and B3 category games had a median stake size per bet of £1 and a mean of £2.59.

Base: All machine data

Figure 4:8   Median and mean stake size, by session type

Session type	Median stake size	Mean stake size
B2 only	£5.40	£14.07
B2 and B3	£1.00	£2.59
B3 only	£0.50	£0.87
Other	£0.50	£1.89

■ Median stake size   ■ Mean stake size
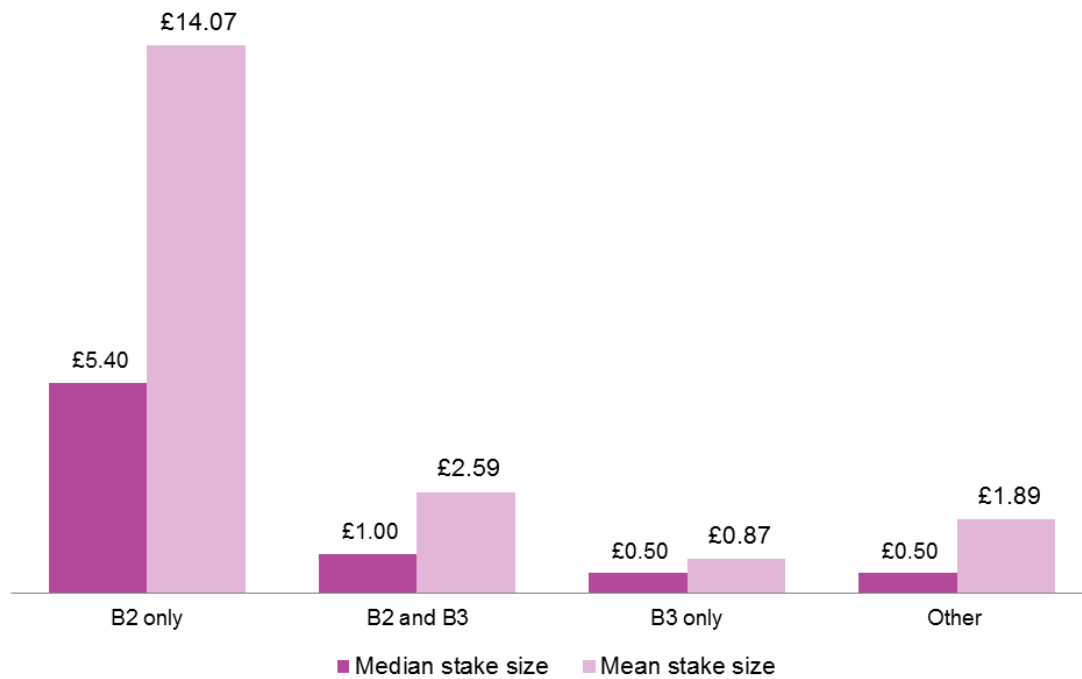
5 Net expenditure

This chapter examines the amount of money gamblers spent on machines. It looks at the difference between the amount of money deposited into a machine and the amount withdrawn within a single session: the 'net expenditure'. Results show that 70-80% of machine sessions result in a net loss to the gambler. Net expenditure is highest per session in London and the South of England, and in less deprived areas. Different types of game category are played have higher spending.

5.1 Net expenditure

Net expenditure was calculated by subtracting the amount of money the gambler won in each session from the amount of money they put into the machine. A positive net expenditure indicates that the gambler has lost more money than they have won; a negative net expenditure shows that the gambler has won more money than they have lost.

The estimates presented in this chapter are based on 'proxy session' data, meaning data that have been divided into discrete chunks based on what looks like the beginning and the end of a discrete period of machine play. (See Appendix H for more details.) There may be some error around the calculation of these sessions and this should be taken into account when reviewing results. The data presented below include all play on machines, regardless of game type; Section 5.8 shows net expenditure by session type. Because of very extreme outliers (discussed below) this chapter mainly focuses on median values rather than means which are affected by these outliers.

Median net expenditure was £5.00 per session, indicating that gamblers lost £5 overall in each session (Figure 5:1). Expenditure on gambling machines ranged from £105 or more at the 95th centile (meaning that the gambler had a net loss of £105 or more on the machine in that session) to -£89.60 per session at the 5th centile (meaning that the gambler took £89.60 or more out of the machine in that session overall). Up to the 20th centile gamblers took more money out of machines than they put in, while in sessions above the 30th centile gamblers lost more than they made, demonstrating that between 70-80% of all sessions result in a net loss to the gambler. The maximum amount of money lost in a single session was £13,776.80. This was a session where only B2 content was played and the session lasted 7.5 hours. Conversely, the

maximum amount of money won in a session was £13,532.20, in a session 3 hours 36 minutes long.

Base: All machine data
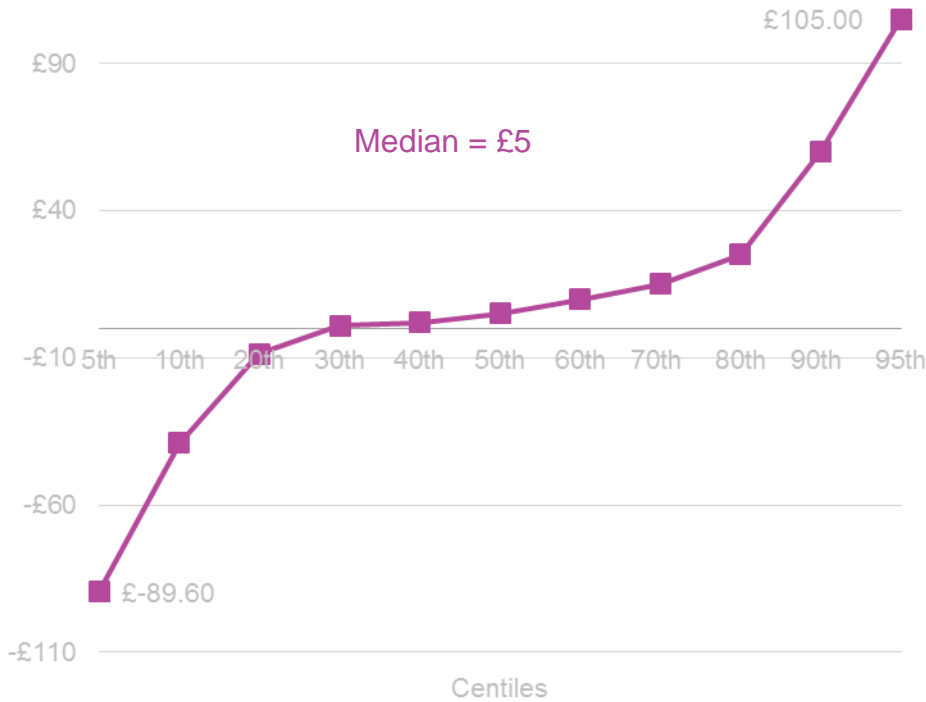
5.2   Net expenditure by region

Net expenditure per session was analysed by regions across the Great Britain.

> Net expenditure per session was higher in London and the South of England than the North of England, Wales and Scotland.

The highest median net expenditure per session was in the South East (£5.20), closely followed by London, the East of England, the East Midlands, and the South West (£5.00) (Figure 5:2). The lowest median net expenditure per session was in the North East and Scotland (£4).

Net expenditure

Scotland
£4

North East
£4

North West
£4.20

Yorkshire
and Humber
£4.30

East
Midlands
£5

West
Midlands
£4.75

East of
England
£5

Wales
£4.90

London
£5

South West
£5

South East
£5.20
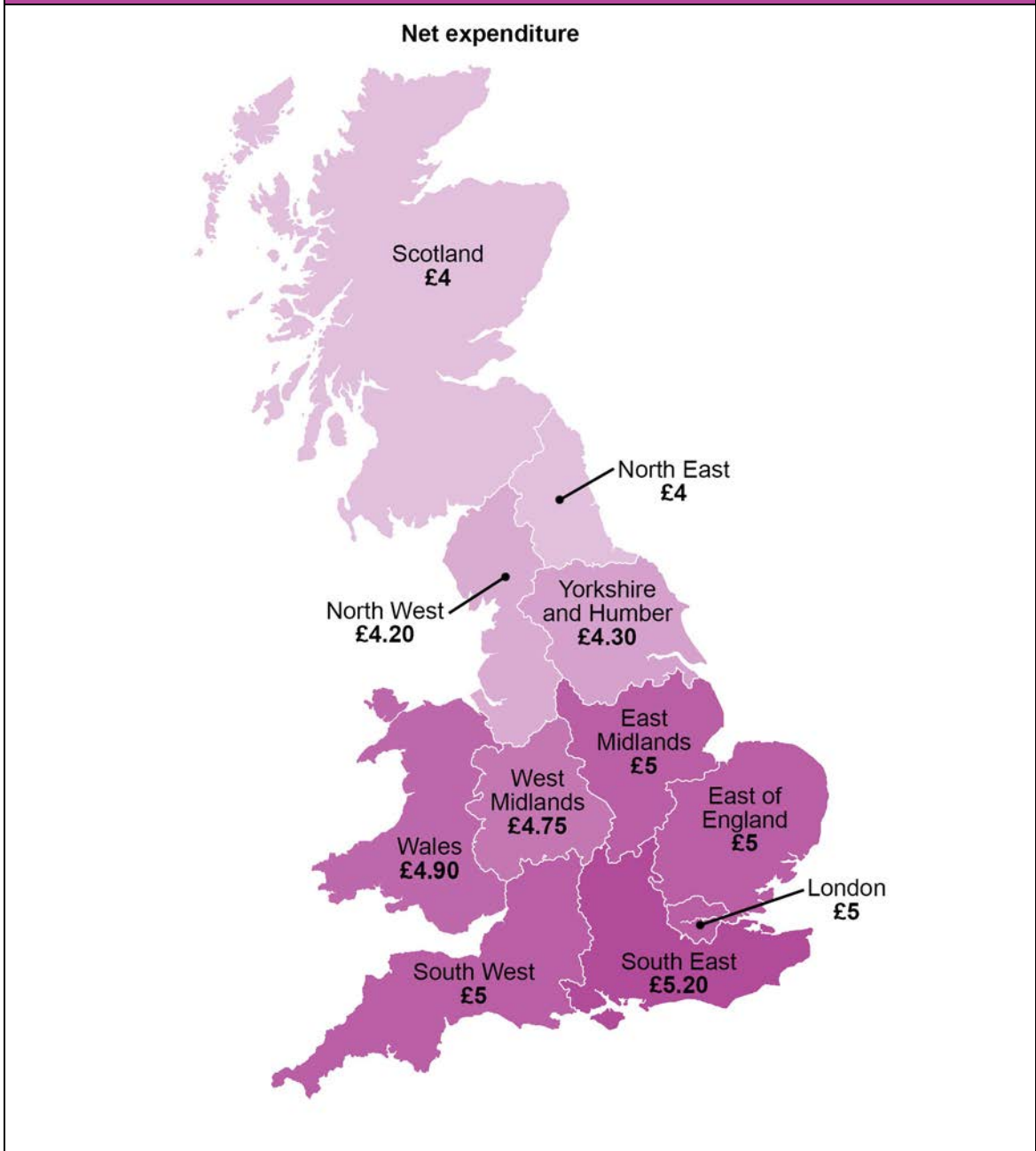
5.3   Net expenditure by deprivation

Median net expenditure per session in England was lower in the most deprived areas (£4.50) than in less deprived areas (£5.00) (Figure 5:3). The same pattern was observed in Scotland (£4.00 compared with £4.50), and Wales (£4.60 compared to £5.00).

Base: All machine data in England, Scotland and Wales

5.4   Net expenditure by population density

Net expenditure was also calculated by population density, with comparisons being drawn between the most densely populated areas (80th centile) and the less densely populated areas of Great Britain. Median net expenditure was £5.00 for both levels of population density (Appendix table C.3).

5.5   Net expenditure by time of day

Net expenditure per session was also analysed by time of day (Figure 5:4). Median net expenditure remained consistent at around £5.00 all day, except between 9am-1pm, and after 11pm, where the median value dropped below £5.00, but always remained above £4.50.

Base: All machine data between 8am and midnight

5.6   Net expenditure by day of the week

The median net expenditure per session remained constant each day, at £5.00. (Appendix table C.5).

5.7   Net expenditure by month

The median net expenditures per session remained constant across all months that data was collected at £5.00 (Appendix table C.6).

5.8   Net expenditure by session type

Gambling machines offer gamblers a range of different games. Net expenditure varied depending on the different types of games which were played in those sessions (Figure 5:5). Sessions where both B2 and B3 games were played showed the largest median net expenditure per session (£10.00). Lower median net expenditure was found when gamblers played one type of game category: B2 only sessions showed a median net expenditure per session of £4.50, and B3 only sessions showed a value of £5.00.

Base: All machine data

£10.00

£5.93

£4.50

£5.00

| B2 only | B2 and B3 | B3 only | Other |

6 Maximum stake

The majority of machine gambling sessions did not reach the £100 maximum stake for B2 category games during the session of play. Only 1% of sessions started with a £100 stake and a further 2% reached it before the end of the session. There was very little variation across most of the different variables investigated. However, whilst the vast majority of sessions did not reach the £100 stake, the proportion that did doubled between 10pm and midnight.

6.1 Proportion of sessions where £100 stake was used

B2 games have a maximum stake of £100. These machines have generated considerable interest from policy makers and other stakeholders as this maximum stake size is higher than other machines available outside of a regulated casino environment (category B3, B3A and B4 games all have a maximum stake size of £2, and category C games have a maximum stake of £1).[15] This chapter focuses on sessions where B2 games were played and looks at the proportion of these sessions where the £100 stake was used. Gaming sessions were grouped into the following mutually exclusive categories:

- sessions that started with a £100 stake;

- sessions that reached the £100 stake before the end of the session, but did not start with it; and

- sessions which did not reach the £100 stake at all.

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[15] See the following website for more details:
http://www.gamblingcommission.gov.uk/gambling_sectors/gaming_machines/about_gaming_machines_fruit_m/gaming_machine_categories.aspx

97% of all sessions involving gambling on a B2 game did not reach the £100 maximum stake, less than 1% started with the £100 stake, and a further 2% did not start with the £100 stake but reached it by the end of the session.

6.2 Proportion of sessions where £100 stake was used by place, time and session type

The proportion of sessions where the £100 stake was used was assessed by different regions of Great Britain (Appendix table D.1); by deprivation (Appendix table D.2), by population density (Appendix table D.3), time of day (Appendix D.4), day of the week (Appendix table D.5), month (Appendix table D.6) and session type (Appendix table D.7). Very little variation was seen across all of these different variables, with the maximum stake not being reached at all during 96-99% of all sessions.

Examining the data by time of day showed some variation with an increase in the proportion of sessions reaching maximum stake in the later evening: around 2% reached maximum stake throughout the day, until 10pm when this rose to 4% until midnight (Figure 6:1).

Figure 6:1   Proportion of sessions where £100 stake was used, by time of day

■ Started with £100 stake

■ Did not start with £100 stake, but reaches in session

■ Did not reach £100 stake

Time		
8am	1 2	97
9am	1 2	97
10am	2	98
11am	2	98
12pm	2	98
1pm	2	98
2pm	2	98
3pm	2	97
4pm	2	98
5pm	1 2	97
6pm	1 2	97
7pm	1 2	97
8pm	1 2	97
9pm	1 2	97
10pm	2 4	95
11pm	2 4	95
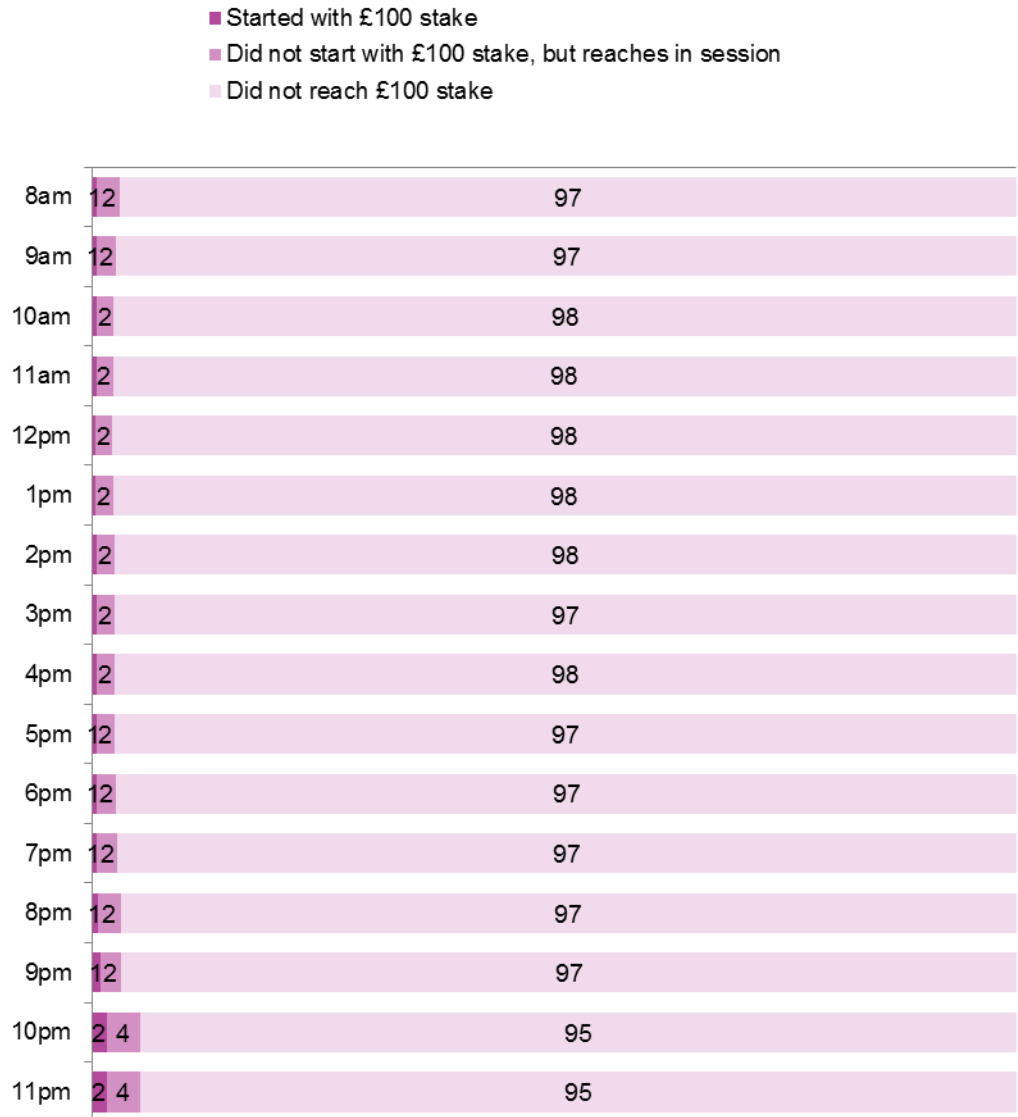
Base: All machine data between 8am and midnight

7 Session length

The median machine gaming session lasted for 3 minutes and 54 seconds; longer sessions were recorded in the East of England, earlier in the morning (from 8am), and when different game types were played. Session lengths were typically shorter in the most deprived areas.

7.1 Session length

The median session length was 3 minutes and 54 seconds (Figure 7:1). The mean session length was longer at 11 minutes and 10 seconds per session, indicating that there were some extremely long sessions affecting this value. Session lengths ranged from 19 seconds at the lower end (5th centile) to 36 minutes and 1 second at the upper end (95th centile). Session lengths were less than five minutes up to the 50th centile, and were over five minutes from the 60th centile.

Figure 7:1   Session length

Base: All machine data
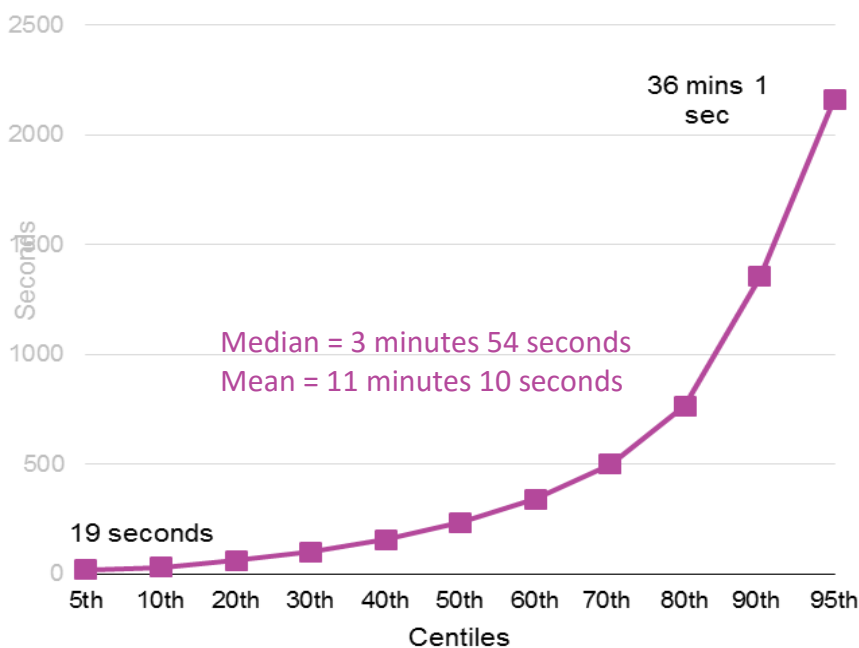
Median = 3 minutes 54 seconds
Mean = 11 minutes 10 seconds

7.2   Session length by region

Figure 7:2 shows session length by region. The median session length is on the left, and the mean on the right. The mean session lengths were much higher than the median, indicating some extremely long sessions affecting the mean value. In terms of the variation across the country, a similar picture can be seen in both figures, with sessions tending to be longer in the South than the North. The longest sessions were recorded in the East of England (median: 4 minutes and 35 seconds, mean: 13 minutes 43 seconds). The shortest sessions were recorded in the North West (median: 3 minutes and 19 seconds, mean: 9 minutes 15 seconds).

Figure 7:2   Median and mean session length, by region
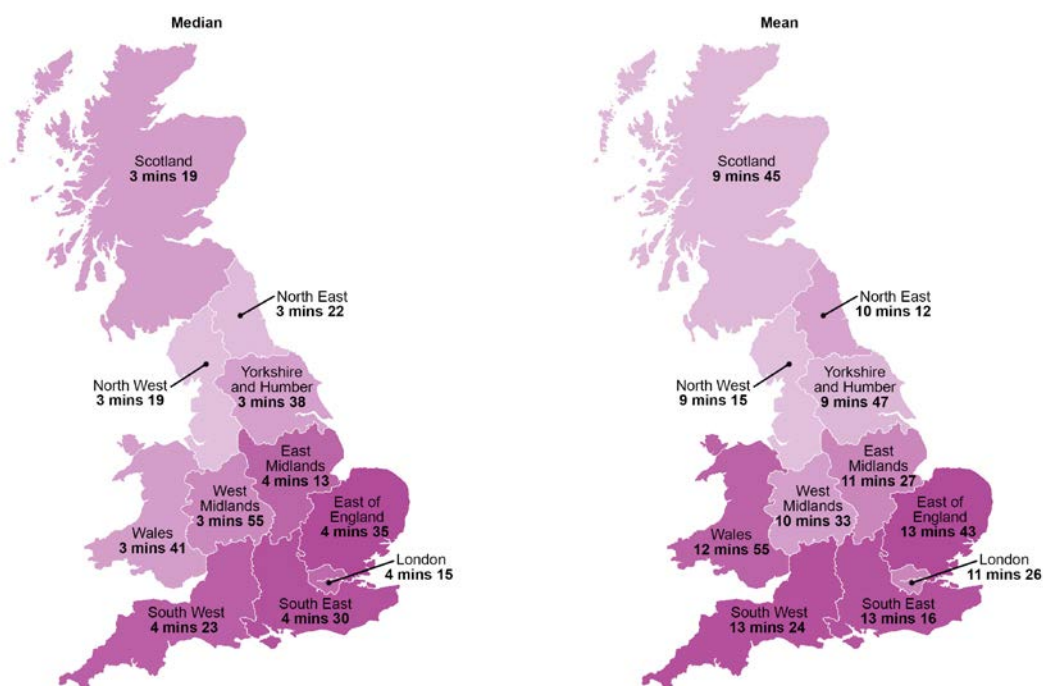
7.3   Session length by deprivation

Median session length in England was shorter in the most deprived areas (3 minutes and 49 seconds) than in less deprived areas (4 minutes and 8 seconds). The same pattern was observed in Scotland (3 minutes and 10 seconds compared to 3 minutes

and 24 seconds), and Wales (3 minutes and 30 seconds compared to 3 minutes and 46 seconds), (Figure 7:3).

Base: All machine data in England, Scotland and Wales
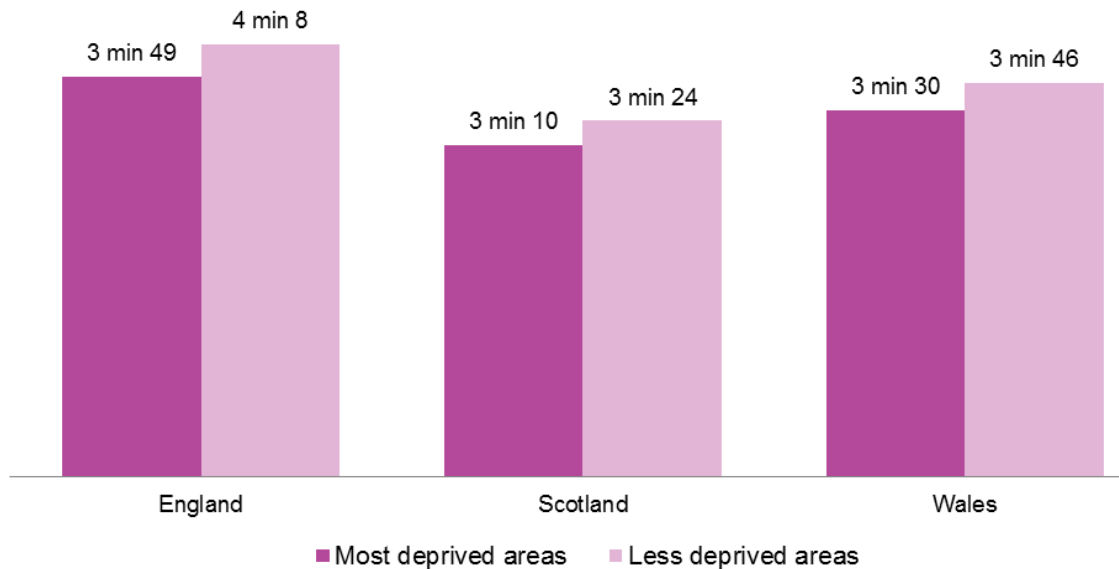
7.4   Session length by population density

The median session length in the most densely populated and not most densely populated areas was the same (3 minutes and 54 seconds for both) (see Appendix table E.3).

7.5   Session length by time of day

The longest median session lengths were recorded in the hour from 8am (5 minutes and 5 seconds), and the shortest median session lengths were recorded in the hour from 9pm (3 minutes and 27 seconds) (Figure 7:5).

Following an initial sharp decrease from the daytime high at 8am, median session lengths generally ranged between 3 minutes and 44 seconds to 4 minutes and 8 seconds) until 9pm, before decreasing again.

Figure 7:4   Median session length, by time of day

Base: All machine data between 8am and midnight

Time	Median session length
8am	5 m 5s
9am	3m 55s
10am	3m 53
11am	3m 44
12pm	3m 46s
1pm	3m 53s
2pm	3m 53s
3pm	3m 58s
4pm	3m 58s
5pm	3m 57
6pm	4m 2s
7pm	4m 1s
8pm	4m 8s
9pm	3m 27s
10pm	3m 46s
11pm	3m 49s
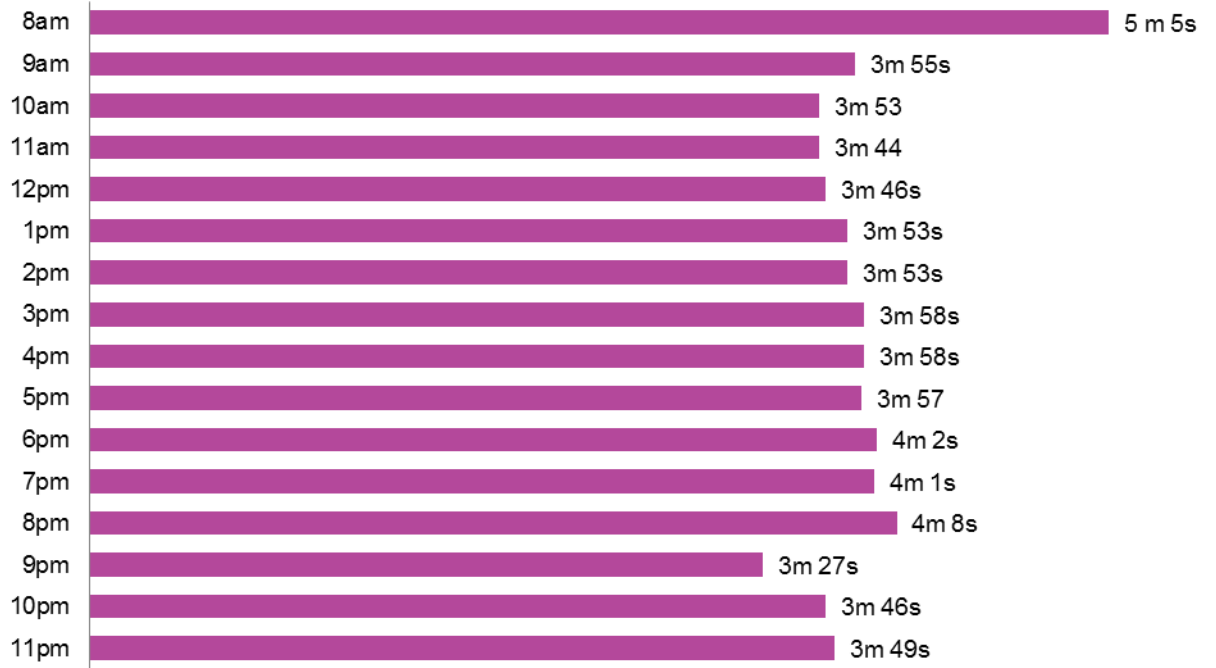
7.6   Session length by day of the week

There was only slight variation in session length by day of the week. The longest median session length was found on Mondays (4 minutes and 6 seconds), and the shortest median session length occurred on Saturdays (3 minutes and 40 seconds). All other weekdays' median session lengths ranged between 3 minutes and 49 seconds and 4 minutes and 3 seconds.

Figure 7:6   Median session length, by day of the week

Base: All machine data
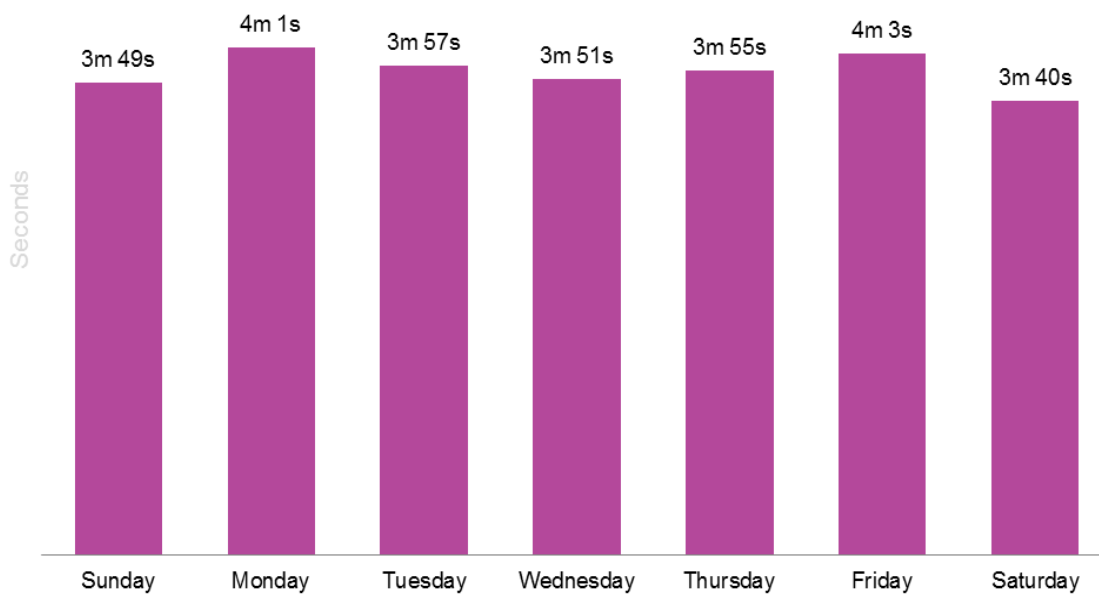
7.7 Session length by month

There was some limited variation in session length over the months that data was supplied. The longest median session lengths were observed in November 2013 (4 minutes and 19 seconds), and the shortest in April 2014 (3 minutes and 42 seconds).

Figure 7:7   Median session length, by month

Base: All machine data

	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
	4m 14s	4m 14s	4m 19s	3m 51s	3m 54s	3m 45s	3m 44s	3m 42s	3m 46s	3m 45s
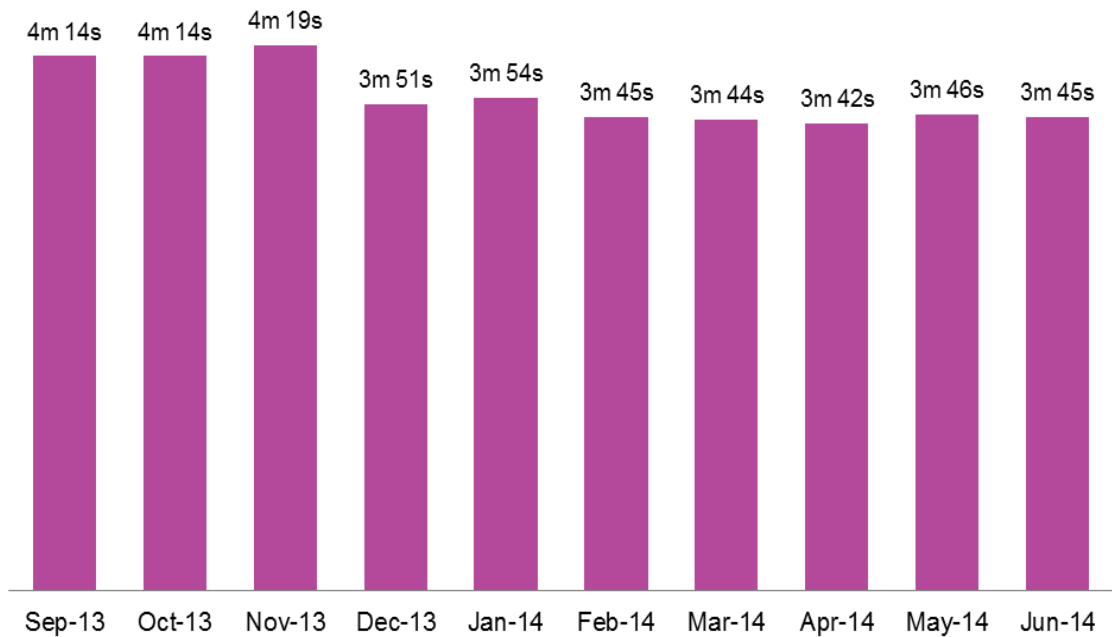
7.8   Session length by session type

Sessions where gamblers engaged in both B2 and B3 games were the longest (median of 12 minutes and 16 seconds). Shorter sessions were found when gamblers only engaged in one game category: B2 only (3 minutes and 18 seconds); B3 only (3 minutes and 57 seconds). Median session length for other categories of games was longer at 7 minutes and 30 seconds.

Figure 7:5   Median session length, by session type

Base: All machine data
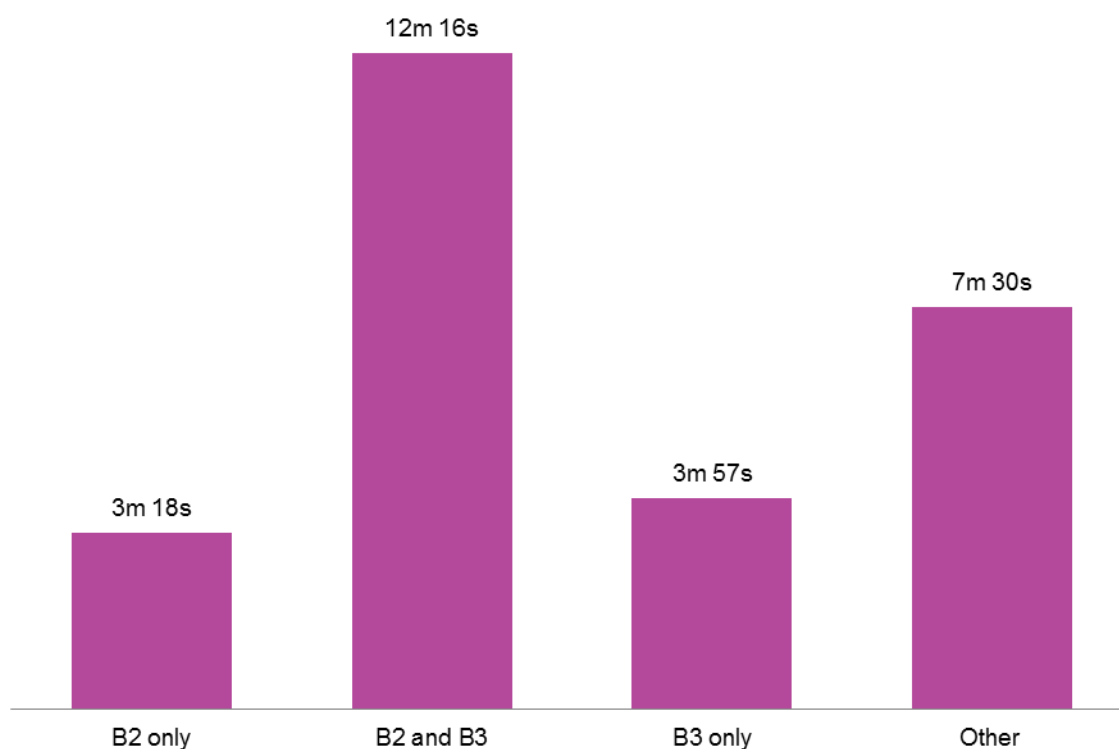
8   Session types

Gaming machines in bookmakers offer a range of different game content: the main options are B2 games which have a maximum stake of £100 and B3 games which have a maximum stake of £2. Nearly three-quarters of all sessions (73%) involved gambling on B2 games only, 16% on B3 only and 7% on a mix of game categories. B2 only sessions were the most popular in the North West, London, Scotland and the West Midlands and the proportion of B2 only sessions increased throughout the day.

8.1   Session types

Gaming machines in bookmakers offer gamblers a range of game content which varies by speed of play, size of maximum stake and size of prize offered. The main game types offered are:

- B2 category games which have a maximum stake of £100 and a maximum prize of £500. B2 games are typically casino type games like roulette and blackjack.

- B3 category games which have a maximum stake of £2 and are typically more traditional fruit- and slot-machine style games.

This chapter examines what categories of games are played in machine gaming sessions. Sessions are split into three groups:

- sessions where only B2 category games were played;

- sessions where only B3 category games were played;

- sessions where both B2 and B3 category games were played; and

- 'other' sessions where the games played were B4 or category C games or where the game played could not be categorised.[16]

Nearly three-quarters (73%) of all sessions involved B2 category games only (Figure 8:1), 16% were B3 only and 7% were a mixture of B2 and B3 category games.

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[16] 'Other' sessions are gaming sessions where the categories of games played in the sessions were category B4, category C or games that were classed as unrestricted and therefore did not fall into one of the legal categories.

Base: All machine data
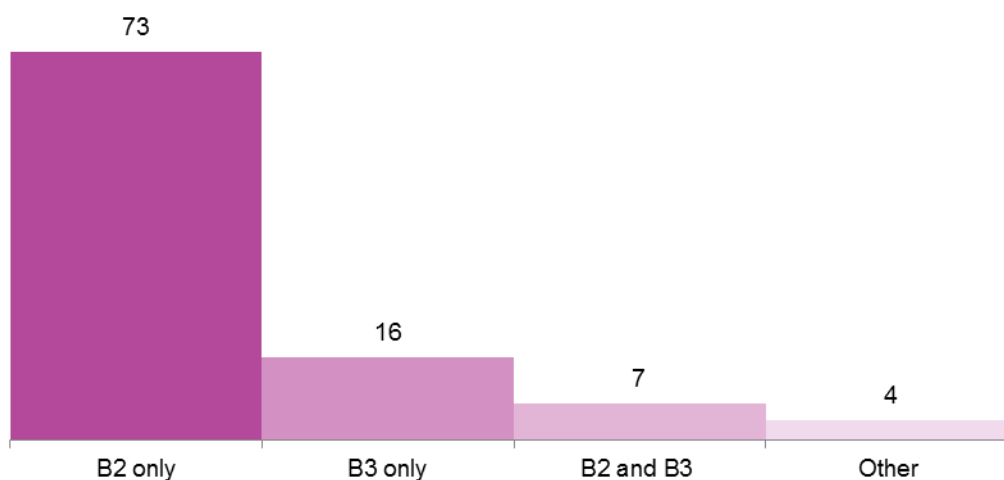
8.2 Session types by region

Looking at the distribution of session types by geographical region showed that B2 only sessions were the most common across all different regions, with more than two-thirds of sessions being of this type. B2 only sessions were particularly popular in the North West, London, Scotland and the West Midlands, with more than 75% of sessions involving B2 only play (Figure 8:2). B3 only sessions were more popular in the East Midlands and the South West where nearly a fifth of all sessions were B3 only sessions.

B2 only

Scotland
75

North East
74

North West
77

Yorkshire
and Humber
72

East
Midlands
67

West
Midlands
75

East of
England
70

Wales
73

London
76

South West
67

South East
70

B3 only

Scotland
15

North East
14

North West
15

Yorkshire
and Humber
18

East
Midlands
19

West
Midlands
15

East of
England
16

Wales
16

London
15

South West
19

South East
16

B2 and B3

Scotland
6

North East
6

North West
6

Yorkshire
and Humber
7

East
Midlands
9

West
Midlands
6

East of
England
8

Wales
7

London
7

South West
8

South East
8

8.3   Session types by deprivation and population density

There was very little variation in session types between the most deprived and less deprived areas in England, Scotland and Wales (Appendix table F.2); or between the most densely and less densely populated areas (Appendix table F.3)

8.4   Session types by time of day

B2 only gaming sessions increased in popularity throughout the day (Figure 8:3). Between 8am and 8pm, the proportion of B2 only sessions rose steadily from 70% to 75%. Between 9pm and 11pm the proportion of B2 only sessions increased more quickly, from 78% to 84%. The proportion of mixed B2 and B3 sessions remained relatively stable throughout the day, with the proportion of B3 only sessions falling towards the evening from 15% at 5pm to 9% by 11pm.

Figure 8:3   Percentage of session types, by time of day
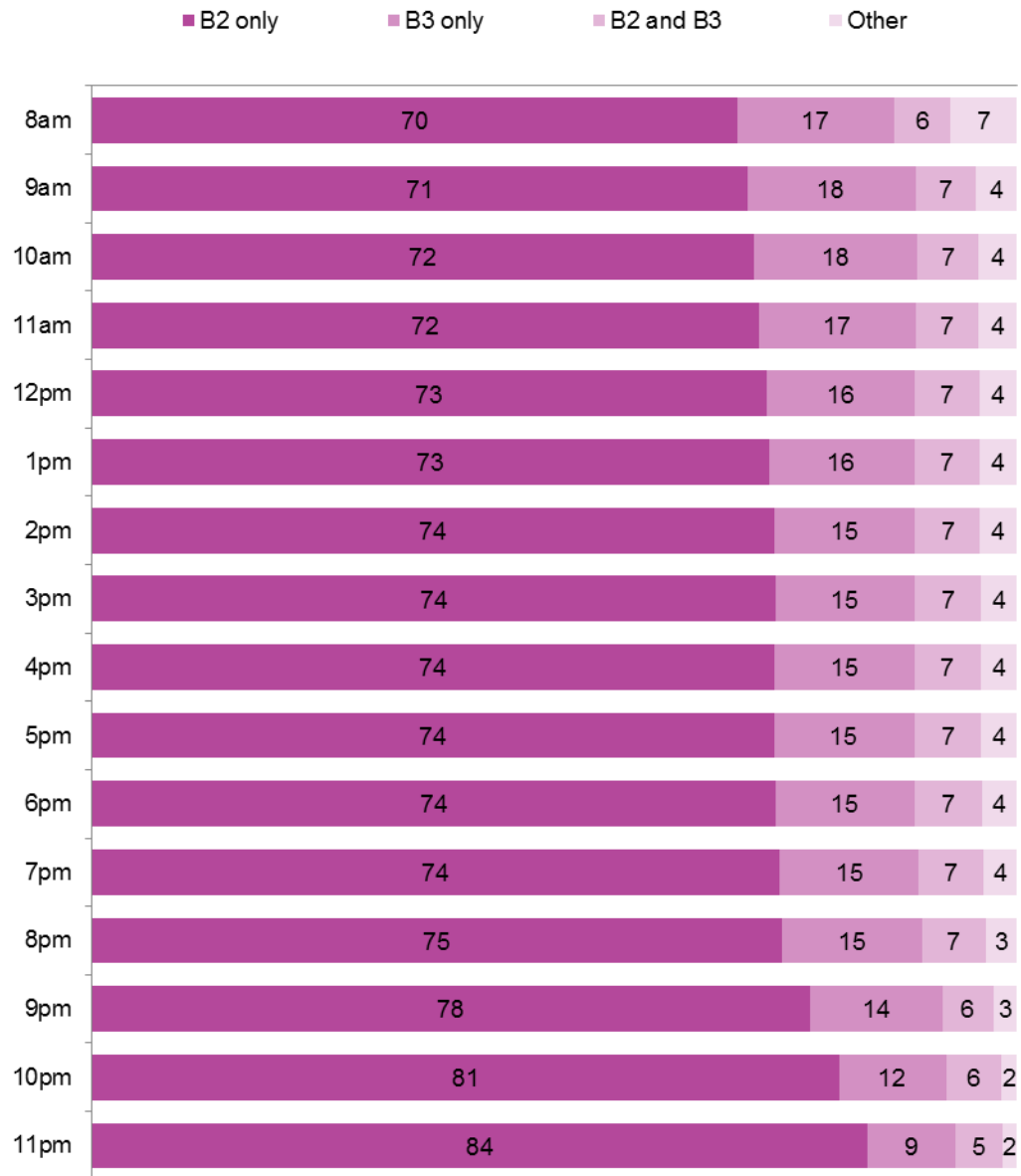
Base: All machine data between 8am and midnight

8.5   Session types by day of the week

There was very little variation in the proportion of different category games played on different days of the week (Appendix table F.5).

8.6   Session types by month

There was some limited variation in the proportion of different game categories played over the ten months for which data was supplied. In December 2013 and January 2014 a slightly higher proportion of sessions were B2 only (76%), whereas June 2014 saw the lowest proportion of B2 only sessions (71%) combined with the highest proportion of B3 only sessions (18%).

Figure 8:4	Percentage of session types by month
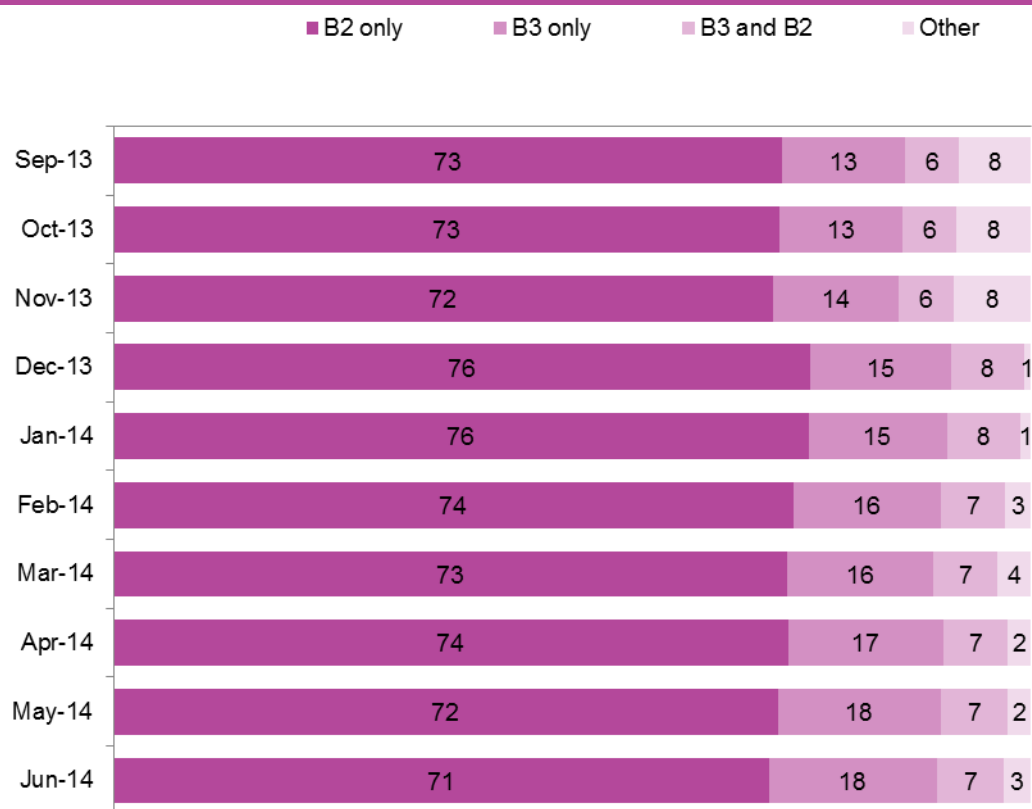
Base: All machine data

9 Types of B2 games

Roulette is the most popular B2 game played on machines in a bookmaker's, accounting for 64% of all B2 games. The highest proportion of roulette play was found in London (75%), and in the most densely populated areas of Great Britain. Furthermore, roulette accounted for a significantly higher proportion of machine play after 10pm (81%) compared with other times of the day.

9.1 Types of B2 games

Machines in bookmakers offer a range of games that can be played at B2 levels of stake, prizes and speed. In this chapter we examine all of the bets placed on B2 games, and the different types of games that the bets were placed on. Analysis of the types of B2 games played showed that roulette is the most popular form of B2 gambling on machines. Roulette accounted for 64% of the B2 games played, with all other B2 games combined accounting for the remaining 36%.

9.2 Types of B2 games by region

Roulette was most popular in London; it accounted for 75% of all B2 games played.

The regions where roulette was the most popular were London (75%) and the North West (71%) (Figure 9:1).The lowest proportions in England were observed in the East and South West (56%). Roulette accounted for 56% of games played in Wales, and 55% in Scotland.

B2: roulette

Scotland
55

North East
58

North West
71

Yorkshire
and Humber
68

East
Midlands
57

West
Midlands
66

East of
England
56

Wales
56

London
75

South West
56

South East
57

9.3 Types of B2 games by deprivation

Figure 9:2 shows the proportion of roulette games played out of all B2 games by area deprivation. In England, roulette was more popular (69% of all B2 games) in the most deprived areas than in less deprived areas (63%). The same pattern was observed in Wales (58% in most deprived areas and 55% in less deprived areas) However, the opposite pattern was observed in Scotland; roulette accounted for 53% of games played in the most deprived areas, compared with 56% of B2 games in less deprived areas.

Figure 9:2	Percentage of B2 games which were roulette, by deprivation

Base: All roulette games in England, Scotland, Wales

■ Most deprived areas ■ Less deprived areas
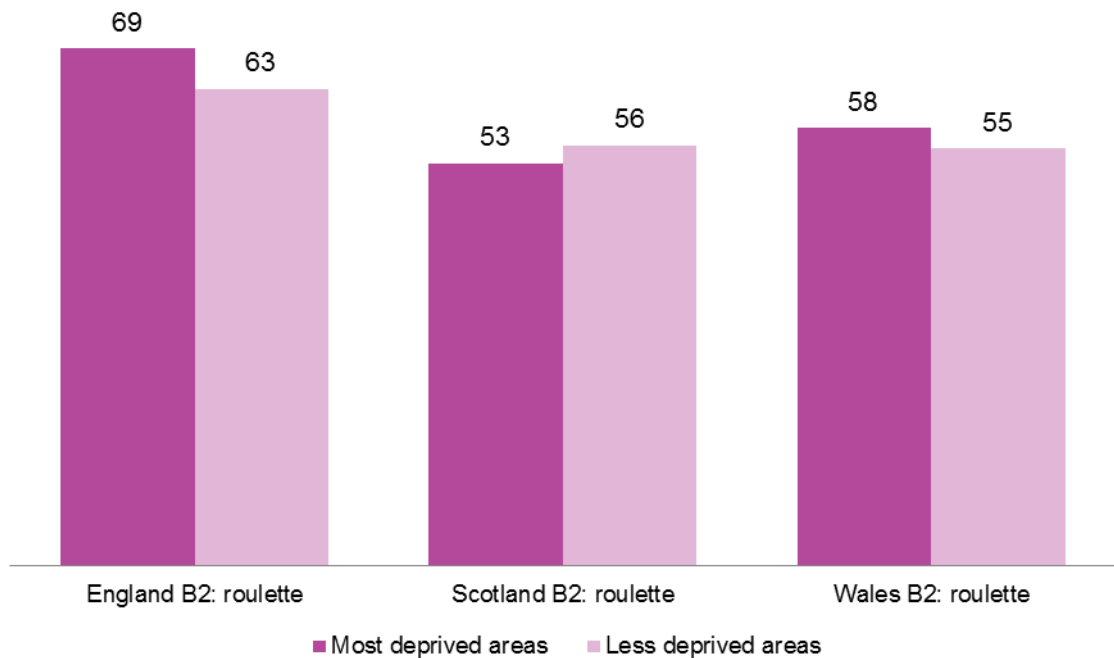
9.4   Types of B2 games by population density

Roulette was the most popular B2 game in both the most densely and less densely populated areas. However, the proportion of roulette games was higher in the most densely populated areas (71% of all B2 games) than in the less densely populated areas (60%) (Figure 9:3).

Figure 9:3   Percentage of B2 games, by population density

Base: All B2 games in England, Scotland and Wales

■ Most densely populated areas
■ Less densely populated areas
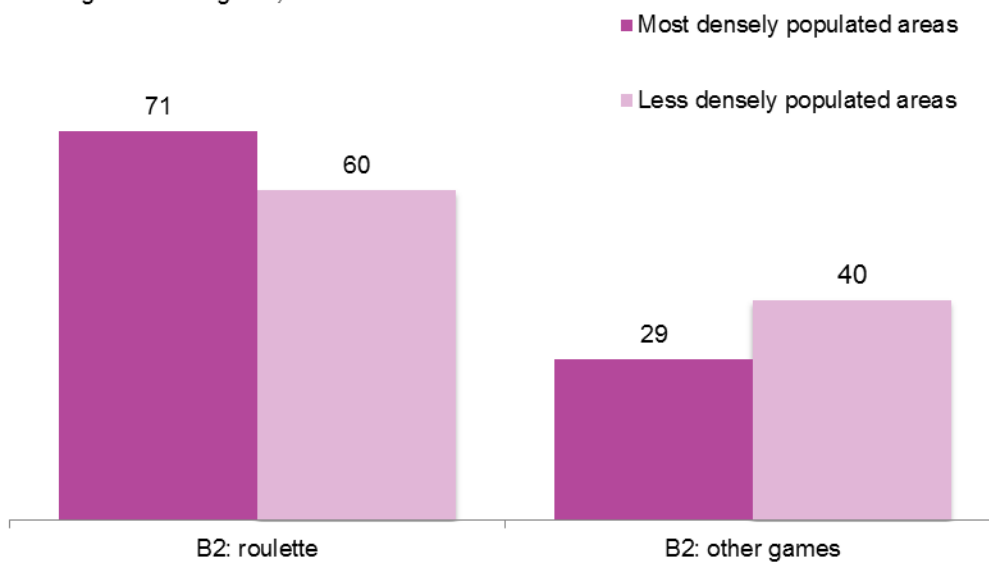
9.5 Types of B2 games by time of day

The proportion of B2 games that were roulette remained relatively stable between 9am and 7pm, ranging from 62% to 65% (Figure 9:4). A sharp rise in roulette play was observed in the evening; when the proportion rose to 72% at 9pm, and to 81% after 10 and 11pm.

Figure 9:4   Percentage of B2 games, by time of day

Base: All B2 games between 8am and midnight

Time	B2: roulette	B2: other games
8am	66	34
9am	63	37
10am	63	37
11am	62	38
12pm	63	37
1pm	63	37
2pm	64	36
3pm	64	36
4pm	64	36
5pm	65	35
6pm	65	35
7pm	65	35
8pm	67	33
9pm	72	28
10pm	81	19
11pm	81	19
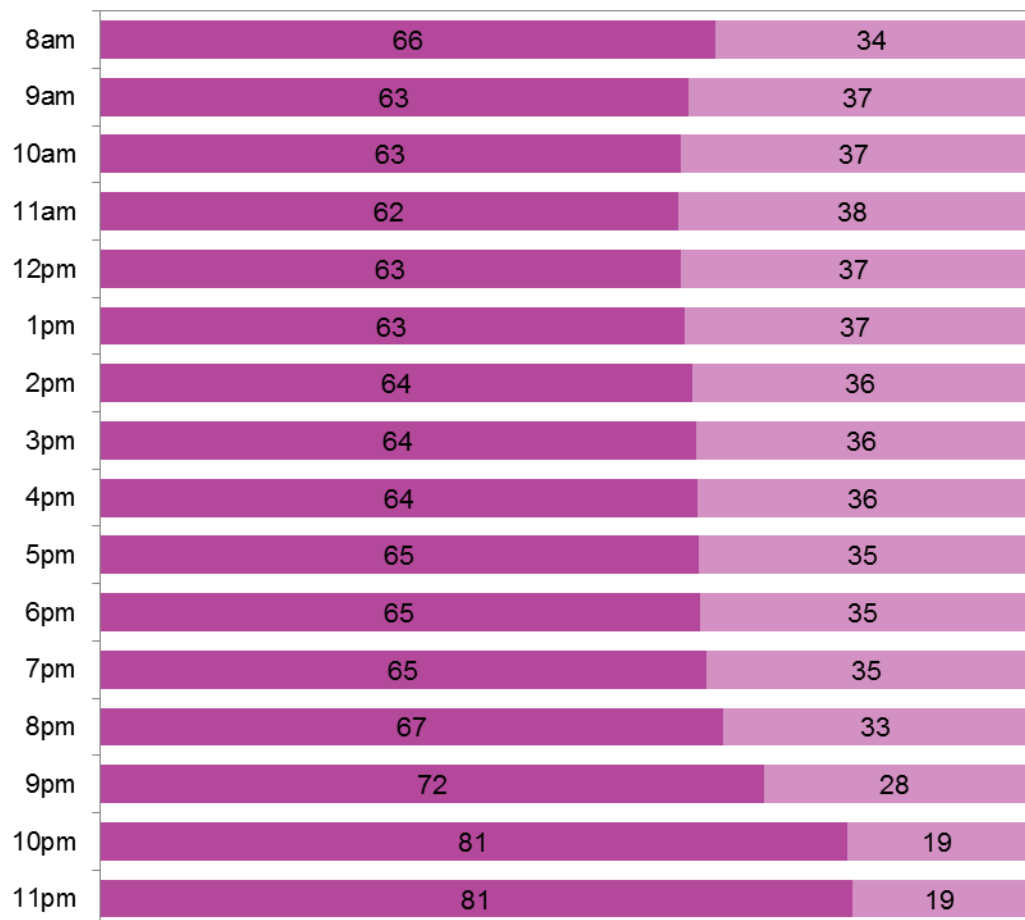
9.6   Types of B2 games by day of the week

Proportions of roulette and other B2 games remained relatively stable throughout the week, with the highest proportion of roulette played on Sunday (66%), and the lowest on Saturday (63%) (Appendix table G.5).

9.7   Types of B2 games by month

Roulette was least popular in December 2013 when it accounted for 56% of all B2 games played, a decrease from the previous three months where the proportion was 68% (Figure 9:5). Proportions rose steadily from December, and peaked at 69% in June 2014.

Figure 9:5	Percentage of B2 games, by month

Base: All B2 games   ■ B2: roulette   ■ B2: other games

Month	B2: roulette	B2: other games
Sep-13	68	32
Oct-13	68	32
Nov-13	68	32
Dec-13	56	44
Jan-14	58	42
Feb-14	61	39
Mar-14	63	37
Apr-14	66	34
May-14	67	33
Jun-14	69	31
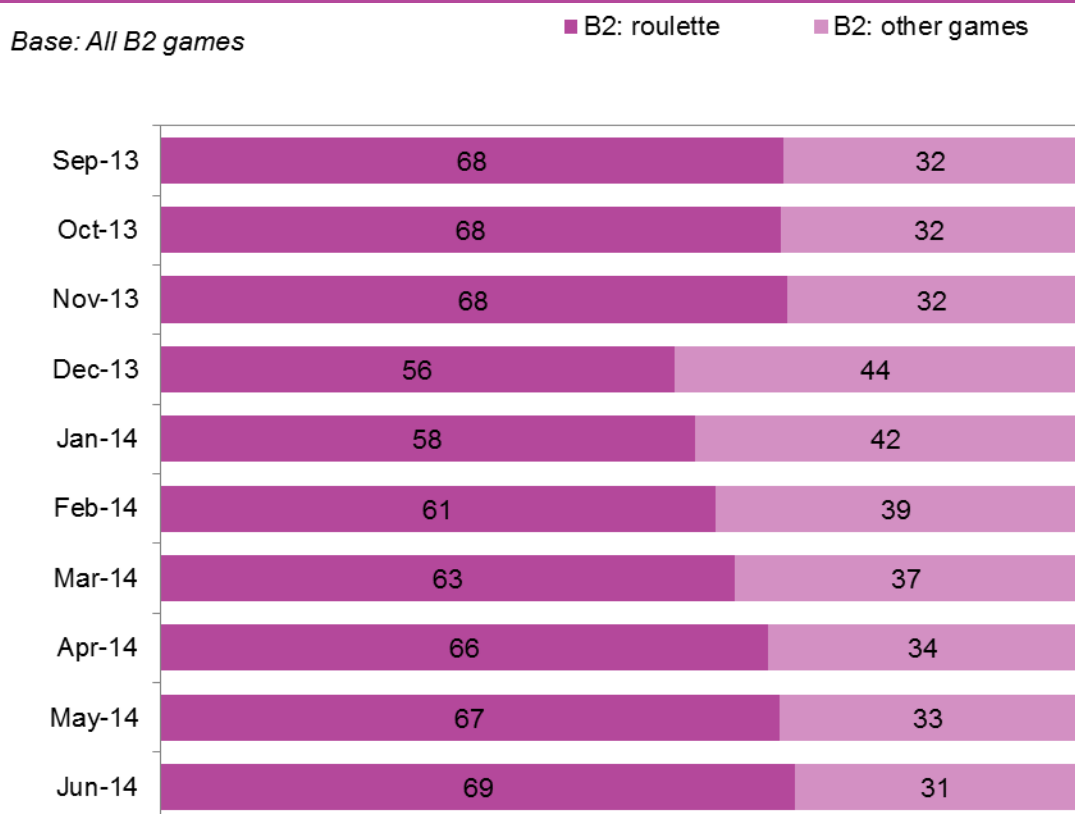
10 Conclusions

10.1 Introduction

This project has for the first time described the transactional information gathered by gambling machines in bookmakers in Great Britain. Machines in bookmakers allow gamblers to stake up to £100 per bet (depending on the game played) and each bet – or transaction – is recorded by the machine along with its outcome. This transactional information – how much money gamblers put into the machines and how much is paid out – has not been examined before. This report will help policy makers better understand how, when and where these machines are used.

Data provided from the five main bookmakers (Betfred, Coral, Ladbrokes, Paddy Power and William Hill) was analysed for the time period between September 2013 and June 2014. This covers data for roughly 85-90% of gambling machines in bookmakers.

Key research questions that the project sought to answer were:

- How many bets were staked across this time period (including stakes at the maximum level)?

- What does the pattern of expenditure look like over this time period?

- How do these expenditure and staking patterns vary by different considerations: geographical variables such as location, deprivation and population density; time of day, week and month; and content variations such as what type and category of game was being played?

10.2 Number of bets

Chapter 3 reported the number of bets placed, and analysed these bets by a number of different variables. Between September 2013 and June 2014, more than 6.7 billion bets were placed on gambling machines. Regional analysis revealed that machine use was most prolific in London, and Scotland, and least so in Wales. It should be noted that this regional analysis data may to some extent be skewed by the distribution of bookmakers across the country.

When analysed by time of day, the data revealed that the greatest number of bets were placed in the afternoon: around 650 million bets were placed between 12pm and 5pm over this time period. More bets were placed on Fridays and Saturdays than any other days of the week; more than a billion bets were placed on each of these days over the time period. Per month, March, April, May and June 2014 were the busy months, with over 700 million bets being placed each month, which may be due to increased footfall in bookmakers as a result of significant sporting events such as horse racing festivals, or the World and FA Cups.

Gambling machines give the gambler the opportunity to play games that fall into different legislative categories and the analysis divided the number of bets into those placed within a B2 only session (which have a maximum stake of £100), in a B3 only

session (which have a maximum stake of £2), and those placed on both B2 and B3 games within a single session. The greatest number of bets was placed in B3 only sessions: over 2.5 billion bets, and over 1.9 billon bets were placed on B2 only sessions. A further 1.5 billion bets were placed in sessions that involved both B2 and B3 content. This is perhaps unsurprising: due to differences in game speed, a maximum of 24 bets per minute could (theoretically) be placed on a B3 game whereas the maximum for a B2 game is three bets per minute.

10.3 Stake sizes and expenditure

Chapter 4 examined the size and distribution of average stake sizes per bet. The median stake size was £1, and the mean stake size £5.13, showing that some extreme outliers affected the mean value. Stake sizes per bet ranged from 20p (5th centile) to £25.25 (95th centile). For sessions that only involved gambling on B2 games the mean stake size was £14.08, whereas for sessions that only involved B3 games mean stake size was £0.87.

Regional analysis revealed that the highest mean stake size per bet was found in London (£6.91), possibly a result of higher average incomes in London, and the lowest was in the East Midlands (£3.92). Analysis of stake size by level of deprivation demonstrated that England and Scotland had lower mean stake sizes per bet in less deprived areas. Stake size varied by time of day; the mean stake size rose gradually throughout the day from £4.55 at 9am to £5.76 at 8pm. After 8pm, the hourly increases were noticeably larger, culminating in mean stake size of £11.09 at 11pm.

Chapter 5 reported the net expenditure per machine gambling session (money put in to the terminal minus money taken out of the terminal). The median net expenditure was £5 and expenditure ranged from losses of £105 (95th centile) to wins of £89.60 (5th centile). Gamblers finished sessions in profit up to approximately the 20th centile, while in sessions above the 30th centile gamblers lost money, suggesting that between 70-80% of all machine gambling sessions between September 2013 and June 2014 resulted in a net loss.

A North/South divide was apparent in the net expenditure data. The highest median net expenditure per session was observed in the South East, closely followed by the East, South West, London, and the East Midlands. The lowest net expenditures in England were observed in the North East and Scotland, suggesting that gamblers in the South lost more money per session than gamblers in the North. The median net expenditure was lower in more deprived areas than in less deprived areas in England, Scotland, and Wales.

When analysing net expenditure by session type, the lowest median net expenditure was recorded in B2 only sessions (£.50). This is likely to be a reflection of the higher payout rates offered by B2 games. The highest net expenditure was measured during sessions where both B2 and B3 games were played (£10).

A significant difference between B2 and B3 content is the maximum stake size that the gambler can place per bet. B3 content is limited to £2 per spin, whereas gamblers playing B2 games can spend up to £100 per bet. To analyse how frequently the maximum stake size available in B2 games was used, Chapter 6 looked at maximum staking in sessions where B2 games were played. Overall, 3% of all B2 sessions

involved a maximum stake of £100 during play. 1% of all sessions where B2 games were played started with the maximum £100 stake and a further 2% did not start with the maximum stake, but reached it before the end of the session. The number of sessions that involved the maximum stake doubled towards the end of the day, from 3% to 6% between 10pm and midnight.

10.4 Session lengths and types of game

Chapter 7 sought to establish variations and patterns in the length of each individual gambling session. The median session length was 3 minutes and 54 seconds, and the mean session length was 11 minutes and 10 seconds. Sessions ranged from 19 seconds (5th centile) to over 36 minutes (95th centile).

Regional analysis showed that gambling sessions were longer in the South than the North of England, reflecting the net expenditure patterns, where gamblers in the South of England tended to spend more per session than those in other areas. Session lengths were shorter in the more deprived areas of Great Britain.

Time of day analysis identified that median session length was longest from 8 to 9am. Session length then decreased after 9am but rose again around 8pm – reflecting a similar pattern to net expenditure. Session lengths were shortest when only B2 games were played and longest when gamblers played both B2 and B3 games.

Analysis of session types in Chapter 8 showed that nearly three-quarters of all machine gambling sessions involved only B2 games. Only 20% of gambling sessions did not feature B2 games at all. B2 only sessions were most popular in the North West, London, Scotland and West Midlands. The proportion of B2 only sessions increased steadily throughout the day, and then increased substantially from 9pm onwards.

Chapter 9 examined B2 content, and sought to establish which B2 games were the most popular. Results show that roulette was the most popular B2 game, accounting for 64% of all B2 games played. Roulette was most popular in London and least popular in the East of England and the South West.

The proportion of B2 games accounted for by roulette remained relatively stable throughout the day until 8pm. After 8pm, the proportion increased dramatically from approximately 65% to over 80%.

10.5 Key themes

This ground-breaking analysis has revealed the detailed patterns of how gamblers play category B machines in bookmakers, and a number of key themes are evident.

First, there were some clear regional differences in machine play: London stood out from all other areas. In London the most bets were placed, at the highest stake values, and the most money was lost here. Gamblers in London tended to play longer sessions, and B2 games, particularly roulette, were more popular here than anywhere else in the country. The North West of England saw some of the highest stake sizes per bet in the country (after London), but net expenditure was lower and sessions tended to be shorter compared to other areas; B2 games, particularly roulette, were also popular here. Scotland also had a higher number of bets than other areas, but net

expenditure was much lower and sessions tended to be shorter. B2 games also were more popular here, but roulette was less so than in some other areas of Great Britain. In Wales, machine gambling appears to be less common that in other areas of the country with the fewest bets and lowest net expenditure here, though this may be affected to some extent by the distribution of the five main bookmakers in Wales.

These regional differences may be a reflection of the markets which they serve. London clearly has a greater population density than other regions. However, when population density was taken into account, the number of bets per person was still significantly higher among Londoners than any other region. This suggests that Londoners who play these machines have higher levels of engagement with them than others. Of course, this may also be related to the profile of people in London (potentially being younger, or from different economic backgrounds). However, these regional differences are important as they point to certain factors which might be useful when looking at more localised risk profiles. Those who bet more and bet for longer may be at greater risk of harm, and understanding how and why these patterns vary at a local level is therefore useful.

Second, some very clear patterns of machine play emerged over different times of the day. The most bets were placed in the afternoon, but some distinct behaviour was evident in the evening. Stake sizes rose dramatically from 8pm. The proportion of B2 games played, particularly roulette, greatly increased after 8pm. The proportion of sessions where the £100 maximum stake was reached doubled between 10pm and midnight. Again, this suggests that those people who play machines in bookmakers from 8pm have distinctly different patterns of play. They bet more money and gamble on these machines for longer and display a preference for B2 games. In terms of thinking about responsible gambling interventions, it may be that this group of people might be of specific interest given their elevated levels of engagement in machine betting.

Third, machine game play also appears to be affected by major sporting events – with an increase in the number of bets placed in months where large sporting events occurred – though analysis over a longer time period is needed to further investigate this pattern. However, results suggest that there may be an increased interest in machines around these times, making this a good opportunity for operators to refresh or renew any responsible gambling marketing and obtain maximum reach.

Finally, the mix of different types of games was also associated with differential machine play. Mixed sessions involving both B2 and B3 games were longer and when gamblers tended to lose the most money. Sessions which involved B2 games only had higher stakes (unsurprisingly as they have a higher maximum stake), but the lowest expenditure and were shorter. Sessions where B3 games only were played had the most bets and gamblers lost more than in B2 sessions, but sessions tended to be shorter than mixed sessions. Further investigation is needed to explore how and why people switch and change between B2 and B3 content and understand the potential impact of this.

This report has systematically documented key patterns of gambling on machines in bookmakers in Great Britain. It provides an overview of how, when and where these machines are used and shows variations in behaviour both across Great Britain and by time of play. This information is intended to serve as a baseline against which changes

can be traced. It also helps to place more complex patterns, as documented in the RGT's broader machines research programme, into context. This broader research (see Report 3: Predicting Problem Gambling; Excell *et al,* 2014) crucially links information about players to their transactional data: however, this is only done for a subset of people. Therefore, this report fills an important gap by providing an overview of patterns of play for the full dataset using all 6.7 billion bets placed between September 2013 and June 2014.

Appendix A.   Number of bets

Appendix Table A.1 Number of bets per member of population (18+), by region

Region	18 years or older population	Proportion of bets per person	Bases (number of bets)
Base: All machine data in England, Scotland and Wales			*Patterns of Play*
North	**11,879,216**	**131**	***1,555,138,928***
North East	2,085,435	144	*300,041,971*
North West	5,593,739	129	*720,584,712*
Yorkshire and Humber	4,200,042	127	*534,512,245*
Midlands	**8,061,506**	**117**	***942,599,890***
East Midlands	3,637,740	118	*428,335,282*
West Midlands	4,423,766	116	*514,264,608*
East of England	4,678,281	127	***594,875,800***
London and the South East	**13,432,202**	**175**	***2,351,266,934***
London	6,529,750	237	*1,549,599,085*
South East	6,902,452	116	*801,667,849*
South West	**4,308,161**	**99**	***425,269,723***
Wales	**2,452,201**	**92**	***226,764,436***
Scotland	**4,292,306**	**151**	***646,381,336***
Total	**49,103,873**	**137**	***6,768,053,704***

Appendix Table A.2   Number of bets, by area deprivation

Deprivation area	Number			%	
Base: All machine data in England, Scotland and Wales					*Patterns of Play*
	Most deprived areas (80th centile)	Less deprived areas	*Bases*	Most deprived areas (80th centile)	Less deprived areas
England	2,339,082,850	3,530,068,425	*5,869,151,275*	40	60
Scotland	237,132,384	409,248,952	*646,381,336*	37	63
Wales	66,734,283	160,030,153	*226,764,436*	29	71
Total			***6,742,297,047***		

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix Table A.3 Number of bets, by population density

Base: All machine data in England, Scotland and Wales					Patterns of Play
	Number			%	
Deprivation area	Most densely populated areas (80th centile)	Less densely populated areas		Most densely populated areas (80th centile)	Less densely populated areas
			Total		
	2,575,554,544	4,192,499,160	6,768,053,704	38	62

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix Table A.4 Number of bets, by time of day

Base: All machine data between 8am and midnight	Patterns of Play
Hour of the day	
8am	49,403,286
9am	233,677,518
10am	423,568,436
11am	548,456,466
12pm	636,592,559
1pm	668,356,002
2pm	671,342,266
3pm	656,765,712
4pm	649,411,960
5pm	623,920,968
6pm	556,780,239
7pm	476,405,921
8pm	366,415,982
9pm	201,548,108
10pm	2,133,530
11pm	574,540
Total	**6,765,353,493**

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix Table A.5 Number of bets, by day of the week	
Base: All machine data	*Patterns of Play*
Day of the week	
Sunday	754,915,561
Monday	994,644,007
Tuesday	938,363,596
Wednesday	884,812,920
Thursday	934,443,244
Friday	1,164,258,082
Saturday	1,096,616,294
Total	***6,768,053,704***

Appendix Table A.6 Number of bets, by month	
Base: All machine data	*Patterns of Play*
Month	
September, 2013	605,562,134
October, 2013	637,632,362
November, 2013	638,736,033
December, 2013	675,714,564
January, 2014	660,276,353
February, 2014	648,355,508
March, 2014	741,188,895
April, 2014	714,175,915
May, 2014	738,376,822
June, 2014	708,035,118
Total	***6,768,053,704***

Appendix Table A.7 Number of bets, by session type	
Base: All machine data	*Patterns of Play*
Session type	
B2 only	1,927,694,951
B3 only	2,594,137,680
B2 and B3	1,507,346,615
Other	738,874,458
Total	***6,768,053,704***

Appendix B.   Stake size tables

Base: All machine data in England, Scotland and Wales

Patterns of Play

Region	Stake size (pence)														
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of bets)
North	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**400**	**1100**	**2175**	**10000**	**467**	***1,555,097,510***
North East	1	20	20	25	50	50	100	100	200	300	1000	2000	10000	407	*300,041,971*
North West	1	20	20	25	50	100	100	100	200	500	1270	2400	10000	504	*720557017*
Yorkshire and Humber	1	20	20	25	50	50	100	100	200	320	1020	2100	10000	450	*534501507*
Midlands	1	20	20	25	50	50	100	100	200	300	1000	2160	10000	453	*942,446,769*
East Midlands	1	20	20	20	50	50	100	100	160	200	920	2000	10000	392	*428,328,602*
West Midlands	1	20	20	25	50	50	100	100	200	400	1240	2500	10000	504	*514,118,167*
East of England	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**220**	**1060**	**2360**	**10000**	**479**	***594,865,195***
London and the South East	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**500**	**1700**	**3320**	**10000**	**621**	***2,351,242,986***
London	1	20	20	25	50	50	100	200	200	600	2000	3820	10000	691	*1,549,583,243*

Appendix Table B.1 Stake size, by region (table continued over two pages)

South East	1	20	20	25	50	50	100	100	200	220	1080	2400	10000	486	*801,659,743*
South West	1	20	20	25	50	50	100	100	200	200	1000	2000	10000	415	*425,262,313*
Wales	1	20	20	25	50	100	100	100	200	300	1000	2125	10000	449	*226,760,409*
Scotland	1	20	20	25	50	100	100	100	200	280	1000	2000	10000	431	*646,375,272*
Total*	1	20	20	25	50	50	100	100	200	360	1240	2525	10000	513	*6,767,806,290*

*The total number of sessions on which the stake size analysis is based is slightly lower than in other chapters. This is because of errors identified in the data which recorded some stakes at being over the £100 maximum. These data have been excluded from analysis.

Appendix Table B.2 Stake size, by area deprivation

Base: All machine data in England, Scotland and Wales   *Patterns of Play*

Deprivation area	Stake size (pence)														Bases (number of bets)
		Centiles												Mean	
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
England															
Most deprived areas (80th centile)	1	20	20	25	50	50	100	100	200	400	1240	2500	10000	508	2,338,957,932
Less deprived areas	1	20	20	25	50	100	100	100	200	360	1320	2720	10000	535	3,529,956,841
Scotland															
Most deprived areas (80th centile)	1	20	20	25	50	50	100	100	200	225	1000	2000	10000	400	237,130,289
Less deprived areas	1	20	20	25	50	100	100	100	200	300	1000	2080	10000	448	409,244,983
Wales															
Most deprived areas (80th centile)	1	20	20	25	50	50	100	100	200	330	1060	2160	10000	454	66,733,558
Less deprived areas	1	20	20	25	50	100	100	100	200	280	1000	2100	10000	447	160,026,851
Total*	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**360**	**1240**	**2525**	**10000**	**513**	**6,767,806,290**

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix Table B.3   Stake size, by population density

Base: All machine data in England, Scotland and Wales | | *Patterns Of Play*

Population density	Stake size (pence)															
		Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean		Bases (number of bets)
Most populated areas (80th centile)	1	20	20	25	50	50	100	100	200	500	1500	3000	10000	581		2,575,495,456
Less populated areas	1	20	20	25	50	50	100	100	200	300	1060	2240	10000	470		4,192,310,834
Total	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**360**	**1240**	**2525**	**10000**	**513**		***6,767,806,290***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix Table B.4   Stake size, by time of day (table continued over two pages)

Base: All machine data between 8am and midnight   *Patterns of Play*

Hour of the day	Stake size (pence)													Mean	Bases (number of bets)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
8am	1	20	20	20	50	50	100	100	200	325	1080	2280	10000	472	*49,400,074*
9am	1	20	20	20	50	50	100	100	200	280	1000	2180	10000	455	*233,668,266*
10am	1	20	20	25	50	50	100	100	200	280	1010	2200	10000	458	*423,548,746*
11am	1	20	20	25	50	50	100	100	200	300	1020	2200	10000	462	*548,437,134*
12pm	1	20	20	25	50	50	100	100	200	300	1080	2250	10000	472	*636,567,319*
1pm	1	20	20	25	50	50	100	100	200	340	1160	2400	10000	491	*668,332,038*
2pm	1	20	20	25	50	50	100	100	200	360	1230	2515	10000	509	*671,317,199*
3pm	1	20	20	25	50	50	100	100	200	400	1300	2620	10000	525	*656,741,917*
4pm	1	20	20	25	50	50	100	100	200	400	1320	2620	10000	526	*649,384,829*
5pm	1	20	20	25	50	50	100	100	200	400	1320	2610	10000	526	*623,899,925*
6pm	1	20	20	25	50	100	100	100	200	400	1350	2700	10000	534	*556,760,590*
7pm	1	20	20	25	50	100	100	100	200	400	1400	2800	10000	549	*476,391,149*

Appendix Table B.4	Stake size, by time of day (table continued over two pages)														
8pm	1	20	20	25	50	100	100	100	200	410	1460	3000	10000	576	*366,406,077*
9pm	1	20	20	25	50	100	100	200	200	500	1820	3600	10000	657	*201,543,902*
10pm	1	20	20	25	50	100	100	200	300	1000	2880	6150	10000	970	*2,133,429*
11pm	1	20	20	50	50	100	200	200	500	1300	3480	7400	10000	1109	*574,455*
Total*	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**360**	**1240**	**2525**	**10000**	**513**	***6,767,806,290***

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix Table B.5   Stake size, by day of the week

Day of the week	Stake size (pence)													Mean	Bases (number of bets)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
Sunday	1	20	20	25	50	50	100	100	200	380	1250	2560	10000	514	*754,890,440*
Monday	1	20	20	25	50	50	100	100	200	400	1360	2760	10000	538	*994,604,066*
Tuesday	1	20	20	25	50	50	100	100	200	395	1300	2700	10000	531	*938,325,317*
Wednesday	1	20	20	25	50	50	100	100	200	365	1260	2620	10000	523	*884,775,135*
Thursday	1	20	20	25	50	50	100	100	200	360	1240	2580	10000	518	*934,409,443*
Friday	1	20	20	25	50	50	100	100	200	340	1190	2440	10000	496	*1,164,220,902*
Saturday	1	20	20	25	50	50	100	100	200	320	1100	2280	10000	477	*1,096,580,987*
Total	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**360**	**1240**	**2525**	**10000**	**513**	***6,767,806,290***

Appendix Table B.6   Stake size, by month

Month	Stake size (pence)														
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of bets)
September, 2013	1	20	20	25	50	100	100	100	200	380	1250	2540	10000	518	605,452,731
October, 2013	1	20	20	25	50	100	100	100	200	400	1284	2600	10000	524	637,576,283
November, 2013	1	20	20	25	50	50	100	100	200	380	1260	2550	10000	518	638,703,957
December, 2013	1	20	20	25	50	50	100	100	200	375	1260	2540	10000	516	675,700,607
January, 2014	1	20	20	25	50	50	100	100	200	360	1230	2520	10000	512	660,257,903
February, 2014	1	20	20	25	50	50	100	100	200	360	1200	2520	10000	510	648,343,503
March, 2014	1	20	20	25	50	50	100	100	200	360	1220	2500	10000	507	741,187,472
April, 2014	1	20	20	25	50	50	100	100	200	360	1240	2540	10000	511	714,174,601
May, 2014	1	20	20	25	50	50	100	100	200	340	1200	2520	10000	506	738,375,433
June, 2014	1	20	20	25	50	50	100	100	200	320	1200	2520	10000	506	708,033,800
Total	**1**	**20**	**20**	**25**	**50**	**50**	**100**	**100**	**200**	**360**	**1240**	**2525**	**10000**	**513**	**6,767,806,290**

Appendix Table B.7   Stake size, by session type

Session type	Stake size (pence)													Mean	Bases (number of bets)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
B2 only	1	50	100	100	200	360	540	880	1240	2000	3800	6500	10000	1407	1,507,289,367
B2 and B3	1	20	20	20	50	50	100	100	100	200	200	1000	10000	259	1,927,659,270
B3 only	1	20	20	20	25	50	50	100	100	100	200	200	10000	87	2,594,019,184
Other	1	20	20	20	25	50	50	100	100	200	200	500	16200	189	738,838,469
Total	*1*	*20*	*20*	*25*	*50*	*50*	*100*	*100*	*200*	*360*	*1240*	*2525*	*10000*	*513*	*6,767,806,290*

Appendix C. Net expenditure tables

Appendix table C.1 Net expenditure, by region (table continued over two pages)														
Base: All machine data in England, Scotland and Wales														
Region	Net expenditure per session (pence)													
		Centiles												
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of sessions)
North	**-1353220**	**-7220**	**-3022**	**-700**	**100**	**200**	**400**	**700**	**1060**	**2000**	**4700**	**9000**	**818180**	**566**	*46,986,770*
North East	-644000	-6600	-2900	-600	100	200	400	600	1000	2000	4180	8000	612020	529	*89,55,242*
North West	-1353220	-7420	-3120	-720	100	200	420	700	1075	2000	4800	9000	818180	561	*23,231,240*
Yorkshire & Humber	-1049075	-7500	-3100	-700	100	200	430	720	1105	2000	5000	9400	734500	595	*14,800,288*
Midlands	**-979115**	**-8300**	**-3600**	**-810**	**100**	**200**	**500**	**900**	**1400**	**2400**	**5500**	**10000**	**720000**	**666**	***23,511,400***
East Midlands	-722100	-8200	-3560	-800	100	200	500	990	1500	2500	5500	10000	720000	677	*9,484,417*
West Midlands	-979115	-8360	-3600	-820	100	200	475	850	1350	2345	5500	10000	697990	660	*14,026,983*
East of England	**-1207740**	**-10279**	**-4400**	**-1000**	**100**	**280**	**500**	**1000**	**2000**	**3020**	**7000**	**12460**	**1013480**	**853**	***123,99,709***
London & South East	-1233440	-11000	-4650	-1000	88	210	500	1000	2000	3025	7060	13100	1377680	831	***60,283,849***
London	-1233440	-11000	-4800	-1000	50	200	500	1000	2000	3000	7200	13500	1367405	821	*43,333,005*

Appendix table C.1 Net expenditure, by region (table continued over two pages)														
South East	-1119800	-10400	-4400	-1000	100	300	520	1000	2000	3100	7000	12500	1377680	854	*16,950,844*
South West	**-839360**	**-9250**	**-4000**	**-950**	**100**	**240**	**500**	**1000**	**1900**	**3000**	**6050**	**11165**	**799020**	**778**	*8,793,483*
Wales	**-623560**	**-8000**	**-3360**	**-730**	**100**	**200**	**490**	**840**	**1300**	**2200**	**5015**	**10000**	**660780**	**644**	*6,089,961*
Scotland	**-926850**	**-7200**	**-3050**	**-700**	**100**	**200**	**400**	**700**	**1100**	**2000**	**4680**	**8900**	**743900**	**552**	*193,14,101*
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	*178,250,259*

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table C.2   Net expenditure, by deprivation

Base: All machine data in England, Scotland and Wales | *Patterns of Play*

Region	Net expenditure (pence)														Bases (number of sessions)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
England															
Most deprived areas (80th centile)	-1005625	-8140	-3500	-800	100	200	450	800	1250	2200	5200	10000	1067000	635	*66,041,146*
Less deprived areas	-1353220	-10000	-4100	-990	100	220	500	1000	1900	3000	6490	12000	1377680	789	*85,934,065*
Scotland															
Most deprived areas (80th centile)	-808135	-6500	-2900	-600	100	200	400	600	1000	2000	4000	8000	659160	501	*7,358,631*
Less deprived areas	-926850	-7800	-3360	-800	100	200	450	800	1200	2065	5000	9500	743900	583	*11,955,470*
Wales															
Most deprived areas (80th centile)	-623560	-7480	-3090	-660	100	200	460	765	1140	2000	5000	9002	660780	606	*1,938,422*
Less deprived areas	-615615	-8040	-3500	-780	100	200	500	900	1400	2395	5360	10000	659205	662	*4,151,539*
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	*178,250,259*

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table C.3   Net expenditure, by population density

Base: All machine data in England, Scotland and Wales · *Patterns of Play*

Region	Net expenditure per session (pence)														Bases (number of sessions)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
Densely populated areas (80th centile)	-1353220	-9080	-4000	-900	100	200	500	980	1500	2540	6000	11000	1367405	701	73,549,599
Not densely populated areas	-1207740	-8670	-3760	-840	100	200	500	1000	1500	2500	5983	10200	1377680	700	104,700,660
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	***178,250,259***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table C.4 Net expenditure, by hour of the day (table continued over two pages)

Base: All machine data between 8am and midnight   *Patterns of Play*

| Hour of the day | Net expenditure per session (pence) | | | | | | | | | | | | | | |
| | | Centiles | | | | | | | | | | | | | |
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of sessions)
8am	-1207740	-9500	-4000	-900	100	200	500	1000	1574	2925	6210	12000	1367405	816	2,026,336
9am	-808640	-8600	-3670	-800	100	200	480	900	1440	2500	5990	10500	1114400	725	7,153,867
10am	-974700	-8220	-3550	-800	100	200	463	840	1360	2350	5500	10000	905510	684	11,886,293
11am	-1089560	-8160	-3530	-814	100	200	460	825	1350	2345	5500	10000	1257320	675	14,719,224
12pm	-1233440	-8230.7	-3560	-835	100	200	480	840	1360	2370	5500	10000	1067000	680	17,078,747
1pm	-936385	-8580	-3750	-880	100	200	495	900	1440	2500	5880	10240	751505	691	17,473,911
2pm	-1049075	-8900	-3880	-900	100	200	500	940	1500	2500	6000	10550	885850	703	17,778,826
3pm	-1353220	-9000	-4000	-905	100	200	500	1000	1500	2650	6000	11000	1377680	720	17,129,336
4pm	-1000500	-9000	-4000	-900	100	200	500	1000	1500	2700	6000	10995	722000	718	16,946,474
5pm	-878560	-9001	-4000	-900	100	205	500	1000	1520	2700	6000	10880	861000	713	16,173,912
6pm	-1010000	-9250	-4000	-900	100	220	500	1000	1600	2800	6000	11000	930100	726	13,960,151
7pm	-720000	-9300	-4000	-855	100	220	500	1000	1610	2800	6000	11000	996000	716	11,952,579

Appendix table C.4		Net expenditure, by hour of the day (table continued over two pages)												
8pm	-772320	-9720	-4000	-850	100	240	500	1000	1800	2995	6000	11100	547480	708	8,783,004
9pm	-589380	-9000	-3900	-795	100	220	500	1000	1500	2450	5400	10000	419620	518	4,972,649
10pm	-355720	-11920	-5000	-1000	20	200	500	1000	2000	3075	7746	14000	264995	756	55,025
11pm	-225000	-11721	-5000	-1160	0	180	470	1000	1820	3000	7000	12160	158780	460	14,814
Total*	-1353220	-8960	-3900	-870	100	200	500	994	1500	2500	6000	10500	1377680	700	178,250,259

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix table C.5   Net expenditure, by day of the week

Day of the week	Net expenditure per session (pence)														Bases (number of sessions)
	Centiles													Mean	
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
Sunday	-1119800	-8680	-3721	-800	100	200	500	950	1480	2460	5660	10020	925385	669	20,868,703
Monday	-1353220	-9440	-4000	-900	100	200	500	1000	1575	2880	6000	11500	972360	756	25,047,505
Tuesday	-1161390	-9000	-3900	-850	100	200	500	978	1500	2540	6000	11000	1377680	718	24,606,777
Wednesday	-1089560	-8800	-3700	-800	100	200	500	900	1460	2500	5990	10482	1367405	701	23,754,318
Thursday	-1233440	-8985	-3840	-840	100	200	500	990	1500	2500	6000	10510	1013480	705	24,636,841
Friday	-1047120	-9005	-4000	-980	100	210	500	1000	1620	2860	6000	10995	996000	724	29,243,117
Saturday	-1207740	-8180	-3600	-850	100	200	500	920	1410	2350	5300	10000	744435	633	30,092,998
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	*178,250,259*

Appendix table C.6   Net expenditure, by month

Month	Net expenditure per session (pence)														Bases *(number of sessions)*
		Centiles													
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
September, 2013	-1089560	-9000	-3995	-940	100	200	500	970	1500	2500	6000	10870	905510	713	*15,649,494*
October, 2013	-944160	-9000	-4000	-940	100	200	500	980	1500	2500	6000	10990	1257320	725	*16,562,151*
November, 2013	-1353220	-9000	-4000	-980	100	200	500	990	1500	2550	6000	11000	930100	726	*16,280,448*
December, 2013	-974740	-9000	-4000	-900	100	200	500	1000	1520	2700	6000	10855	816000	714	*17,577,143*
January, 2014	-1049075	-8880	-3780	-800	100	200	500	975	1500	2510	6000	10550	1367405	704	*17,197,460*
February, 2014	-1161390	-8700	-3700	-800	100	200	500	950	1500	2500	5850	10135	896490	685	*17,311,709*
March, 2014	-1233440	-8600	-3700	-800	100	200	500	960	1500	2500	5800	10050	1067000	672	*20,169,717*
April, 2014	-947200	-8800	-3800	-820	100	200	500	985	1500	2500	5940	10160	893510	675	*19,424,683*
May, 2014	-1119800	-9000	-3900	-840	100	200	500	1000	1500	2580	6000	10500	996000	697	*19,470,913*
June, 2014	-875015	-9000	-3900	-840	100	200	500	1000	1500	2600	6000	10550	1377680	703	*18,606,541*
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	*178,250,259*

Appendix table C.7   Net expenditure, by session type

Session type	Net expenditure per session (pence)													Mean	Bases (number of sessions)
		Centiles													
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
B2 only	-1353220	-8900	-3850	-900	100	200	450	800	1300	2300	5715	10400	1377680	631	130,864,726
B2 and B3	-749265	-14075	-6515	-1950	-70	500	1000	1980	3000	5000	10000	17950	896490	1416	12,087,363
B3 only	-459040	-7000	-3000	-300	100	250	500	1000	1495	2090	4700	8000	597900	637	27,991,846
Other	-1207740	-9420	-3995	-725	100	300	593	1000	2000	3200	6990	12000	905510	987	7,306,324
Total	**-1353220**	**-8960**	**-3900**	**-870**	**100**	**200**	**500**	**994**	**1500**	**2500**	**6000**	**10500**	**1377680**	**700**	**178,250,259**

Appendix D.   Proportion of sessions where £100 stake was used

Appendix table D.1 Proportion of sessions where £100 stake was used, by region (table continues over two pages)			
Base: All machine data in England, Scotland and Wales where B2 games were played			*Patterns of Play*
Region	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
North	<0.5	1	98	*38,090,049*
North East	<0.5	1	99	*7,179,228*
North West	<0.5	1	98	*19,217,679*
Yorkshire and Humber	<0.5	**2**	**98**	*11,693,142*
Midlands	<0.5	2	98	*18,522,761*
East Midlands	<0.5	2	98	*7,186,157*
West Midlands	<0.5	2	**97**	*11,336,604*
East of England	**1**	**3**	**97**	*9,672,417*
London and the South East	**1**	**3**	**96**	*48,827,585*
London	1	2	96	*35,733,266*
South East	1	2	98	*13,094,319*
South West	<0.5	1	98	*6,624,200*

Appendix table D.1 Proportion of sessions where £100 stake was used, by region (table continues over two pages)			
Wales	<0.5	1	98	*4,858,084*
Scotland	<0.5	**2**	**98**	*15,604,273*
Total	**1**	**2**	**97**	***142,199,369***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table D.2	Proportion of sessions where £100 stake was used, by area deprivation			
Base: All machine data in England, Scotland and Wales where B2 games were played				*Patterns of Play*
Deprivation area	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
England				
Most deprived areas (80th centile)	<0.5	2	98	*53,465,256*
Less deprived areas	1	2	97	*68,271,756*
Scotland				
Most deprived areas (80th centile)	<0.5	1	99	*5,948,158*
Less deprived areas	<0.5	1	98	*9,656,115*
Wales				
Most deprived areas (80th centile)	<0.5	1	98	*1,547,257*
Less deprived areas	<0.5	1	98	*3,310,827*
Total	**1**	**2**	**97**	***142,199,369***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table D.3   Proportion of sessions where £100 stake was used, by population density

				Patterns of Play
Base: All machine data in England, Scotland and Wales where B2 games were played				
Population density	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
Densely populated areas (80th centile)	1	2	97	*60,241,829*
Not densely populated areas	<0.5	2	98	*82,724,305*
Total	**1**	**2**	**97**	*142,966,134*

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table D.4   Proportion of sessions where £100 stake was used, by time of day

				Patterns of Play
Base: All machine data between 8am and midnight where B2 games were played				
Hour of the day	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
8am	1	2	97	*1,346,618*
9am	1	2	97	*5,414,753*
10am	<0.5	2	98	*9,233,374*
11am	<0.5	2	98	*11,579,211*
12pm	<0.5	2	98	*13,604,553*
1pm	<0.5	2	98	*14,006,408*
2pm	<0.5	2	98	*14,327,473*
3pm	<0.5	2	97	*13,852,817*
4pm	1	2	98	*13,701,005*
5pm	1	2	98	*13,098,843*
6pm	1	2	97	*11,365,482*
7pm	1	2	97	*9,795,840*
8pm	1	2	97	*7,233,198*
9pm	1	2	97	*4,258,936*
10pm	2	4	95	*51,279*
11pm	2	4	95	*14,301*
Total	**1**	**2**	**97**	***142,884,091***

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix table D.5	Proportion of sessions where £100 stake was used, by day of the week			
Base: All machine data where B2 games were played				*Patterns of Play*
Day of the week	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
Sunday	<0.5	2	98	*16,769,252*
Monday	1	2	97	*20,065,919*
Tuesday	1	2	97	*19,763,092*
Wednesday	1	2	97	*19,038,822*
Thursday	1	2	97	*19,713,172*
Friday	1	2	98	*23,372,719*
Saturday	<0.5	2	98	*24,243,158*
Total	**1**	**2**	**97**	***142,966,134***

Appendix table D.6 Proportion of sessions where £100 stake was used, by month

| | | | | *Base: All machine data where B2 games were played* | | | *Patterns of Play* |

Month	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	Bases (number of sessions)
September, 2013	<0.5	2	97	12,323,321
October, 2013	<0.5	2	97	12,997,246
November, 2013	<0.5	2	97	12,684,579
December, 2013	1	2	98	14,749,360
January, 2014	1	2	97	14,396,371
February, 2014	1	2	98	14,046,174
March, 2014	1	2	98	16,144,789
April, 2014	1	2	98	15,596,613
May, 2014	1	2	97	15,459,545
June, 2014	1	2	97	14,568,136
Total	**1**	**2**	**97**	*142,966,134*

Appendix table D.7	Proportion of sessions where £100 stake was used, by session type			
Base: All machine data where B2 games were played				*Patterns of Play*
Session type	Proportion of sessions that started with £100 stake %	Proportion of sessions that did not start with £100 stake but reached it in the session %	Proportion of sessions that did not reach £100 stake %	*Bases (number of sessions)*
B2 only	1	2	97	130,872,403
B2 and B3	1	2	98	12,093,731
Total	**1**	**2**	**97**	*142,966,134*

Appendix E. Session length tables

Appendix table E.1 Session length (seconds), by region (table continues over two pages)

Region	Length of session (seconds)														Bases (number of sessions)
							Centiles								
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
North	**0**	**15**	**27**	**53**	**88**	**137**	**205**	**300**	**440**	**674**	**1191**	**1899**	**56105**	**576**	*46,965,508*
North East	0	19	30	55	89	136	202	294	430	661	1184	1933	56105	612	*8,949,628*
North West	0	14	25	51	85	133	199	292	429	659	1164	1853	56105	555	*23,221,096*
Yorkshire and Humber	0	16	28	56	94	146	218	317	463	707	1238	1952	56105	587	*14,794,784*
Midlands	**0**	**20**	**33**	**63**	**105**	**163**	**242**	**351**	**513**	**784**	**1378**	**2185**	**56105**	**655**	*234,99,840*
East Midlands	0	22	35	67	110	171	253	366	534	816	1437	2288	56104	687	*9,479,241*
West Midlands	0	19	31	61	101	157	235	342	500	763	1338	2115	56105	633	*14,020,599*
East of England	**0**	**24**	**39**	**73**	**120**	**186**	**275**	**399**	**584**	**895**	**1593**	**2571**	**56105**	**823**	*12,390,519*
London and the South	**0**	**21**	**35**	**67**	**112**	**175**	**259**	**376**	**547**	**831**	**1450**	**2282**	**56105**	**717**	*60,255,065*

Base: All machine data in England, Scotland and Wales · *Patterns of Play*

Appendix table E.1 Session length (seconds), by region (table continues over two pages)

East															
London	0	19	33	66	110	171	255	369	537	813	1408	2199	56105	686	*43,317,732*
South East	0	24	38	72	118	183	270	393	574	880	1563	2504	56105	796	*16,937,333*
South West	**0**	**21**	**35**	**68**	**114**	**177**	**263**	**382**	**560**	**860**	**1530**	**2464**	**56104**	**804**	***8,785,490***
Wales	**0**	**19**	**31**	**58**	**95**	**148**	**221**	**324**	**478**	**741**	**1344**	**2218**	**56105**	**775**	***6,080,931***
Scotland	**0**	**16**	**28**	**53**	**86**	**133**	**199**	**290**	**427**	**660**	**1187**	**1942**	**56105**	**585**	***19,302,375***
Total	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	***178,150,249***

- Totals exclude some sessions where there were errors (i.e. sessions which lasted longer than 15 hours) and so bases for these tables vary to the rest of the tables; and include data from 15 venues which could not be geographically located.

Appendix table E.2 Session length, by area deprivation

Patterns of Play

Region	Length of session (seconds)														Bases (number of sessions)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
England															
Most deprived areas (80th centile)	0	18	31	59	99	154	229	334	488	743	1298	2043	56105	624	*66,017,382*
Less deprived areas	0	20	33	64	107	167	248	362	529	811	1436	2299	56105	718	*85,879,040*
Scotland															
Most deprived areas (80th centile)	0	16	27	51	83	128	190	278	410	633	1141	1870	56105	570	*7,354,378*
Less deprived areas	0	16	28	54	89	137	204	298	438	676	1215	1985	56105	594	*11,947,997*
Wales															
Most deprived areas (80th centile)	0	19	30	55	91	141	210	309	456	706	1269	2075	56104	734	*1,935,667*
Less deprived areas	0	20	32	59	97	151	226	331	488	758	1380	2287	56105	794	*4,145,264*
Total*	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	*178,150,249*

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table E.3 Session length, by population density

Base: All machine data in England, Scotland and Wales   *Patterns of Play*

Density	Length of session (seconds)														Bases (number of sessions)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
Densely populated areas (80th centile)	0	19	32	61	101	157	234	341	501	769	1369	2203	56105	685	*104,630,925*
Not densely populated areas	0	18	31	60	100	157	234	341	499	761	1333	2104	56105	649	*73,519,324*
Total*	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	***178,150,249***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table E.4 Session length, by time of day (table continued over two pages)

	Base: All machine data between 8am and midnight															Patterns: of Play

Hour of the day	Length of session (seconds)															
	Centiles															
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of sessions)
8am	0	20	34	69	120	196	305	470	755	1408	39363	46525	56105	5548	2,002,396
9am	0	18	30	59	98	155	233	344	510	794	1460	2540	56105	1264	7,129,215
10am	0	18	30	58	96	149	224	327	479	735	1299	2074	56105	721	11,861,893
11am	0	18	31	59	97	151	224	325	475	724	1264	1975	56105	558	14,707,225
12pm	0	19	31	60	99	153	226	328	478	727	1265	1965	56105	531	17,071,655
1pm	0	19	32	62	102	157	233	336	489	742	1288	1997	56096	538	17,470,628
2pm	0	19	32	62	102	158	233	338	492	748	1303	2026	54479	546	17,777,368
3pm	0	19	33	63	104	161	238	345	503	766	1337	2086	31558	562	17,128,675
4pm	0	19	32	62	103	160	238	345	504	767	1339	2098	26687	571	16,946,106
5pm	0	19	32	61	102	159	237	345	505	772	1362	2170	24768	589	16,173,679
6pm	0	19	32	62	103	161	242	355	523	806	1448	2369	20593	623	13,960,006

Appendix table E.4 Session length, by time of day (table continued over two pages)														
7pm	0	18	31	61	102	160	241	356	525	814	1472	2432	17362	629	11,952,544
8pm	0	18	31	62	104	164	248	366	541	841	1538	2553	14001	610	8,782,986
9pm	0	15	26	52	86	136	207	306	451	686	1170	1737	10423	445	4,972,649
10pm	0	12	25	51	87	145	226	339	508	782	1353	2036	6950	515	55,025
11pm	0	14	28	56	98	154	229	334	480	701	1134	1552	3435	433	14,814
Total*	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	*178,150,249*

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix table E.5 Session length, by day of the week

Base: : All machine data													Patterns of Play	

Day of the week	Length of session (seconds)														
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	Bases (number of sessions)
Sunday	0	18	31	59	99	153	229	334	491	755	1351	2204	56105	774	20,822,481
Monday	0	19	32	63	105	164	246	360	528	811	1435	2293	56105	713	25,034,757
Tuesday	0	18	31	61	101	158	237	346	507	778	1380	2208	56105	692	24,594,396
Wednesday	0	18	31	59	99	154	231	337	495	761	1352	2169	56105	686	23,742,690
Thursday	0	19	31	61	101	157	235	342	502	770	1362	2179	56105	682	24,626,319
Friday	0	19	33	63	106	164	243	353	514	783	1371	2163	56105	666	29,236,608
Saturday	0	18	31	59	96	149	220	320	466	711	1248	1968	48572	527	30,092,998
Total	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	*178,150,249*

Appendix table E.6 Session length, by month

Base: All machine data | *Patterns of Play*

Month	Length of session (seconds)													Mean	Bases (number of sessions)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max		
September, 2013	0	19	33	66	111	172	254	370	544	847	1576	2759	56105	999	*15,625,571*
October, 2013	0	19	33	66	111	172	254	370	545	848	1574	2745	56105	1008	*16,536,362*
November, 2013	0	20	34	68	114	175	259	376	553	860	1591	2762	56105	1005	*16,254,817*
December, 2013	0	19	32	60	99	155	231	337	493	751	1307	2032	56100	555	*17,571,063*
January, 2014	0	17	30	59	99	155	233	343	508	788	1423	2316	56105	662	*17,182,575*
February, 2014	0	18	31	59	97	151	225	329	481	733	1273	1974	56095	533	*17,310,467*
March, 2014	0	18	31	58	96	150	224	326	476	724	1250	1922	56105	519	*20,169,040*
April, 2014	0	18	31	58	96	149	222	324	473	719	1242	1910	56098	517	*19,424,070*
May, 2014	0	18	31	59	97	151	226	329	481	729	1258	1935	56100	524	*19,470,279*
June, 2014	0	18	31	58	96	150	225	328	478	726	1253	1929	56097	522	*18,606,005*
Total	**0**	**19**	**31**	**61**	**101**	**157**	**234**	**341**	**500**	**766**	**1354**	**2161**	**56105**	**670**	***178,150,249***

Appendix table E.7 Session length, by session type

Session type	Session length (seconds)														Bases (number of bets)
	Centiles														
	Min	5th	10th	20th	30th	40th	50th (median)	60th	70th	80th	90th	95th	Max	Mean	
B2 only	0	17	28	53	85	132	198	290	425	650	1144	1826	56105	585	*130,798,637*
B2 and B3	0	133	192	304	424	565	736	957	1263	1744	2731	3988	56105	1361	*12,070,821*
B3 only	0	19	34	69	112	165	237	338	489	746	1313	2070	56105	586	*27,987,748*
Other	0	35	59	123	206	312	450	642	922	1387	2407	3821	56105	1370	*7,293,043*
Total	*0*	*19*	*31*	*61*	*101*	*157*	*234*	*341*	*500*	*766*	*1354*	*2161*	*56105*	*670*	*178,150,249*

Appendix F.   Session types tables

Appendix table F.1 Distribution of session types, by region (table continued over two pages)					
Base: All machine data in England, Scotland and Wales					*Patterns of Play*
Region	Distribution of session types				
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
North	**75**	**16**	**6**	**3**	***46,986,770***
North East	74	14	6	6	*8,955,242*
North West	77	15	6	2	*23,231,240*
Yorkshire and Humber	72	18	7	3	*14,800,288*
Midlands	**72**	**16**	**7**	**5**	***23,511,400***
East Midlands	67	19	9	5	*9,484,417*
West Midlands	75	15	6	4	*14,026,983*
East of England	70	16	8	6	*12,399,709*
London and the South East	**74**	**15**	**7**	**4**	***60,283,849***
London	76	15	7	3	*43,333,005*
South East	70	16	8	6	*16,950,844*
South West	67	19	8	5	*8,793,483*

Appendix table F.1 Distribution of session types, by region (table continued over two pages)

Wales	73	16	7	4	*6,089,961*
Scotland	75	15	6	4	*19,314,101*
Total	**73**	**16**	**7**	**4**	***178,250,259***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table F.2   Distribution of session types, by area deprivation

Base: All machine data in England, Scotland and Wales					*Patterns of Play*
Deprivation area	Distribution of session types				
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
England					
Most deprived areas (80th centile)	74	16	7	3	*66,041,146*
Less deprived areas	72	16	7	4	*85,934,065*
Scotland					
Most deprived areas (80th centile)	75	15	6	4	*7,358,631*
Less deprived areas	74	15	6	4	*11,955,470*
Wales					
Most deprived areas (80th centile)	74	16	6	4	*1,938,422*
Less deprived areas	73	16	7	4	*4,151,539*
Total	**73**	**16**	**7**	**4**	***178,250,259***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table F.3	Distribution of session types, by population density				
Base: All machine data in England, Scotland and Wales					*Patterns of Play*
Population density	Distribution of session types				
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
Densely populated areas (80th centile)	75	15	7	3	*73,549,599*
Less densely populated areas	72	16	7	5	*104,700,660*
Total	**73**	**16**	**7**	**4**	*178,250,259*

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table F.4   Distribution of session types, by time of day

Hour of the day	Distribution of session types				Patterns of Play
Base: All machine data between 8am and midnight					
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
8am	70	17	6	7	*2,026,336*
9am	71	18	7	4	*7,153,867*
10am	72	18	7	4	*11,886,293*
11am	72	17	7	4	*14,719,224*
12pm	73	16	7	4	*17,078,747*
1pm	73	16	7	4	*17,473,911*
2pm	74	15	7	4	*17,778,826*
3pm	74	15	7	4	*17,129,336*
4pm	74	15	7	4	*16,946,474*
5pm	74	15	7	4	*16,173,912*
6pm	74	15	7	4	*13,960,151*
7pm	74	15	7	4	*11,952,579*
8pm	75	15	7	3	*8,783,004*
9pm	78	14	6	3	*4,972,649*
10pm	81	12	6	2	*55,025*
11pm	84	9	5	2	*14,814*
Total	**73**	**16**	**7**	**4**	***178,250,259***

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

Appendix table F.5   Distribution of session types, by day of the week

Day of the week	Distribution of session types				Patterns of Play
Base: All machine data					
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
Sunday	74	16	7	4	20,868,703
Monday	73	16	7	4	25,047,505
Tuesday	74	16	7	4	24,606,777
Wednesday	74	16	7	4	23,754,318
Thursday	73	16	7	4	24,636,841
Friday	73	16	7	4	29,243,117
Saturday	74	15	7	4	30,092,998
Total	**73**	**16**	**7**	**4**	**178,250,259**

Appendix table F.6   Distribution of session types, by month

Month	Distribution of session types				Patterns of Play
Base: All machine data					
	B2 only	B3 only	B2 and B3	Other	*Bases (number of sessions)*
September, 2013	73	13	6	8	*15,649,494*
October, 2013	73	13	6	8	*16,562,151*
November, 2013	72	14	6	8	*16,280,448*
December, 2013	76	15	8	1	*17,575,678*
January, 2014	76	15	8	1	*17,198,925*
February, 2014	74	16	7	3	*17,311,709*
March, 2014	73	16	7	4	*20,169,717*
April, 2014	74	17	7	2	*19,424,683*
May, 2014	72	18	7	2	*19,470,913*
June, 2014	71	18	7	3	*18,606,541*
Total	**73**	**16**	**7**	**4**	***178,250,259***

Appendix G.   Types of B2 games tables

Appendix table G.1 Proportions of B2 games, by region			
Base: All B2 games in England, Scotland and Wales			*Patterns of Play*
Region	Proportion of B2 games		
	Roulette style games %	Other B2 games %	*Bases (number of sessions)*
North	**67**	**33**	***38,090,049***
North East	58	42	*7,179,228*
North West	71	29	*19,217,679*
Yorkshire and Humber	68	32	*11,693,142*
Midlands	**62**	**38**	***18,522,761***
East Midlands	57	43	*7,186,157*
West Midlands	66	34	*11,336,604*
East of England	**56**	**44**	*9,672,417*
London and the South East	**69**	**31**	***48,827,585***
London	75	25	*35,733,266*
South East	57	43	*13,094,319*
South West	56	44	*6,624,200*

Appendix table G.1 Proportions of B2 games, by region		
Wales	56	44	*4,858,084*
Scotland	55	45	*15,604,273*
Total	**64**	**36**	***142,199,369***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table G.2   Proportion of B2 games, by area deprivation

Deprivation area	Proportion of B2 games		
Base: All B2 games in England, Scotland and Wales			*Patterns of Play*
	Roulette style games %	Other B2 games %	*Bases (number of sessions)*
England			
Most deprived areas (80th centile)	69	31	*53,465,256*
Less deprived areas	63	37	*68,271,756*
Scotland			
Most deprived areas (80th centile)	53	47	*5,948,158*
Less deprived areas	56	44	*9,656,115*
Wales			
Most deprived areas (80th centile)	58	42	*1,547,257*
Less deprived areas	55	45	*3,310,827*
Total	**64**	**36**	***142,199,369***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table G.3　Proportion of B2 games, by population density

Population density	Proportion of B2 games		*Patterns of Play*
Base: All B2 games in England, Scotland and Wales			
	Roulette style games %	Other B2 games %	*Bases (number of sessions)*
Densely populated areas (80th centile)	71	29	*60,241,829*
Not densely populated areas	60	40	*82,724,305*
Total	**64**	**36**	***142,966,134***

*Totals shown are for all data, this includes data from 15 venues which could not be geographically located.

Appendix table G.4   Proportion of B2 games, by time of day

Hour of the day	Proportion of B2 games		Patterns of Play
Base: All B2 games between 8am and 11pm			
	Roulette style games %	Other B2 games %	Bases (number of sessions)
8am	66	34	1,346,618
9am	63	37	5,414,753
10am	63	37	9,233,374
11am	62	38	11,579,211
12pm	63	37	13,604,553
1pm	63	37	14,006,408
2pm	64	36	14,327,473
3pm	64	36	13,852,817
4pm	64	36	13,701,005
5pm	65	35	13,098,843
6pm	65	35	11,365,482
7pm	65	35	9,795,840
8pm	67	33	7,233,198
9pm	72	28	4,258,936
10pm	81	19	51,279
11pm	81	19	14,301
Total	**64**	**36**	**142,884,091**

*Totals shown are for all data; the table excludes data that was incorrectly time stamped by machines (i.e., showed play between 1am and 7am).

| Day of the week | Proportion of B2 games | | Patterns of Play |
	Roulette style games %	Other B2 games %	Bases (number of sessions)
Sunday	66	34	16,769,252
Monday	65	35	20,065,919
Tuesday	64	36	19,763,092
Wednesday	64	36	19,038,822
Thursday	64	36	19,713,172
Friday	63	37	23,372,719
Saturday	63	37	24,243,158
Total	**64**	**36**	**142,966,134**

Appendix table G.5 Proportion of B2 games, by day of the week

Base: All B2 games

Appendix table G.6   Proportion of B2 games, by month

Month	Proportion of B2 games		Patterns of Play
Base: All B2 games			
	Roulette style games %	Other B2 games %	*Bases (number of sessions)*
September, 2013	68	32	*12,323,321*
October, 2013	68	32	*12,997,246*
November, 2013	68	32	*12,684,579*
December, 2013	56	44	*14,749,360*
January, 2014	58	42	*14,396,371*
February, 2014	61	39	*14,046,174*
March, 2014	63	37	*16,144,789*
April, 2014	66	34	*15,596,613*
May, 2014	67	33	*15,459,545*
June, 2014	69	31	*14,568,136*
Total	**64**	**36**	***142,966,134***

Appendix H.   Proxy sessions

The gambling machines operated in LBOs in Great Britain to do not require a player to insert their loyalty card before they begin playing. It is possible for the player to insert or withdraw their card at any point of their session. Therefore, if a session is only defined during the period when the card was actually inserted it is likely that some player activity would be excluded. To overcome this problem an algorithm was developed to predict the start and end of sessions on the machine. If a player card was inserted during any portion of the predicted proxy session then all of these transactions are associated to the player.

To generate the proxy sessions, Featurespace configured its ARIC engine to predict if the next event in the stream of data was the start of a new player's sessions. To verify the system, we compared the accuracy of proxy session results to the sessions defined only by the insertion and removal of a loyalty card. The outcome of the verification process is shown below in Figure 6 as a ROC Curve. We believe that the actual performance of the system is better than this, as we are measuring our performance against players inserting and removing their cards rather than the true start and end of sessions.

Indicative Proxy Session Detection Accuracy

Operating point generating a true positive rate of 87.3% and a false positive rate of 11.8%
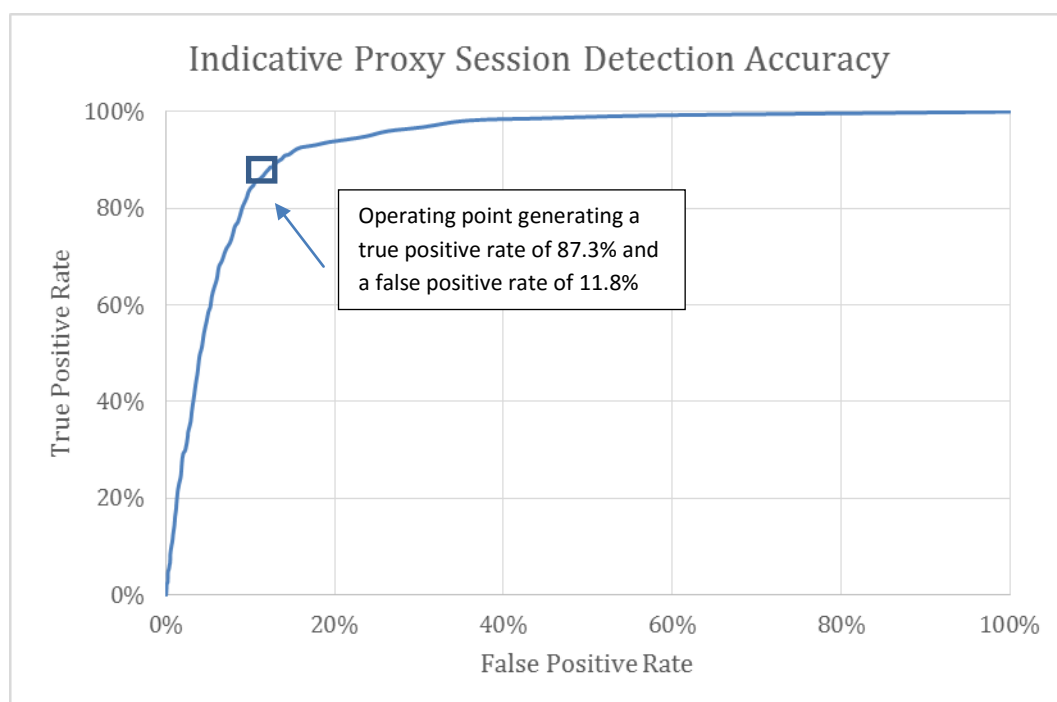
For the results presented in this report, we have chosen the confidence threshold for detecting a change in sessions to deliver a true positive rate of 87.3% with a corresponding false positive rate of 11.8%. If a lower threshold was chosen, increasing the false positive rate would see an overall reduction in the reported session lengths. We are confident that the setting selected provides an optimal equilibrium between short and long sessions.

To provide an illustration of how the Proxy Session process works, a sample of activity from one gaming machine is provided in **Error! Reference source not found.**. In this table, the first six columns represent data that have been provided by the industry. Of particular interest is the first column, which indicates the events when the player has their card inserted into a machine. The last three columns illustrate the data which are added when calculating the proxy sessions. Each of these columns is defined as:

- **Proxy Session Score** – provides a threshold which can be applied to determine if a new session has started;
- **Session ID** – the unique identifier assigned to the session;
- **Proxy Session Player ID** – the player ID that is now associated with each of the events based on the extent of the newly defined session.

The table has been shaded so that the alternative sessions are highlighted in different colours. The derived columns have been shaded in a darker colour. A Proxy Session Score threshold of above 0.35 has been used to define a new session. In this particular example we can see that in the second session (with ID 987655) we have extended the player ID to include the Cash Out transaction. It is interesting to note that in this example there was a nine-minute gap of inactivity between the player putting the money into the machine and then deciding to take it all out.

It is also interesting in this example to note how the impact in choosing the threshold could affect the analysis. If a threshold of 0.4 had been selected, then the subsequent activity in the third session (with ID 987656) would have also been mapped across to player 123456 as well.

Table 1

PlayerID	Timestamp	Value	Balance	Action	Game	Proxy Session Score	Session ID	Proxy Session PlayerID
	09:18	-1160	1180	Play	Roulette	0.00	987654	
	09:18	720	1900	Win	Roulette	0.00	987654	
	09:18	-1160	740	Play	Roulette	0.00	987654	
	09:18	1260	2000	Win	Roulette	0.00	987654	
	09:19	-1160	840	Play	Roulette	0.00	987654	
	09:19	1440	2280	Win	Roulette	0.00	987654	
	09:19	-1160	1120	Play	Roulette	0.00	987654	
	09:20	-1120	0	Play	Roulette	0.00	987654	
123456	12:53	1000	1000	CashIn		0.58	987655	**123456**
123456	12:53	1000	1000	CashIn		0.58	987655	**123456**
123456	12:53	1000	1000	CashIn		0.58	987655	**123456**
	13:01	-3000	0	CashOut		0.00	987655	**123456**

	13:05	200	200	CashIn	Roulette	0.38	987656	
	13:05	10	210	CashIn	Roulette	0.04	987656	
	13:05	-210	0	Play	Roulette	0.00	987656	
	13:05	360	360	Win	Roulette	0.00	987656	
	13:06	20	380	CashIn	Roulette	0.02	987656	
	13:06	-380	0	Play	Roulette	0.00	987656	
	13:06	500	500	CashIn	Roulette	0.10	987656	
	13:07	-480	20	Play	Roulette	0.00	987656	
	13:07	200	220	CashIn	Roulette	0.16	987656	
	13:07	-220	0	Play	Roulette	0.00	987656	
	13:29	500	500	CashIn	Slots	0.58	987657	
	13:29	-20	480	Play	Slots	0.00	987657	

It is important to note the impact that the definition of the proxy session has on the results presented in this report. In short, a 'session' does not necessarily constitute a 'visit', as a player may conduct multiple sessions during a given visit to an LBO, and indeed multiple visits on a given day. For example, if the proxy sessions are too short we will see overall reductions in total staking levels, reloading, and changes in games. Conversely, if the proxy sessions are too long, then we will be asserting that players are spending more money and time on the machines than is actually occurring.