

Tracked Play on B1 Gaming Machines in British Casinos

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THE DATA FOR OUR STUDY

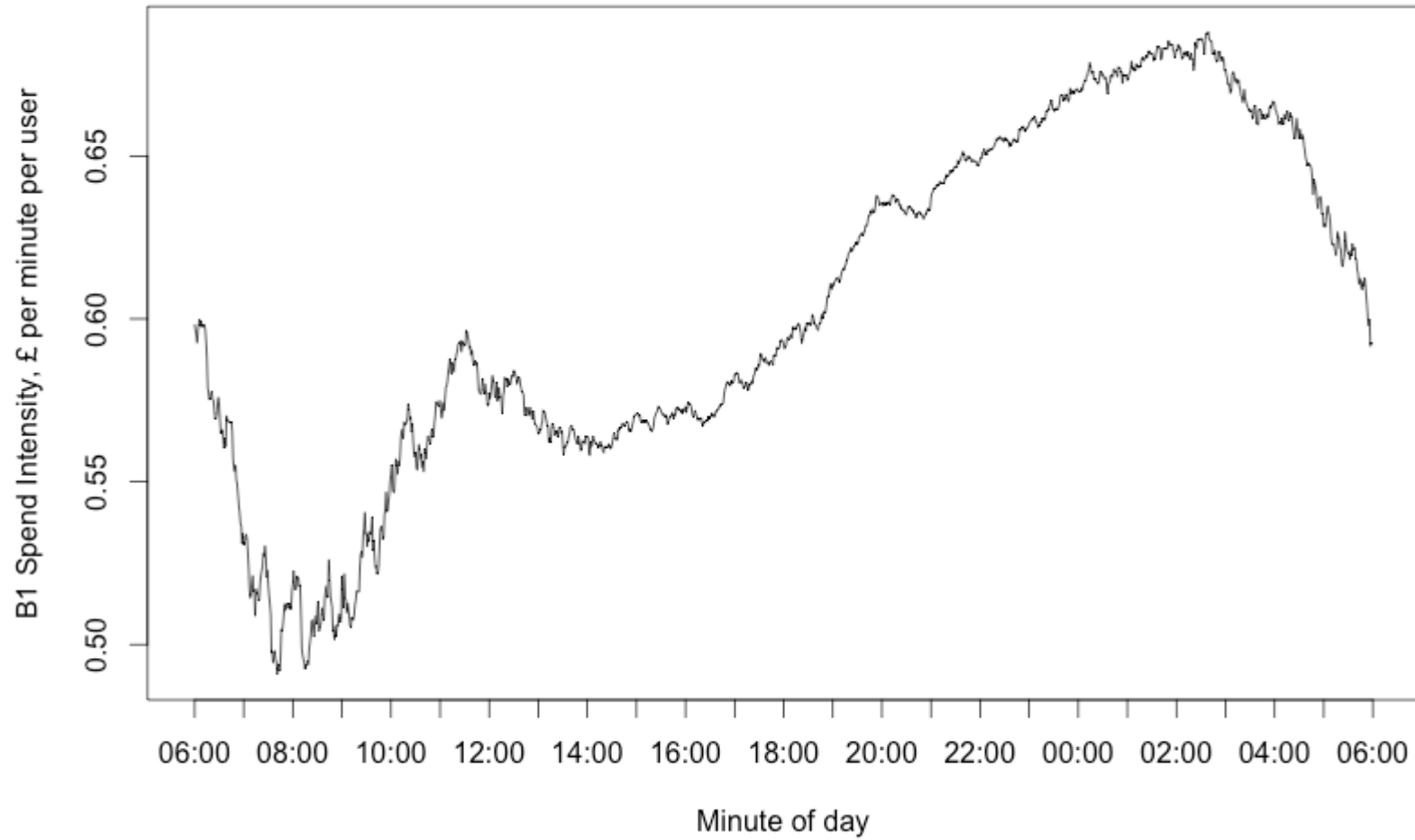
- loyalty card data provided by Rank Group plc, Britain's largest casino operator
- information on more than 5 million casino visits by more than 850,000 players over 2010-2015
- nearly 30% of these visits involved playing machines (and the majority of these were machines-only visits- no engagement in table games)
- for each visit, we know the amount won or lost and the duration of play and can then calculate the intensity of play (spend per minute)
- for each player, we know gender, age and postcode (from which we can obtain a profile of the neighbourhood of residence and the distance from the casino)

OUR BRIEF FROM GambleAware

1. to reveal typical and atypical patterns of machine play over dimensions such as frequency of play, levels of player loss and time spent playing
2. to investigate the impact of players winning or losing on their decisions as to when to go back to play again (“*between-session loss chasing*”)
3. to examine the extent to which atypical (and potentially risky) behaviour persists over time

- as proves to be the case for most gambling activities, the picture presented by **typical** play appears to be benign
- the median duration of machine play was a little under one hour
- in half of all visits, the player either won money or lost an amount up to something in the range £20-£25 (depending on year)
- this is not dissimilar to amounts typically spent at other leisure venues such as cinemas, restaurants or public houses
- however, significant numbers of visits involved lengthy play (11% more than three hours)
- and losses of more than £200 were relatively common (7% of all visits)
- but losses in the high hundreds of pounds were very seldom observed- probably because of regulatory limits on stakes and speed of play such that extremely long sessions would be needed to lose so much
- average intensity of play was much higher late at night and in the early hours

B1 users' spending intensity at different times of day (defined by the time at which the player stops playing)



“chasing losses” across sessions

- *all* standard PG screens include a question such as “When you gamble, how often do you go back another day to try to win back money you lost?” (DSM)
- a very large proportion of ‘problem gamblers’ in the BGPS data endorsed this item
- in our data we cannot observe motives for going to the casino but we can observe whether individuals exhibit a tendency to shorten the time-to-next-visit when they lose more than they usually lose
- we constructed a statistical model of the duration of time to an individual’s next machine visit to a casino

FOR THE TECHNICALLY MINDED

1. player loss was measured “relative to that player’s norm”.
2. time between visits is a censored variable for each player – you do not know when the last visit time is – just that it occurred after the end of the data period. We used survival models to deal with the censoring.
3. we used a frailty term to account for unexplained heterogeneity across individuals.
4. we modelled time between visits for regular users only (50 or more visits during the three year period).
5. log-logistic parametric survival model with gamma frailty term:

```
timeBetweenVisits = loserOnLastVisit + lossesOnLastVisit+ winningsOnLastVisit + age +  
female + deprived+ pastFrequency + durationOfLastVisit
```

TIME BETWEEN VISITS: MODEL APPLIED TO AGGREGATED DATA

- this level of analysis captures average behaviour
- increased player losses were associated with increased time between visits
- increased player wins were associated with decreased time between visits

so, on average, people seem to behave “rationally”.....lose more than usual...stay away

but when examining gambling behaviour, it is atypical, not typical, behaviour that we worry about...

TIME BETWEEN VISITS: MODEL APPLIED TO EACH INDIVIDUAL

`timeToNextVisit = lossesOnLastVisit + durationOfLastVisit`

RESULT

2% (of 15,000 regular players) displayed over the data period as a whole a systematic (statistically significant) tendency to return sooner the more they lost last time

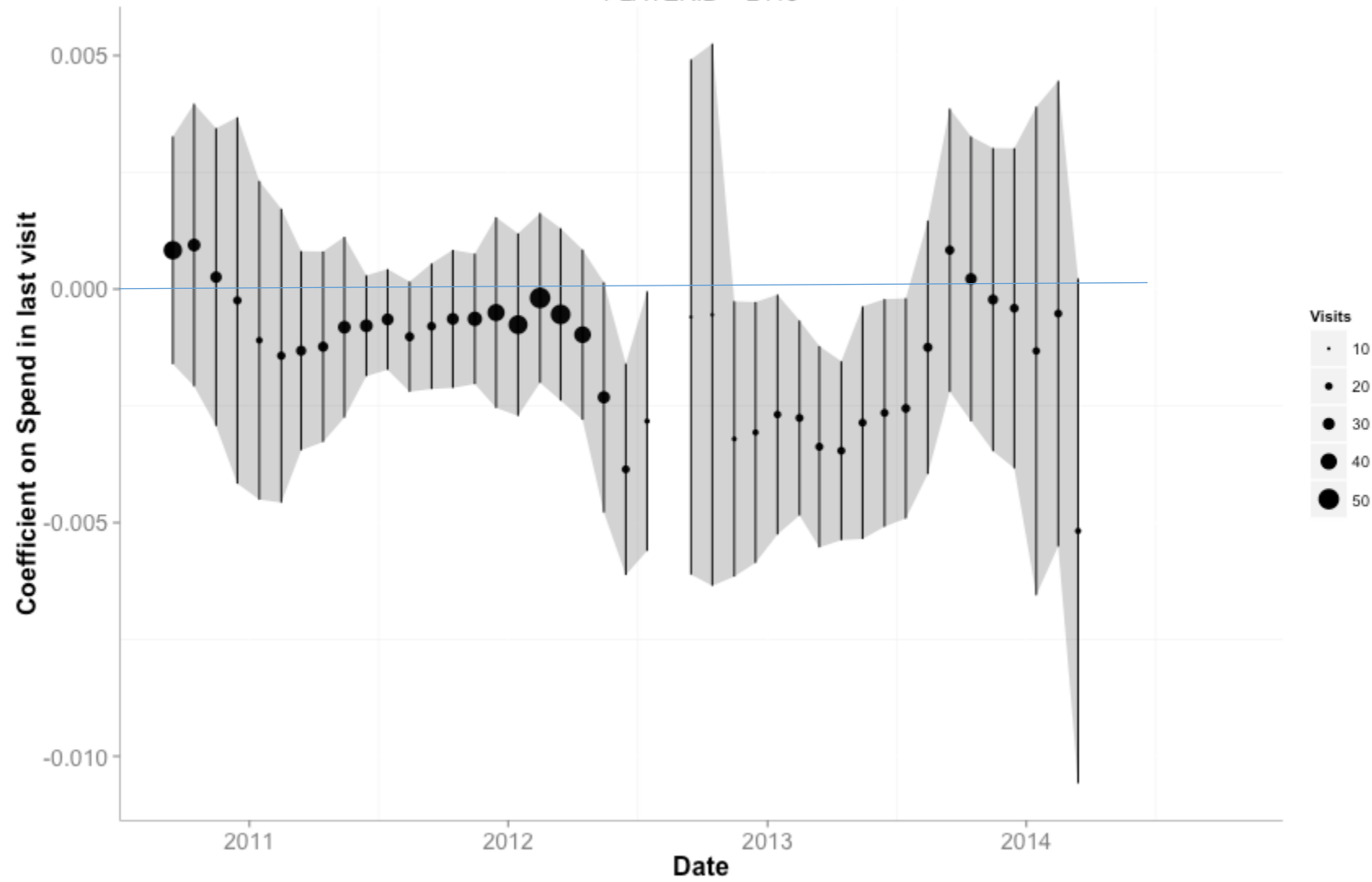
when we profiled the 281 players identified as chronic loss-chasers, they proved to be disproportionately male and young; on average, they were also big spenders compared with other regular players (median spend per visit £77.70)

but loss chasing behaviour may be sporadic

so next we fitted a model to each individual for rolling six-month periods

an example.....

PLAYERID = 2413



- **among regular players, 27% (3,561 individuals) exhibited between-session loss chasing behaviour at some point in their player history**
- this illustrates that a far from trivial proportion of regular customers may be vulnerable to problematic behaviour even though the number experiencing problems at any point in time may be 'low'
- any algorithm-based programme to monitor player behaviour would be likely to flag up significant numbers of players for further investigation and possible intervention

FINALLY...

- we investigated players who had engaged in unusually ‘heavy’ sessions to check whether they typically repeated such behaviour in subsequent visits
- for example, duration of play is known to be a strong predictor of PG, so we identified, for each quarter, players who had on at least one occasion in that quarter played machines **for more than five hours** in one visit
- example: 759 had done so in 2012, Q1
- 40% repeated the behaviour in 2012, Q2. The proportion repeating the behaviour fell off steadily. By 2014, Q4, only 21% did the same thing again and only 3% of the original 759 had done so in each intervening quarter

- implication: most problematic behaviour is self-correcting
- this does not imply that the behaviour is not harmful
- for some players, they may have ‘given up’ on extreme play because it proved non-sustainable
- in evaluating any programme which intervenes when ‘bad’ behaviour is observed, the bar for judging it a success will likely have to be set high because most ‘bad’ behaviour ceases without external intervention

thank-you for listening

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