Assessing Discount Policies and Practices in the Casino Industry

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Abstract

Casino executives were polled regarding their discounting practices and policies. The results indicated that casinos offering discounts to players were most concerned with a player's actual loss and least concerned about the number of hands/rounds played and the player's average bet. The extant literature clearly demonstrates that such a focus can result in substantial financial consequences (Lucas, Kilby & Santos, 2003; Kilby, Fox & Lucas, 2004). Additionally, the analysis of two discount-oriented deals offered to premium players demonstrates the potentially destructive power of discounts on casino cash flows. These results fill a gap in the literature related to the prevalence of discounts and the extent of casino managements' knowledge of discount mechanics.

Key Words: discounts on loss, rebates on loss, casino marketing incentives, table games management, casino management, price promotion

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Introduction

The general purpose of this research was to learn more about the practice of discounting gambling losses incurred by premium table game players (a.k.a. high-rollers). Specifically, this exploratory study sought to gain an understanding of how well industry practitioners understand the mathematically complex process of discounting. For example, which factors do they consider when structuring a discount offer? Are these the factors that are crucial to successful deal making? What are the consequences of not understanding this process? To these ends, it was necessary to poll casino executives as to their discounting policies and practices. Additionally, analyses of actual discount deals that were offered to premium players provided an alternative means to the same ends.

Previous researchers have found fault with alleged discounting policies and practices (Binkley, 2001; Lucas, Kilby & Santos (2002), but no existing study has endeavored to survey casino executives, regarding these procedures. That is, discount policy has been critiqued, based solely on the admission of the general practice and the experiences of the researchers. No detailed information has been collected from casino executives regarding actual policies and procedures. However, discounting the losses of high-rollers is a topic that many casino executives are not willing to freely discuss. Hence, this study offers rare insight into the high-end deal making processes of the casino industry.

Discounting player losses is a practice that no executive would want to advertise, as it clearly reduces cash flows. However, increased competition for premium players has

increased the frequency and attractiveness of discount deals, for several reasons. First, the gaming industry has experienced considerable expansion over the last 20 years, both domestically and internationally. In turn, competition for players has increased with the addition of these new properties. Second, mega-markets such as Las Vegas have matured and no longer enjoy the favorable supply-demand relationship of past years (Roehl, 1996). Lastly, there are those that believe the premium player market to be inherently profitable, a position based on historical conditions that featured a maximum cost exposure of room, food and beverage (RFB) expense (Lucas, Kilby & Santos, 2002). Subscribers to this theory will go to great lengths to acquire players they believe to be of substantial value.

The mainstream marketing literature cites increased sales volume as one of the most common results of price-based promotions (Blattberg, Briesch & Fox, 1995). However, the production of casino revenues differs from traditional business forms due to the random effects of probability on short-term gaming activity. This abstract phenomenon often leads gaming executives to believe they have increased the casino's wealth by the amount of a specific player's loss. Of course this is rarely true, as players almost always win or lose more than the casino's theoretical win (t-win). T-win is the product of a player's total wagers multiplied by the house's statistical advantage on those wagers. The true value of a player is determined by t-win, not his or her actual losses. Hence, incentives based on actual player losses should not be casually managed. Only those executives with a deep understanding of the complex and abstract matters of probability are qualified to define the terms of these incentives.

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Due to mounting competitive pressures, many casino executives have found themselves attempting to out-bid each other by offering ever-increasing discount offers to premium players. Again, without a keen understanding of the mathematical underpinnings, discounting can lead to negative cash flows (Lucas, Kilby & Santos, 2002; Kilby & Fox, 1998). Deal-making mistakes carry substantial financial consequences that can extend well into the future. If unchecked, the effect of these negative or marginal cash flow deals can be obscured or partially offset/masked by the success of other profit centers such as slots or hotel operations.

Literature Review

This review contains four sections. First, two studies on the basics of the discounting process are reviewed. Second, research related to the overall effectiveness of casino promotions and casino marketing is discussed. Third, literature related to the specific practice of discounting is reviewed. And finally, the research objectives are summarized.

Discount Basics

This section is a summary of Lucas, Kilby and Santos (2002) and Kilby, Fox and Lucas (2004). Simply put, these studies showed that a discount reduces the casino's statistical advantage. In nearly all cases, the house advantage is decreased by an amount greater than the face value of the discount. Alternatively stated, a 10% discount nearly always reduces the house advantage by more than 10%. Hence, the casino will refund more than 10% of its theoretical win. In general, as the number of hands played increases, the gap between a player's actual outcome and the casino's theoretical win decreases. When offering a discount, one must be clear regarding the relationship between the magnitude of the discount and the requirements of the wagering process. That is, the greater the number of hands played, the greater the discount.

Also, the player's bet spread must be monitored. Bet spread is the difference, expressed in units, between the least and greatest wager. Although the bet spread affects the cost of the discount, players sometimes vary their wagers beyond the agreed-upon terms of the deal. Bet tracking allows management to "police" the deal. That is, cancel or revise the discount terms, once the original bet spread parameter is breached. Casino executives must be willing to void or revise the original deal, as the player's betting behavior can substantially alter the magnitude of his or her discount. For example, 50% of Player A's wagers are $999, with the remaining wagers equal to $1, but Player B always wagers $500. Despite the differences in wagering patterns, both Player A and Player B produce an average bet of $500, but the cost of a fixed-term discount to Player A will be greater. The erratic betting pattern (player A's 9:1 bet spread) increases the cost of the discount by increasing the variance in the outcome distribution. That is, the likelihood of extreme outcomes is increased. When those extreme outcomes are player losses, the house reduces/discounts them by a fixed percentage. But when the extreme outcomes result in player wins, no money is refunded to the casino.

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Casino executives must bet track to accurately refund a prescribed percentage of a player's actual loss. Bet tracking is recording the amount and placement of each wager made by the player receiving the discount. For example, player X made a $10,000 bet on the banker, in baccarat. Without bet tracking, neither actual loss nor the true house advantage can be determined. When executives offer discounts without bet tracking, they do not know the player's actual win/loss or the house advantage on the wagers placed. It is easy to see how negative cash flow deals could occur under these conditions.

Desperation for premium players and a lack of understanding are competing theories for the reluctance of casino executives to include constraints in discount offers. The more latitude the player is afforded regarding the number of decisions (e.g., rounds played), bet placement and bet spread, the more variance he or she can create in the outcome distribution. A lack of discount deal constraints transfers cost control to the player. When discounts are involved, high-limit action cannot always be *expected* to lead to profits.

Casino Promotions

Much of what is written about the effect of casino promotions/marketing on gaming business volumes is anecdotal. Many of these articles appear to be sales pitches, written by those responsible for the featured promotion. Unfortunately, the majority of published empirical research is characterized by findings suggesting that casino promotions, generally, are failing to produce positive cash flows.

The attempts to increase casino cash flows, via slot promotion, for example, have only intermittently succeeded. One study of the ever-popular drawing-based promotion produced evidence suggesting the generation of negative cash flows (Lucas & Bowen, 2002). In most cases, the cash prizes significantly increased coin-in levels, but failed to produce incremental revenues beyond the cost of the incentives. Other researchers have produced similar results when attempting to measure the effects of cash mail programs on slot volume (Lucas & Brewer, 2001; Lucas, Dunn & Singh, 2004).

Cash mail programs are attempts to employ direct marketing practices featuring buy-in incentives. For example, a customer receiving such an offer would receive $25.00 in coin or credits for a $20.00 buy-in, producing a $5.00 premium to the player. However, Lucas and Brewer (2001) produced results suggesting a cash mail program had produced negative cash flows, despite the significant increases in daily coin-in associated with the program variable. Lucas, Dunn and Singh (2004) produced similar results in their analysis of direct mail incentives offered by a Las Vegas Strip casino.

To the contrary, a Midwestern riverboat was found to produce positive cash flows from cash mail offers to slot players (Lucas & Santos, 2003), while Lucas & Brewer (2001) found slot tournaments to produce positive cash flows for a Las Vegas casino. It may not be the type of promotion that is crucial for success, but rather the execution, timeliness and appropriateness of the promotion for the property and market.

With regard to table games promotions, Lucas and Kilby (2002) advanced a theoretical model to estimate the effectiveness of match-play coupons on table game business volume. This model was empirically tested by Lucas (in press) only to find more evidence of negative cash flows. The match-play variable failed to produce a significant and positive effect on the cash drop levels of a Las Vegas casino. No other studies were found that measured the effect of casino promotions on actual casino business volumes. But these findings clearly establish the possibility of less than profitable promotional activities within the casino industry.

Discounting

Objective research specifically related to the practice of discounting is less abundant. Lucas, Kilby and Santos (2002), discuss discounting practices and failures, making recommendations to improve existing policies. Binkley's 2001 Wall Street Journal article also reports on the ill effects of discounting practices on casino cash flows. But neither of these two pieces focuses on the intricacies of actual discounting policies. Both articles elude to the widespread use of these play incentives, but offer little, in terms of recoverable evidence to support the claim. Until this study, no researcher has attempted to profile discounting policy by polling casino executives, who are understandably hesitant to discuss these practices. It is not in their financial interest to advertise discounts and their credibility has been attacked in the existing literature on this topic (Binkley, 2001; Lucas, Kilby & Santos, 2002).

There seems to be no argument that play incentives and extravagant amenities are necessary to attract premium table game players (Roehl, 1996; Eadington & Kent-Lemon, 1992). Binkley (2001) also includes commentary from Las Vegas casino executives in support of this premise. With regard to incentives, the practice of buying the business is spreading to lower price points (less than high rollers) as well. Shoemaker & Zemke (2004) have found the promotions and benefits offering of Las Vegas locals' market casinos to influence the patronage intentions of area residents. But the high-rollers are especially coveted and casino marketers from competing properties continually attempt to woo players away from each other, via ever-increasing play incentives. Lucas, Kilby and Santos (2002) theorize that the spiraling cost of play incentives is due to the belief that the premium play market is inherently profitable. They hold that if casino executives understood the true cost of these incentives, many of these offers would not be made.

Research Objectives

Discount policies have been critiqued by previous researchers based solely on their personal experiences (Lucas, Kilby & Santos, 2002; Binkley, 2001). This study seeks to obtain self-reported evidence from casino executives, stating that they offer discounts. As noted by Kilby, Fox and Lucas (2004) and Lucas, Kilby & Santos (2002), discount rates must change as a function of the number of hands the recipient is willing to play. Also, the casino must bet track when offering a discount. The second objective of this study is to gain an understanding of existing discount policies with regard to these issues. Are managers structuring discounts based on these factors or are they simply looking at credit lines and actual losses?

Regarding discounts, researchers have also charged casino executives with irresponsible deal making (Binkley, 2001; Lucas, Kilby & Santos, 2002). Along the

same lines, research findings have indicated evidence of negative cash flows associated with several casino promotions (Lucas, in press; Lucas & Brewer, 2001; Lucas & Bowen, 2002). Given the apparent disregard for deal and program analysis, this study seeks to analyze actual discount deals. These analyses will produce estimates of incremental net cash flows resulting from the deals, providing further insight into the deal-making prowess of casino marketers. Overall, the analyses of the deals combined with the self-reported policy details will help determine the degree to which casino marketers understand the complex effects of discount-related deals.

Methodology

Data Collection

One hundred casino properties were selected for inclusion in this study. Casino City Press provides a searchable database of casinos called the Gaming Business Directory (GBD) (Gaming Business Directory, 2002). The database was searched for casinos in the United States with fifty or more table games. The initial search resulted in ninety-six properties, from which contact information was also obtained. Four additional properties with thirty-five or more table games were also determined to be suitable for the study. Given the number of table games (i.e., 35+), it seemed likely that discounts would be offered by these properties. With regard to the sampling frame, the number of tables operated by the casino had no relevance, other than serving as a proxy for the likelihood of catering to premium play.

The GBD online directory provided information on company executives, including their area(s) of responsibility. Once the properties were selected, the GBD database was queried for executives whose responsibilities included senior-level marketing. In most cases, only one name was listed. When there was more than one individual listed, the person with the most senior title was selected as the addressee. The intention was for the survey to be completed by a person likely to design, offer, or be directly involved in the process of offering discounts to players.

In general, the questionnaire was designed to gauge the knowledge of casino deal makers with regard to the discounting process. However, the questions also addressed the gap in the literature related to the prevalence and general understanding of the discounting practice. Appendix A contains a copy of the questionnaire used in this study.

Ultimately, casinos in the GBD with 35+ table games were sent surveys, via the U.S. postal service. In an effort to contact non-responders, a follow-up survey was mailed with a postage-paid return envelope. This follow-up mailing occurred 40 days after the initial mailing. Cover letters were included in both mailings. The follow-up cover letter reminded recipients that they had not yet responded.

Individual Deal Terms

Additionally, two discount deals offered to separate parties were analyzed using the Casino Marketing Manager version 3.3.2. This software is specifically designed to compute the change in the house advantage of a casino game, resulting from the terms of discounting deals. The terms of these deals were obtained via the consulting practices of the authors. Both deals were offered to premium players by Las Vegas casino executives.

Using survey data is one way to assess the broad-based understanding of the discounting process, but analysis of actual deals offers another avenue of discovery. Taken together, it is hoped that these two approaches will provide a clearer picture of the deal making practices of casino executives. The terms of the two deals are listed in Tables 1 and 2.

Table 1
Play Summary and Deal Terms: Deal 1

Player Rating Data:	
Days of Play	3
Marker Play	$2,000,000
Chip Play	$1,310,000
Total Buy-in	$3,310,000
Actual Win/(Loss)	($2,007,300)
Average Bet	$46,315.79
Length of Play (hrs:mins)	18:24
T-win	$239,429
Games Played Most Often (1)	Blackjack
Deal Terms/Expenses:	
Non-negotiable Chips	$75,000
Total Comps (RFB)	$85,000
Discount: 20% of Actual Loss (2)	$401,460
Additional Discount (3)	$115,000
Travel Discount (4)	$25,000

Notes.
(1) If other games were played, the true cost of the discount changes.
(2) This was a 20% a priori discount, i.e., it was agreed upon before any play occurred.
(3) This was a post hoc deal, where the debt to the casino was reduced by an additional lump sum.
(4) Akin to an airfare incentive

Table 2
Summary of Deal Terms: Deal 2

Offer Parameters:	
Maximum Bet (1)	$100,000
Average Bet (1)	$60,000
Commission to Agent (2)	$150,000
Credit Line	$5,000,000
Airfare Allowance (3)	$150,000
Promo Chips	$150,000
Game: Baccarat	
Discount Schedule: (4)	
$0 - $1M loss = 15%	
$1M - $3M loss = 20%	
$3M+ loss = 25%	

Notes.
(1) Although the player is permitted to wager $100k, his average bet over the course of play must be no more than $60k.
(2) A commission paid to the player's agent, if at least 12 shoes are played or the player loses at least $3M.
(3) Although a cash airfare allowance was part of the offer, the deal also included round-trip transportation on the casino's private jet. In reality, the airfare allowance is simply a cash payment to the player for patronizing the casino.
(4) This tiered discount structure is very popular with casinos.
(5) The player was also offered full RFB status.
(6) After 12 shoes are completed, the deal resets. That is, all play incentives are paid again, as if it were a new trip.

Deal 1 (Table 1) includes both deal terms and actual results from gambling activity. The first section of Table 1 provides the details related to revenue production, including the game played and the duration of play. These data all originated from actual player rating cards which were entered into the casino system. The most important line item in this section is the theoretical win (t-win). Also included in Table 1 are the expenses associated with Deal 1. According to the terms of the deal, the player was to receive a 20% a priori discount, which amounted to $401,460. However, due to the magnitude of the player's actual loss, an additional post hoc discount of $115,000 was awarded.

Deal 2 (Table 2) only includes the offer terms/constraints. However, these terms reset after 12 shoes of baccarat are dealt (about 960 hands). That is, all play incentives are paid again, as if it were a new gambling visit or trip. This includes a reset for the discount terms as well. As indicated in Table 2, the player could wager as much as $100,000 per round, but the average bet over a 12-shoe period could not exceed $60,000. Deal 2 featured a tiered discount structure wherein the rebate percentage varied based on the player's actual loss. The discount rate ranged from 15% to 25%.

Once the incremental win (revenue) from these deals was computed, the associated expenses were considered. These expenses ranged from agent commissions to travel reimbursement. A complete listing of the associated expenses for each deal can be found in the Results section. Given the revenue focus of casino marketers, this incremental cash flow analysis is necessary to demonstrate the bottom-line effect of reducing the house advantage within an expense-heavy deal structure. The results of the deal analyses will demonstrate the ultimate effects of actual discount-driven play incentives.

Results

Table 3 lists responses to the survey items related to discount determination factors. For the purposes of anonymity, the results are listed by each property's identification code. Thirty surveys were returned, but only 14 casinos reported the use of discounts. The data in Table 3 pertains to these 14 casino properties.

Table 3
Response Summary for Casinos Reporting the Use of Discounts

	Discount Determination Factors				
Casino ID	Credit Line	Min. Credit Line(1)	Avg. Bet (2)	# of Hands Played (3)	Min. Actual Loss (4)
K27	Yes	$150,000	No	No	$150,000
K19	No	$0	No	No	$50,000
K32	Yes	$50,000	Yes	Yes	$50,000
J7	Yes	$50,000	No	No	$50,000
K41	No	$0	No	No	$100,000
E2	No	$0	No	No	$0
K38	Yes	$0	No	Yes	$100,000
K42	Yes	$150,000	No	No	$150,000
K33	No	$0	No	No	$0
K17	No	$0	No	No	$0
K7	Yes	$50,000	No	Yes	$50,000
J8	No	$0	Yes	Yes	$100,000
K23	No	$0	No	No	$100,000
B1	No	$0	No	No	$100,000

Notes.
(1) Minimum credit line for a player to be eligible for a discount.

(2) Only one property reported a minimum average bet constraint of $800, as a matter of policy.
(3) No property reported the use of a minimum hands requirement associated with process of awarding a discount.
(4) This amount represents a minimum loss by the player to become eligible for a discount.

Only two of 14 respondents were concerned with average bets. And only four of 14 respondents considered the number of hands played. Table 3 clearly indicates that the player's actual loss was the most important factor related to the discount process. Although not shown in Table 3, seven of 14 reporting properties claimed to record the amount and nature of each bet placed by players receiving discounts. Three of the seven respondents that reported the use of bet tracking noted that this practice was intermittent. In summary, average bet and number of hands played were not crucial to the process, while the player's actual loss appeared to be paramount. Additionally, bet tracking seemed to be of moderate importance.

Table 4 contains results from the same 14 properties described in Table 3. Here the respondents were asked to weight the importance of four discount determinants. Table 4 summarizes their responses.

Table 4
Response Summary: Importance Ranking of Discount Determinants

	Importance Weight (in %)			
Casino ID	Credit Line	Average Bet Played	# of Hands Played	Actual Loss
K27	0	0	0	100
K19	0	0	0	100
K32	20	10	10	60
J7	0	0	0	100
K41	0	0	0	100
E2	25	0	0	75
K38	0	0	0	100
K42	0	0	0	100
K33	0	0	0	0
K17	0	0	0	100
K7	50	0	25	25
J8	0	10	0	90
K23	0	0	0	100
B1	0	0	0	100

These results corroborate those found in Table 3. All but one property (K7) listed actual loss as the primary discount criterion. K7 gave credit line the heaviest weight (50%), well above average bet (0%) and number of hands played (25%). Without exception, these latter variables received weights that indicated low importance. The mode weight for both average bet and number of hands played was zero (12 out of 14 cases). It should be noted that one property (K33) failed to report any weights.

Table 5 analyzes Deal 1, which is described in Table 1. Certain assumptions were made regarding the player's skill level, as the true house advantage was not known. Blackjack is a game of skill, making the house advantage a function of the game rules and the player's blackjack ability.

Table 5
Analysis of Deal 1

Assumptions:	
House Advantage Before Discount (1)	0.42%
Bet Spread (2)	1:4
Hands per Hour (3)	210
Results:	
T-win Before Discount (4)	$755,916
T-win After Discount (5)	$364,425
Less:	
Additional Discount (6)	$115,000
RFB Expense (7)	$85,246
Gaming Tax (8)	$24,599
Non-negotiable Chip Cost (9)	$79,393
Profit (10)	$60,187

Notes

(1) Computed by Casino Marketing Manager software (v. 3.3.2). Assumes a 6-deck shoe, dealer stands on soft 17, and player can double after split.
(2) The software computes all possible outcomes of wagering activity assuming a 1:4 bet spread. This assumes 50% of the bets are 1-unit wagers and 50% are 4-units wagers. A constant wager is likely to underestimate the outcome distribution variance.
(3) 210 hands per hour is the estimated game speed for one-on-one play (Kilby, Fox & Lucas, 2004). The casino system errantly estimated the hands per hour at 67, assuming a full table.
(4) (Avg. bet)(House adv.)(Hands per hour)(Hours played). Slight differences may arise from rounding decisions.
(5) The expected win, after the effect of the 20% discount. The standard deviation of the associated outcome distribution exceeds $2M. This is no small concern, if outcome volatility is a concern (i.e., cash flow volatility is an issue).
(6) As this amount is not expressed in a priori terms, it is treated like a cash award.
(7) RFB expense may be reduced by amounts equal to the difference between actual cost and retail/complimentary room rates. Other cost reductions may be available for food and beverage charges occurring in casino-operated outlets.
(8) 6,75% of t-win after the discount, i.e., (0.675)(364,425). Nevada's Gaming Control Board treats discounts as a business expense, making the reduced t-win the appropriate tax basis. In Las Vegas other local taxes would be owed as well (i.e., 0.5%).
(9) See Kilby & Fox (1998) for more on computing the cost of non-negotiable chips. This analysis assumes a house edge of 0.42% and a 6.75% gaming tax paid on t-win generated from chip wash.
(10) T-win after the 20% discount (i.e., $364,425) less associated expenses.

In this case, the player's value to the casino is nowhere near the $2M actual loss or the $755k t-win, before the discount and expenses. Although the expected value of the after-discount t-win was $364,425, the standard deviation of that outcome distribution exceeded $2M. This is a tremendous amount of cash flow risk for a $60,187 profit. Most casinos are not in a position to entertain intermittent play of this magnitude, as the cash flow variance is capable of destroying quarterly earnings.

In analyzing deal 1, it was interesting to discover that the casino system assumed the player to be wagering on a nearly full table. The following formula was the basis of this conclusion.

(System t-win) / (House adv.) / (Avg. bet) / (Hours played) = Hands per hour, or
$239,429 / 0.0042 / 46,315.79 / 18.5 hours = 67 hands per hour

A player with an average bet of this magnitude is almost always playing one-on-one (or head-to-head). That is, only the player and the dealer are on the game. Because of this condition, the hands per hour estimate increases from 65 to 210 (See Kilby, Fox & Lucas, 2004). This underestimation of premium player t-win is very common. In fact, if the system theoretical of $239,429 were used in our analysis of Deal 1, a substantial negative cash flow would result. Based on the information available to management, the deal should not have been offered to the player.

Table 6 analyzes Deal 2, as described in Table 2. Again it was necessary to make some assumptions regarding betting strategy. However this analysis was less sensitive to such assumptions, as this player's game was baccarat. In baccarat the player-side and banker-side bets have nearly the same house advantage, at 1.24% and 1.06%, respectively. Tie bets are rarely made by player's of this caliber. Despite the wagering strategy, the bet tracking process would record all actual wagers, allowing for a precise house advantage to be determined. But this deal must be analyzed before it is offered to the player, creating the need for house advantage assumptions.

Table 6
Analysis of Deal 2: After 12 Shoes of Baccarat

Revenues:	
T-win with no discount (1)	$594,121
T-win after discount (2)	351,900
Less Expenses:	
Commission to Agent (3)	$150,000
Airfare Allowance (4)	150,000
Promo Chip Allowance (5)	155,691
Air/Travel Expense (6)	10,000
RFB (7)	15,000
Deal Profit:	
Profit/(Loss) after 12 shoes (8)	($128,791)

Notes

(1) Assumes 78 hands per shoe, a house edge of 1.06%, 12 shoes played, and an average bet of $60,000. By truncating the house advantage to two places, rounding differences from system estimates occurred.
(2) T-win after adjusting for the tiered discount terms (See Table 2).
(3) This commission is part of the deal terms. It is to be paid to the player's agent.
(4) Ostensibly for airfare reimbursement, this incentive has evolved into another cash bonus.
(5) See Kilby & Fox (1998) for more on computing the cost of non-negotiable chips. Assumes a house edge of 0.42% and a 6.75% gaming tax paid on t-win generated from chip wash. In Las Vegas an additional 0.5% tax on gaming win would be paid.
(6) This expense was estimated based the industry experience of the authors. It represents the per-trip cost of operating a company aircraft. This estimate is conservative.
(7) This expense represents the cost of full RFB privileges for the player, his agent, and any entourage, over a 3-day period. This is a conservative estimate.
(8) T-win after discount less all deal costs.

This deal is expected to produce negative cash flow. Management should not have extended these terms. It was a business decision based on either a poor or insufficient analysis. The Casino Marketing Manager software, or something like it, is necessary to accurately estimate the after-discount t-win of an offer such as this one. The software computes all possible outcomes, creating a weighted average discount. That is, it is quite capable of analyzing the tiered discount structure of this offer.

Again, Deal 2 should have never been offered to the player, under any circumstances. The player's agent was an effective negotiator. Worse yet, Deal 2 offers reset terms, allowing the player to invoke the terms multiple times. As analyzed, this offer also produced an outcome distribution with a standard deviation of $2M, making it an inherently dangerous proposition for most casinos.

Disscussion

Others have cited irresponsible deal making practices, with regard to discounts offered to players (Binkley, 2001; Lucas Kilby & Santos, 2002). The results of this study support these claims. Despite the fact that only 14 casinos offered discounts, all of them are paying attention to the wrong variables, clearly demonstrating a lack of knowledge in a crucial area.

As discounts change the house advantage of any game, one must pay strict attention to the dollar-amount of the wagers placed.

Further, the authors have analyzed deals for some of the casinos that denied the use of discounts. In the experience of the authors, nearly all casinos that cater to a premium play clientele offer discounts. But, as previously mentioned, this is not a topic that casino executives are willing to discuss. In summary, the authors believe that the number of casinos offering discounts was severely under-reported.

As discounts change the house advantage of any game, one must pay strict attention to the dollar-amount of the wagers placed and the number of wagers placed (Lucas, Kilby & Santos, 2002; Kilby, Fox & Lucas, 2004). With seven of 14 properties claiming to bet track, 50% of the casinos don't know the house advantage associated with the deal/game. Of course this assumes the house still has an advantage, which is a dangerous assumption. Worse yet, three of the casinos claiming to bet track, do so only intermittently. Bet tracking is labor intensive and may seem unnecessary to these executives, as the results indicate that they are chiefly concerned with actual losses.

Discounts decrease the house advantage whether players win or lose (Lucas, Kilby & Santos, 2002). The house advantage is needed to compute a player's theoretical win, which, in turn, serves as the basis for complimentary awards such as the player's room, food and beverage (RFB) expenses. However, when RFB awards are computed using the original game advantage instead of the reduced advantage, the effect of this discount is increased. After these and other play incentives are considered, there is very little, if anything left for the casino. The effects of discounts are not obvious, but casino executives must strive to understand this process, as it affects the players placing the greatest wagers. For more on the mathematics of discounts, see Kilby, Fox and Lucas (2004).

Deals 1 and 2

With regard to Deal 1, a 20% a priori discount reduced the house advantage by 52%, while Deal 2's tiered discount can be expected to reduce the house edge by 41%. The change in the house edge is equal to the change in the t-win, from the before-discount level. In general, profits are cut in half, before the effects of all the other incentives such as promotional chips, airfare, and agent commissions. What business can afford that kind of volume discount?

In the case of Deal 2, no business can afford deals that produce negative cash flows. However, Deal 1 generated positive cash flows. But the profit on this deal was miniscule

compared to the cash flow risk (i.e., the $2M standard deviation) and the capital invested in assets necessary to attract these players. Management should consider cash flows generated by or related to the assets required to produce them.

The results of the Deal 1 and Deal 2 analyses further demonstrate a lack of knowledge regarding the mechanics of discounts. This condition may limit the ability of management to accurately compare cash flows produced by premium players to the net asset base (for premium play amenities). That is, if one cannot compute one's true cash flow, one cannot compute return on net assets. Given that all the discount-granting properties in this study pay the most attention to actual loss, it is likely that most of those executives believe the house to have won $2M+ from the Deal 1 action. Even if the casino reduced the $2M loss by the sum of the discount amount and play incentives, positive cash flows would still be grossly overstated for purposes of player valuation.

When play incentives are communicated in terms of a player's actual loss, with no regard for the number of hands/rounds played, red flags should appear in the minds of analysts. The very couching of the offer indicates management's misunderstanding of the process. However, even if discounts were communicated as percentage rebates of t-win, bet tracking would still be necessary. But bet tracking is unpopular, as it is a labor intensive process. Given the evidence presented in the existing literature, many casino executives would be disappointed by the cash flows produced by this allegedly high-profit segment, known as the high-roller business.

Discount Policy Flaws

One of the most deceiving characteristics of a discount is that a 10% rebate of a player's actual loss almost always results in a much greater percentage decrease in t-win. Previous researchers have shown that the discount reduces the house advantage of the game, whether the player wins or loses (Lucas, Kilby & Santos, 2002). This abstract play incentive is difficult to understand, but much more costly than it appears. The terms of the game change at the level of the expected value formula.

To avoid future miscues, casino executives are encouraged to use the available resources such as discount analysis software and the growing literature base. However, the authors realize that paradigms are not easily diminished. For example, gaming executives approach the premium player market with the goal of winning the player's bankroll. It sounds innocent enough, but it leads to a focus on actual wins and losses at the player level, ignoring the normal variance of the outcome distribution.

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Players of unfair games (games with a house advantage) will lose in the long run. However, in the short-term, some may appear to be brilliant while others may appear cursed or even ignorant. But the truth always equals the product of the amount wagered and the house advantage. Casino executives must ignore actual wins/losses when valuing players. Casino executives should not concern themselves with determining who they can beat; they should concentrate on attracting customers to the games. If this requires play incentives, deals should be structured in such a way that they produce an acceptable profit for the risk endured. See Kilby, Fox and Lucas (2004) for more on how to properly structure discounts.

Limitations and Future Research

Although this work is the only study of its kind, the lack of response to the survey leaves much to learn about the specific discounting policies of casinos. However the responders were true to form, supporting the claims of existing researchers. Other survey efforts might include a hypothetical scenario, detailing the results of premium player's trip(s). Given this information, respondents would be asked to describe the

discount, if any, this player would receive. An actual loss of $50,000 is recommended for use in this capacity, as it is great enough to trigger a discount by most properties. Further, many casinos have players capable of losing $50,000, preventing a low response rate due to item design exclusion.

Through this hypothetical question format, variables such as the number of hands played could be isolated and manipulated. These questions would demonstrate whether the responders understand the role of each variable in the discount process. As casinos executives are reluctant to discuss discounting practices, only repeated attempts to gather information on this phenomenon will help researchers describe the discounting practices. No one study is likely to contain data from 75 casinos.

Other important issues deserving more attention are bet tracking policies and general discount theory. Specifically, questions aimed at the value of discounts to players. For example, does a 10% discount reduce the house advantage by 10%? Bet tracking questions might also focus on general theory. For instance, is bet tracking necessary to determine the true cost of a discount? Responses to these types of questions would be most telling.

Finally, some attempt should be made to measure the industry's level of awareness regarding the effect of bet spread on a priori discount agreements. For example, what constraints are in place to keep the players from wagering one unit on some bets and 10 units on other bets? As erratic betting increases the cost of discounts by increasing outcome variance, casino executives must limit bet spreads. When estimating the cost of a discount, specific language must be used regarding average bet parameters. For example, 50 one-unit wagers and 50 ten-unit wagers do not constitute an average bet of 5.5 units, when estimating the cost of a discount. This erratic bet pattern is characterized by a ten-unit bet spread. All else held constant, flat bettors produce outcome distributions with less variance than erratic bettors with the same simple average bet. As this is a somewhat abstract concept, it would be interesting to measure the degree to which it is understood by industry executives.

References

Binkley, C. (2001, September 7). Reversal of fortune. *Wall Street Journal*, pp. A1, A8.

Blattberg, R. C., Briesch, R., & Fox, E. J. (1995). How promotions work. *Marketing Science, 14*(3 part 2 of 2), G122-G132.

Eadington, W. R., & Kent-Lemon, N. (1992). Dealing to the premium player: Casino marketing and management strategies to cope with high risk situations. In W. R. Eadington, & J. A. Cornelius (Eds.), *Gambling and commercial gaming: Essays in business, economics, philosophy and science* (pp. 65-80). Reno, NV: Institute for the Study of Gambling and Commercial Gaming.

Gaming Business Directory. (2002). Annual report (Sources of revenue, p.12). Retrieved on July 11, 2002, from http://casinocitypress.com/GBD/GamingBusiness Directory/.

Kilby, J., & Fox, J.(1998). *Casino operations management*. New York: Wiley.

Kilby, J., Fox, J., & Lucas, A. F. (2004). *Casino operations management* (2nd ed.). New York: Wiley.

Lucas, A. F. (in press). Estimating the impact of match-play promotional offers on the blackjack business volume of a Las Vegas hotel casino. *Journal of Travel and* Tourism Marketing.

Lucas, A. F., & Bowen, J. T. (2002). Measuring the effectiveness of casino promotions. *International Journal of Hospitality Management, 21*(2), 189-202.

Lucas, A. F., & Brewer, K. P. (2001). Managing the slot operations of a hotel casino in the Las Vegas locals' market. *Journal of Hospitality and Tourism Research, 25*(3), 289-301.

Lucas, A. F., Dunn, W. T., & Singh, A. K. (2004). Estimating the short-term effect of free-play offers in a Las Vegas hotel casino. Manuscript submitted for publication. *Journal of Travel and Tourism Marketing*.

Lucas, A. F., & Kilby, J. (2002). Table games match play offers: Measurement & effectiveness issues, *The Bottomline, 17*(1), 18-21.

Lucas, A. F., Kilby, J., & Santos, J. (2002). Assessing the profitability of premium players. *Cornell Hotel and Restaurant Administration Quarterly, 43*(4), 65-78.

Lucas, A. F., & Santos, J. (2003). Measuring the effect of casino-operated restaurant volume on slot machine business volume: An exploratory study. *Journal of Hospitality & Tourism Research, 27*(1), 101-117.

Roehl, W. S. (1996). Competition, casino spending, and use of casino amenities. *Journal of Travel Research, 34*(3), 57-62.

Shoemaker, S., & Zemke, D. (2004). The "locals" market: An emerging gaming segment. Manuscript submitted for publication. *Journal of Gambling Studies*.

Article submitted: 3/31/04
Sent to peer review: 4/2/04; 4/12/04
Reviewer comments sent to author: 5/19/04
Author's revised version received: 5/19/04; 7/22/04
Article accepted for publication: 8/5/04

Appendix A
Discount on Loss Survey

1. Do you offer discounts on loss to your customers as a promotional tool?

   Yes_____ No _____

2. Is a standard discount as a percentage of loss offered to players?

   Yes_____ No _____

3. Does the discount offered vary upon the customer's credit line?

   Yes_____ No _____

4. Does the discount offered vary upon the customer's average bet?

   Yes_____ No _____

5. Does the discount offered vary upon the number of hands (spins/shoes) a customer plays?

   Yes_____ No _____

6. Does the discount offered vary upon the actual loss of a customer?

   Yes_____ No _____

7. Please attach a weight that each factor contributes to the amount of discount offered.

   Credit Line _____
   Average Bet _____
   # of Hands _____
   Actual Loss _____

   Total 100%

8. Do you ever change a predetermined discount based upon the actual amount lost by the player?

   Yes_____ No _____

9. Do you ever change a predetermined discount based upon the time it takes for a player to lose (quick loss provision)?

   Yes_____ No _____

10. Do you utilize bet tracking for customers receiving a discount?

    Yes_____ No _____