

CTR-Averse Betting by James Grosjean and Previn Mankodi

The Irrelevance of the “Trip-Bankroll Problem”

Players frequently ask “How much of my bankroll should I bring on a trip?” Or, “If I bring \$X, what is my trip-ruin probability?” Along these lines, some analysis has been done on the question, “If I have only \$X with me, out of a much larger bankroll, how should I bet?” Except possibly for a team with a bankroll so large that traveling with it would be logistically difficult (or expensive due to the opportunity cost of keeping the bankroll in cash), we consider these questions to be misguided, perhaps irrelevant. Our recommendation is that a player on a trip should have access to enough funds so that his trip-ruin probability is zero! To bust out on one trip in a career is too many. As a practical matter, additional funds are often only a phone call away if other pros are in the area. For those seeking rules of thumb, here’s one: a player with a bankroll of \$30000 or less should bring it all.

If these recommendations are followed, a player might never encounter a trip-bankroll problem. Sadly, all of our handwaving cannot make the problem disappear, because it rears its ugly head in a mathematically identical manifestation: Regulation 6A. Legally, Reg. 6A is Nevada’s version of what most of us refer to as the “CTR Rule,” which requires a person to provide information for a Currency Transaction Report if he makes cash transactions exceeding \$10000 in a 24-hour period. The casino will demand ID in order to complete this form for the U.S. Treasury Department (not the IRS). Failure to provide ID will result in a “CTR backoff,” meaning that the casino is required to refuse the player’s action until ID is provided.

So, a player who is unwilling to provide ID will have to quit a game before exceeding a \$10000 loss. This is mathematically equivalent to having a \$10000 trip bankroll. While it is easy to alleviate the trip-bankroll problem by bringing more money, this \$10000 barrier is a bit more stubborn.¹ Our task is to determine how this constraint affects our betting strategy.

Presumably, the player’s full bankroll is large, so this is not an issue of risk aversion where the player must avoid busting out at all costs (a la Kelly). Our player is not concerned with risk. He is not afraid to lose the \$10000, except insofar as busting out ends his game prematurely, and might produce a smaller expected profit than a betting strategy where he bets conservatively to avoid busting out. Let’s look at a contrived example to see the phenomenon.

Scaling Back because of a Table Limit

Suppose the player may bet on a fair coin paying 2:1 on winning wagers. The expectation of this game is $0.5(2) + 0.5(-1) = 0.5$, with variance $0.5(4) + 0.5(1) - 0.5^2 = 2.25$. He might have a bankroll of \$1 million at home, but he has only \$5 cash in his pocket. If he is allowed to bet on three coin flips, he would bet his \$5, and then continue to fully parlay any winnings.

His betting decisions, expected action, and expected profit are shown in the first section of the following table. His expected action is \$23.75. He busts out a lot, but so what? A player who is afraid of busting out, betting only \$3 on the first round, will not do better. This player puts less money into action on the round he holds back, and since the game is positive, the guy who bets the maximum will have, in expectation, even more funds available to put into action on the subsequent round. Holding back accomplishes nothing other than lowering the expected profit. We’re here to make money, not worry about busting out. (For those who don’t want to bust out: don’t play!) When we say “bust out,” we are referring only to the player’s cash on hand; his full bankroll is huge, and not at risk.

¹In Missouri, there is a restriction to \$500 cash for each two-hour period, with every buy-in recorded on a player’s card previously obtained using ID.

Betting Strategy in Three-Flip Game 50% Edge, \$5 Cash on Hand									
Flip Outcomes	No Limits		With \$5 Table Maximum			With \$10 Win Ceiling			
	Bet Max	Hold Back	Bet Max	Hold Back	Bet Best	Bet Max	Hold Back	Bet Best	Bet Best
LLL	5/-/- -5	3/2/- -5	5/-/- -5	3/2/- -5	3.3̄/1.6̄/- -5	5/-/- -5	3/2/- -5	3.3̄/1.6̄/- -5	2.5/2.5/- -5
LLW	5/-/- -5	3/2/- -5	5/-/- -5	3/2/- -5	3.3̄/1.6̄/- -5	5/-/- -5	3/2/- -5	3.3̄/1.6̄/- -5	2.5/2.5/- -5
LWL	5/-/- -5	3/2/6 -5	5/-/- -5	3/2/5 -4	3.3̄/1.6̄/5 -5	5/-/- -5	3/2/4.5 -3.5	3.3̄/1.6̄/5 -5	2.5/2.5/3.75 -1.25
LWW	5/-/- -5	3/2/6 13	5/-/- -5	3/2/5 11	3.3̄/1.6̄/5 10	5/-/- -5	3/2/4.5 10	3.3̄/1.6̄/5 10	2.5/2.5/3.75 10
WLL	5/15/- -5	3/11/- -5	5/5/5 0	3/5/5 -4	3.3̄/5/5 -3.3̄	5/-/- 10	3/2/3 1	3.3̄/1.6̄/2.5 2.5	2.5/2.5/3.75 -1.25
WLW	5/15/- -5	3/11/- -5	5/5/5 15	3/5/5 11	3.3̄/5/5 11.6̄	5/-/- 10	3/2/3 10	3.3̄/1.6̄/2.5 10	2.5/2.5/3.75 10
WWL	5/15/45 -5	3/11/33 -5	5/5/5 15	3/5/5 11	3.3̄/5/5 11.6̄	5/-/- 10	3/2/- 10	3.3̄/1.6̄/- 10	2.5/2.5/- 10
WWW	5/15/45 130	3/11/33 94	5/5/5 30	3/5/5 26	3.3̄/5/5 26.6̄	5/-/- 10	3/2/- 10	3.3̄/1.6̄/- 10	2.5/2.5/- 10
Expected Action	190/8	154/8	80/8	82/8	83.3̄/8	40/8	55/8	55/8	55/8
Expected Profit	95/8	77/8	40/8	41/8	41.6̄/8	20/8	27.5/8	27.5/8	27.5/8

Table shows the bets, separated by slashes, for each coin flip. The profit for each case is shown below the bets. The bottom two lines of the chart show the expected action and expected profit derived from each betting strategy. Since each of the eight flip combinations is equally likely, the values in the bottom rows are shown in eighths.

Now suppose we impose a table maximum bet of \$5. The expectation-maximizing guy was going to bet \$5 on the first round. The table maximum does not restrict his desired first-round bet, so should he not go ahead and bet his \$5 as before? If he does so and loses, he is finished, just like before. If he wins the first flip, he then has enough to bankroll the remaining two flips to the table maximum of \$5. His expected profit is \$5 on expected action of \$10.

Look again at the guy who holds back \$2 on the first flip and bets \$3. Subsequently, he bets to the limit—either his remaining bankroll or the table maximum. His expected action is \$10.25; he has surpassed the max bettor! The motivation of the max bettor is that by betting everything now in a positive game, he has even more funds available to bet on the subsequent hand. He then goes all in on the next hand, and so on; no other player can ever catch up to his action. When the table maximum is imposed, there is less benefit to betting the max now. The guy who bets only \$3 will have enough, if he wins the first flip, to max out the remaining two hands. Betting the max will not allow a player to get any more into action than that. With no limits, a dollar won on the first round had “value” greater than a dollar, because it could be parlayed in this positive-expectation game. That is no longer true; it is as if we have reduced the payoff on a winning bet. The effect is similar to games that have a maximum aggregate payoff, such as Let It Ride.

The guy who holds back two dollars gives up action, equivalently profit, in the case where the first flip is won. When the first flip is lost, the guy who has \$2 left then catches up in the cases where the second flip wins, keeping him in action until the third flip, while the max bettor is already long gone.

The two betting strategies are compared in the middle section of the table. Also shown is the optimal betting strategy, which recommends that the player bet $3.3\bar{3}$ on the first flip. This is a clever bet, and one that may appear familiar to tournament players. If he wins, he has enough to bet the table maximum on the subsequent two flips. If he loses, he can then bet $1.6\bar{6}$, which if won would leave him with enough funds for one max bet on the last hand.

The bottom line is that holding back a bit leads to a higher expected profit. Remember that this is not a question of risk aversion or fear of busting out. We don’t care about busting out per

se, but it turns out that betting conservatively allows the player in this example to get more money into action. Is it not curious that the imposition of a \$5 table maximum on a player who was going to bet \$5 now causes him to bet \$3.33?

The Irrelevance of the “Kelly Criterion”

This last principle even trumps Kelly! With the cool million back at home, this player’s Kelly wager would be \$250,000 (expectation is 0.5, winning payoff is 2, and variance is 2.25). The table maximum of \$5 is well below this amount, and he has no fear of busting out the session, which would have minimal impact on his total bankroll. Yet, instead of betting \$5 to get as close to the desired wager as possible, the Kelly bettor nevertheless bets well below the table maximum on the first hand.

To be fair, Kelly is never “wrong”; under the utility and gaming assumptions of the model, the optimal bet is what it is. In this context, though, Kelly is rendered irrelevant, or at least infeasible. Part of the problem is that a naïve implementation of Kelly using only the dollar payoff of a single hand does not capture the influence of the future constraints. The shortcut of betting as close to the desired Kelly wager as the table limits allow will not deliver the correct answer. Without this shortcut, Kelly becomes impractical.

A player with only \$1 can wager it and then fully parlay the winnings. In essence, each dollar he wins now is worth more than a dollar, because it will earn a future return (remember “net present value”?). As we will see more clearly in the next section, that is not true for a player with significantly more money. Any attempt to apply Kelly would require a better measure of the true payoff of the hand, a measure that would capture “depreciation”—the negative side effect that winning a hand makes the constraints more likely to bind on future hands. In the presence of these constraints (the table maximum and the win ceiling, to be discussed next), the best measure of the edge and variance of the hand might be the Bellman value function itself, but now the attempt to bolster Kelly has become ridiculous. We still maintain that the table limit and the heat limit are far more relevant to today’s professional than the Kelly Criterion.

We already discussed the phenomenon that the imposition of a table limit can cause a cash-constrained player to bet less than that limit. Usually, though, the imposition of a table maximum causes a player to bet that amount. Now we examine the heat limit, sometimes a powerful constraint that can cause significant reductions in bet size.

Scaling Back because of a Win Ceiling

In most casino contexts, there is a ceiling on the amount that can be won in a session, due to heat. In some sweaty casinos, a player would be prudent to quit after a win of \$4000 or \$5000. In an action joint, perhaps a player could win \$100000 in a session, or even \$225000. The amount that can be won depends on the casino size, the pit personnel, the skill of the BP, the BP’s account history, the skill of the spotter, the game being played, the amount of concurrent civilian action, and other factors. Weighing these factors, a crew usually has an idea, going into a game, of how much can be won, and when they will quit, even in the absence of visible heat. Another interpretation is that a player will be backed off after a certain amount is won.

In the analysis that follows, we impose a “hard cap” on how much can be won. A hard cap means that a player may not wager an amount if winning that bet would put his aggregate win over the ceiling. A soft cap, in contrast, would allow the player’s current hand to propel him beyond the ceiling, at which point he would then quit before playing any additional hands. A soft cap may induce betting schemes that have a player creep up close to the ceiling, and then make monster bets that propel him as far past the ceiling as possible if he wins, or back to the starting point if he loses. The difference between a hard cap and a soft cap is mitigated in our analysis by the simultaneous presence of a table maximum on each hand.

Let’s look at the three-flip example, but impose a win ceiling of \$10. There is no table maximum. The player who bets \$5 on the first flip will again be finished after one flip, with \$5 of action. A player who bets \$3 on the first flip can do much better, generating \$6.875 in action ($55/8$). It turns out that the betting scheme shown is optimal, though not unique. Two other optimal strategies are shown. Note how the bets are chosen so that the player can exactly touch the ceiling. The optimal strategies all call for an initial bet in the range $\$1.6\bar{6}$ through $\$3.3\bar{3}$.

The win ceiling is really a conditional table maximum. It merely requires that depending on previous wins and losses, the current bet might be restricted. Under this interpretation, once the player has reached the win ceiling, it is as if we then impose a table maximum for all subsequent rounds of \$0—he cannot bet anymore. In general, the win ceiling is what drives the reduction in bets.

Scaling Back in “Live” Examples

For live games, we now present twelve tables, for edges as low as 1%. We look at combinations of win ceilings and table maximums (\$500, \$1000, \$2000, \$2500, \$3000, \$5000). The table minimum is \$100. These represent realistic table limits found in American casinos. Each chart shows the value of the game and the optimal bet depending also on the number of hands remaining. Bets are shown for a player who has \$10000 (or \$15000 or \$20000), and for players whose initial stake has been reduced to \$5000 or \$2000. In all cases, the win ceiling is computed relative to his initial starting bank.

The value of the game increases with the edge, with a higher table limit, a higher win ceiling, and more hands remaining, as we would expect. Also, for a given wealth level (chip stack), we will bet more if there are fewer hands remaining.

These examples are meant to be used as a guideline for blackjack and other games. The actual game used to generate the tables was our favorite game, Virtual Coin Toss. Winning bets are paid 3:2. This coin can land on its edge, creating a push.² The win probability and push probability are selected to match the expectation and variance desired (player edges of 1%, 3%, 5%, and 7%, all with variance 1.44 on a 1-unit bet). We define a coin with our desired expectation and variance, but remember that the coin game has no doubling, splitting, or insurance, so additional funds are never required to supplement the initial bet.

All That and a Bag of Chips

Reminiscent of the doctor who hears the complaint, “Doctor, it hurts when I do this,” and then replies, “Don’t do that,” we made the trip-bankroll problem disappear by recommending that players bring more money. Now, we suggest the same remedy to the CTR problem. If a player does not wish to curtail his betting, his only solution is to bring chips to the casino. Chips do not count towards the \$10000 cash allotment.³

The first four charts show the player’s optimal bets for a starting bankroll of \$10000, along with the expected profit derived from the game. Under the same combinations of edge, table maximum, hands remaining, and win ceiling, we offer four charts for a player with a \$15000 bankroll, which represents the \$10000 cash allowance according to the CTR rule, and an additional \$5000 in chips. Then there are four more charts for a player who starts with \$20000.

²To avoid propagating rounding errors in the Bellman algorithm, described in *Rebated Losses Revisited*, we wanted the payoff to be an integer or half-integer. To then match the desired expectation and variance, we had to introduce the push probability. The formulas for the virtual coin are presented in Appendix E of *Exhibit CAA—Beyond Counting*.

³Chips from a different casino sometimes are converted in a chip-for-chip exchange that does not count towards the cap, but sometimes the casino treats the use of “foreign” chips as a double transaction, a cash-out followed by a buy-in. It is safest to assume that foreign chips will be treated as cash, and thus are of no help with our problem.

If there is only one lesson to be gleaned from these charts, it is that chips are valuable—very valuable. Let’s look at the most visible example: a player has a full session of 200 hands ahead, at a 7% edge per hand, with a \$5000 table maximum and no win ceiling. With only \$10000 cash on hand, the expected profit would be \$27170. By bringing \$10000 in chips, a player can increase this expectation to \$39778, shown on the chart for a \$20000 starting bankroll. This means that the use of those chips will generate an extra \$12608. This premium is *over and above* the \$10000 face value of the chips. If a player borrows \$10000 in chips before the session, he can return the chips afterwards, *and still* have an extra \$12608 in expected profit!

Is that possible? At a 7% edge, for 200 hands, a flat bettor would expect to win 14 bets. So if the extra chips can increase the player’s average bet by \$900, then there will be an additional $14 \times \$900 = \12600 in profit. If we look at the player’s first wager, the \$10000 bank allows a \$1438 wager, but using the chips to create a \$20000 bank will allow a \$2613 wager. As the player’s wealth fluctuates, this differential in the bet will fluctuate also, but a \$900 differential is reasonable.

Even if there is no available game that strong, suppose a player buys in for \$5000, plays for a while, and then breaks even. He now has \$5000 in chips, and might want to cash them out. No! Suppose that he plans to play 50 hands the following day, with only a 1% edge, and a win ceiling of \$20000. Those chips are worth \$157 over their face value. That’s quite a good return for holding five pumpkins for a night.

Perusing the charts should yield additional insights. If there is interest, we may examine betting strategies for the game of blackjack specifically, and also examine changes in *playing* strategy based on the CTR constraint. For now, we will let the numbers speak.

Premium on Chips				
Edge per Hand	\$5000 Chips		\$10000 Chips	
	Hands to Go			
	50	200	50	200
\$5000 Max. No Win Ceiling				
1%	309	846	559	1582
3%	937	2740	1685	5058
5%	1575	4834	2809	8807
7%	2211	7011	3910	12608
\$5000 Max. \$20000 Win Ceiling				
1%	157	315	277	556
3%	447	830	780	1438
5%	697	1163	1206	1981
7%	905	1312	1552	2195
\$1000 Max. \$20000 Win Ceiling				
1%	32	249	39	401
3%	83	649	99	1021
5%	119	904	140	1391
7%	141	1020	163	1536

Optimal Betting Facing CTR Constraint Starting Bankroll is \$10000 1% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	32:443/500/500	61:325/500/500	94:237/500/396	141:169/400/260	200:117/268/174
1000	40:499/1000/904	72:343/806/532	105:234/540/358	148:160/373/246	205:100/260/170
2000	46:489/1250/836	76:334/750/500	108:229/525/344	150:157/368/242	207:100/258/168
2500	46:490/1272/856	76:316/738/496	108:229/526/344	150:157/367/242	207:100/258/168
3000	47:488/1280/824	76:334/740/496	108:229/524/344	151:157/367/242	207:100/258/168
5000	47:497/1288/832	77:313/760/504	108:229/524/344	151:157/367/242	207:100/258/168
Win Ceiling=2500					
500	47:500/500/500	100:500/500/500	166:475/500/408	261:328/458/278	382:219/300/185
1000	70:1000/1000/908	132:664/924/564	196:442/606/380	281:304/415/258	396:211/289/178
2000	86:1020/1436/892	142:610/836/532	203:427/584/366	286:298/408/254	399:209/286/176
2500	88:1056/1382/872	143:609/834/524	204:424/580/364	287:298/407/254	400:209/286/176
3000	89:1002/1400/876	144:610/824/528	204:424/582/364	287:297/407/254	400:209/286/176
5000	90:970/1436/856	145:619/836/520	205:427/574/360	287:298/406/252	400:209/286/176
Win Ceiling=5000					
500	50:500/500/500	121:500/500/500	225:500/500/412	383:500/500/298	589:350/348/200
1000	93:1000/1000/920	193:1000/1000/604	298:702/702/404	436:475/474/278	622:329/328/190
2000	131:1638/1672/968	219:954/956/564	315:662/660/390	447:463/461/270	629:325/323/188
2500	136:1605/1608/928	222:945/948/560	317:657/658/388	448:461/460/270	630:325/323/188
3000	138:1512/1564/928	224:930/940/560	318:656/656/388	449:461/459/270	631:324/323/188
5000	141:1597/1560/960	225:936/940/560	319:654/656/388	450:461/459/268	631:324/322/188
Win Ceiling=10000					
500	50:500/500/500	125:500/500/500	248:500/500/416	473:500/500/314	816:500/432/224
1000	100:1000/1000/920	237:1000/1000/632	409:1000/870/460	627:717/569/310	916:487/387/210
2000	175:2000/2000/1024	315:1438/1148/628	459:978/780/436	659:680/541/296	937:476/378/206
2500	191:2436/1928/1012	322:1402/1120/616	464:967/772/424	662:676/538/294	939:475/377/204
3000	198:2320/1856/1016	326:1380/1104/608	467:962/768/420	664:674/537/294	940:474/376/204
5000	207:2320/1888/1064	331:1364/1084/600	471:950/764/416	667:672/535/292	942:473/376/204
Win Ceiling=20000					
500	50:500/500/500	125:500/500/500	249:500/500/416	489:500/500/316	918:500/492/236
1000	100:1000/1000/920	245:1000/1000/636	458:1000/996/476	789:1000/710/348	1229:697/475/240
2000	190:2000/2000/1036	394:2000/1436/704	610:1402/956/484	899:947/650/332	1300:657/450/230
2500	222:2500/2264/1068	422:2048/1388/704	627:1358/934/476	910:935/642/330	1308:652/447/228
3000	245:3000/2276/1108	435:1968/1348/696	636:1338/922/472	916:929/638/328	1312:650/446/228
5000	278:3186/2200/1104	453:1888/1296/672	649:1316/904/464	925:920/634/326	1318:647/444/226
Win Ceiling=50000					
500	50:500/500/500	125:500/500/500	249:500/500/416	489:500/500/316	923:500/496/236
1000	100:1000/1000/920	245:1000/1000/636	460:1000/1000/480	821:1000/760/356	1404:988/574/266
2000	190:2000/2000/1036	410:2000/1528/720	693:1984/1156/540	1127:1422/842/392	1746:952/578/274
2500	225:2500/2308/1080	462:2500/1600/748	760:2026/1184/552	1193:1376/832/392	1794:927/566/270
3000	253:3000/2324/1128	502:2828/1648/768	806:2006/1192/560	1230:1338/816/388	1820:915/560/268
5000	326:4536/2560/1208	590:2772/1680/796	878:1864/1140/548	1281:1286/788/380	1856:897/550/264
No Win Ceiling					
500	50:500/500/500	125:500/500/500	249:500/500/416	489:500/500/316	923:500/496/236
1000	100:1000/1000/920	245:1000/1000/636	460:1000/1000/480	821:1000/760/356	1406:996/576/266
2000	190:2000/2000/1036	410:2000/1528/720	694:1996/1156/544	1143:1522/870/396	1856:1155/650/294
2500	225:2500/2308/1080	462:2500/1600/748	765:2096/1204/556	1240:1594/902/408	1994:1204/673/302
3000	253:3000/2324/1128	503:2860/1652/768	821:2184/1244/568	1318:1654/930/424	2105:1244/692/308
5000	326:4640/2564/1208	613:3204/1808/824	970:2416/1352/612	1528:1812/1004/448	2405:1346/740/328

Table shows profit followed by optimal bets at chip stacks of 10000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.386693. Push occurs with probability 0.0432667.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$10000 3% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	95:443/500/500	175:325/500/500	265:237/500/396	382:171/401/262	519:120/269/174
1000	118:499/1000/908	205:343/808/536	292:234/542/360	401:160/374/246	530:100/261/169
2000	133:489/1250/836	216:334/754/504	300:229/526/346	405:157/369/242	532:100/259/168
2500	135:490/1268/856	217:325/740/496	300:229/528/344	405:157/369/242	533:100/259/168
3000	135:488/1280/824	218:334/746/496	301:229/524/344	406:157/369/242	533:100/259/168
5000	136:497/1288/836	218:313/760/504	301:229/526/346	406:159/369/242	533:100/259/168
Win Ceiling=2500					
500	139:500/500/500	294:500/500/500	481:472/500/412	732:328/460/280	1036:220/301/184
1000	208:1000/1000/924	383:664/928/568	560:442/608/380	786:306/416/260	1068:213/289/178
2000	253:1024/1444/892	413:610/840/532	579:427/586/368	798:300/409/254	1076:211/287/176
2500	259:1056/1382/872	416:609/836/528	582:427/582/364	799:300/408/254	1077:210/287/176
3000	262:1002/1408/876	418:610/828/528	583:424/584/364	800:299/408/254	1077:210/286/176
5000	265:970/1436/856	419:619/836/520	584:427/576/364	801:300/407/254	1078:210/287/176
Win Ceiling=5000					
500	150:500/500/500	362:500/500/500	664:500/500/416	1111:500/500/302	1665:351/349/200
1000	277:1000/1000/928	570:1000/1000/608	872:705/704/408	1255:477/476/278	1750:331/328/190
2000	389:1647/1672/976	647:957/960/568	920:663/662/392	1286:464/463/272	1770:326/324/188
2500	403:1605/1608/928	655:948/950/560	925:659/660/390	1290:463/462/270	1773:326/324/186
3000	410:1512/1564/928	659:936/944/560	928:657/658/388	1291:462/460/270	1774:326/323/186
5000	418:1597/1560/960	664:936/944/564	931:656/658/388	1294:462/460/270	1775:326/323/186
Win Ceiling=10000					
500	150:500/500/500	375:500/500/500	745:500/500/420	1415:500/500/318	2418:500/436/226
1000	300:1000/1000/928	711:1000/1000/640	1224:1000/876/460	1869:720/571/310	2704:489/388/210
2000	526:2000/2000/1028	942:1446/1152/632	1373:982/784/436	1961:682/542/296	2765:478/379/204
2500	573:2440/1928/1024	965:1406/1124/616	1388:970/774/428	1971:678/540/296	2772:476/378/204
3000	594:2320/1856/1024	977:1390/1108/612	1396:964/770/420	1977:676/538/294	2775:476/377/204
5000	620:2320/1888/1064	993:1364/1088/600	1407:952/768/416	1984:674/536/294	2781:475/376/204
Win Ceiling=20000					
500	150:500/500/500	375:500/500/500	749:500/500/420	1477:500/500/320	2810:500/500/240
1000	300:1000/1000/928	737:1000/1000/644	1390:1000/1000/484	2423:1000/718/352	3807:700/477/240
2000	572:2000/2000/1036	1198:2000/1444/712	1869:1408/960/488	2770:951/652/334	4032:659/451/230
2500	672:2500/2304/1088	1284:2056/1392/708	1922:1364/936/476	2807:938/644/330	4057:654/448/228
3000	742:3000/2280/1112	1326:1980/1352/696	1950:1344/924/472	2826:932/640/328	4071:652/447/227
5000	844:3186/2208/1120	1382:1896/1304/676	1989:1320/908/464	2853:924/635/326	4090:649/445/226
Win Ceiling=50000					
500	150:500/500/500	375:500/500/500	749:500/500/420	1477:500/500/320	2835:500/500/242
1000	300:1000/1000/928	737:1000/1000/644	1399:1000/1000/484	2547:1000/776/364	4513:1000/588/268
2000	573:2000/2000/1036	1251:2000/1544/728	2158:2000/1168/544	3604:1438/850/396	5752:957/581/274
2500	679:2500/2324/1096	1419:2500/1616/752	2381:2052/1200/556	3832:1384/836/396	5925:931/568/270
3000	766:3000/2352/1124	1550:2868/1664/772	2535:2020/1200/560	3957:1344/820/388	6017:918/561/268
5000	996:4616/2564/1232	1836:2784/1688/800	2777:1874/1144/548	4134:1291/792/380	6149:900/550/262
No Win Ceiling					
500	150:500/500/500	375:500/500/500	749:500/500/420	1477:500/500/320	2835:500/500/242
1000	300:1000/1000/928	737:1000/1000/644	1399:1000/1000/484	2547:1000/776/364	4521:1000/591/270
2000	573:2000/2000/1036	1251:2000/1544/728	2161:2000/1172/544	3669:1558/884/402	6246:1187/663/296
2500	679:2500/2324/1096	1419:2500/1616/752	2399:2132/1220/560	4023:1626/918/416	6804:1235/686/304
3000	766:3000/2352/1124	1553:2904/1672/776	2591:2218/1260/572	4310:1686/944/426	7261:1273/704/312
5000	998:4652/2576/1232	1913:3240/1824/828	3114:2444/1364/616	5106:1838/1016/452	8549:1374/752/330

Table shows profit followed by optimal bets at chip stacks of 10000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.39224. Push occurs with probability 0.0494.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$10000 5% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	155:443/500/500	281:319/500/500	414:237/500/400	575:171/402/262	743:117/270/174
1000	191:490/1000/912	325:343/812/536	453:234/544/360	599:160/375/246	755:117/262/168
2000	215:489/1250/836	342:334/758/504	463:229/528/346	604:160/370/242	758:117/260/167
2500	218:490/1268/856	343:334/744/496	464:229/529/346	605:160/370/242	759:117/260/166
3000	219:497/1280/824	344:334/746/500	464:229/526/344	605:160/370/242	759:117/259/166
5000	219:497/1288/836	345:313/762/508	465:229/528/346	606:160/370/242	759:117/259/166
Win Ceiling=2500					
500	230:500/500/500	480:500/500/500	769:469/500/412	1137:328/462/280	1543:222/302/184
1000	342:1000/1000/928	618:664/932/572	888:445/610/382	1211:306/418/260	1584:214/290/177
2000	414:1024/1448/892	664:610/842/532	916:430/587/368	1228:301/410/254	1593:212/288/176
2500	423:1056/1382/872	669:610/840/528	919:427/584/366	1230:301/410/254	1594:212/287/174
3000	428:1002/1408/876	672:610/830/528	921:427/584/364	1231:300/409/254	1595:212/287/174
5000	433:970/1436/856	674:619/840/524	923:430/578/364	1233:300/408/254	1595:212/287/174
Win Ceiling=5000					
500	250:500/500/500	601:500/500/500	1087:500/500/424	1779:500/500/304	2581:352/350/200
1000	459:1000/1000/932	933:1000/1000/616	1411:707/706/408	1994:478/477/278	2699:332/329/190
2000	641:1647/1672/976	1056:960/964/568	1485:666/664/392	2040:466/464/272	2726:328/325/186
2500	664:1605/1608/948	1069:951/952/560	1493:661/662/390	2045:465/463/270	2729:327/324/186
3000	676:1512/1564/936	1076:939/946/560	1498:660/660/388	2048:464/462/270	2730:327/324/186
5000	689:1598/1560/960	1084:936/944/564	1503:659/658/388	2051:463/462/270	2733:327/324/186
Win Ceiling=10000					
500	250:500/500/500	625:500/500/500	1240:500/500/424	2340:500/500/324	3927:500/440/227
1000	499:1000/1000/932	1182:1000/1000/644	2028:1000/882/464	3069:722/573/312	4363:491/389/210
2000	875:2000/2000/1028	1566:1450/1156/632	2271:985/786/436	3215:684/544/296	4454:479/379/204
2500	953:2440/1932/1032	1603:1410/1124/620	2296:973/776/428	3231:680/541/296	4465:478/378/204
3000	989:2320/1856/1024	1623:1394/1112/612	2309:967/772/420	3240:678/540/294	4470:477/378/203
5000	1033:2332/1888/1052	1650:1364/1088/600	2327:956/770/416	3252:676/537/294	4478:476/377/202
Win Ceiling=20000					
500	250:500/500/500	625:500/500/500	1249:500/500/424	2472:500/500/328	4743:500/500/246
1000	500:1000/1000/932	1232:1000/1000/648	2339:1000/1000/488	4108:1000/726/354	6448:703/478/240
2000	958:2000/2000/1040	2021:2000/1452/716	3166:1412/964/488	4704:954/654/334	6823:660/452/228
2500	1126:2500/2316/1096	2168:2064/1400/708	3257:1368/940/480	4765:941/646/330	6865:656/449/227
3000	1246:3000/2280/1112	2240:1984/1356/700	3305:1348/928/472	4798:935/642/328	6888:654/448/226
5000	1420:3192/2212/1120	2337:1900/1312/676	3372:1322/910/464	4845:927/636/326	6920:651/445/226
Win Ceiling=50000					
500	250:500/500/500	625:500/500/500	1249:500/500/424	2473:500/500/328	4809:500/500/246
1000	500:1000/1000/932	1232:1000/1000/648	2358:1000/1000/488	4374:1000/794/368	7975:1000/604/274
2000	959:2000/2000/1040	2121:2000/1560/736	3723:2000/1184/552	6359:1454/858/396	10364:961/583/276
2500	1140:2500/2328/1104	2419:2500/1636/764	4133:2076/1212/560	6786:1392/840/396	10690:934/570/270
3000	1289:3000/2368/1124	2654:2904/1680/780	4415:2036/1208/564	7020:1349/822/392	10864:920/562/266
5000	1690:4640/2604/1248	3166:2796/1696/800	4858:1880/1148/552	7350:1295/794/380	11113:902/552/262
No Win Ceiling					
500	250:500/500/500	625:500/500/500	1249:500/500/424	2473:500/500/328	4809:500/500/246
1000	500:1000/1000/932	1232:1000/1000/648	2358:1000/1000/488	4374:1000/794/368	7999:1000/608/274
2000	959:2000/2000/1040	2121:2000/1560/736	3729:2000/1188/552	6511:1596/900/406	11556:1223/678/302
2500	1140:2500/2328/1104	2419:2500/1636/764	4172:2168/1236/568	7213:1664/934/420	12765:1269/700/308
3000	1289:3000/2368/1124	2659:2948/1688/780	4532:2256/1280/576	7791:1720/958/432	13777:1306/718/316
5000	1694:4664/2608/1248	3316:3276/1840/844	5536:2480/1380/620	9435:1868/1028/456	16725:1404/764/334

Table shows profit followed by optimal bets at chip stacks of 10000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.398. Push occurs with probability 0.055.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$10000 7% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	213:443/500/500	378:319/500/500	543:237/500/402	725:171/403/264	893:117/270/174
1000	261:490/1000/920	433:343/816/540	587:235/546/362	750:166/376/246	904:117/262/167
2000	292:489/1256/836	453:334/760/504	599:229/530/348	756:160/371/244	906:117/260/166
2500	296:490/1268/856	456:334/746/496	600:229/530/346	757:160/371/242	907:117/260/166
3000	297:497/1280/824	457:334/748/500	601:229/527/344	757:160/371/242	907:117/260/166
5000	298:497/1288/836	458:316/764/508	602:229/530/346	758:160/371/242	907:117/260/166
Win Ceiling=2500					
500	321:500/500/500	658:500/500/500	1032:463/500/416	1477:328/464/282	1918:223/303/184
1000	472:988/1000/932	837:664/936/572	1178:448/612/382	1562:307/419/260	1958:215/291/176
2000	567:1024/1448/896	896:618/842/536	1213:430/588/370	1581:303/411/254	1967:213/288/174
2500	580:1056/1382/880	902:618/842/528	1217:427/586/368	1583:301/411/254	1968:213/288/174
3000	586:1002/1408/896	906:610/830/528	1218:427/586/366	1584:301/410/254	1969:213/288/174
5000	593:970/1436/856	909:619/842/528	1221:430/578/368	1586:301/409/254	1970:213/288/174
Win Ceiling=5000					
500	349:500/500/500	837:500/500/500	1493:500/500/428	2380:500/500/308	3325:352/351/200
1000	639:1000/1000/936	1282:1000/1000/616	1912:708/708/412	2643:480/478/278	3454:333/330/188
2000	887:1683/1676/984	1447:963/964/568	2007:669/666/392	2698:468/465/272	3483:329/325/186
2500	918:1605/1608/940	1464:954/956/564	2018:663/662/390	2704:466/464/270	3486:328/325/186
3000	935:1512/1564/936	1472:942/948/560	2023:663/662/390	2707:465/463/270	3488:328/325/186
5000	953:1598/1560/960	1484:936/944/564	2030:662/660/388	2711:464/463/268	3490:328/324/186
Win Ceiling=10000					
500	350:500/500/500	875:500/500/500	1733:500/500/432	3239:500/500/330	5294:500/443/228
1000	699:1000/1000/936	1650:1000/1000/652	2812:1000/888/464	4200:723/574/312	5823:492/389/208
2000	1223:2000/2000/1032	2180:1456/1160/636	3142:988/790/440	4390:686/545/296	5932:480/380/204
2500	1332:2472/1944/1032	2232:1416/1128/624	3175:976/780/428	4411:682/542/296	5944:479/379/202
3000	1382:2338/1864/1028	2259:1398/1112/616	3193:970/774/424	4422:680/541/294	5951:478/378/202
5000	1443:2332/1888/1052	2296:1366/1092/604	3217:959/772/416	4438:678/538/292	5960:477/378/202
Win Ceiling=20000					
500	350:500/500/500	875:500/500/500	1749:500/500/432	3471:500/500/334	6677:500/500/250
1000	700:1000/1000/936	1729:1000/1000/656	3301:1000/1000/492	5811:1000/732/356	9025:705/480/240
2000	1345:2000/2000/1048	2858:2000/1464/720	4487:1416/968/488	6648:956/656/334	9523:662/452/228
2500	1586:2500/2328/1112	3068:2072/1404/712	4617:1372/942/480	6734:944/647/332	9579:658/450/226
3000	1756:3000/2300/1124	3171:1992/1364/700	4685:1350/930/476	6780:937/642/328	9609:656/448/226
5000	2005:3192/2208/1120	3310:1904/1316/676	4779:1324/912/468	6845:929/637/326	9651:653/446/224
Win Ceiling=50000					
500	350:500/500/500	875:500/500/500	1749:500/500/432	3473:500/500/334	6821:500/500/252
1000	700:1000/1000/936	1729:1000/1000/656	3334:1000/1000/496	6281:1000/816/376	11716:1000/621/278
2000	1348:2000/2000/1048	3016:2000/1576/740	5381:2000/1204/556	9361:1470/868/400	15420:965/586/276
2500	1606:2500/2336/1108	3458:2500/1652/768	6008:2098/1224/564	10017:1400/846/398	15913:937/571/270
3000	1822:3000/2384/1128	3811:2944/1696/784	6437:2048/1220/568	10374:1354/826/392	16175:923/563/266
5000	2408:4652/2600/1264	4578:2804/1700/804	7108:1886/1152/552	10878:1299/796/380	16547:904/552/261
No Win Ceiling					
500	350:500/500/500	875:500/500/500	1749:500/500/432	3473:500/500/334	6821:500/500/252
1000	700:1000/1000/936	1729:1000/1000/656	3334:1000/1000/496	6281:1000/816/376	11774:1000/628/278
2000	1348:2000/2000/1048	3016:2000/1576/740	5391:2000/1208/556	9654:1636/918/412	17756:1264/695/306
2500	1606:2500/2336/1108	3459:2500/1656/768	6078:2208/1252/572	10803:1706/948/424	19885:1308/716/314
3000	1822:3000/2384/1128	3820:3000/1704/784	6642:2298/1296/584	11764:1756/974/436	21702:1343/733/320
5000	2414:4692/2640/1264	4821:3316/1860/848	8247:2512/1396/632	14568:1902/1042/460	27170:1438/779/338

Table shows profit followed by optimal bets at chip stacks of 10000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.403973. Push occurs with probability 0.0600667.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$15000 1% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	32:443/500/500	61:325/500/500	94:240/500/416	143:180/500/304	210:125/366/206
1000	40:499/1000/920	73:358/1000/616	110:259/738/420	158:180/494/284	221:123/341/195
2000	47:666/1758/1008	81:358/996/576	116:246/690/396	163:174/480/276	224:123/336/192
2500	49:666/1632/948	82:355/984/572	117:246/682/396	163:174/478/276	224:123/335/192
3000	50:666/1562/928	82:355/972/564	117:243/680/392	163:174/477/276	225:123/335/192
5000	51:517/1668/968	83:355/984/564	118:247/682/392	164:174/475/274	225:123/335/191
Win Ceiling=2500					
500	47:500/500/500	100:500/500/500	167:487/500/416	267:367/500/310	407:258/392/214
1000	70:1000/1000/920	135:727/1000/624	209:520/792/440	308:349/524/294	437:241/359/200
2000	90:1177/1868/996	156:700/1056/596	225:486/726/408	318:339/504/284	444:237/353/198
2500	95:1137/1754/984	158:688/1032/592	227:481/720/404	319:337/502/284	445:237/352/197
3000	97:1116/1700/968	160:685/1028/584	228:481/716/400	320:336/502/282	445:236/352/196
5000	100:1078/1760/1020	162:682/1028/588	229:477/718/400	321:336/501/282	446:236/352/196
Win Ceiling=5000					
500	50:500/500/500	121:500/500/500	225:500/500/416	393:500/500/314	636:431/432/224
1000	93:1000/1000/920	197:1000/1000/632	323:864/870/460	489:570/569/310	705:389/387/210
2000	139:1938/2000/1024	247:1143/1148/628	359:779/780/436	512:543/541/296	721:380/378/206
2500	149:1899/1928/1012	252:1116/1120/616	363:771/772/424	515:539/538/294	723:379/377/204
3000	154:1848/1856/1016	255:1098/1104/608	365:768/768/420	516:538/537/294	724:379/376/204
5000	161:1782/1888/1064	259:1098/1084/600	368:759/764/416	518:535/535/292	725:378/376/204
Win Ceiling=10000					
500	50:500/500/500	125:500/500/500	249:500/500/416	483:500/500/316	877:500/478/234
1000	100:1000/1000/920	242:1000/1000/636	441:1000/960/472	721:914/650/334	1073:602/434/226
2000	184:2000/2000/1036	362:1834/1312/680	541:1206/874/460	782:829/600/316	1112:579/418/219
2500	211:2500/2168/1064	378:1738/1260/664	551:1183/858/456	788:822/596/314	1117:576/416/218
3000	227:3000/2188/1080	385:1698/1240/660	556:1171/850/452	792:818/593/312	1119:575/415/217
5000	245:2671/2000/1064	396:1645/1208/640	563:1157/840/448	797:812/590/310	1123:573/414/216
Win Ceiling=20000					
500	50:500/500/500	125:500/500/500	250:500/500/416	499:500/500/316	980:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	490:1000/1000/480	901:1000/742/356	1478:915/511/250
2000	199:2000/2000/1036	452:2000/1496/716	738:1838/1028/516	1104:1210/694/348	1602:832/477/240
2500	242:2500/2300/1080	504:2500/1480/728	769:1743/996/504	1124:1187/682/344	1616:825/473/238
3000	278:3000/2324/1128	530:2560/1452/720	785:1704/980/492	1134:1175/676/340	1623:821/471/236
5000	340:4044/2324/1144	562:2392/1380/696	806:1655/956/480	1149:1160/666/336	1633:816/468/234
Win Ceiling=50000					
500	50:500/500/500	125:500/500/500	250:500/500/416	499:500/500/316	985:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	492:1000/1000/480	934:1000/760/356	1687:1000/575/266
2000	199:2000/2000/1036	467:2000/1528/720	838:2000/1156/544	1418:1944/854/396	2238:1279/594/280
2500	245:2500/2308/1080	548:2500/1600/748	946:2500/1196/556	1526:1864/852/396	2314:1235/581/276
3000	286:3000/2324/1128	614:3000/1648/768	1021:2728/1212/564	1585:1793/838/396	2353:1214/573/272
5000	402:5000/2564/1208	758:3756/1716/808	1140:2484/1172/556	1665:1702/808/384	2409:1186/561/268
No Win Ceiling					
500	50:500/500/500	125:500/500/500	250:500/500/416	499:500/500/316	985:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	492:1000/1000/480	934:1000/760/356	1688:1000/576/266
2000	199:2000/2000/1036	467:2000/1528/720	838:2000/1156/544	1438:2000/870/396	2396:1596/650/294
2500	245:2500/2308/1080	548:2500/1600/748	951:2500/1204/556	1592:2194/902/408	2612:1673/673/302
3000	286:3000/2324/1128	614:3000/1652/768	1041:2996/1244/568	1715:2284/930/424	2785:1734/692/308
5000	403:5000/2564/1208	790:4392/1808/824	1279:3348/1352/612	2044:2530/1004/448	3251:1892/740/328
Table shows profit followed by optimal bets at chip stacks of 15000, 5000, and 2000. Win ceiling is strict. All figures represent dollars. Payoff is 3:2 with probability 0.386693. Push occurs with probability 0.0432667.					

Optimal Betting Facing CTR Constraint Starting Bankroll is \$15000 3% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	95:443/500/500	175:325/500/500	266:240/500/420	387:180/500/308	536:129/367/206
1000	118:499/1000/928	208:358/1000/620	304:262/740/424	422:180/496/284	560:123/342/194
2000	137:666/1758/1016	229:358/1000/580	320:256/692/396	432:174/481/276	566:123/337/192
2500	141:666/1632/948	232:355/988/572	322:250/684/396	433:174/480/276	566:123/336/191
3000	144:666/1564/928	233:355/976/568	323:246/682/396	434:174/478/276	567:123/336/191
5000	147:517/1668/968	235:355/984/564	324:247/684/392	435:174/477/274	567:123/335/191
Win Ceiling=2500					
500	139:500/500/500	294:500/500/500	482:481/500/420	747:364/500/314	1086:258/394/215
1000	208:1000/1000/928	391:727/1000/632	593:520/796/444	846:351/526/294	1153:243/360/200
2000	265:1177/1868/996	449:706/1060/600	635:487/728/408	873:340/506/284	1169:239/354/197
2500	277:1137/1752/984	456:691/1040/592	639:484/722/404	876:339/504/284	1170:238/353/196
3000	284:1120/1712/972	460:691/1032/584	642:481/718/404	877:339/503/284	1171:238/353/196
5000	292:1111/1808/1024	465:691/1028/588	645:478/718/400	879:337/502/282	1173:238/353/196
Win Ceiling=5000					
500	150:500/500/500	362:500/500/500	665:500/500/420	1132:500/500/318	1767:429/436/226
1000	277:1000/1000/928	581:1000/1000/640	936:864/876/460	1385:572/571/310	1937:391/388/210
2000	411:1938/2000/1028	720:1146/1152/632	1035:783/784/436	1446:545/542/296	1975:382/379/204
2500	440:1899/1928/1024	737:1116/1124/616	1046:774/774/428	1453:542/540/296	1979:381/378/204
3000	456:1848/1856/1024	746:1107/1108/612	1051:770/770/420	1457:540/538/294	1982:380/377/204
5000	475:1782/1888/1064	757:1098/1088/600	1059:762/768/416	1462:537/536/294	1985:380/376/204
Win Ceiling=10000					
500	150:500/500/500	375:500/500/500	746:500/500/420	1437:500/500/320	2553:500/490/236
1000	300:1000/1000/928	723:1000/1000/640	1307:1000/980/476	2108:916/654/334	3083:604/435/226
2000	550:2000/2000/1036	1075:1840/1320/684	1595:1210/878/460	2281:832/602/318	3190:581/419/218
2500	628:2500/2220/1068	1121:1744/1268/668	1624:1186/862/456	2299:825/597/314	3202:578/417/217
3000	676:3000/2188/1088	1143:1704/1244/660	1638:1174/854/452	2309:821/595/312	3209:577/416/217
5000	731:2668/2000/1064	1175:1650/1212/640	1660:1160/844/448	2324:815/591/310	3218:575/415/216
Win Ceiling=20000					
500	150:500/500/500	375:500/500/500	750:500/500/420	1498:500/500/320	2947:500/500/242
1000	300:1000/1000/928	749:1000/1000/644	1473:1000/1000/484	2718:1000/754/360	4456:919/514/252
2000	597:2000/2000/1036	1360:2000/1508/724	2229:1844/1036/520	3336:1214/696/348	4827:835/478/238
2500	728:2500/2320/1096	1519:2500/1496/732	2323:1750/1002/504	3396:1191/684/344	4867:828/474/238
3000	836:3000/2324/1124	1598:2572/1456/724	2371:1710/984/492	3427:1179/678/340	4889:824/472/236
5000	1024:4044/2324/1144	1696:2396/1388/700	2436:1660/956/480	3472:1164/670/336	4920:819/469/234
Win Ceiling=50000					
500	150:500/500/500	375:500/500/500	750:500/500/420	1499:500/500/320	2972:500/500/242
1000	300:1000/1000/928	749:1000/1000/644	1482:1000/1000/484	2845:1000/776/364	5272:1000/590/270
2000	598:2000/2000/1036	1414:2000/1544/728	2571:2000/1172/544	4445:1972/864/396	7171:1286/597/280
2500	735:2500/2324/1096	1667:2500/1616/752	2922:2500/1208/560	4806:1876/858/400	7429:1240/583/276
3000	860:3000/2352/1124	1874:3000/1668/776	3168:2756/1224/568	5001:1801/842/396	7564:1218/575/272
5000	1221:5000/2576/1232	2335:3768/1728/808	3553:2492/1176/560	5268:1708/810/384	7755:1190/562/266
No Win Ceiling					
500	150:500/500/500	375:500/500/500	750:500/500/420	1499:500/500/320	2972:500/500/242
1000	300:1000/1000/928	749:1000/1000/644	1482:1000/1000/484	2845:1000/776/364	5280:1000/591/270
2000	598:2000/2000/1036	1414:2000/1544/728	2573:2000/1172/544	4527:2000/884/402	7857:1649/663/296
2500	735:2500/2324/1096	1668:2500/1616/752	2944:2500/1220/560	5068:2246/918/416	8690:1723/686/304
3000	860:3000/2352/1124	1877:3000/1672/776	3241:3000/1260/572	5505:2338/944/426	9373:1783/704/312
5000	1223:5000/2576/1232	2444:4456/1824/828	4051:3400/1364/616	6715:2576/1016/452	11289:1937/752/330

Table shows profit followed by optimal bets at chip stacks of 15000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.39224. Push occurs with probability 0.0494.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$15000 5% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	155:443/500/500	281:319/500/500	415:240/500/424	580:180/500/312	760:130/369/206
1000	191:490/1000/932	329:358/1000/624	468:265/744/428	624:180/498/286	785:123/343/194
2000	220:666/1758/1016	360:367/1004/580	489:256/692/400	637:177/482/278	792:123/337/191
2500	227:666/1632/948	364:358/988/576	492:256/688/396	638:177/481/276	792:123/337/190
3000	231:666/1578/928	366:355/980/568	493:250/684/396	639:177/480/276	793:123/337/190
5000	236:517/1650/968	369:355/984/564	495:250/686/392	640:177/478/274	793:123/336/190
Win Ceiling=2500					
500	230:500/500/500	480:500/500/500	771:475/500/424	1154:361/500/318	1597:258/396/216
1000	342:1000/1000/932	630:724/1000/636	932:520/800/444	1288:352/527/296	1676:244/361/200
2000	431:1177/1868/996	716:709/1068/600	992:489/730/408	1323:343/507/284	1695:240/355/196
2500	451:1137/1760/988	727:691/1044/592	999:484/724/404	1327:342/505/284	1697:240/354/196
3000	461:1120/1736/972	733:691/1036/588	1003:484/720/404	1329:340/504/284	1698:240/354/196
5000	474:1111/1808/1024	741:691/1032/588	1008:481/720/402	1332:339/503/282	1700:240/353/195
Win Ceiling=5000					
500	250:500/500/500	601:500/500/500	1089:500/500/424	1804:500/500/324	2698:427/440/227
1000	459:1000/1000/932	950:1000/1000/644	1501:864/882/464	2165:574/573/312	2919:392/389/210
2000	674:1938/2000/1028	1167:1152/1156/632	1651:786/786/436	2253:547/544/296	2968:383/379/204
2500	722:1899/1932/1032	1193:1125/1124/620	1667:777/776/428	2263:544/541/296	2974:382/378/204
3000	747:1848/1856/1024	1206:1107/1112/612	1676:771/772/420	2268:542/540/294	2977:382/378/203
5000	779:1782/1888/1052	1225:1098/1088/600	1688:765/770/416	2276:540/537/294	2981:381/377/202
Win Ceiling=10000					
500	250:500/500/500	625:500/500/500	1241:500/500/424	2366:500/500/328	4088:500/500/240
1000	499:1000/1000/932	1199:1000/1000/648	2145:1000/992/484	3404:918/658/336	4851:605/436/226
2000	912:2000/2000/1040	1770:1846/1324/688	2603:1214/880/464	3667:835/604/318	5003:583/420/218
2500	1041:2500/2244/1084	1844:1750/1272/672	2648:1190/864/456	3696:827/599/316	5020:580/418/216
3000	1118:3000/2184/1092	1880:1708/1248/664	2672:1178/856/456	3711:824/596/314	5029:579/417/216
5000	1210:2671/2000/1080	1931:1654/1216/640	2705:1163/846/448	3732:818/593/312	5043:577/415/214
Win Ceiling=20000					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2498:500/500/328	4906:500/500/246
1000	500:1000/1000/932	1249:1000/1000/648	2458:1000/1000/488	4532:1000/766/364	7352:923/517/252
2000	995:2000/2000/1040	2272:2000/1520/728	3725:1852/1040/520	5550:1218/698/350	7938:838/479/238
2500	1215:2500/2328/1104	2539:2500/1504/736	3882:1756/1004/508	5648:1195/686/344	8001:830/475/236
3000	1395:3000/2328/1124	2672:2580/1464/728	3961:1716/984/496	5700:1183/680/342	8035:826/473/234
5000	1712:4074/2344/1144	2837:2402/1392/700	4069:1665/960/480	5773:1167/670/336	8083:821/470/234
Win Ceiling=50000					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2499:500/500/328	4972:500/500/246
1000	500:1000/1000/932	1249:1000/1000/648	2476:1000/1000/488	4802:1000/794/368	9077:1000/606/274
2000	997:2000/2000/1040	2374:2000/1560/736	4373:2000/1188/552	7692:2000/874/402	12568:1292/600/280
2500	1228:2500/2328/1104	2813:2500/1636/764	5002:2500/1224/564	8347:1888/864/402	13030:1245/585/276
3000	1439:3000/2368/1124	3175:3000/1684/780	5443:2784/1232/572	8698:1808/846/398	13272:1222/576/272
5000	2058:5000/2608/1248	3988:3784/1736/812	6128:2500/1180/560	9178:1714/812/386	13613:1193/564/266
No Win Ceiling					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2499:500/500/328	4972:500/500/246
1000	500:1000/1000/932	1249:1000/1000/648	2476:1000/1000/488	4802:1000/794/368	9102:1000/608/274
2000	997:2000/2000/1040	2374:2000/1560/736	4379:2000/1188/552	7880:2000/900/406	14165:1709/678/302
2500	1228:2500/2328/1104	2814:2500/1636/764	5048:2500/1236/568	8916:2306/934/420	15895:1780/700/308
3000	1439:3000/2368/1124	3181:3000/1688/780	5594:3000/1280/576	9770:2394/958/432	17343:1837/718/316
5000	2063:5000/2608/1248	4195:4520/1840/844	7111:3452/1380/620	12194:2628/1028/456	21559:1987/764/334

Table shows profit followed by optimal bets at chip stacks of 15000, 5000, and 2000. Win ceiling is strict. All figures represent dollars. Payoff is 3:2 with probability 0.398. Push occurs with probability 0.055.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$15000 7% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	213:443/500/500	378:319/500/500	543:240/500/428	730:180/500/314	906:130/370/206
1000	261:490/1000/936	438:358/1000/628	604:265/746/432	775:180/499/286	928:123/343/192
2000	299:666/1764/1016	475:367/1004/584	628:256/694/400	788:177/484/278	933:123/338/190
2500	307:666/1634/948	480:355/992/576	631:256/690/396	789:177/482/276	934:123/337/188
3000	312:666/1578/932	483:355/984/572	633:256/688/396	790:177/481/276	934:123/337/188
5000	319:517/1650/976	486:355/988/564	635:250/688/394	791:177/479/274	935:123/337/188
Win Ceiling=2500					
500	321:500/500/500	658:500/500/500	1033:469/500/432	1493:358/500/324	1964:259/398/214
1000	472:988/1000/936	850:718/1000/640	1228:520/802/448	1640:354/528/296	2039:246/362/200
2000	589:1176/1868/996	960:718/1072/604	1300:490/732/408	1679:343/508/284	2056:242/355/196
2500	615:1137/1770/992	974:694/1048/596	1308:486/726/408	1683:342/506/284	2058:241/355/195
3000	628:1125/1736/972	981:691/1040/588	1312:484/722/404	1686:342/505/284	2060:241/354/194
5000	647:1111/1808/1024	991:691/1036/588	1318:481/720/402	1689:340/504/282	2061:241/354/194
Win Ceiling=5000					
500	349:500/500/500	837:500/500/500	1494:500/500/432	2405:500/500/330	3433:425/443/228
1000	639:1000/1000/936	1302:1000/1000/652	2017:861/888/464	2829:575/574/312	3662:394/389/208
2000	930:1938/2000/1032	1586:1152/1160/636	2205:786/790/440	2931:548/545/296	3713:385/380/204
2500	994:1902/1944/1032	1619:1125/1128/624	2225:779/800/428	2943:546/542/296	3719:384/379/202
3000	1028:1845/1864/1028	1637:1116/1112/616	2236:774/774/424	2949:544/541/294	3722:383/378/202
5000	1071:1782/1888/1052	1661:1107/1092/604	2251:768/772/416	2957:542/538/292	3726:383/378/202
Win Ceiling=10000					
500	350:500/500/500	875:500/500/500	1734:500/500/432	3264:500/500/334	5448:500/500/244
1000	699:1000/1000/936	1670:1000/1000/656	2951:1000/1000/488	4585:919/662/338	6327:607/437/226
2000	1271:2000/2000/1036	2443:1852/1328/688	3554:1218/884/464	4915:837/606/318	6500:584/420/216
2500	1447:2500/2256/1088	2543:1752/1276/672	3613:1194/866/456	4951:830/600/316	6519:582/418/216
3000	1554:3000/2184/1092	2592:1714/1252/664	3644:1182/858/456	4969:826/598/314	6529:580/417/216
5000	1680:2671/2004/1072	2661:1660/1216/640	3688:1165/848/450	4996:820/594/312	6544:579/416/214
Win Ceiling=20000					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3497:500/500/334	6834:500/500/252
1000	700:1000/1000/936	1749:1000/1000/656	3442:1000/1000/496	6313:1000/778/368	10045:925/520/252
2000	1393:2000/2000/1048	3185:2000/1532/736	5208:1860/1048/524	7692:1222/700/350	10782:840/480/236
2500	1702:2500/2336/1108	3560:2500/1512/736	5426:1760/1008/512	7824:1198/688/344	10861:832/476/236
3000	1956:3000/2356/1124	3746:2588/1468/728	5535:1720/988/496	7893:1186/682/342	10903:829/474/234
5000	2402:4084/2360/1144	3977:2408/1396/704	5684:1670/962/484	7990:1171/672/336	10963:823/470/232
Win Ceiling=50000					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3499:500/500/334	6978:500/500/252
1000	700:1000/1000/936	1749:1000/1000/656	3475:1000/1000/496	6790:1000/816/376	13023:1000/625/278
2000	1396:2000/2000/1048	3345:2000/1576/740	6234:2000/1204/556	11112:2000/884/404	18198:1298/603/280
2500	1723:2500/2336/1108	3983:2500/1656/768	7171:2500/1236/568	12085:1899/870/404	18861:1249/587/276
3000	2022:3000/2384/1128	4513:3000/1700/784	7827:2804/1244/576	12603:1815/850/400	19206:1226/577/272
5000	2913:5000/2600/1264	5710:3800/1740/816	8841:2508/1184/564	13306:1718/814/388	19690:1196/564/266
No Win Ceiling					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3499:500/500/334	6978:500/500/252
1000	700:1000/1000/936	1749:1000/1000/656	3475:1000/1000/496	6791:1000/816/376	13083:1000/628/278
2000	1396:2000/2000/1048	3345:2000/1576/740	6245:2000/1208/556	11467:2000/918/412	21226:1777/695/306
2500	1723:2500/2336/1108	3984:2500/1656/768	7253:2500/1252/572	13109:2374/948/424	24150:1845/716/314
3000	2022:3000/2384/1128	4524:3000/1704/784	8088:3000/1296/584	14485:2456/974/436	26649:1899/733/320
5000	2921:5000/2640/1264	6042:4576/1860/848	10458:3512/1396/632	18499:2684/1042/460	34181:2044/779/338

Table shows profit followed by optimal bets at chip stacks of 15000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.403973. Push occurs with probability 0.0600667.

Optimal Betting Facing CTR Constraint					
Starting Bankroll is \$20000					
1% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	32:443/500/500	61:325/500/500	94:240/500/416	143:183/500/314	212:130/445/226
1000	40:499/1000/920	73:364/1000/636	111:273/896/464	163:190/586/316	230:130/397/214
2000	47:666/2000/1032	83:376/1180/640	121:268/802/440	170:183/554/300	235:125/387/208
2500	49:666/1980/1028	85:373/1148/628	122:265/792/436	171:183/550/300	236:125/386/208
3000	51:666/1900/1008	86:373/1132/616	123:265/786/432	172:180/549/298	236:125/385/208
5000	53:666/1888/1048	87:367/1104/608	124:259/782/420	173:180/547/296	237:125/384/208
Win Ceiling=2500					
500	47:500/500/500	100:500/500/500	167:487/500/416	268:372/500/314	414:277/460/230
1000	70:1000/1000/920	135:733/1000/636	213:556/924/468	320:385/610/324	461:265/411/218
2000	91:1180/2000/1036	162:772/1232/660	238:530/828/448	339:370/573/308	474:257/399/212
2500	96:1218/2008/1040	167:754/1188/640	241:524/818/444	341:367/569/304	475:256/398/212
3000	100:1227/1980/1072	169:745/1168/632	243:520/812/440	342:364/566/304	476:256/397/212
5000	106:1192/1900/1036	173:736/1160/616	245:516/804/436	344:363/564/302	477:255/396/210
Win Ceiling=5000					
500	50:500/500/500	121:500/500/500	225:500/500/416	394:500/500/316	648:469/478/234
1000	93:1000/1000/920	198:1000/1000/636	329:938/960/472	515:648/650/334	757:436/434/226
2000	140:1986/2000/1036	260:1296/1312/680	386:873/874/460	555:602/600/316	783:420/418/219
2500	153:2031/2168/1064	270:1251/1260/664	393:858/858/456	560:597/596/314	786:419/416/218
3000	161:2034/2188/1080	275:1227/1240/660	397:849/850/452	562:595/593/312	788:418/415/217
5000	174:2010/2000/1064	283:1191/1208/640	402:837/840/448	566:591/590/310	790:416/414/216
Win Ceiling=10000					
500	50:500/500/500	125:500/500/500	249:500/500/416	484:500/500/316	890:500/492/236
1000	100:1000/1000/920	242:1000/1000/636	448:1000/996/476	763:1000/710/348	1172:697/475/240
2000	185:2000/2000/1036	384:2000/1436/704	593:1395/956/484	866:946/650/332	1237:657/450/230
2500	215:2500/2264/1068	411:2029/1388/704	609:1353/934/476	877:934/642/330	1244:653/447/228
3000	237:3000/2276/1108	424:1954/1348/696	618:1333/922/472	883:928/638/328	1248:651/446/228
5000	270:3130/2200/1104	442:1876/1296/672	630:1308/904/464	891:919/634/326	1254:648/444/226
Win Ceiling=20000					
500	50:500/500/500	125:500/500/500	250:500/500/416	500:500/500/316	993:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	497:1000/1000/480	946:1000/754/356	1630:1000/539/258
2000	200:2000/2000/1036	474:2000/1516/720	817:2000/1088/528	1252:1430/734/362	1827:974/501/247
2500	247:2500/2308/1080	547:2500/1544/740	869:2076/1058/524	1283:1392/716/356	1848:963/496/246
3000	289:3000/2324/1128	591:3000/1536/744	893:2008/1034/520	1299:1373/708/352	1859:957/493/244
5000	381:4878/2520/1200	643:2792/1448/720	926:1928/1000/496	1321:1349/698/348	1874:949/489/242
Win Ceiling=50000					
500	50:500/500/500	125:500/500/500	250:500/500/416	500:500/500/316	998:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	499:1000/1000/480	979:1000/760/356	1845:1000/575/266
2000	200:2000/2000/1036	490:2000/1528/720	920:2000/1156/544	1621:2000/860/396	2621:1573/607/284
2500	249:2500/2308/1080	592:2500/1600/748	1068:2500/1200/556	1780:2312/868/404	2729:1502/595/280
3000	297:3000/2324/1128	679:3000/1648/768	1177:3000/1224/564	1866:2194/858/404	2785:1470/586/276
5000	448:5000/2564/1208	887:4664/1748/808	1350:3018/1200/568	1980:2057/824/392	2863:1430/572/272
No Win Ceiling					
500	50:500/500/500	125:500/500/500	250:500/500/416	500:500/500/316	998:500/496/236
1000	100:1000/1000/920	250:1000/1000/636	499:1000/1000/480	979:1000/760/356	1846:1000/576/266
2000	200:2000/2000/1036	490:2000/1528/720	920:2000/1156/544	1642:2000/870/396	2813:1996/650/294
2500	249:2500/2308/1080	592:2500/1600/748	1074:2500/1204/556	1856:2500/902/408	3110:2099/673/302
3000	297:3000/2324/1128	680:3000/1652/768	1198:3000/1244/568	2026:2856/930/424	3348:2183/692/308
5000	449:5000/2564/1208	924:5000/1808/824	1529:4192/1352/612	2481:3192/1004/448	3987:2396/740/328

Table shows profit followed by optimal bets at chip stacks of 20000, 5000, and 2000. Win ceiling is strict.
 All figures represent dollars. Payoff is 3:2 with probability 0.386693. Push occurs with probability 0.0432667.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$20000 3% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	95:443/500/500	175:325/500/500	266:240/500/420	388:183/500/320	540:139/450/230
1000	118:499/1000/928	208:364/1000/640	307:273/902/468	432:193/588/316	576:130/398/212
2000	137:666/2000/1036	234:376/1184/640	331:268/804/440	449:187/556/300	586:130/388/208
2500	142:666/2000/1040	239:373/1152/628	334:268/796/436	451:187/552/300	588:130/387/208
3000	146:666/1900/1008	242:373/1136/616	336:265/788/436	452:183/550/298	588:130/386/206
5000	153:666/1908/1060	246:367/1108/608	339:265/784/424	454:180/548/296	589:130/385/206
Win Ceiling=2500					
500	139:500/500/500	294:500/500/500	482:481/500/420	748:367/500/320	1097:275/468/232
1000	208:1000/1000/928	392:727/1000/640	601:553/936/472	875:388/614/324	1200:266/412/218
2000	266:1177/2000/1036	465:772/1236/664	667:532/832/448	919:372/574/308	1228:259/400/212
2500	282:1219/2040/1048	478:754/1192/640	675:527/820/444	925:369/571/304	1231:258/399/210
3000	292:1227/1996/1080	485:748/1172/632	679:523/816/444	927:367/568/304	1232:258/398/210
5000	309:1192/1900/1036	494:736/1160/616	686:517/804/438	931:366/566/302	1235:257/397/210
Win Ceiling=5000					
500	150:500/500/500	362:500/500/500	665:500/500/420	1133:500/500/320	1788:461/490/236
1000	277:1000/1000/928	582:1000/1000/640	950:930/980/476	1445:649/654/334	2045:438/435/226
2000	413:1983/2000/1036	756:1305/1320/684	1105:876/878/460	1549:603/602/318	2108:422/419/218
2500	450:2031/2220/1068	784:1254/1268/668	1123:861/862/456	1561:599/597/314	2115:421/417/217
3000	475:2034/2188/1088	799:1230/1244/660	1132:852/854/452	1567:596/595/312	2119:420/416/217
5000	512:2034/2000/1064	820:1197/1212/640	1146:840/844/448	1576:593/591/310	2125:418/415/216
Win Ceiling=10000					
500	150:500/500/500	375:500/500/500	746:500/500/420	1438:500/500/320	2578:500/500/240
1000	300:1000/1000/928	724:1000/1000/644	1323:1000/1000/484	2211:1000/718/352	3311:699/477/240
2000	552:2000/2000/1036	1133:2000/1444/712	1733:1399/960/488	2495:949/652/334	3479:659/451/230
2500	641:2500/2304/1088	1211:2038/1392/708	1780:1357/936/476	2524:937/644/330	3498:655/448/228
3000	706:3000/2280/1112	1250:1960/1352/696	1804:1338/924/472	2540:931/640/328	3508:653/447/227
5000	802:3154/2208/1120	1301:1882/1304/676	1837:1312/908/464	2562:923/635/326	3523:650/445/226
Win Ceiling=20000					
500	150:500/500/500	375:500/500/500	750:500/500/420	1500:500/500/320	2972:500/500/242
1000	300:1000/1000/928	750:1000/1000/644	1489:1000/1000/484	2827:1000/768/362	4828:1000/545/260
2000	599:2000/2000/1036	1421:2000/1532/728	2445:2000/1096/532	3730:1435/736/364	5395:977/502/247
2500	741:2500/2324/1096	1640:2500/1556/744	2598:2084/1064/528	3819:1397/720/356	5453:966/497/244
3000	866:3000/2332/1124	1771:3000/1544/748	2671:2015/1040/520	3866:1378/710/354	5484:960/494/242
5000	1143:4896/2520/1200	1926:2802/1452/724	2769:1935/1004/500	3932:1354/700/348	5528:952/490/242
Win Ceiling=50000					
500	150:500/500/500	375:500/500/500	750:500/500/420	1500:500/500/320	2996:500/500/242
1000	300:1000/1000/928	750:1000/1000/644	1498:1000/1000/484	2954:1000/776/364	5663:1000/590/270
2000	600:2000/2000/1036	1475:2000/1544/728	2795:2000/1172/544	5009:2000/872/400	8235:1583/612/284
2500	748:2500/2324/1096	1789:2500/1616/752	3266:2500/1216/560	5526:2330/874/404	8589:1509/598/280
3000	891:3000/2352/1124	2060:3000/1668/776	3613:3000/1236/568	5805:2205/862/404	8771:1476/588/276
5000	1355:5000/2576/1232	2712:4672/1756/816	4167:3030/1204/568	6172:2064/826/392	9025:1434/574/270
No Win Ceiling					
500	150:500/500/500	375:500/500/500	750:500/500/420	1500:500/500/320	2996:500/500/242
1000	300:1000/1000/928	750:1000/1000/644	1498:1000/1000/484	2954:1000/776/364	5671:1000/591/270
2000	600:2000/2000/1036	1475:2000/1544/728	2797:2000/1172/544	5096:2000/884/402	9047:2000/663/296
2500	748:2500/2324/1096	1790:2500/1616/752	3288:2500/1220/560	5826:2500/918/416	10156:2171/686/304
3000	891:3000/2352/1124	2063:3000/1672/776	3693:3000/1260/572	6418:2930/944/426	11064:2252/704/312
5000	1358:5000/2576/1232	2839:5000/1824/828	4799:4268/1364/616	8050:3260/1016/452	13607:2461/752/330

Table shows profit followed by optimal bets at chip stacks of 20000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.39224. Push occurs with probability 0.0494.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$20000 5% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	155:443/500/500	281:319/500/500	415:240/500/424	581:180/500/326	763:139/456/230
1000	191:490/1000/932	330:358/1000/648	471:273/912/468	635:196/590/316	801:139/399/212
2000	221:666/2000/1036	368:376/1192/644	504:268/806/444	656:187/557/302	812:130/388/206
2500	229:666/1996/1040	375:373/1156/632	508:268/798/440	658:187/554/300	813:130/387/206
3000	235:666/1900/1036	379:373/1140/624	511:268/792/436	660:187/552/298	814:130/387/206
5000	245:666/1908/1060	384:367/1112/608	514:265/784/424	662:187/550/296	815:130/386/206
Win Ceiling=2500					
500	230:500/500/500	480:500/500/500	771:475/500/424	1155:364/500/328	1607:273/476/236
1000	342:1000/1000/932	630:727/1000/648	942:550/948/476	1322:390/616/326	1726:268/413/218
2000	433:1177/2000/1040	740:772/1240/664	1035:533/834/448	1380:372/576/308	1757:261/401/212
2500	457:1225/2076/1060	759:763/1200/644	1047:526/822/444	1387:370/572/306	1760:260/399/210
3000	474:1227/2012/1080	769:754/1176/636	1054:524/816/444	1391:369/570/304	1762:259/399/210
5000	500:1192/1948/1036	784:745/1160/620	1063:520/806/440	1396:367/567/302	1765:259/398/210
Win Ceiling=5000					
500	250:500/500/500	601:500/500/500	1089:500/500/424	1805:500/500/328	2719:453/500/240
1000	459:1000/1000/932	950:1000/1000/648	1519:924/992/484	2242:648/658/336	3041:439/436/226
2000	678:1983/2000/1040	1219:1305/1324/688	1748:879/880/464	2386:606/604/318	3119:424/420/218
2500	737:2031/2244/1084	1263:1254/1272/672	1775:864/864/456	2402:600/599/316	3128:422/418/216
3000	777:2034/2184/1092	1286:1233/1248/664	1790:855/856/456	2411:598/596/314	3133:421/417/216
5000	836:2034/2000/1080	1318:1197/1216/640	1810:843/846/448	2423:595/593/312	3140:420/415/214
Win Ceiling=10000					
500	250:500/500/500	625:500/500/500	1241:500/500/424	2367:500/500/328	4113:500/500/246
1000	499:1000/1000/932	1200:1000/1000/648	2166:1000/1000/488	3538:1000/726/354	5130:700/478/240
2000	916:2000/2000/1040	1856:2000/1452/716	2804:1404/964/488	3960:952/654/334	5359:661/452/228
2500	1060:2500/2316/1096	1981:2044/1400/708	2876:1362/940/480	4004:940/646/330	5385:657/449/227
3000	1165:3000/2280/1112	2042:1966/1356/700	2914:1342/928/472	4027:934/642/328	5398:655/448/226
5000	1321:3154/2212/1120	2124:1885/1312/676	2966:1315/910/464	4060:925/636/326	5418:652/445/226
Win Ceiling=20000					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2499:500/500/328	4931:500/500/246
1000	500:1000/1000/932	1250:1000/1000/648	2479:1000/1000/488	4675:1000/784/368	7839:1000/550/262
2000	998:2000/2000/1040	2363:2000/1548/732	4048:2000/1104/536	6122:1440/740/364	8701:980/503/247
2500	1234:2500/2328/1104	2725:2500/1572/748	4299:2091/1068/528	6265:1401/722/358	8788:969/498/244
3000	1443:3000/2368/1124	2942:3000/1552/752	4418:2022/1042/520	6339:1382/712/352	8835:963/495/242
5000	1903:4896/2516/1192	3199:2812/1456/724	4578:1941/1006/500	6443:1358/702/348	8901:955/490/240
Win Ceiling=50000					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2500:500/500/328	4997:500/500/246
1000	500:1000/1000/932	1250:1000/1000/648	2497:1000/1000/488	4946:1000/794/368	9596:1000/607/274
2000	1000:2000/2000/1040	2465:2000/1560/736	4710:2000/1188/552	8552:2000/884/404	14153:1591/616/286
2500	1248:2500/2328/1104	3000:2500/1636/764	5535:2500/1228/564	9465:2348/882/408	14766:1514/600/280
3000	1486:3000/2368/1124	3466:3000/1688/780	6146:3000/1252/576	9954:2215/868/404	15080:1480/590/276
5000	2274:5000/2608/1248	4598:4704/1764/816	7116:3040/1212/568	10597:2071/828/392	15516:1438/575/270
No Win Ceiling					
500	250:500/500/500	625:500/500/500	1250:500/500/424	2500:500/500/328	4997:500/500/246
1000	500:1000/1000/932	1250:1000/1000/648	2497:1000/1000/488	4946:1000/794/368	9621:1000/608/274
2000	1000:2000/2000/1040	2465:2000/1560/736	4716:2000/1188/552	8750:2000/900/406	16007:2000/678/302
2500	1248:2500/2328/1104	3001:2500/1636/764	5582:2500/1236/568	10111:2500/934/420	18235:2252/700/308
3000	1486:3000/2368/1124	3472:3000/1688/780	6309:3000/1280/576	11236:3000/958/432	20101:2330/718/316
5000	2279:5000/2608/1248	4839:5000/1840/844	8345:4340/1380/620	14432:3332/1028/456	25532:2533/764/334

Table shows profit followed by optimal bets at chip stacks of 20000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.398. Push occurs with probability 0.055.

Optimal Betting Facing CTR Constraint Starting Bankroll is \$20000 7% Edge					
Table Max	Hands to Go				
	10	25	50	100	200
Win Ceiling=1000					
500	213:443/500/500	378:319/500/500	543:240/500/432	730:180/500/332	908:139/460/232
1000	261:490/1000/936	438:358/1000/652	607:271/920/472	785:196/592/318	940:139/400/212
2000	299:666/2000/1036	484:376/1192/648	644:268/808/444	806:187/558/302	949:139/389/206
2500	310:666/1996/1048	493:373/1160/632	649:268/800/440	809:187/555/300	950:139/388/206
3000	318:666/1900/1044	498:373/1144/624	652:268/794/436	810:187/553/298	951:139/387/204
5000	330:666/1908/1060	504:367/1116/612	656:265/786/426	812:187/551/296	951:139/386/204
Win Ceiling=2500					
500	321:500/500/500	658:500/500/500	1033:469/500/432	1494:360/500/334	1972:271/482/238
1000	472:988/1000/936	851:727/1000/656	1238:547/960/480	1674:390/618/326	2081:269/414/218
2000	591:1177/2000/1036	988:772/1244/668	1348:535/836/452	1736:372/577/308	2109:262/401/210
2500	624:1225/2080/1064	1012:763/1204/648	1362:529/824/448	1744:372/573/306	2112:261/400/210
3000	645:1227/2032/1084	1025:754/1184/636	1370:526/820/444	1748:370/571/304	2114:261/399/208
5000	679:1192/1948/1036	1043:745/1164/620	1380:520/808/440	1753:369/568/302	2116:261/398/208
Win Ceiling=5000					
500	349:500/500/500	837:500/500/500	1494:500/500/432	2406:500/500/334	3450:446/500/244
1000	639:1000/1000/936	1303:1000/1000/656	2036:915/1000/488	2909:648/662/338	3773:440/437/226
2000	934:1983/2000/1036	1649:1305/1328/688	2318:882/884/464	3072:609/606/318	3850:426/420/216
2500	1013:2031/2256/1088	1706:1260/1276/672	2351:867/866/456	3091:603/600/316	3859:424/418/216
3000	1066:2034/2184/1092	1736:1236/1252/664	2369:858/858/456	3100:600/598/314	3864:423/417/216
5000	1145:2034/2004/1072	1777:1206/1216/640	2394:846/848/450	3114:596/594/312	3871:422/416/214
Win Ceiling=10000					
500	350:500/500/500	875:500/500/500	1734:500/500/432	3265:500/500/334	5468:500/500/250
1000	699:1000/1000/936	1671:1000/1000/656	2974:1000/1000/492	4731:1000/732/356	6602:701/480/240
2000	1275:2000/2000/1048	2551:2000/1464/720	3798:1408/968/488	5245:955/656/334	6852:663/452/228
2500	1471:2500/2328/1112	2717:2044/1404/712	3890:1366/942/480	5298:942/647/332	6880:659/450/226
3000	1614:3000/2300/1124	2799:1972/1364/700	3938:1345/930/476	5326:936/642/328	6894:657/448/226
5000	1827:3184/2208/1120	2908:1888/1316/676	4005:1320/912/468	5366:928/637/326	6916:654/446/224
Win Ceiling=20000					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3498:500/500/334	6855:500/500/252
1000	700:1000/1000/936	1750:1000/1000/656	3464:1000/1000/496	6469:1000/802/374	10561:1000/556/264
2000	1397:2000/2000/1048	3298:2000/1560/740	5611:2000/1112/536	8375:1444/742/364	11607:983/504/246
2500	1727:2500/2336/1108	3797:2500/1584/756	5953:2097/1072/532	8561:1405/724/358	11711:971/498/244
3000	2017:3000/2368/1128	4097:3000/1560/756	6115:2028/1048/524	8658:1386/714/354	11767:965/495/242
5000	2659:4906/2520/1192	4453:2820/1460/728	6331:1946/1008/500	8792:1362/702/348	11846:957/491/240
Win Ceiling=50000					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3500:500/500/334	6998:500/500/252
1000	700:1000/1000/936	1750:1000/1000/656	3497:1000/1000/496	6947:1000/816/376	13583:1000/627/278
2000	1400:2000/2000/1048	3458:2000/1576/740	6657:2000/1208/556	12196:2000/896/408	20117:1598/620/286
2500	1747:2500/2336/1108	4223:2500/1656/768	7861:2500/1244/568	13522:2364/890/412	20963:1519/602/280
3000	2083:3000/2384/1128	4894:3000/1704/784	8754:3000/1264/576	14224:2225/872/408	21393:1485/591/276
5000	3205:5000/2616/1264	6537:4736/1772/824	10162:3050/1216/572	15142:2077/832/392	21989:1442/576/270
No Win Ceiling					
500	350:500/500/500	875:500/500/500	1750:500/500/432	3500:500/500/334	6998:500/500/252
1000	700:1000/1000/936	1750:1000/1000/656	3497:1000/1000/496	6947:1000/816/376	13644:1000/628/278
2000	1400:2000/2000/1048	3458:2000/1576/740	6669:2000/1208/556	12566:2000/918/412	23563:2000/695/306
2500	1747:2500/2336/1108	4224:2500/1656/768	7945:2500/1252/572	14669:2500/948/424	27216:2344/716/314
3000	2083:3000/2384/1128	4904:3000/1704/784	9032:3000/1296/584	16440:3000/974/436	30342:2418/733/320
5000	3212:5000/2640/1264	6919:5000/1860/848	12157:4424/1396/632	21614:3410/1042/460	39778:2613/779/338

Table shows profit followed by optimal bets at chip stacks of 20000, 5000, and 2000. Win ceiling is strict.
All figures represent dollars. Payoff is 3:2 with probability 0.403973. Push occurs with probability 0.0600667.