

$$0 = 8.82FE - 4.19$$

$$8.82FE = 4.19$$

$$FE = \frac{4.19}{8.82} = 0.47 = 47\%$$

You need at least 47% fold equity to go all-in profitably with $T\heartsuit 5\clubsuit$.

You estimate Villain is opening ~60% hands on the BN (*Hand Range 10*) and calling the BB all-in with 28.8% hands (*Hand Range 11*).

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s		
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s		
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s		
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	
A6o	K6o						76o	66	65s	64s	63s	
A5o	K5o							65o	55	54s	53s	52s
A4o										44	43s	42s
A3o											33	32s
A2o												22

BN 60% RFI

	2x	60.18%
	Fold	39.82%

Hand Range 10: 60% BN Opening Range

BN Calling Frequency:

$$Calling\ Frequency = \frac{Calling\ \%}{Opening\ \%}$$

$$Calling\ Frequency = \frac{28.8}{60}$$

$$Calling\ Frequency = 0.48 = 48\%$$

Ev

$$= [(Ev \text{ on Fold}) * (\% BB \text{ Folds})] + [(Ev \text{ called}) * (\% BB \text{ Calls})] \\ + [(Ev \text{ Reraised}) * (\% BB \text{ Raises})]$$

$$Ev = [(2.625) * (0.4917)] + [-2 * (\% BB \text{ Calls})] + [-2 * (\% BB \text{ Raises})]$$

$$Ev = [(2.625) * (0.4917)] + [-2 * (\% BB \text{ Calls})] \\ + [-2 * (\% BB \text{ Raises})]$$

$$Ev = [1.291] - 2 * [\% BB \text{ Calls} + \% BB \text{ 3bets}]$$

$$Ev = [1.291] - 2 * [\% BB \text{ Defends}]$$

$$Ev = [1.291] - 2 * [0.5083]$$

$$Ev = 1.291 - 1.017$$

$$Ev = 0.274bb$$

$$Ev = 27.4bb/100$$

The steal with 72o yields a profit of 27.4bb/100. This raise is only profitable because Villain defends the big blind way too tightly, allowing you to exploit by stealing their blind with any two cards (ATC).

From the BB's perspective the defence should be at a frequency of:

$$MDF = 1 - Alpha = 1 - 0.43 = 0.57$$

The BB's minimum defense frequency is 57% hands, but the BB's GTO solution in this spot is to defend **82.1% hands** (*Hand Range 26*) which, for many players, sounds crazy. Later in the book we will study BB defense strategies in depth and understand why this is possible.

ates to a weaker strategy, their EV can only go down and, since poker is a zero sum game, that EV will be gained by you.

Fortunately, Nash Equilibrium principles are not limited to heads-up poker. They can also be applied to any poker situation once there are only two players remaining in the pot.

Let's look at some examples of common poker situations that can be considered heads-up subgames:

- ◆ 6-max cash game: CO raises, the BN 3-bets, the blinds fold and the action gets back to the CO. The only players remaining are BN and CO.
- ◆ MTT 9-max: UTG raises and the action folds to the BB. The only players remaining are UTG and BB.
- ◆ MTT 6-max: HJ raises, BN calls, SB 3-bets, HJ Folds and the action gets back to the BN. The only players remaining are SB and BN.

That's great! GTO play guarantees unbeatability in any poker hand from the point where there are only two players left, but what about situations where there are three or more active players?

In multi-way situations, the EV loss by one player's mistakes are not spread equally among the other players in the hand. In most situations, some players will be able to capitalize more on the mistakes than others, depending on many factors such as stack depth and position. Furthermore, some players might end up losing EV even if they play their equilibrium strategies. Consider the following:

Example

Game: \$100 3-max online Jackpot Sit & Go

Stacks: BN 12bb, SB 12bb, BB 12bb

Players: 3 (no ante)

Pre-flop: (1.5bb) BN push 12 BB, Hero is in the SB.

The Nash Equilibrium strategy for the BN is to push 32.1% hands. If we introduce a fishy player to the game who only pushes 16%, we can use a push-fold calculator to get the players' change in EV if the blinds continue playing Nash Equilibrium and if they adjust to the MES (*Table 13*).

Big Blinds/100	BN EV	SB EV	BB EV
All Nash	22	-16.7	-5.4
BN Fish	19.8	-21.2	1.5
MES vs Fish	16.6	-19.9	3.3

Table 13: MES Adjustments

If you think someone is out of line with their 3-bet frequency then, to exploit them, you first need to assess how they will react to a 4-bet. If they will fold most of the time, you can 4-bet a polarized range, opting to bluff with hands that have good blockers, such as A5s. If the Villain is likely to call your 4-bet with a wide range and only 5-bet premium hands, the best approach is to 4-bet a linear range so you extract immediate value and have a strong range post-flop. If the Villain is likely to 5-bet all-in wide, then don't be afraid to 4-bet/call off with hands such as AQ. Sometimes they will get your stack but, more often than not, you will get theirs.

The smaller your opponent's 3-bet size, the more hands in your range you need to defend in order to remain unexploitable. Against smaller sizes, you should call more hands and, conversely, the bigger the bet-size, the fewer hands you need to defend.

Rake effects are reduced in pots that are already inflated by pre-flop action. So when deciding to enter the pot by 3-betting or 4-betting, the main concern should be the ranges and equities in play.

When facing a 5-bet, your general getting in range should be TT+ and AK.

Once the action gets to you after an open raise and a 3-bet, in general you will 4-bet or fold. Splitting your range into cold calling and cold 4-betting presents problematic issues that give away information about your hand. Cold calling also allows active players to realize their equity by calling many hands they would have folded vs a 4-bet, so the best approach is to simply cold 4-bet all of your continuing range or ~3% hands vs tight ranges and ~6% hands vs wide ranges (*Hand Range 53*).

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTs	QTs	JTs	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

Hand Range 53: BB Cold 4-betting

Versus: ● LJ & HJ / ● CO & BN / ● BN & SB

The **BN** Non-limping Strategy

BN Stack	Actions Frequency			Total VPIP
	All-in	Raise (Non All-in)	Fold	
10bb	33.50%	5.40%	61.10%	38.90%
12bb	27.20%	10.60%	62.20%	37.80%
15bb	20.80%	18.50%	60.70%	39.30%
17bb	14.60%	25.60%	59.80%	40.20%
20bb	3.50%	38.40%	58.10%	41.90%
25bb	0.00%	46.30%	53.70%	46.30%
30bb	0.00%	48.60%	51.40%	48.60%
40bb	0.00%	50.90%	49.10%	50.90%
60bb	0.00%	54.40%	45.60%	54.40%
80bb	0.00%	55.60%	44.50%	55.50%
			Avg VPIP	45.38%

Table 47: BN GTO Action Frequencies by Stack Depth (Limping not Allowed)

In Table 47 we can see that the deeper the stack depth, the more hands the BN gets to play, starting with 38.9% total VPIP with 10bb up to 55.5% with 80bb, for a total increase of 16.6% in raising frequency. One of the main reasons for this massive increase is that deeper stacks favor the BN's positional advantage. The best tool the blinds can use to decrease their positional disadvantage is to rejam all-in, which doesn't offer a great risk/reward ratio with stacks deeper than 40bb, so it becomes increasingly difficult for the blinds to deny equity to the BN.

Due to being guaranteed to be in position throughout the hand, the BN post-flop equity realization is the highest and it only increases further as stacks get deeper. By going all-in, the BN forsakes positional advantage and thus there is a massive reduction in the BN open pushing frequency as stacks get deeper, dropping to 3.5% at 20bb and 0% at 25bb.

BN RFI Range at 15bb

With 15bb, the BN splits their range almost 50/50 between going all-in and min-raising (*Hand Range 112*). There is still the same pattern as before with hands that have good equity against calling ranges but don't have great post-flop playability being pushed (66-22, AJo-A2o, offsuit broadways and premium suited connectors).

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98	87s	86s	85s	84s	83s	82s	
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

Hand Range 112: BN 15bb

- All-in 20.8% / ● Raise 2x 18.5% /
- Fold 60.7%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98	87s	86s	85s	84s	83s	82s	
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

Hand Range 113: BN 25bb

- Raise 2x 46.3% / ● Fold 53.7%

BN RFI Range at 25bb

with 25bb, there is no all-in range from the BN (*Hand Range 113*). At this stack depth having high card value and high raw equity is more important than having playability. For this reason, hands such as K7o that have a king blocker to the blinds' rejamming ranges is more valuable than having a hand with more playability such as 74s.

It might be surprising to see the BN folding pocket pairs such as 33 and 22, but these hands don't do well as min-raises. They have two reverse blockers (meaning they do not block playable hands) to the blinds' rejamming ranges, so you will get re-shoved slightly more often than normal and will be forced to fold them pre-flop. If someone calls, small pairs also do not fare well. Most of the time they will be playing as an underpair and either be forced to play passively and be denied equity, or bluff and get into complicated situations where they invest way too many chips with a hand that won't have many outs to improve. To make matters worse, implied odds are not so great at this stack depth. So, these hands should simply be folded.

BN RFI Range at 40bb

with 40bb, the BN gets to play a wider range than with 25bb, and hands with good post-flop playability, such as suited gappers, and hands with high implied odds, such as small pocket pairs, increase in value. The 4-bet frequency is lower than at 25bb because now the SPR will be higher and allow for more post-flop play, which benefits the BN's post-flop equity realization (*Hand Range 114*).

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

Hand Range 114: BN 40bb

● Raise 2.3x 50.9% / ● Fold 49.1%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

Hand Range 115: BN 60bb

● Raise 2.3x 54.4% / ● Fold 45.5%

BN RFI Range at 60bb

With 60bb, the BN gets to widen their opening range even more (*Hand Range 115*). The BN 4-bet all-in frequency decreases because now the BN is deep enough to have a non-all-in 4-bet range. Additionally, the BN's positional advantage increases, so at this stack depth, BN's main defense against 3-bets is to flat-call in position at a high frequency (we will look at Defense vs 3-bet Strategies later in the book).

Cutoff PFI Strategy

There are many drawbacks to implementing limping strategies when outside the blinds and the BN because there are more players left to act who can over-limp or even raise. Any potential EV gained by implementing a limping strategy will hardly be enough to compensate for overcomplicating the overall strategy.

Furthermore, there are some limitations to what modern computers can do and adding limps for all players in a 9-max simulation exponentially increases the size of the game tree, which requires heavy use of abstractions and in turn produces inconsistent results.

For all these reasons, I decided not to include limping strategies from the cutoff onwards and will focus on analyzing the raise/fold strategy (which also is congruent with the play in modern games).

As we see in *Table 48*, the total CO VPIP increases as stacks get deeper (similarly to the BN), from 31.4% at 10bb to 37.50% at 80bb for an average of 33.69% across all positions. At 10bb and below, the CO plays a push/fold strategy and starts to incorporate min-raises at 12bb. The overall all-in frequency decreases as stacks get deeper, and sinks to 0% at 20bb.

IP Cbet Frequency by OESDs

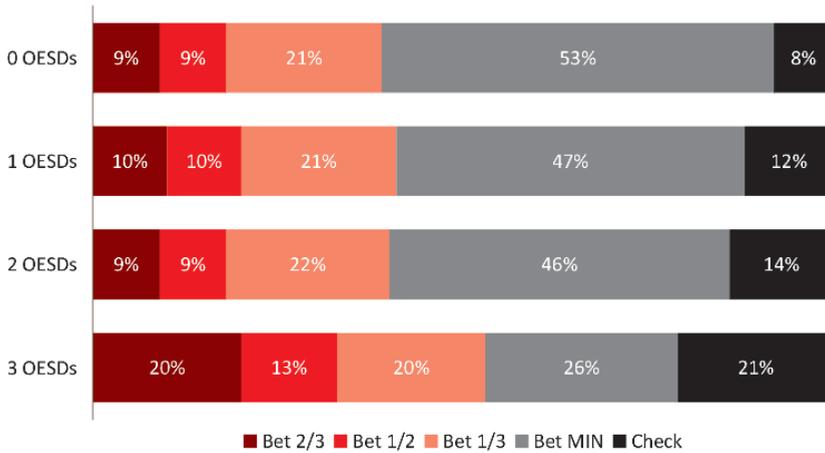


Diagram 43

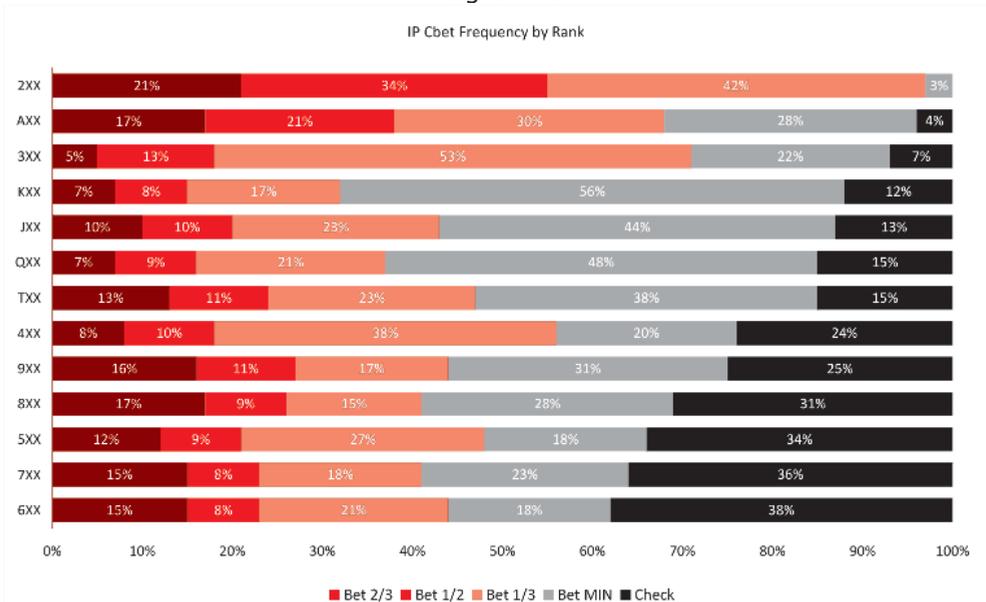


Diagram 44

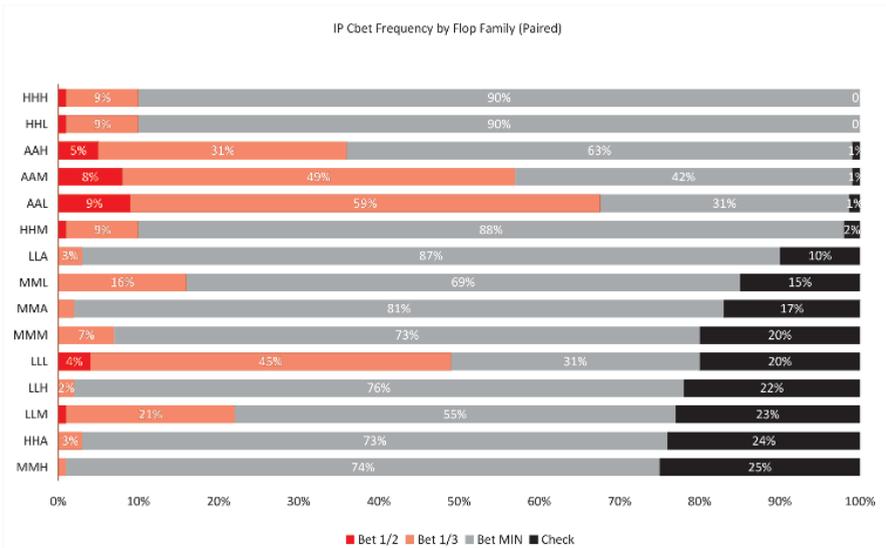


Diagram 49

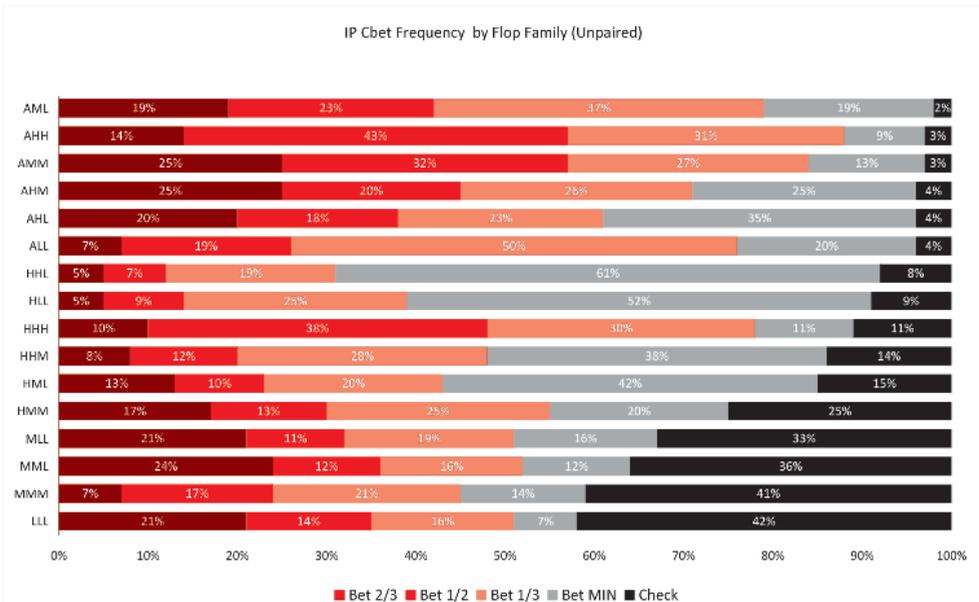


Diagram 50

On unpaired flops, the least c-bet flop families are LLL, MMM, MML, MLL and HMM. We still see a lot of bet-size mixing, so we have to look deeper into the unpaired flop textures to get a better idea of how to approach them.

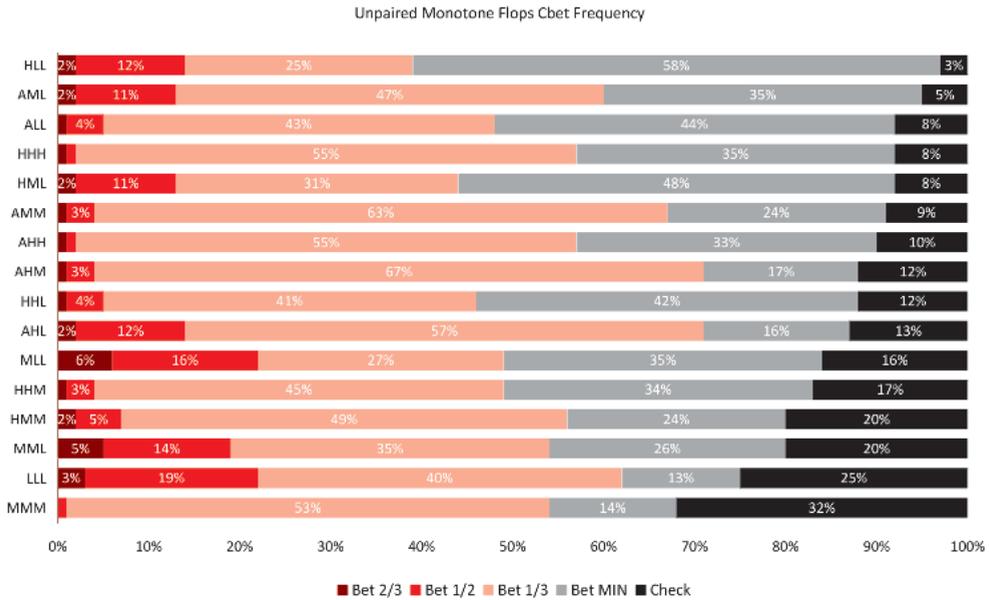


Diagram 53

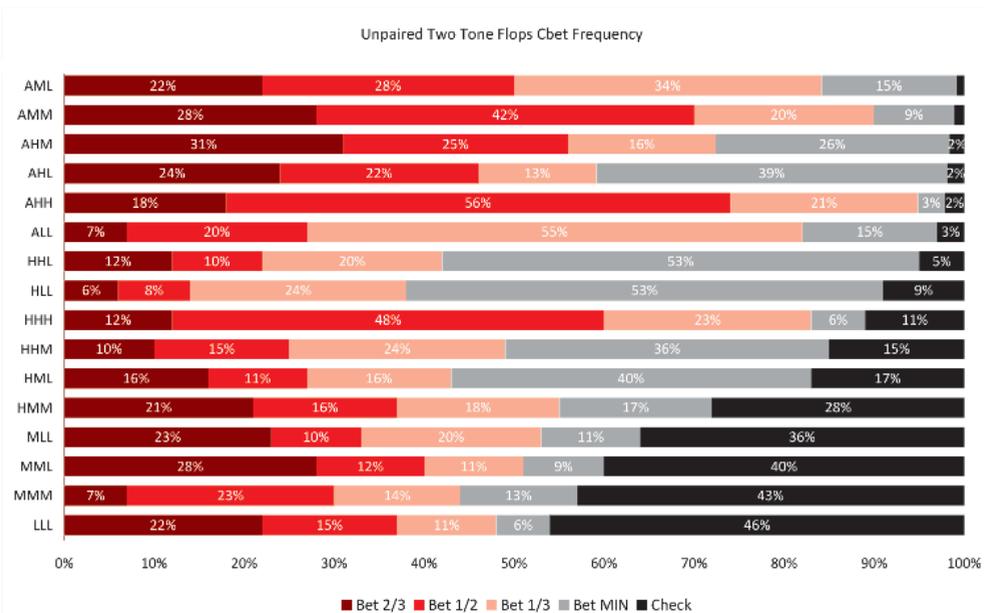


Diagram 54

The lower the ranks and the more connected the board, the less IP gets to c-bet, with MMM, LLL, MML, and HMM being the least c-bet flops. Flops with three possible flopped straights are checked 31% of the time, flops with two straights are checked 28%, flops with one straight are checked 17% and flops with zero

straights are checked only 10% of the time. Stack depth also has an effect, with deeper stacks being more likely to check the flop.

We could easily simplify our strategy on monotone flops to use only 1/3-pot bet-sizes or min-bets without suffering a significant EV loss.

Again, we see the trend of lower ranks being c-bet less frequently. However, we see a big difference in the way bet-sizes are used compared to monotone flops, with bigger bet-sizes being used a lot more frequently. Again, this is a function of the way the equities are distributed on two-tone flops, with IP having 24% strong hands compared to the BB's 5%.

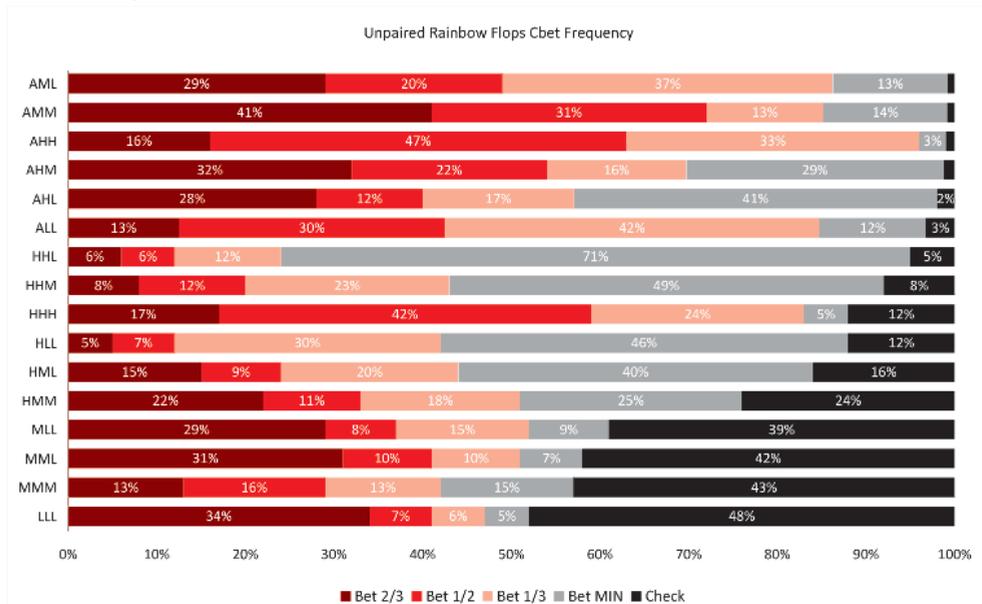


Diagram 55

On rainbow flops, IP's range advantage is even greater than on two-tone flops, which will again result in an even higher preference for larger bet-sizes. Hands that are strong on rainbow flops usually also tend to be strong on the turn and river. Conversely, on two-tone flops, the presence of possible flush draws will result in more abrupt equity shifts. The absence of flush draws on the flop also increases the percentage of the BB's trash hands that would have a flush draw on a two-tone board. For these reasons, IP will be able to triple barrel more effectively on rainbow flops and get all the money in by the river.

Developing IP C-betting Strategies

The first thing you should consider when deciding to c-bet is your opponent's skill level. If the Villain is a weak player who is completely oblivious, you can get away with doing pretty much anything you want. If you think they are likely to call your

EQR of many of OOP's strong hands gets reduced due to the presence of the flush draw, resulting in a reduced c-betting frequency. Monotone boards improve IP's equity distribution substantially. This results in OOP using a small bet and c-betting only about 50% of hands.

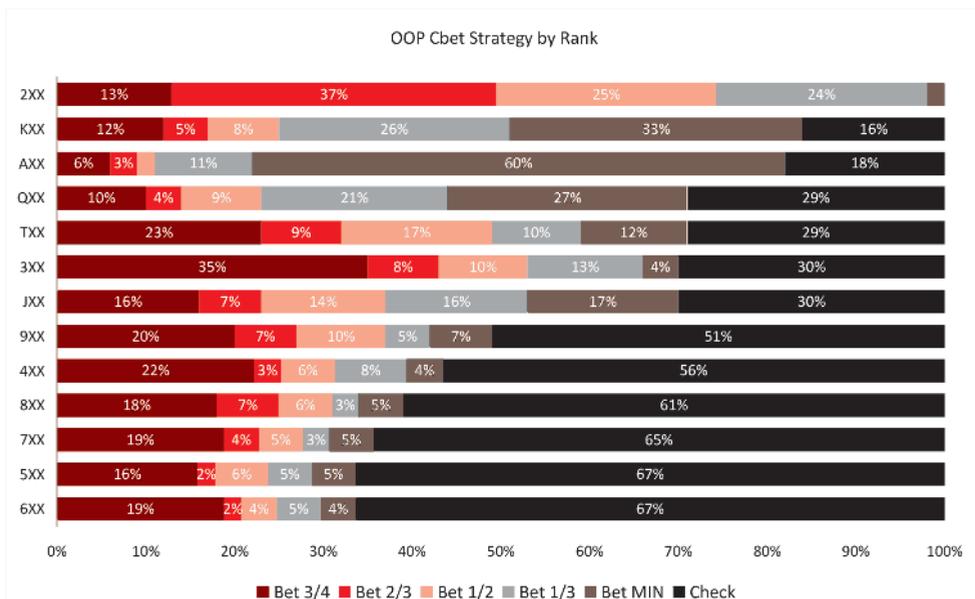


Diagram 75

On Axx and high card flops, OOP has the range advantage and c-bets most of the time, while on middle and low flops the equity distributions are symmetric, resulting in OOP playing a lot more passively.

IP Cbet Strategy by Texture

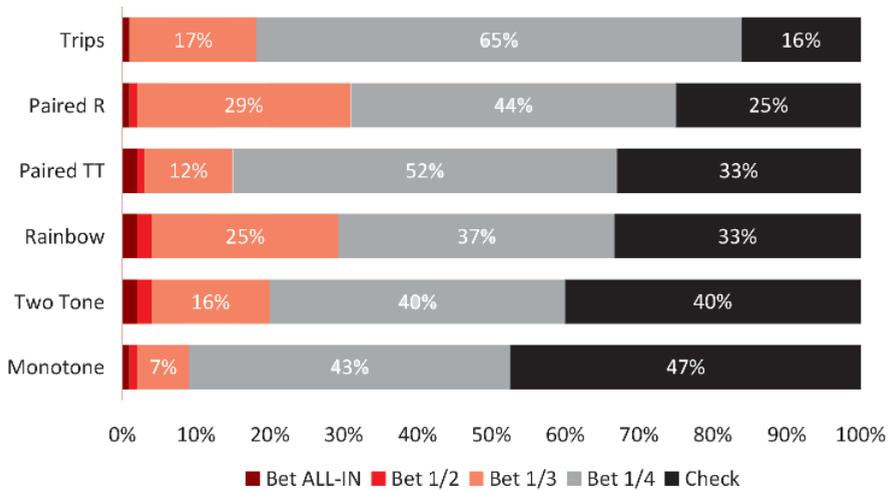


Diagram 82

Trips and rainbow paired flops are the most frequently c-bet textures, with two-tone and monotone flops being the least frequently c-bet. On two-tone flops, OOP has a great spot to x/r with many flush draws, which would force Hero off the pot. For this reason, two-tone flops are checked back at a high frequency, allowing many of IP's good and weak hands to realize equity.

IP Cbet Strategy by Rank

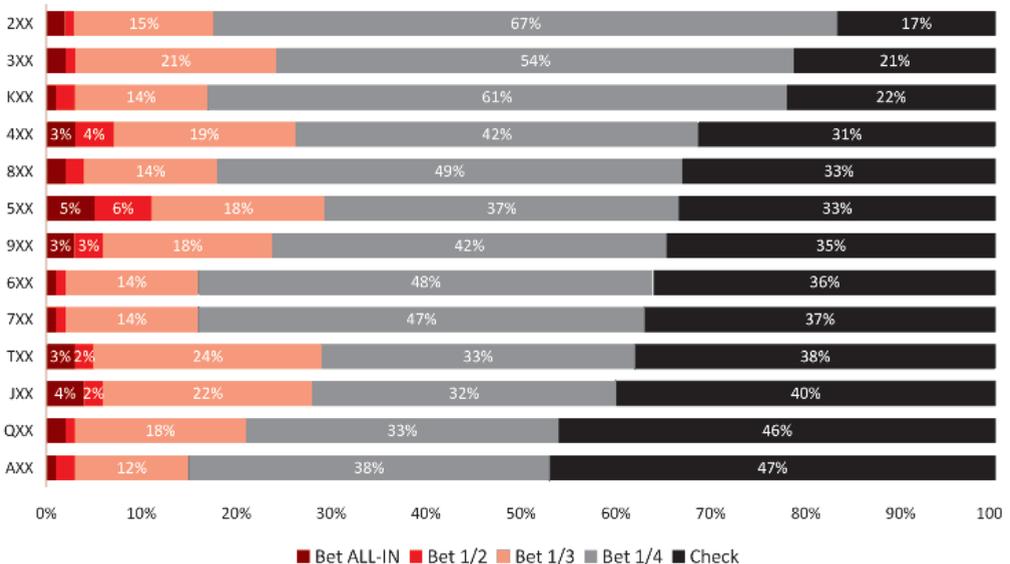


Diagram 83

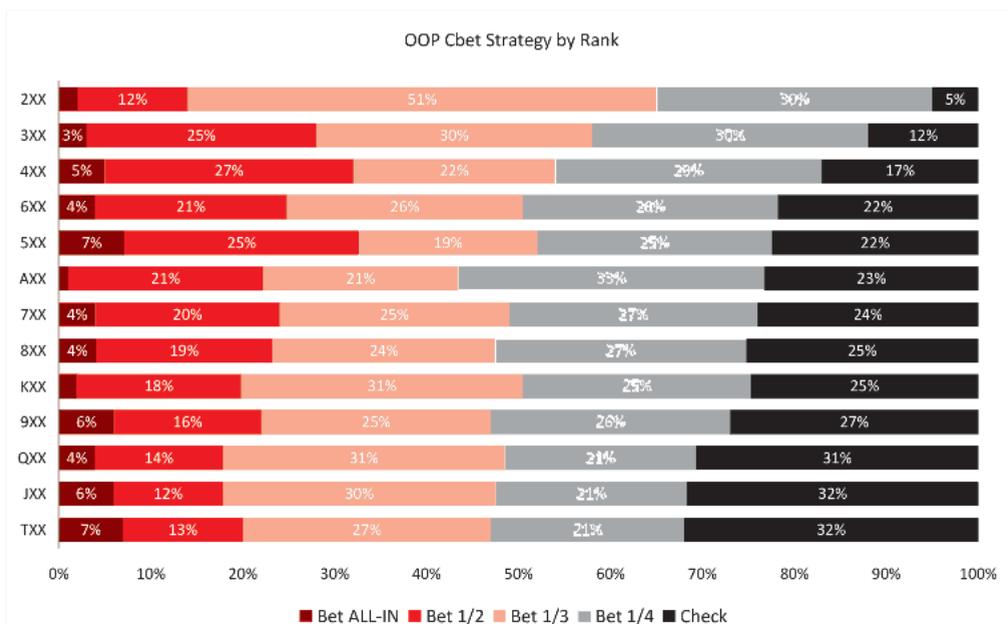


Diagram 87

An interesting difference is seen on Axx boards that get c-bet 77% of the time when Hero is OOP but only 53% when Hero is IP. In both situations, the players' equity distribution is similar, and so the main difference seems to be that now, playing OOP, Hero doesn't want to give the option to the Villain to have a free turn when IP. If the action goes x/x on the flop, it is Hero who will have to act first on the turn, giving away more range information. So, Hero decides to mostly bet on Axx flops and force IP to fold some weak hands on the flop with a higher frequency, avoiding complications by taking a passive line too often.

C-bet Defense

In no-limit hold'em, c-bet defense is highly susceptible to bet-sizing. Some players like using MDF as pseudo-GTO strategy, but as we have already pointed out, while this number could in some instances serve as a rough guideline, it does not take equities and range distribution into account.

Basing your entire strategy on MDF will be highly detrimental.

For example, in the BB vs UTG 40bb situation, if UTG bets 1/3-pot then, according to MDF, the BB is supposed to defend 75% of the time. However, on a flop such as AQ3r, the BB's range has 70% trash hands and 10% weak hands. On average, the BB's trash hands have 16% equity against UTG, but the pot odds laid

middle boards, bottom two pair on high boards and combo draws that would benefit from getting all the money in on the flop or reducing the SPR so they cannot be easily pushed off the pot on the turn.

Weak hands are mostly x/c, but almost 1/3 of them get folded and about 15% get x/r. Trash hands are mostly folded, but some get x/c and a few of them work well as x/r bluffing combos.

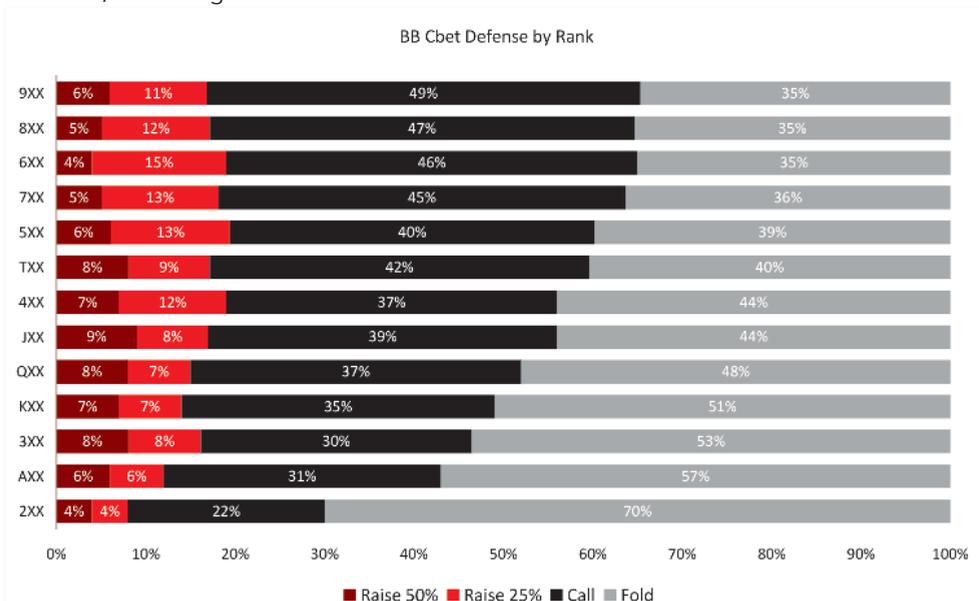


Diagram 97: BB vs UTG

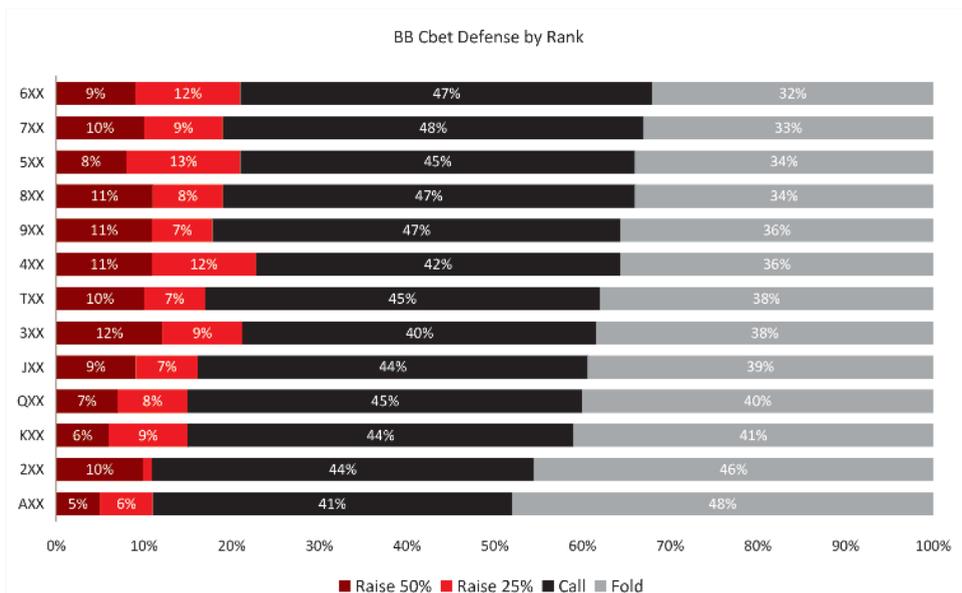


Diagram 98: BB vs BN

On 9♥8♥4♦, OOP has the polarization advantage on many turn cards, resulting in a high betting frequency (*Diagram 115*).

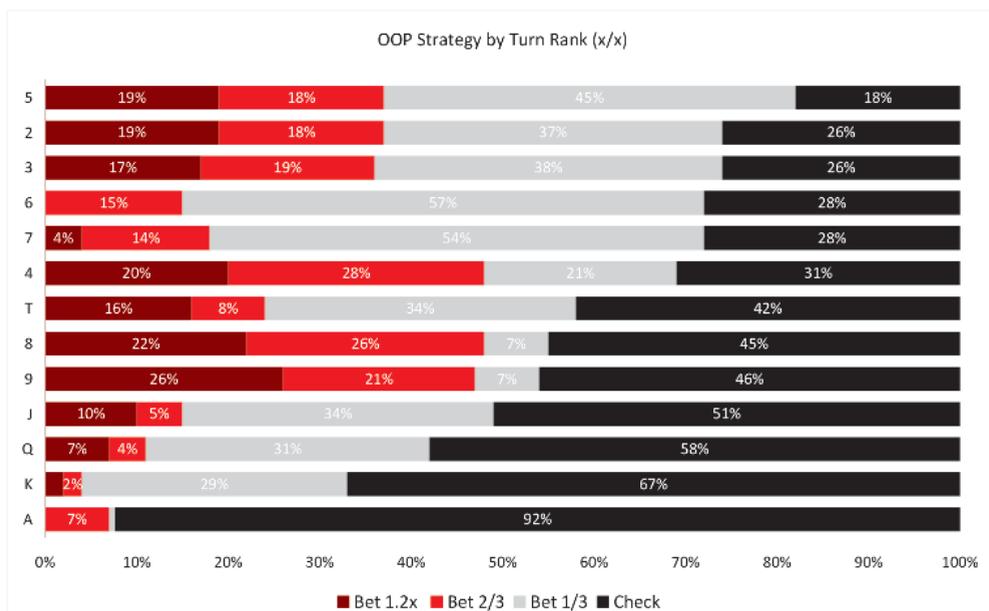


Diagram 116

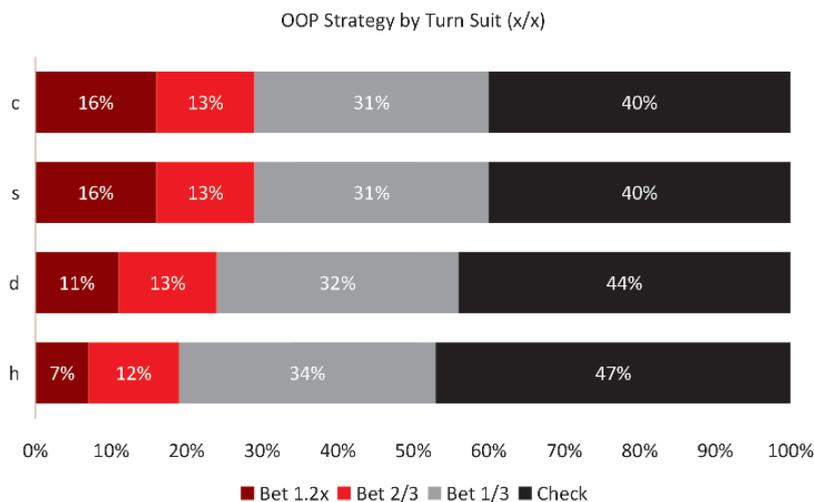


Diagram 117

In general, low cards that complete straights, a 9, 8 or 4 pairing the board, and hearts are good turns for OOP (*Diagram 116*). Overcards to the board that don't complete many straights, and particularly the aces, are good for IP. The effect of the turn card suit is seen in *Diagram 117*.

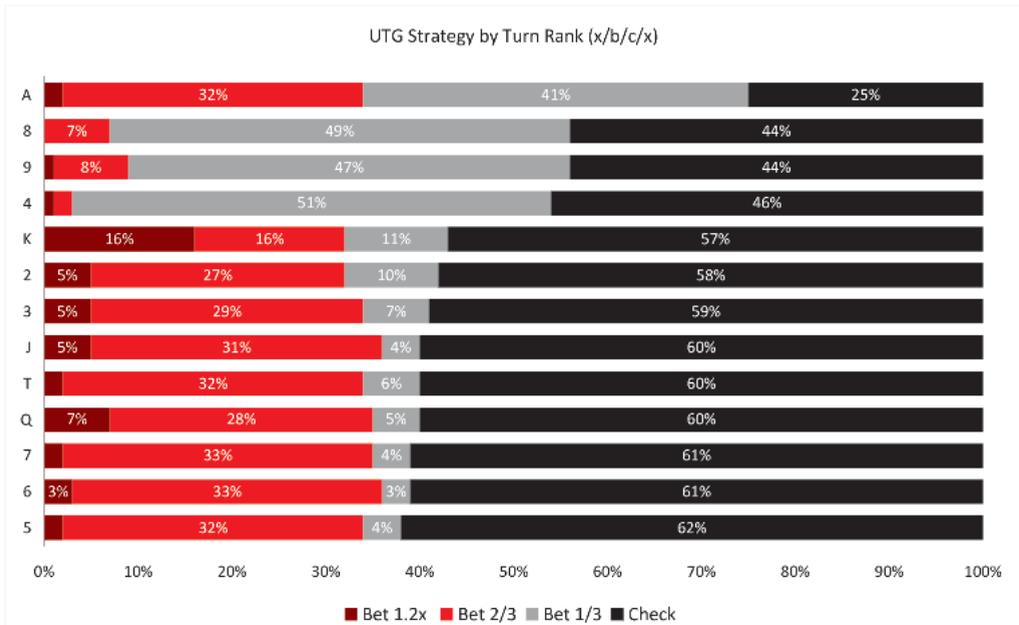


Diagram 126

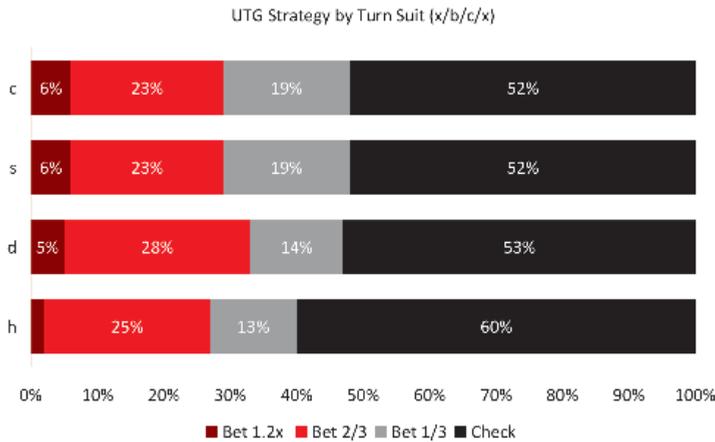


Diagram 127

The 9, 8 and 4 are bad cards for IP, but they still want to bet them at a high frequency when checked to. This happens because IP expects OOP to have a high donk betting frequency on those turn cards, so when they do check, their range will not have as many strong combos. At the same time, there are many hands in OOP's range that will not connect at all with the 9, 8 or 4. So, by betting small, IP can still get many folds. On most other runouts, IP will bet a more polarized range and opt to use a bigger bet-size (*Diagrams 126-127*).

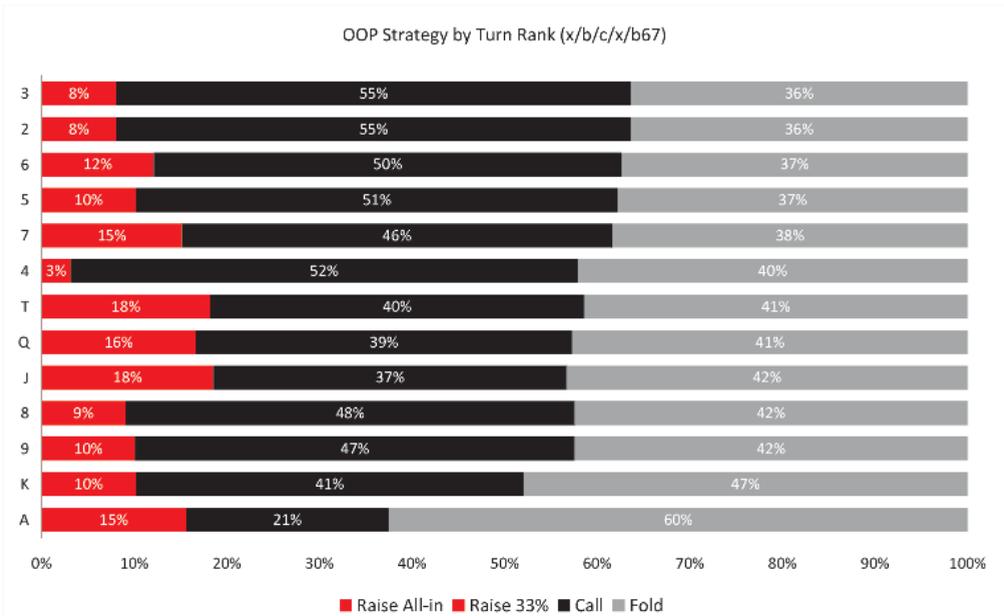


Diagram 130

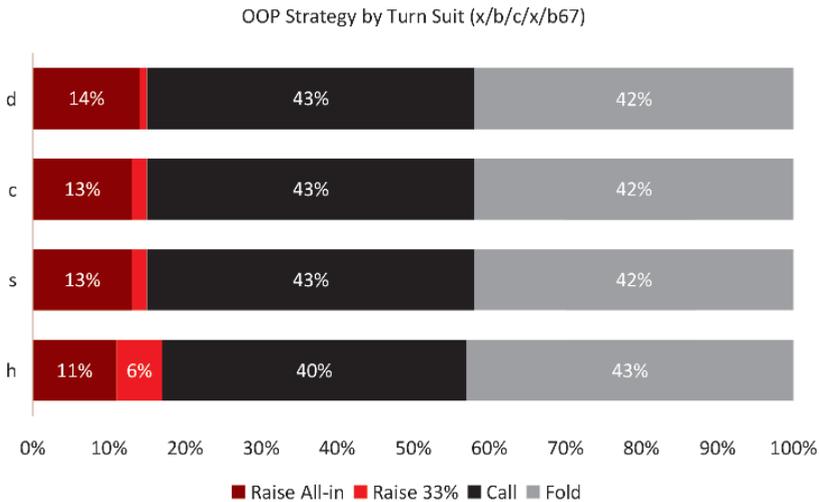


Diagram 131

On average, OOP will x/r the turn 14% of the time and will be mostly going all-in, as a smaller raise size would commit too many chips. In general, their weaker x/r hands are semi-bluffs that will have the equity to call an all-in bet and thus be committed (*Diagrams 130-131*).