

DAILY DOSE
OF GTO

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INTRODUCTION



Inside this book, you will find **334 poker lessons** specifically crafted to enhance your comprehension of game theory optimal strategies.

The lessons are organized around a common theme for each chapter, allowing you to progress systematically and emerge as a more skilled player.



FUNDAMENTALS

FUNDAMENTALS



The first chapter of daily doses covers fundamental concepts. These are the building blocks of strategy!

The first 30 Daily Doses cover fundamental concepts that serve as the foundation for developing effective strategies.

These concepts will be used as building blocks to gradually progress towards more complex ideas.

MDF?

dEV?

Pot odds?

Equity realization?

GTO?

SRP?

Nash Equilibrium?

SPR?

Geometric Bet Size?

Alpha?

Nodelock?

Implied odds?

Abstraction?

Range Advantage?



Poker is full of strange terms and obtuse nomenclature. It can be difficult to wrap your head around all the terminology at first.

Poker Glossary

A B C D E F **G** H I J K L M N O P Q R S T U V W X Y Z

G

Gapper

A gapping hand with at least one blank separating the two cards. For example, 7h would be referred to as a gapper.

Game Theory Optimal (GTO)

The most exploitable fold strategy, resulting in the highest possible expected value against an opponent.

Game tree

The state-space that describes all sequences of actions that can take place in a board of poker. This includes all possible moves, information sets, and payoffs.

Geometric bet size

Betting the same size (as a percentage of the pot) on each street such that chips are all-in on the final street.

[Learn more](#)

This is why **GTO Wizard** provides a comprehensive glossary of poker terminology.
Access the glossary from gtowizard.com/glossary

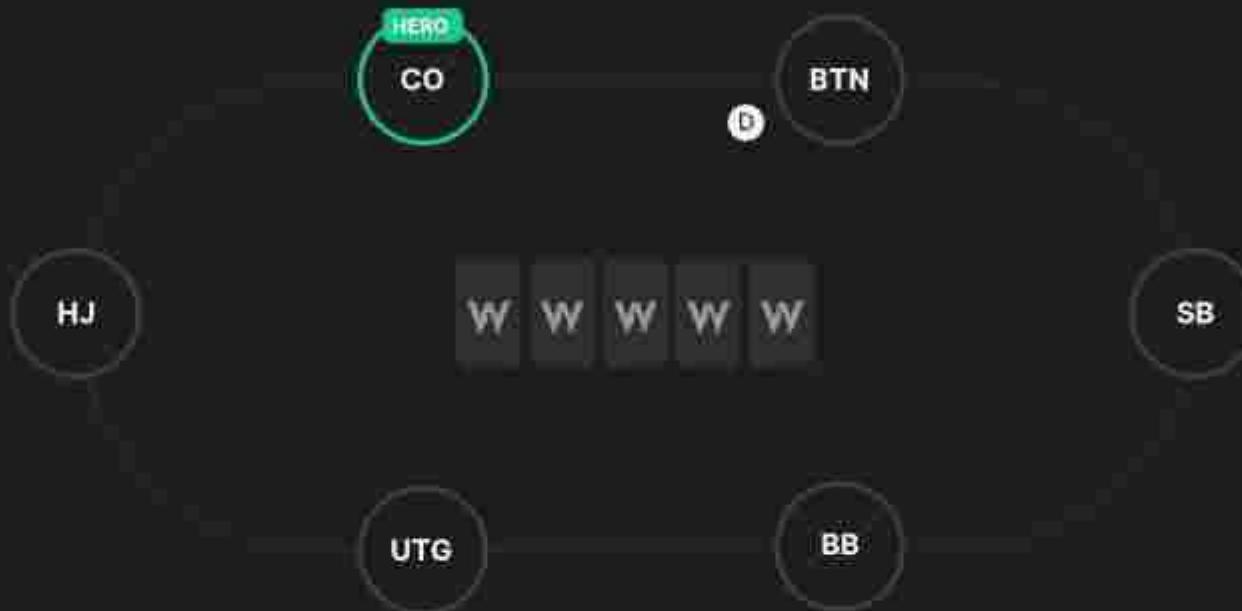




Poker is a game of small edges. Many advanced concepts take a lot of effort to learn and offer only small edges in exchange for their mastery.

So what is the "*lowest-hanging fruit*" in poker?

What concept should you master first to maximize the return on your study time?

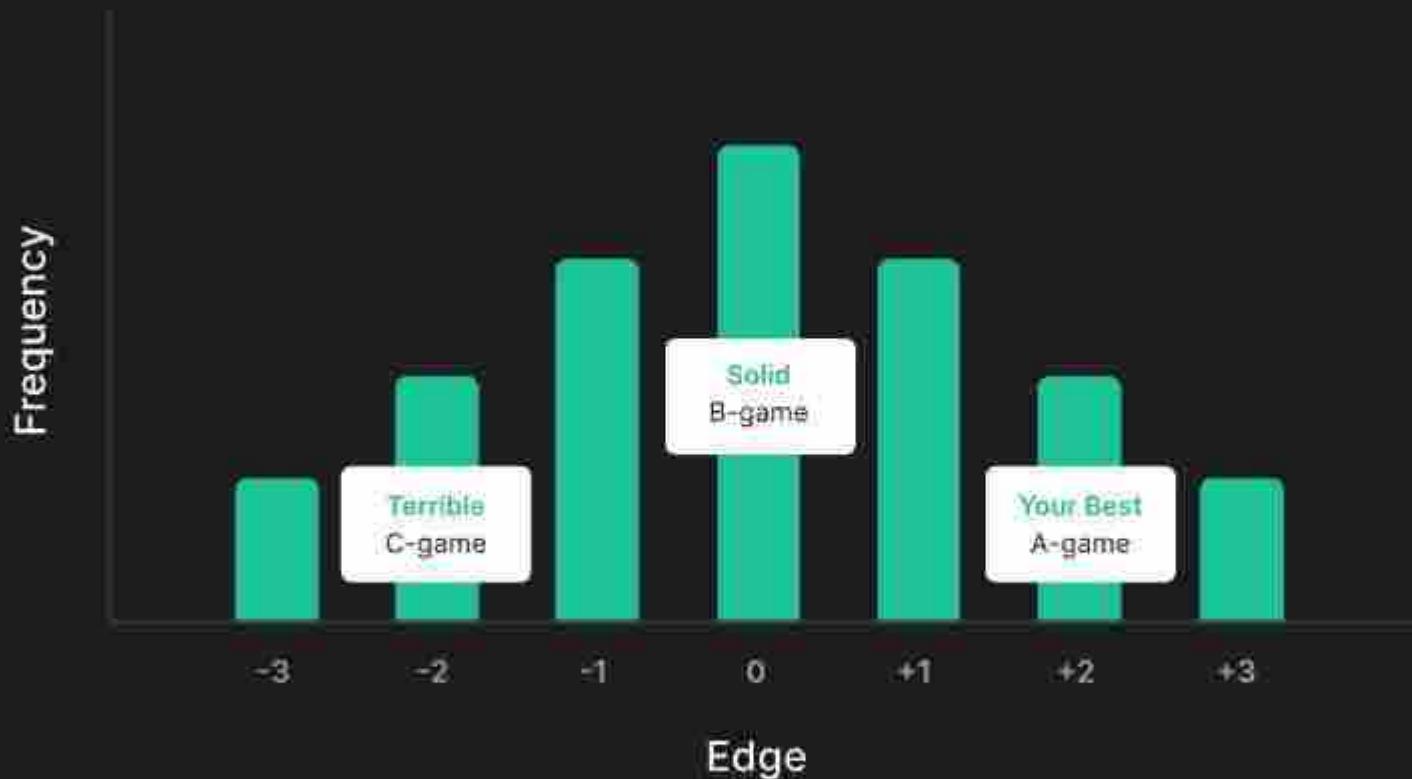


Mastering your preflop strategy is, by far, the lowest hanging fruit.

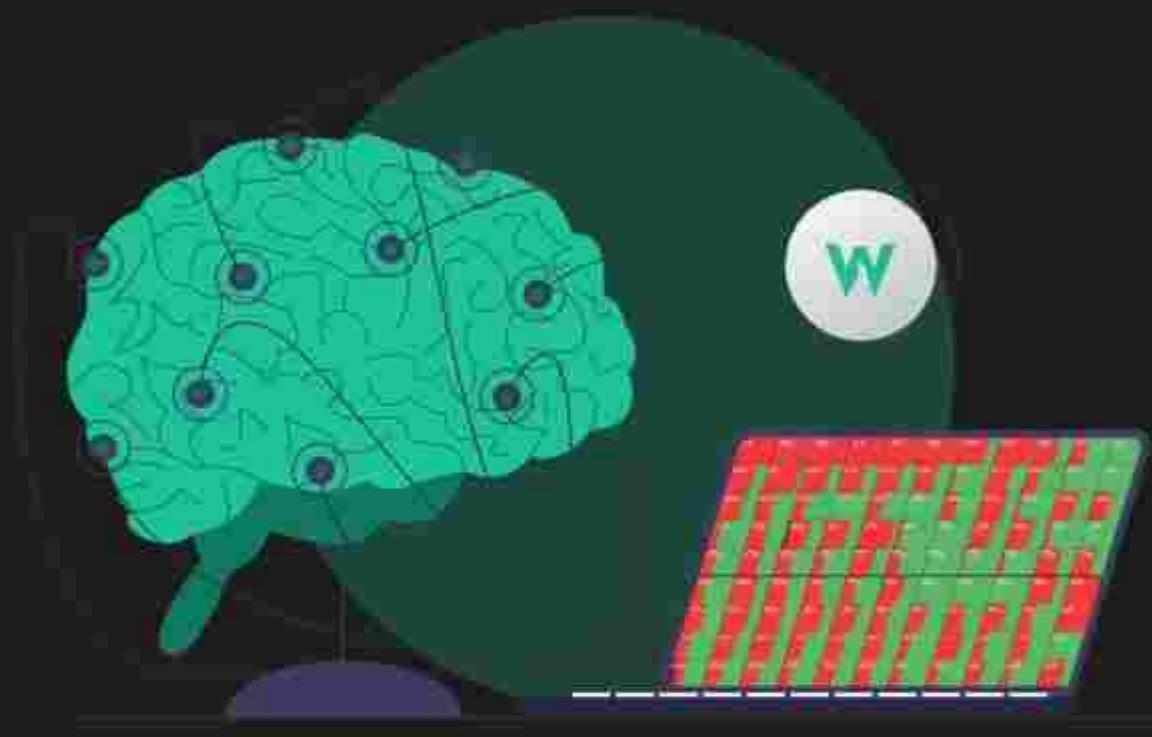
Every hand you play will pull from your knowledge of how to play pre. Preflop is the easiest street to master since it's the least complex.

Solid preflop play sets you up to make better decisions postflop. For these reasons, we advise mastering this street first in order to maximize study time.

[Learn more](#)



Tilt management is one of the most important skills a poker player can learn. In order to be successful, you must learn to recognize when you're not playing at your best, and implement strategies to mitigate tilt.



- 1: Study and recognize different kinds of tilt triggers. Run bad tilt, entitlement tilt, injustice tilt, revenge tilt, or even winner's tilt can negatively impact your performance.
- 2: Take a break, inject logical statements, and control your thought process. This is the most effective way to mitigate your losses when playing poorly.

- 3: Timing is everything. For mitigation to be effective, it needs to be implemented immediately. The longer you allow yourself to play your worst game, the more likely you are to make huge mistakes.
- 4: Learn to manage your anxiety. Poor play is associated with very high and very low levels of anxiety. You want to be somewhere in between an apathetic zombie and an emotional wreck.
- 5: Separate the outcome from the process. This game can sometimes reward poor play and punish good play. It's important to ask if you played your hand well, without being results-oriented.

[Learn more](#)



Poker is not one game, it's a type of game with dozens of different formats.

There are MTT's, SNG's, cash games, heads up and fullring games.

Find your game!

Experiment with different formats to find what suits you best.

After a while, you should focus on mastering one specific format. In the long run it's better to become a specialist than a "*jack-of-all-trades*".

However, you won't know what you might excel at until you try different formats.



GTO often feels overwhelming when you're starting out. There's so much material to learn and so many spots to look at. So where should you start?



You should study spots that have the biggest effect on your results. BTN vs BB and SB vs BB are the most common spots in poker, so they will have a significant impact on your results. This makes it a natural starting point!

[Learn more](#)



What is the
best play with KT?



On AT7r?



As humans we're used to thinking of poker in terms of our specific holding.
The problem is that a hand in a vacuum is meaningless. Almost any play can be justified in
the right context. For example, what's the best play with KT on AT7r?

Effective stack?



Positions?

Actions so far?

Rake?

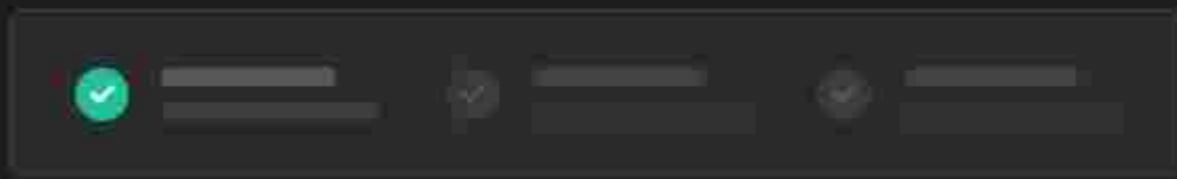


Ranges?

There is no answer to that question without context. Strategically, poker is not played hand-vs-hand, it's played range-vs-range. Be mindful of what your overall range wants to do instead of focusing on your exact holding.



Developing a warm-up routine is a great way to ensure you're playing your best game at the start of a session.



Simple warm-up routine:

- 1: 20 minutes - practice against the solution.
- 2: One range construction exercise.
- 3: 5 minutes - Review previous sessions.
- 4: Practice a specific spot. Choose a texture/spot that you want to improve at this session.

[Learn more](#)

You want to enter your session feeling fresh and fired up to play your A-game! Warming up with exercises like this is a great way to put yourself in the best mindset to play well.





Pot odds tell you how much you need to win in order to justify putting in money.

This simple risk reward calculation is fundamental to every call you'll ever make as a poker player. Yet many players misunderstand this concept.



How to calculate pot odds:

Pot odds % = (amount to call) / (pot after you call)

Pot odds % = 5bb / 20bb = 25%

You need 25% equity to call

Spot the lie

Let's say your opponent bets 5bb into a 10bb pot on the turn, with 80bb behind.
Can you spot the mistake in this picture?

Equity ≠ Value

You need to win at least 5bb, over the long run, to make the call.

That is not the same thing as having 25% raw equity if there can be future action, due to equity realization.

[Learn more](#)

More accurately, you need to win at least 25% of the pot after calling.



The key to achieving results



Pursuing everything



Focusing on one thing

With so much information at your fingertips it's easy to feel overwhelmed.
Different board textures and starting ranges and stack sizes can alter the strategy.

So how should you approach studying?

SUITS:

Any Rainbow Flush draw Monotone

PAIRING:

Any Not paired Paired Tripled

CONNECTEDNESS:

Any Disconnected Connected

HIGHEST CARD:

Any A K Q J T 9 8 7 6 5 4 3 2

MIDDLE CARD:

Any A K Q J T 9 8 7 6 5 4 3 2

LOWEST CARD:

Any A K Q J T 9 8 7 6 5 4 3 2

CLEAR ALL CONFIRM

Focus your attention on a specific spot and board texture. For example, BTN vs BB, SRP, paired boards where the pair is a broadway card.

Use aggregate reports to find boards that have similar flop strategies.



GTO has become a popular buzzword in recent years. But what does GTO aim to achieve?

Balance



The end goal of GTO is to create an unexploitable strategy. It's designed to break free of levelling wars, metagame and reads.

It's designed to maximize profit against the best possible counter-strategy.

[Learn more](#)

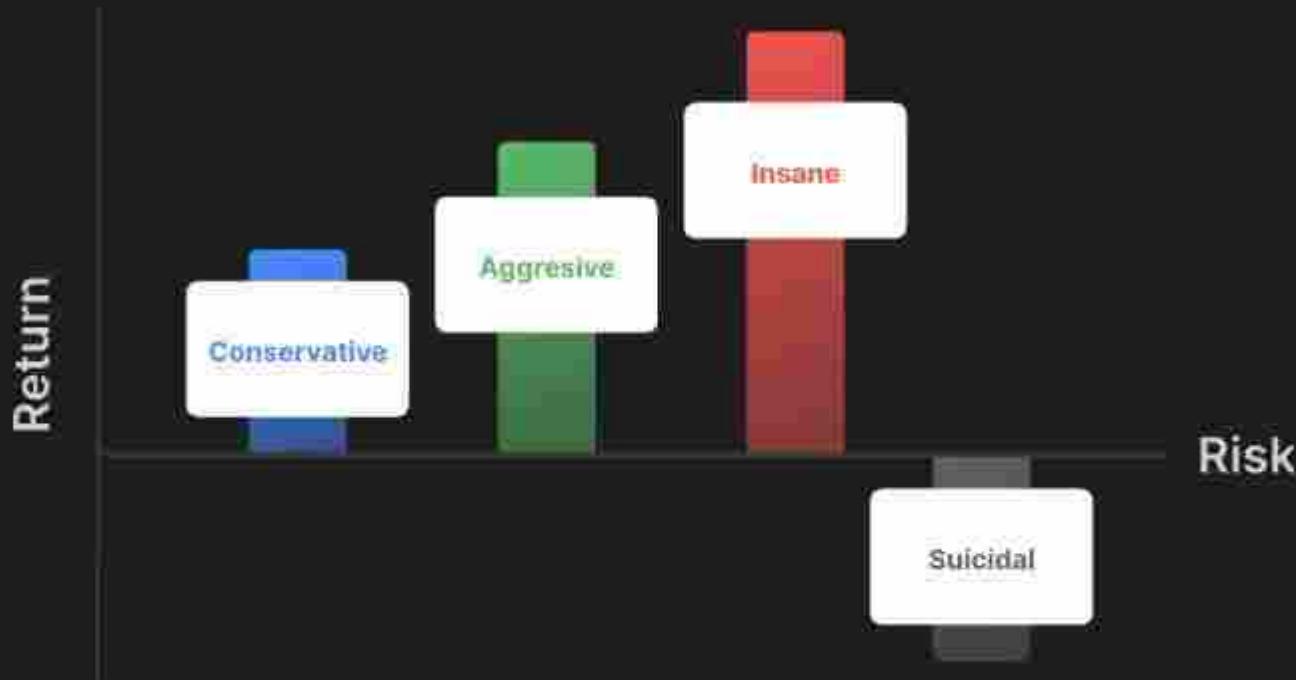
It's the strongest fixed strategy you can play against dynamic, adjusting, exploitative opponents. In short, GTO aims to achieve balance.





Good bankroll management is essential to long-term success in poker.

Bankroll management seeks to maximize your long-term success by ensuring you are properly rolled for the stakes you play.



A good rule of thumb is to have 30-50 buy-ins for cash games, and at least 100 buy-ins for MTTs.

Playing stakes that are too high for your bankroll drastically increases your risk of ruin, while playing too passively can trap you at lower stakes for a much longer time.

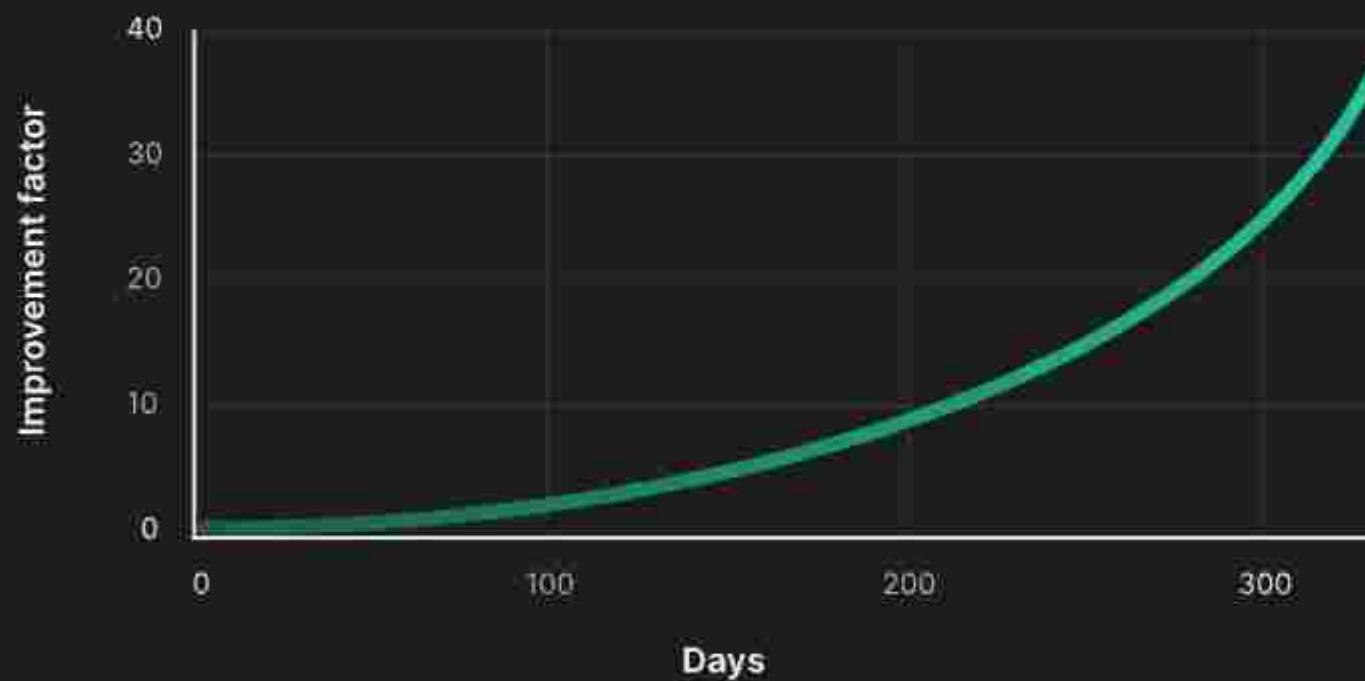
[Learn more](#)



Take a 5-8 buy-in shot when you have enough for the next stake.

The power of incremental improvement

Improve 1% per day



Small gains can add up quickly over time. Try to improve just a tiny bit each day, and you'll be exponentially better next year!



Reviewing your sessions is key to incremental improvement.

You should end each session with the goal of learning something new.

If you improve 1% every single day, you'd be 3778% better by the next year.

- 1: Regularly upload and review your sessions using the hand history analyzer.
- 2: While you play, mark any hand where you felt lost. Review these hands (without solver assistance) and try to identify where you got lost.
- 3: Do a deep dive into these hands using GTO Wizard.
Challenge your assumptions, try to build better heuristics for next time.
- 4: Go through the analyzed hands and try to plug your biggest leaks.
- 5: Review a few hands that you were proud of the way you played, and a few hands that you think you could have played better.



Unlike direct pot odds, implied odds take into account the potential value that can be gained on future streets. With strong draws, players can win more money if they hit, while contributing less to the pot when they miss. This results in a more favorable risk/reward balance than pot odds alone.

To calculate implied odds, one must consider how frequently their hand can outdraw the top of their opponent's range, as well as how much money you can extract when you hit!



CO opens, BTN calls, flop's $9\spades 8\hearts 7\hearts 2\clubs$. BTN stabs 75% on the flop then overbets 125% on the turn.

Why does CO prefer calling with $A\hearts 5\hearts$ but folds with overpairs and top pairs?



This is due to implied odds. The BTN turn overbet represents two pair+, so CO's top pair and overpairs are relatively static bluff-catchers facing this range.

However, a hand like A♥5♥ has implied odds to call and try to outdraw the top of BTN's range. CO can generate extra money when they hit without donating more when they miss, increasing the upside of calling.

[Learn more](#)

 EQ buckets - Simple

Hands are separated by their Equity:

Best hands 100%-75%

Good hands 75%-50%

Weak hands 50%-33%

Trash hands 33%-0%

Range-vs-range equity is often thought of as a single number.

However, it's possible to view equity as a distribution instead to provide better strategic insight.

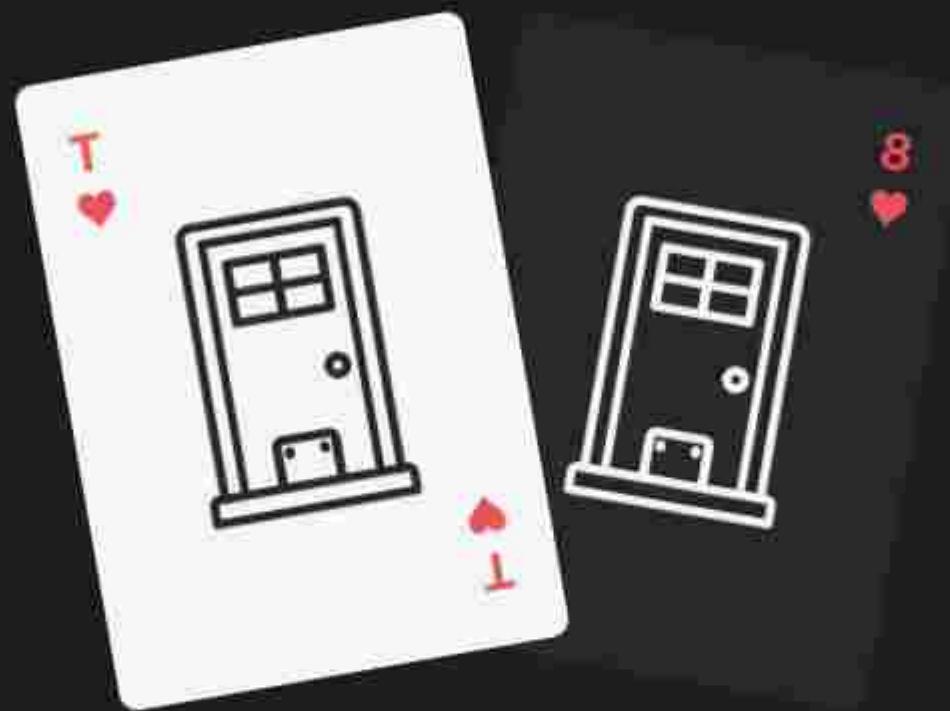


For example, you can use equity buckets to group similar hands together.

In this case, even though the equity is 50%/50%, we can see that one player is much more polarized than the other.

This gives them a major advantage!

[Learn more](#)



A backdoor refers to your hand's ability to pick up a draw on the turn. Good players pay much closer attention to backdoors than novices.

Why is that?



Backdoors give your hand better "visibility".

This means you'll be able to barrel more turns, realize more equity, and have more flexibility to navigate later streets.

For example, on $\text{Q}\heartsuit\text{7}\diamondsuit\text{5}\clubsuit$, a hand like $\text{T}\heartsuit\text{8}\heartsuit$ can turn a draw on any 6, 9, J, or \heartsuit . That's 19 different turn cards!



Poker is a high-variance game. As humans, we often struggle to conceptualize just how swingy this game can be. Try using a poker variance calculator.

Every player should do this at some point. This exercise helps with expectation management and long-term tilt control.



Imagine you win at 5 bb/100. You have a standard deviation of 100 bb/100.

Over 100 hands, you'd expect to win $5\text{bb} \pm 100\text{bb}$.

Over 10,000 hands, you'd come out ahead only 70% of the time.

Over 100,000 hands, you'd come out ahead 95% of the time.

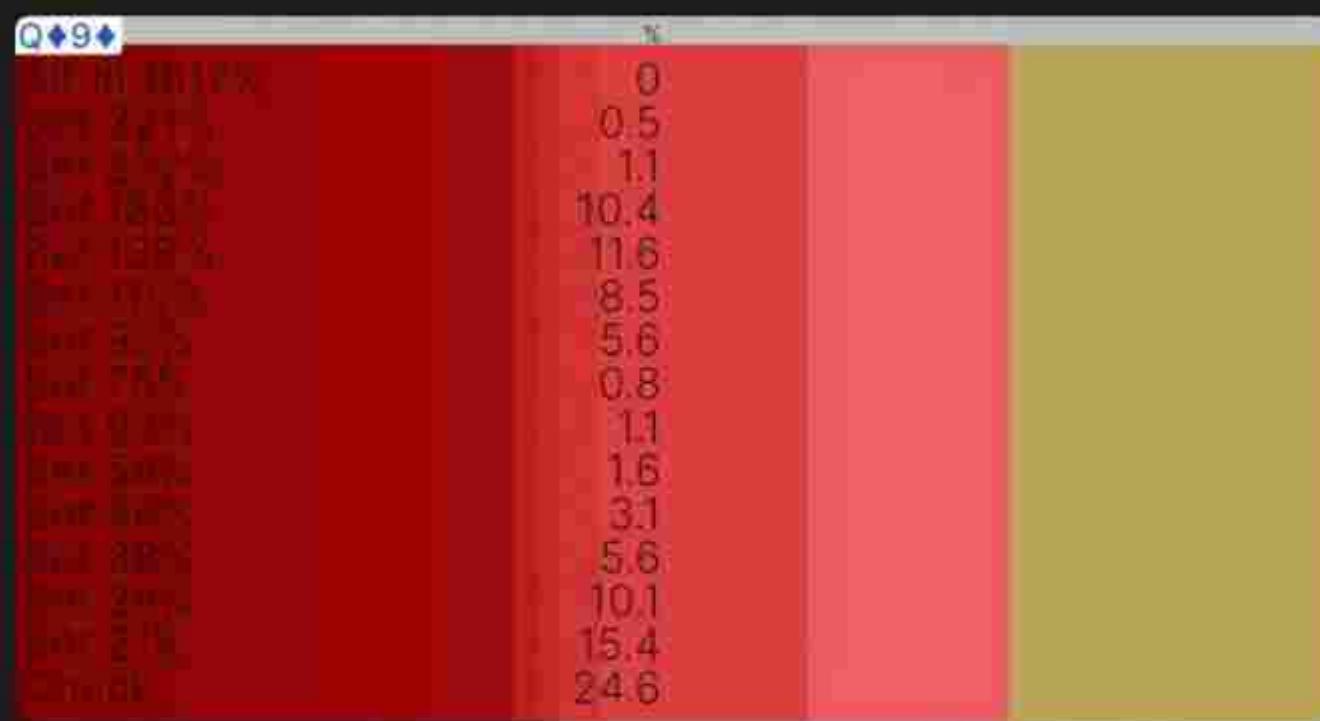
Hands (?)	50000
Expected winnings (?)	2500.00 BB
Standard deviation after 50000 hands (?)	2236 BB 4.47 BB/100
70% confidence interval (?)	[264 BB, 4736 BB] [0.53 BB/100, 9.47 BB/100]
95% confidence interval (?)	[-1972 BB, 6972 BB] [-3.94 BB/100, 13.94 BB/100]

After 50,000 hands: You'd expect to win 25 buy-ins on average.

[Learn more](#)

However, due to variance: 70% of the time you'd win between 2 - 47 buy-ins.
95% of the time your results would be between losing 20 buy-ins and winning 70 buy-ins.





The first thing you notice about solvers is that they seem to love mixing strategies. Every hand gets thrown into every line.

Why is that?

Q 9 6



You should always choose the best strategy.

When a solver mixes between actions, those actions should (theoretically) have the same EV.

That means against an unchanging GTO player, you could pick any of those mixed actions at any frequency and never lose EV.

So why does it bother to mix then?



We mix to remain unexploitable.

If you check all your weak hands and bet all your strong hands, even if everything is mixed in GTO, an exploitative opponent can punish you severely.

[Learn more](#)

They would simply overfold against your bet and attack your checks.

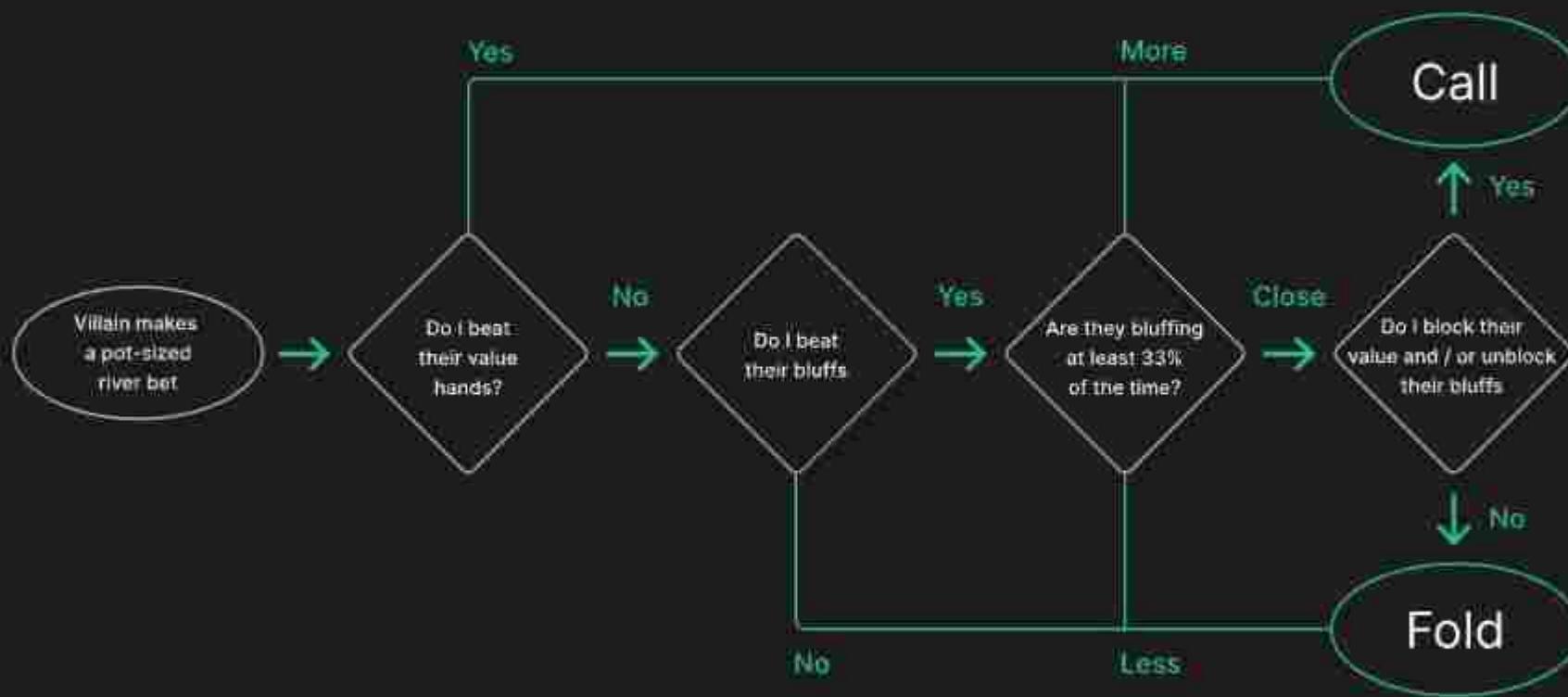




Bluff-catching is arguably one of the most difficult skills to learn in poker.

Before you hit that call button, you should ask yourself three questions:

- 1: Do I beat a bluff?
- 2: Are they bluffing often enough that I have pot odds to call?
- 3: Does my hand block their value bets and/or unblock their bluffs?





Equity Distribution Graph

A "*nut advantage*" refers to when one player has an advantage in the nutted part of their range, relative to their opponent.

But why is this relevant?



The nut advantage dictates how much you can polarize, and how large you can bet.

Betting larger narrows your opponent's range quickly, so it's important that your value bets can extract money from the top of villain's range when they call down.

[Learn more](#)



In this BB vs BU SRP scenario, BB is facing a 125% overbet from the button on a ♦Q♦♥J♦7♦ flop. Why is BB folding top pair hands like Q9 and Q8s?



Step into Button's overbetting range. Combine betting, suit, and equity filters to separate their bluffs from their value bets.



We can see that 9's and 8's heavily block BTN's bluffing range, which means they're more likely to hold a value hand when we hold an 8 or a 9.

A natural step in the thought process from novice to advanced player is the ability to "*think in ranges*"

This can often seem like a daunting task, but it becomes much easier when you start thinking of ranges as "*structures*" rather than trying to visualize all 1326 combinations of starting hands in your head.

You may have heard terms such as "*polarized*", "*linear*", "*condensed*", or "*merged*", but what do these terms actually mean?

Hand Strength



Polarized	Linear	Condensed	Merged
1	1	0	1
0.8	1	0.2	0.8
0.7	0.8	0.4	0.7
0.2	0.6	0.8	0
0	0.4	1	0.25
0	0.2	0.8	0.4
0	0	0.4	0.25
0	0	0.2	0
0.2	0	0	0.2
0.7	0	0	0.7
1	0	0	1

A polarized range represents strong and weak hands.

A Linear range represents top-down strong to medium hands.

A Condensed range represents mostly medium hands, and a Merged range is something in between a polarized and linear range.

[Learn more](#)





One of the crucial questions to consider when assessing the implied odds of your hand is whether it has the potential to draw to the nuts.

This is because a significant portion of your expected value hinges on your ability to outdraw your opponent's value range, which is where the largest pots are won.

Having nut potential enables you to extract more value from your opponents when you complete your draw.

9 7 6	J 8	A 8
Number of outs	8 outs	8 outs
Equity	38%	49%
Drawing to the nuts?		
Expected Value	5.38 bb	2.57 bb

For example, HJ open, BB call, flop 9♣ 7♦ 6♥, HJ c-bets 33% pot.

Would you rather hold J♠ 8♠ or A♠ 8♠? Both hands have the same amount of outs, although A♠ 8♠ has more equity.

Despite that, J♠ 8♠ is a much more valuable hand as it can cooler worse straights on 976T!



Blockers are a card removal effect that can range from insignificant to very significant.

An important skill in poker is learning when blockers significantly factor into a decision, and when they're not as important.

Blockers *matter* when:

Ranges are narrow, value hands/bluffs are centered around a few key cards.

Blockers *matter less* when:

Ranges are wide, and value hands/bluffs are spread out among many different cards.

[Learn more](#)





"Targeting" is the process of making a portion of your opponent's range indifferent.

When sizing a bet it's important to think about what hand classes you want to target with your range, and what size would make those kinds of hands indifferent between continuing or folding.



SB open, BB call, $A\heartsuit Q\spades 7\clubsuit$. SB can choose between a 33% block-bet, and a 125% overbet.

What hand classes do each of these sizes target?



A block-bet targets BB's air, whereas a 125% bet targets their 2nd and 3rd pair.



MDF:

Tell you how wide you need to defend

Pot odds:

Tell you how much equity you need to call

Minimum defense frequency (MDF) and pot odds may seem like vague and unrelated concepts in poker. But they are intimately related in GTO.

The best way to understand these concepts is to visualize how they actually work together.



BB is facing a 75% pot-sized bet on the river. This graph shows BB's equity distribution, with green dots representing the continuation range.

MDF tells us BB needs to continue with 57% of their range to prevent SB from profitably bluffing. Pot Odds tell us BB needs at least 30% equity to call.



Hands with more than 30% equity should call. Hands with less than that should fold.

The solver has constructed its betting range such that BB has just enough hands to reach MDF.

[Learn more](#)



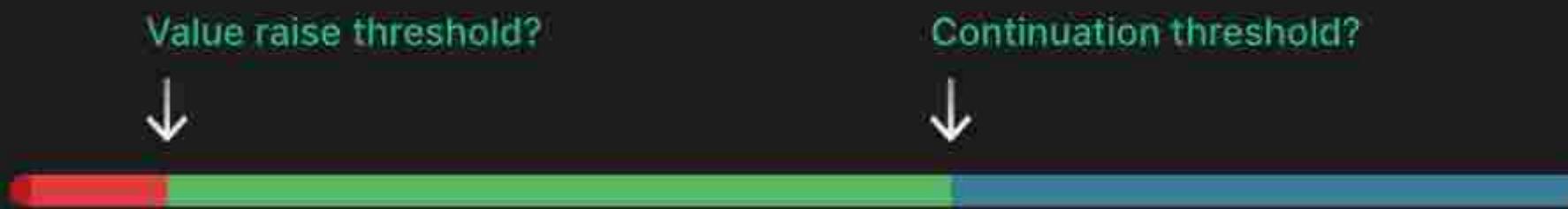


When thinking in ranges, it's advised to ask yourself where the thresholds are.

What's the **weakest hand you call?**

What's the **weakest hand you value bet?**

What's the **strongest hand that you fold?**



Thresholds guide your strategy. Once you know where these lines are you have a better idea how to construct your range.

[Learn more](#)

Next time you're analyzing a hand, make a point to ask yourself these questions and compare your answers to the solution.





The term "*indifference*" is common in game theory. To be indifferent means to be neutral about your options. In poker, indifference refers to when two or more actions have the same expected value.

But what does this look like in practice?



CO opens, BB calls. CO bets 1/3 pot on the flop and turn, then overbets 150% pot on the river. The board runs out $4\heartsuit 4\clubsuit 2\spades Q\heartsuit J\heartsuit$.

Why is BB calling some ace high and folding some top pair?



BB needs about 37% equity to call this overbet. CO is using a balanced range of nutted hands and air, such that most of BB's range is very close to indifferent.





Equity realization is a term in poker that describes how much of your raw equity you will realize.

But what does this actually mean?

Equity Realization

$$\text{EQR} = \frac{\text{EV pot share}}{\text{EQ pot share}}$$

Equity Realization compares your "pot share" between the equity and expected value of a hand.

[Learn more](#)

For example, if a hand has 50% equity, and only wins a quarter of the pot on average, then it's only realizing half of its equity. This hand is said to "under-realize" its equity.





Mistake



Inaccuracy

There are two types of mistakes in GTO poker; pure mistakes and frequency mistakes.

What's the difference?



Pure mistake:

Loses value against a fixed GTO strategy

Frequency mistake:

Only punished by an exploitative opponent

A pure mistake is an action that always loses value against a fixed Nash Equilibrium strategy.

[Learn more](#)

A frequency mistake (i.e. not mixing correctly) can only be punished if your opponent deviates from equilibrium.



QUIZZES

QUIZZES



After covering the basics, it is time to evaluate your knowledge of GTO.

Going forward, each Dose will include a quiz. The first page of each Dose will present a question. Take some time to consider the question before looking at the solution!

Board:



Villain:

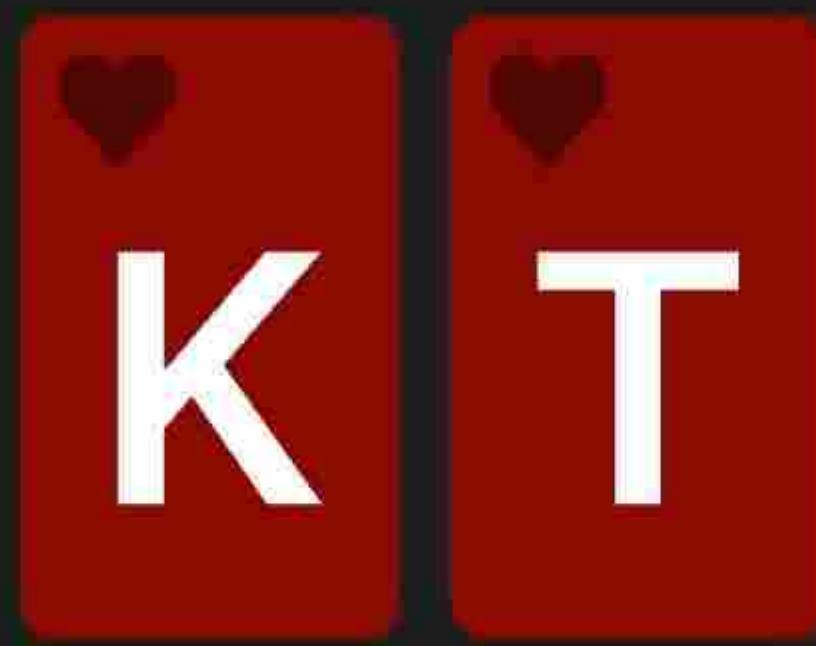


Hero:



Hero has 11 outs to win.

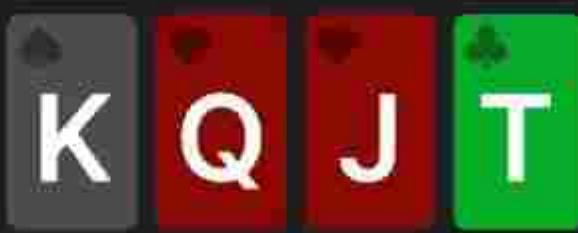
What are their hole cards?



Correct answer:

K♥T♥

Board:



Villain:



Hero:



Your outs:

2 Kings + 9 Hearts = 11 outs

The T out is counterfeit as it gives QQ a better boat
(QQQTT > TTTKK)



[NL500 6-Max Cash, 100bb] CO opens, BB calls. Flop is A♥ J♠ 2♣.
Which set has the highest EV? Why?

- A: AA
- B: JJ
- C: 22

Expected Value

Correct answer

B: JJ

JJ has the most EV, followed by 22, then AA.



AA blocks top pair, which makes it harder to get value from worse hands.

For this reason, AA often traps or bets small instead.

BB card removal adjusted frequencies vs overbet

	Fold	Call	Raise
No blockers:	64.9%	31.2%	3.9%
22	65.7%	31.4%	2.8%
JJ	65.7%	30.7%	3.6%
AA	74.2%	22.1%	3.7%

22 and JJ have similar blockers against BB's calling range, but 22 blocks many of BB's natural raises including BB's only set.

JJ is most likely to extract value from worse hands.

CO	BTN	SB	BB	FLOP
FOLD	FOLD	FOLD	FOLD	
RAISE 2.3	CALL	CALL	CALL	
ALL-IN 100	RAISE 7.5	RAISE 12.5	RAISE 14	
	ALL-IN 100	ALL-IN 100	ALL-IN 100	

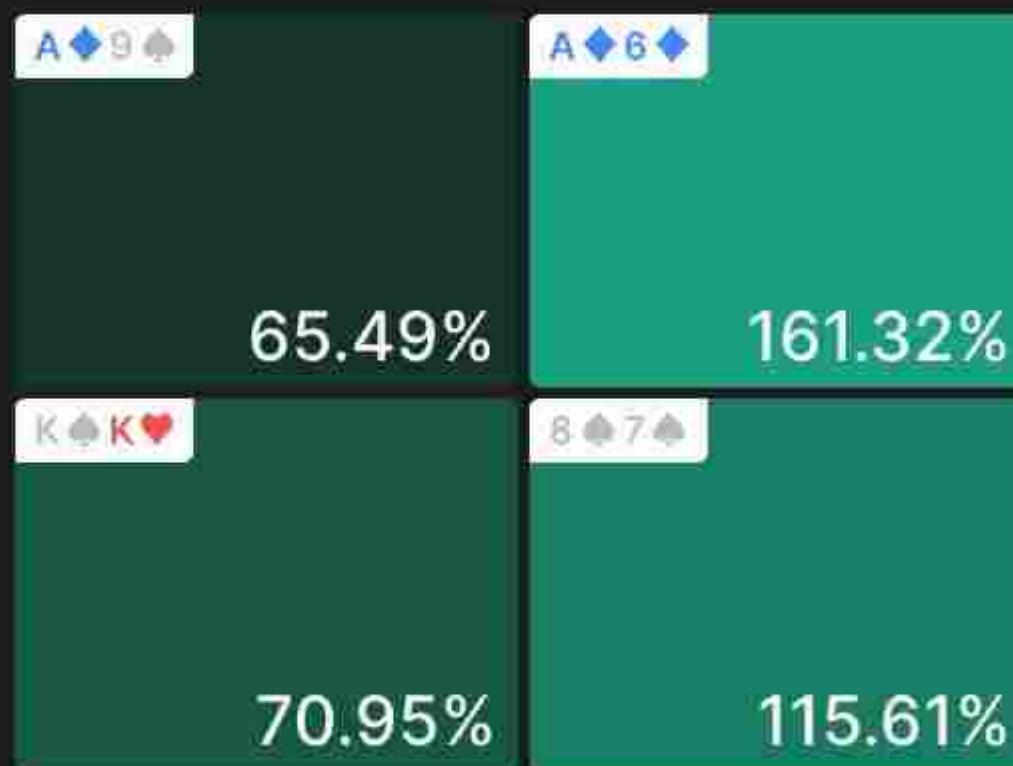
FLOP



9 8 7

[NL500 6-Max Cash, 100bb] CO opens 2.3bb, BTN calls. Flop is 9♥ 8♦ 7♦.
Which hand has the best equity realization in the CO?

- A: A♦ 6♦
- B: A♦ 9♠
- C: K♠ K♥
- D: 8♠ 7♠



Correct answer:

A: A♦6♦

Hands that can navigate later
streets **tend to realize more equity**

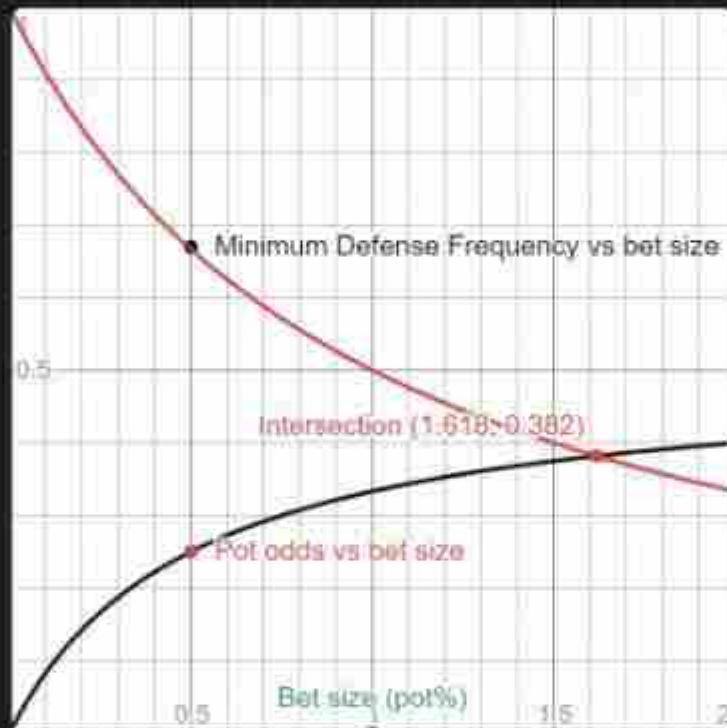
Equity realization measures how well a hand performs relative to its equity.

A♦ 6♦ will almost always see the river, and wins more than its "fair share" of the pot due to the extra implied odds of the nut flush and straight draw.

Minimum defense frequency = pot odds?

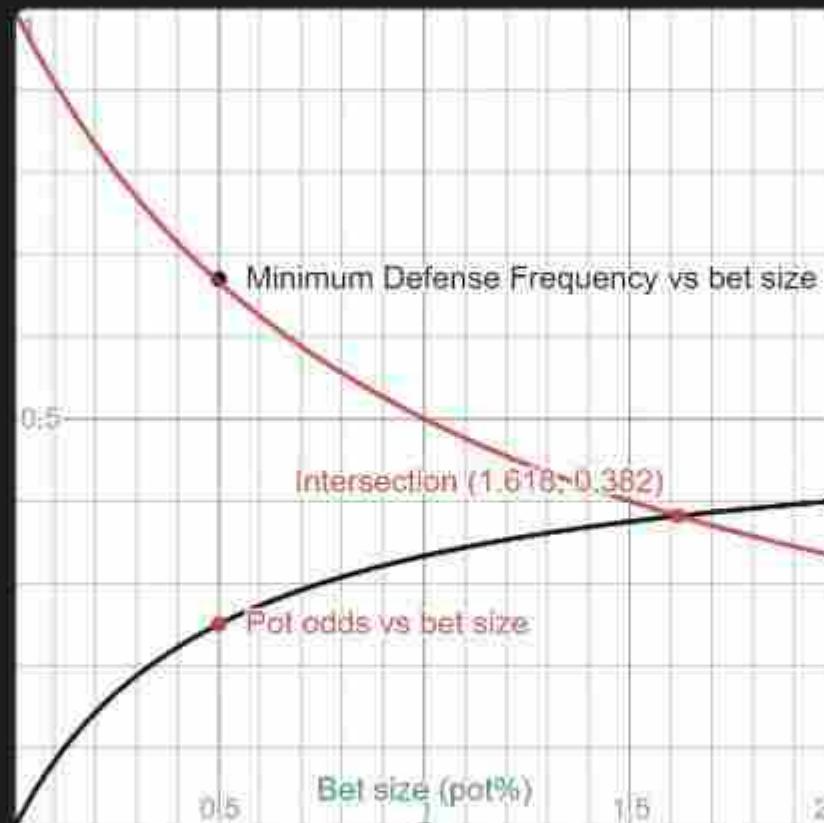
There is one bet size that gives your opponent the same minimum defense frequency as their pot odds %. What bet size is that?

- A: 100% Pot
- B: Square root of 2 ($\sqrt{2}$), 141% pot
- C: The Golden Ratio (ϕ), 162% pot
- D: Pi (π), 314% pot

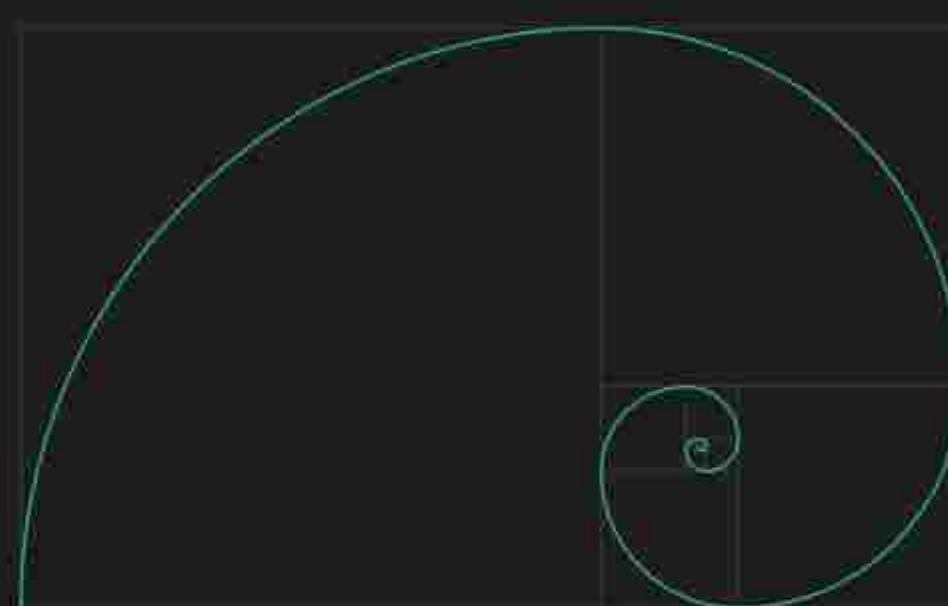


Correct answer:

C: The Golden Ratio (Φ), 162% pot



Betting exactly the golden ratio (ϕ), ~162% pot, will give your opponent the exact same pot odds% and MDF%, 38%



The golden ratio is a mathematical constant known for showing up in the most unexpected places.

Let $s = \text{bet/pot}$:

$$\text{MDF} = 1/(s+1)$$

$$\text{Pot odds} = s / (2s + 1)$$

Setting these equal to each other, we find the intersection is exactly the golden ratio, Φ .

Which boards are **bet more frequently** in single-raised pots?

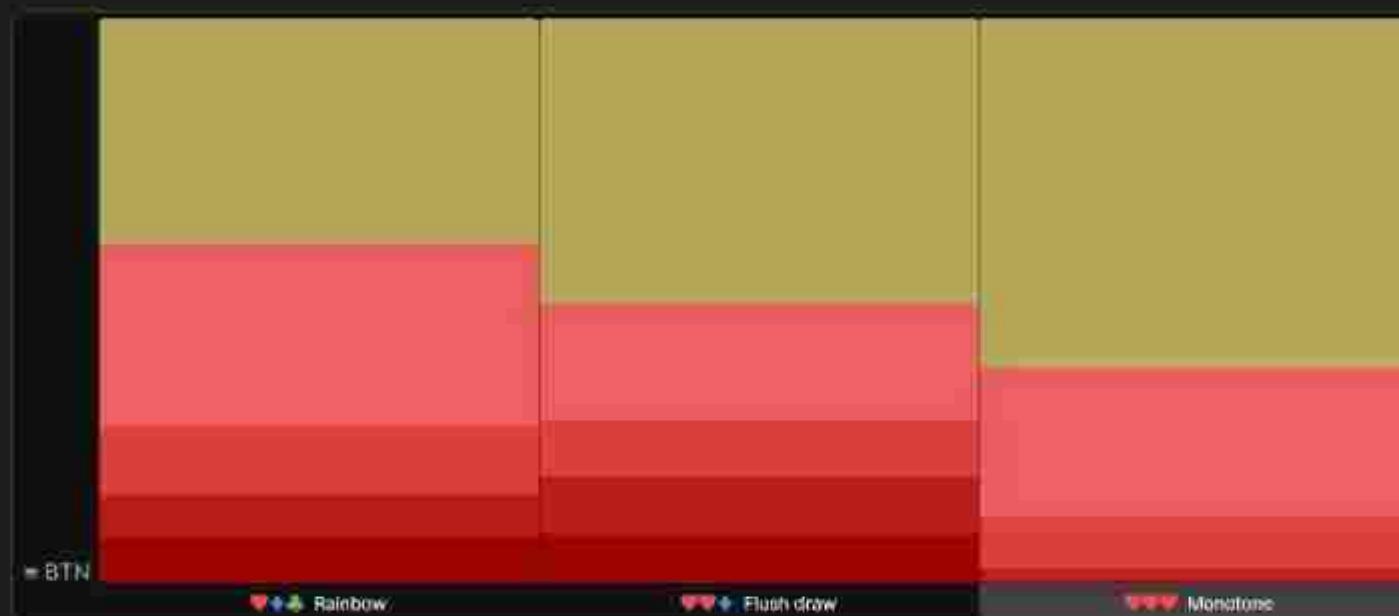
   Rainbow

   Flush draw

   Monotone

[NL50 6-Max Cash, 100bb] Which flops should you bet more often? BTN vs BB SRP:

- A: Rainbow
- B: Flush draw
- C: Monotone



Correct answer:

A: Rainbow

You should bet most often on rainbow flops in single-raised pots.

Suits	+	Strategy	Check	Bet	EV IP	EV OOP	EQ IP %	EQ OOP %	EQR IP %	EQR OOP %
Rainbow	39.8%		39.7	50.3	3.2	1.9	54.3	45.7	107	75
Flush draw	55.1%		30.3	49.7	3.1	2	53.9	46.1	105.5	77.1
Monotone	5.2%		50.7	38.3	3	2.1	53.3	46.7	102.3	81.2

Generally speaking, draws have the effect of flattening out range advantages. Rainbow boards tend to be bet more frequently because BB has a harder time realizing their equity.

Your equity with value hands is less certain on draw heavy boards, so you may end up inflating the pot with what turns out to be a very medium strength hand.

Flush draw flops are bet less frequently using a larger size, while monotone flops are bet least frequently using a very small size.



[NL500 6-Max Cash, 100bb] UTG opens 2bb, BB calls.
Which of these flops is closest to a rangebet for UTG?

- A: A♦ 3♦ 2♣
- B: A♥ 2♥ 2♦
- C: Q♥ 6♦ 6♣
- D: J♦ T♥ 9♥

Flops	Strategy	Check	Bet 33%	Bet 50%	Bet 76%	Bet 124%	All-in 2178%	EV IP
□ UTG vs BB		32	32.9	18.2	11.6	5.3	0	2.8
▼ Filtered 100%		32	32.9	18.2	11.6	5.3	0	2.8
A♦3♦2♦		71.9	15.8	7.6	4.7	0.1	0	2.8
A♥2♥2♦		69.2	29.8	0.8	0.2	0	0	3
Q♦6♦5♦		33.6	54.9	1.2	0.2	0	0	2.8
J♦T♦9♥		15.6	38.4	42.2	3.1	0.7	0	2.8

Correct answer:

D: J♦ T♦ 9♥

UTG should range-bet.



We have to compare how the ranges hit these flops. BB's advantage is in the lower cards, so boards with two or more low cards are not frequently rangebet. This is especially true on flops where BB can have many nuttered hands.



The JT9 board powers up all of the 9+ high cards, which makes up most of UTG's range.

BB ends up drastically overfolding.

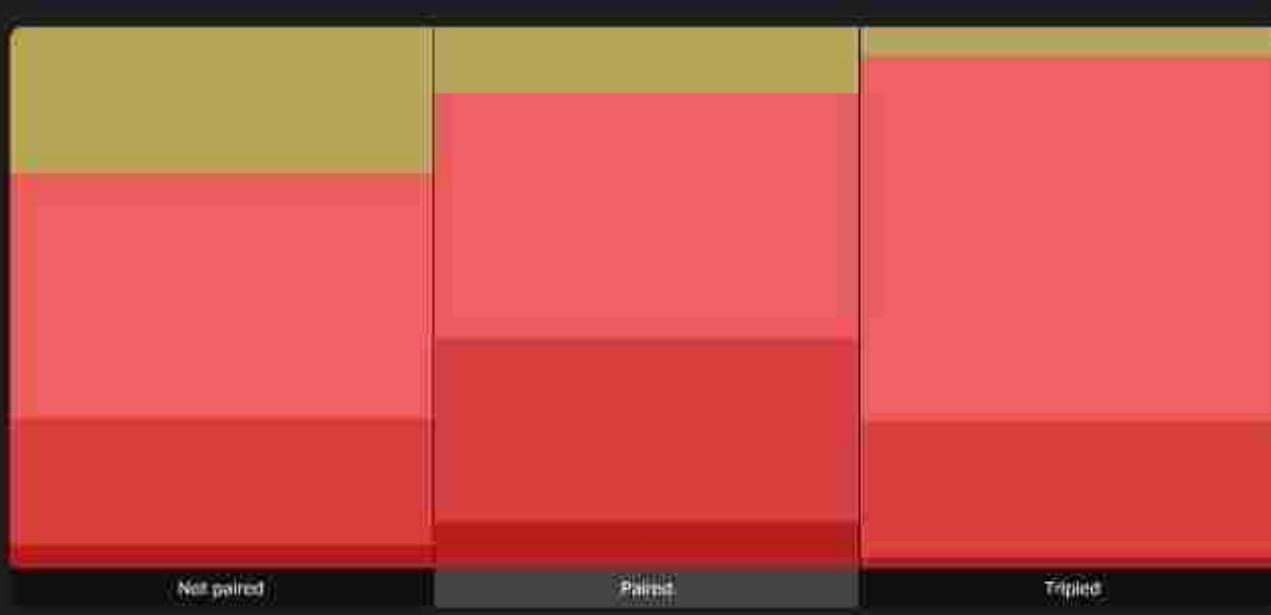
BTN vs CO

3Bet Pot

Not paired	XYZ
Paired	XXY
Tripled	XXX

[NL500 6-Max Cash, 100bb] CO opens, BTN 3-bets, CO calls.
Which board texture tends to use the largest bet sizes?

- A: Unpaired flops
- B: Paired flops
- C: Tripled flops



Correct answer:

B: Paired flops

Pairing	Strategy	Check	Bet 33%	Bet 50%	Bet 75%	Bet 125%
CO vs BTN		25.2	44.7	24.8	4.9	0.3
Filtered	100%	25.2	44.7	24.8	4.9	0.3
Tripled	0.2%	6.4	66.7	24.7	2.1	0.1
Paired	16.9%	13.2	44.5	33.4	8.7	0.2
Not paired	82.8%	27.7	44.7	23	4.2	0.3

In single-raised pots, paired boards often prompt smaller bet sizes which target the air in your opponent's range.

However, in 3-bet pots, your opponent's range consists of less air and more medium strength hands such as pocket pairs.

Instead of targeting their air, you size up to target their medium hands.

HJ	CO	BTN
FOLD	FOLD	FOLD
RAISE 2	CALL	CALL
ALL-IN 100	RAISE 6.5	RAISE 7.5
	ALL-IN 100	ALL-IN 100

[NL500 6-Max Cash, 100bb] You open 2bb from the HJ, BTN calls, blinds fold. How often should you c-bet the flop, on average?

- A: 20%
- B: 30%
- C: 40%
- D: 50%

Player	EV	Equity	EQR
HJ ♠	- 2.42	▲ 50.67 %	▼ 86.39 %
BTN	▲ 2.65	▼ 49.33 %	▲ 97.16 %
All-in 1782%	Bet 125%	Bet 75%	
0%	1.2%	1.7%	
Bet 50%	Bet 33%	Check	
6%	19.4%	71.7%	

Correct answer:

B: 30%

C-bet 30% on average.

HJ Open



BTN Call



BTN's condensed cold-calling range is actually quite strong despite being capped. That's because they need to compensate for the fact that the blinds might squeeze, the rake, and the gap concept.

HJ Open

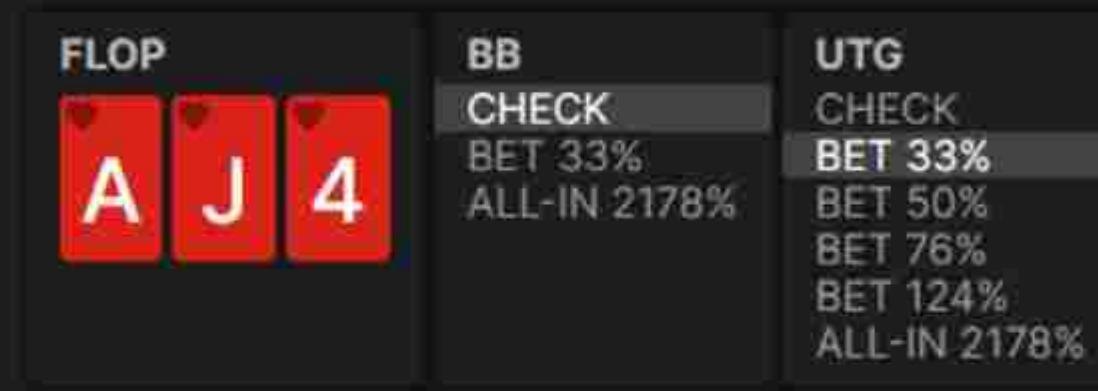


BTN Call



Going HU to the flop, the HJ is no longer in a position of strength.
They have less EV, more air in range, and worse equity realization due to being out of position.

For this reason, they should be checking quite frequently.



[NL50 6-Max Cash, 100bb] UTG opens 2bb, BB calls. Flop is A♥ J♥ 4♥.
UTG c-bets 33% pot, which hand should BB continue with most often?

- A: J ♠ 8 ♠
- B: K ♠ Q ♠
- C: 8 ♥ 7 ♠
- D: 9 ♠ 9 ♣



Correct answer:

C: 8♥ 7♠

Every other hand is a mixed fold.



Holding a flush-card is one of the most important factors on monotone flops.
This is because hands that can't draw to a flush have a difficult time realizing their equity.
Furthermore, you need to be able to defend your range on 4-flush turn/river runouts.



[NL500 6-Max Cash, 100bb] opens 2.5bb, SB 3-bets to 12bb. You call the BTN with KTs. You started this hand with 100bb. The expected value of calling the 3-bet with KTs is 1.41bb.

What is the expected value of your stack after calling the 3-bet?

- A: 101.41 bb (starting stack + EV)
- B: 103.91 bb (starting stack + 2.5 bet + EV)
- C: 98.91 bb (starting stack - 2.5 bet + EV)
- D: 90.5 bb (starting stack - 12bb 3bet + EV)

	EV
All-in 100	0.69
Raise 26	0.91
Call	1.41
Fold	0

Correct answer:

C: 98.91 bb

Your average stack will be 98.91 bb.

Expected value is relative to folding

The trick to answering this question is realizing that EV is relative to folding.

If we fold, our stack will be 97.5bb. Since calling is 1.41 better than folding, the answer is 98.91.

[Learn more](#)

Many spots in poker come down to finding the move that loses the least. +EV does not necessarily mean "*profitable*", it means better than folding.



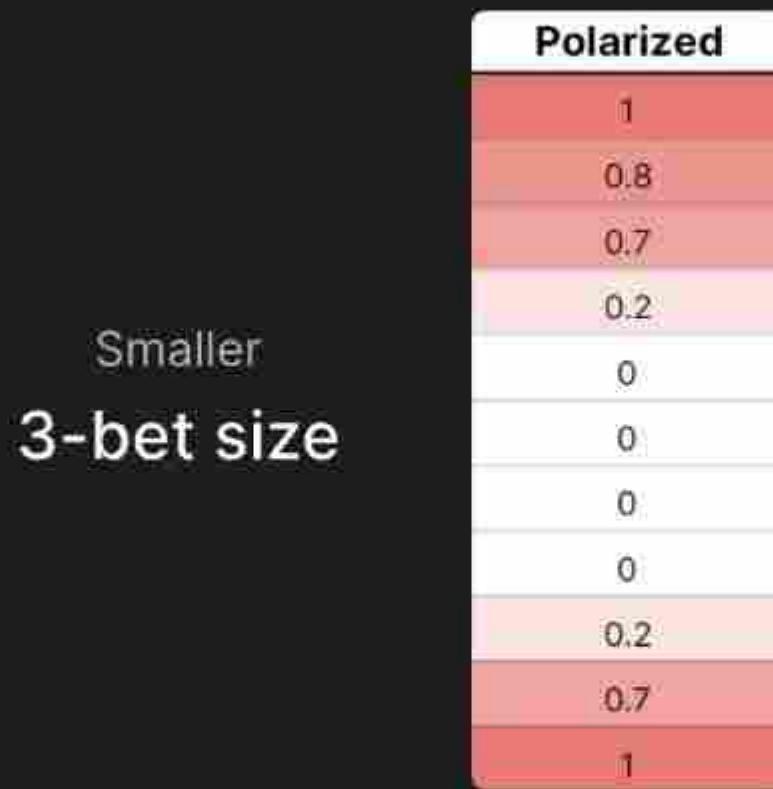
Hand Strength



Polarized	Linear
1	1
0.8	1
0.7	0.8
0.2	0.6
0	0.4
0	0.2
0	0
0.2	0
0.7	0
1	0

BTN opens, action's on you in the BB. For some reason, your opponent will never call a 3-bet, opting to raise/fold instead. How should you adjust your sizing and 3-betting range?

- A: 3-bet smaller with a linear range
- B: 3-bet smaller with a polarized range
- C: 3-bet larger with a linear range
- D: 3-bet larger with a polarized range



Correct answer:

B: 3-bet smaller with a polarized range

Take advantage of inelastic ranges by
minimizing risk **to maximize reward**

The way to exploit someone who won't call is to use a smaller size.

This gives you the best price on a bluff, loses the least when you raise-fold,
while your value hands always have the option to reopen the action if villain continues.

The most efficient way to construct this strategy is using a polarized range, consisting of value that's happy to face a raise, and bluffs that are happy to fold against a raise.



[NL50 6-Max Cash, 100bb] (Hero) calls a 2.5bb BTN open. BB's Q♣ T♣ realizes 70% of its equity on a K♠ T♥ 5♣ flop. What does this actually mean?

- A: Q♣ T♣ gets to showdown 70% of the time, therefore "realizing" its equity
- B: Q♣ T♣ has 70% as much EV as its equity
- C: It's a vague concept without a concrete mathematical definition
- D: Q♣ T♣ wins 70% of its equity pot share



Correct answer

D: The hand wins 70% of its equity pot share

Q ♣ T ♣	
Bet	0%
Range	1
EV	2.6
EQ	67.51%
EQR	70.71%

Equity realization is defined as:

$$\text{EQR} = \text{EV pot share} / \text{EQ pot share}$$

Q ♣ T ♣	
Bet	0%
Range	1
EV	2.6
EQ	67.51%
EQR	70.71%

Where EV pot share is the fraction of the pot you expect to win according to your expected value, and EQ pot share is the fraction of the pot you expect to win according to your equity.

This is a useful metric for understanding the performance of your range and impact of postflop variables!



Your opponent never check-raises bluffs on the river.
How should you adjust your betting range?

- A: Bluff more often
- B: Bluff less often
- C: Check back thin value
- D: Bet more thin value



= Value bet thin

Correct answer:

D: Bet more thin value

Consider what strategies open up when
you remove your opponent's counter attack

The primary reason to check back thin value is to avoid reopening the action and being bluffed off the best hand.

If your opponent never bluffs, then you can simply bet-fold your thin value, knowing they will never bluff you off the best hand.

As long as your hand has more than 50% equity against their calling range, it is a good value bet against this opponent.

Separate fundamental laws
from human simplifications

Humans have invented a lot of poker metrics. If you're facing a shove on the river, which one of these metrics is always true?

- A: You should call with hands that have greater equity than your pot odds dictate
- B: You should call wide enough to meet MDF
- C: You should call with hands that block value and unblock bluffs
- D: You should call with hands that beat a part of their value range

Pot Odds



Correct answer:

A: You should call with hands that have greater equity than your pot odds dictate

I've got good blockers,
and if I fold I'm exploitable.
I call!

Quads. I don't bluff rivers.



Pot odds are the only metric derived directly from the expected value of calling. If you're winning more than your pot odds, then calling will always be higher EV than folding.

Pot odds takes precedence over MDF. If your opponent is never bluffing, then there's no point calling bluff-catchers.

That's because MDF is designed as a shield to prevent you from getting run over by bluffs.

Likewise, good blockers and beating part of their value range are only rough indicators of a good call, rather than a fundamental law derived from expected value. Both of these can lead to -EV calls against an opponent who isn't bluffing.

AK	AKs	ADs	ASs	ATs	ASs	ABs	ATs	ABs	25s	ATs	Ad	Ac
AKo	KK	KQs	KQs	KTs	KQs							
Ad	KQs	QQ	QJs	QTs	QBs	QJs	QJs	QDs	Q5s	Q4s	Q3s	Q2s
Ado	KQs	KK	QJs	JJs	JTs							
At	KTs	QTs	ITs	TT	TSs							
Ato	KTs	QQs	JTs	JTs	99	99s	87s	96s	95s	94s	93s	92s
Ab	KQs	QBs	JQs	TQs	99s	88s	87s	86s	85s	84s	83s	82s
Ab	K7s					77	76s	75s				
AAd							66	65s				
AAd								55	54s			
ATo									44			
ATo										33		
ATo											22	

BTN opens and you call in the BB. Your opponent always checks back the flop. How should you adjust your turn strategy?

- A: Probe bet more value heavy
- B: Probe bet more bluffs
- C: Probe bet more often
- D: Probe bet less often



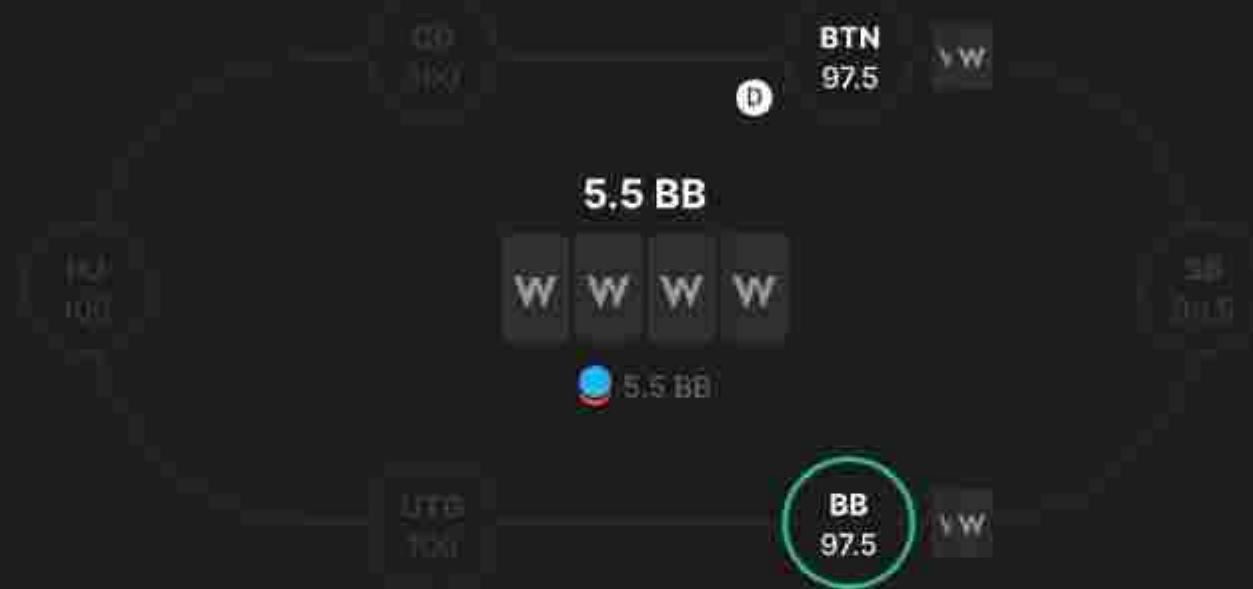
Correct answer

D: Probe bet less often

"Focus on what you know"

We don't know their turn strategy. The only thing we know is that they get to the turn with a much stronger range than a normal check-back would indicate.

The way to exploit this is to play defensively and check more often.



The trick to answering this question is avoiding assumptions about their turn play, and focusing only on their new range vs a baseline GTO range.

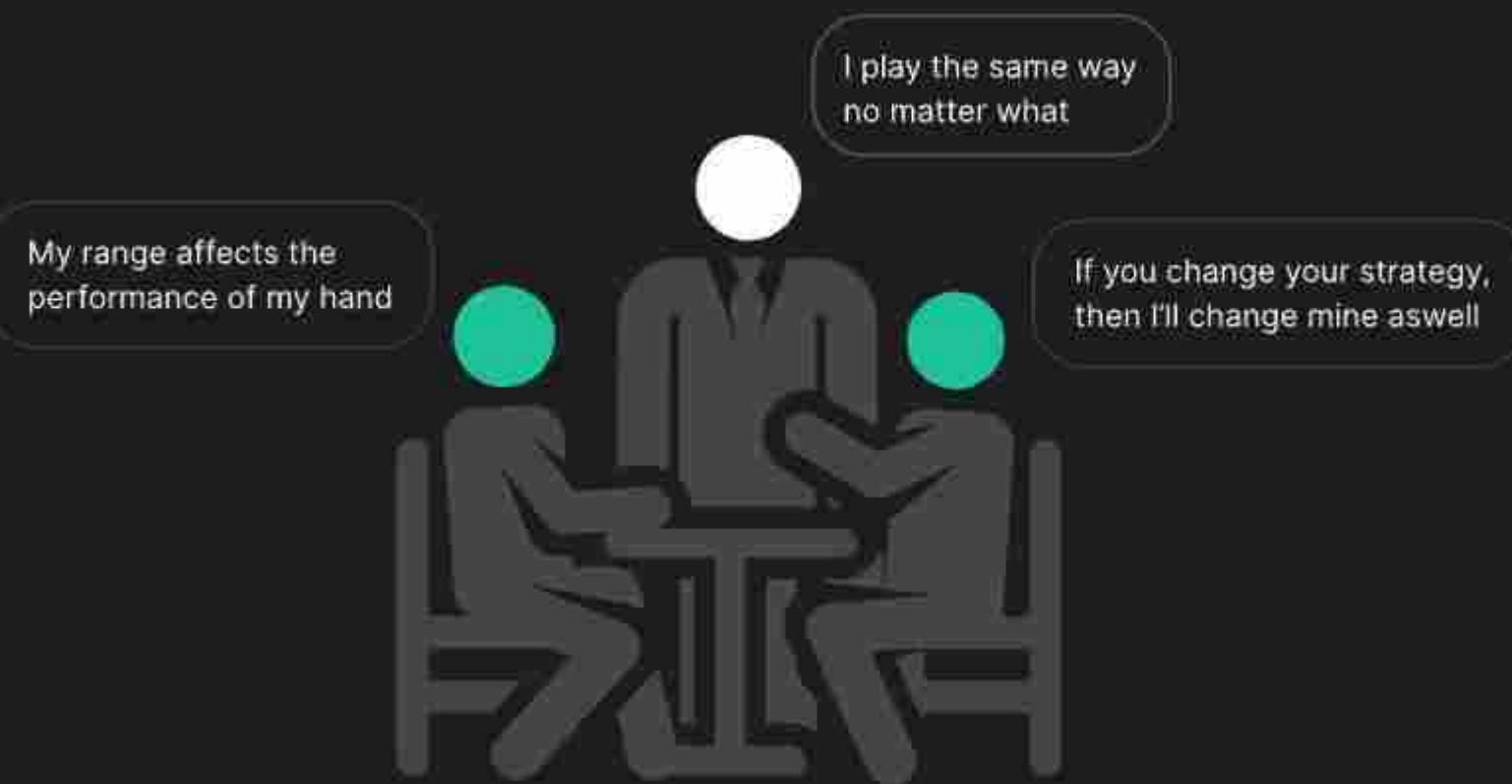
Your turn strategy (ought) to be based on a solid GTO baseline.

Figure out how they've deviated from that baseline, and adjust accordingly.

Find the hidden assumption

The saying "*Your range's strategy affects your hand's strategy*" is only true given a certain assumption. What is that assumption?

- A: This is only true if your opponent is *playing* a fixed strategy
- B: This is only true if your opponent is *not playing* GTO
- C: This is only true if your opponent is *playing* GTO
- D: This is only true if your opponent is *not playing* a fixed strategy



Correct answer:

D: This is only true if your opponent is *not playing* a fixed strategy

If your opponent won't change their strategy,
then your range construction has no impact on the
performance of your individual hand

The hidden assumption is that if you change your range, then your opponent will change their strategy, which in turn affects the performance of your hand.

If your opponent will not change their strategy, then you're playing "*your hand vs their strategy*" in a vacuum, rather than "*range vs range*".

[Learn more](#)

SPR = 4 on the flop

What is hero's optimal bet size?

Hand Strength



Polar Hero	Defender
1	0
0.8	0
0.7	0
0.3	0
0	0.8
0	1
0	0.8
0.2	0
0.5	0
0.2	0
1	0

Perfect polarity refers to a situation where your range consists of the absolute nuts or complete bluffs, relative to your opponent's range of bluff-catchers. If the SPR is 4, what bet size should the perfectly polarized player use to maximize their EV on the flop?

- A: 35% pot
- B: 54% pot
- C: 115% pot
- D: All in

Starting pot: 1

Starting stacks: 4

	Bet size	Pot after call
Flop	54.0%	2.08
Turn	54.0%	4.33
River	54%	9.00

Correct answer:

B: 54% pot



In perfectly polarized situations, the optimal strategy is to use the geometric bet size.

This involves betting an equal fraction of the pot on each street to put your opponent all in by the river.



This strategy forces them to defend as wide as possible per MDF, maximizing the value of your nuts.

[Learn more](#)

Since we're on the flop, the ideal strategy bets 54% on flop/turn/river.



FLOP	BB	CO	BB	CO
6♦ 4♥ 2♦	CHECK BET 33% ALL-IN 1916%	CHECK BET 33% BET 50% BET 75% BET 125% ALL-IN 1916%	FOLD CALL RAISE 50% RAISE 100% ALL-IN 1129%	FOLD CALL RAISE 50% RAISE 100% ALL-IN 540%

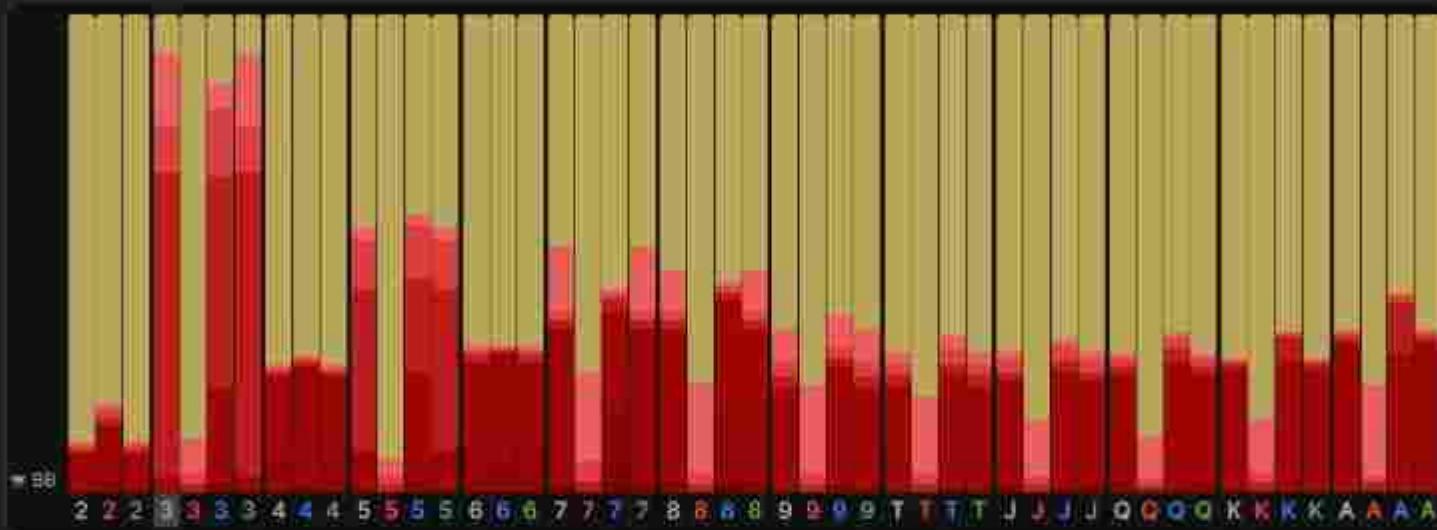
[NL50 6-Max Cash, 100bb] CO opens 2.3bb, BB calls. Flop is 6♦ 4♥ 2♦.
CO c-bets 1/3, BB XR 1/2 pot, CO calls.
Which turn card should BB barrel most frequently?

A: 3♠

B: 2♥

C: 8♦

D: Q♥



Correct answer:

A: 3♠

BB should c-bet most often on the turned 3♠.



BB's primary semi-bluff is the gutshot 5, therefore any turned 3 gives BB many straights. CO actually has the advantage on flush cards.

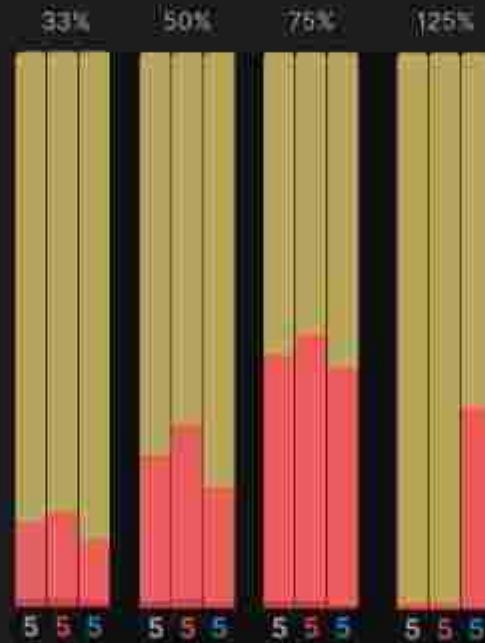
That's because BB only check-raises some flush draws, whereas CO defends all flush draws on the flop.



[NL50 6-Max Cash, 100bb] BTN opens, BB (hero) calls. Flop is K♠ T♥ 5♣.
BTN either c-bets 33%, 50%, 75% or 125% pot. You call.
The turn pairs with a 5♥. Which line does BB donk more often?

- A: When BTN has c-bet 33% on the flop
- B: When BTN has c-bet 50% on the flop
- C: When BTN has c-bet 75% on the flop
- D: When BTN has c-bet 125% on the flop

BB turn donk by BTN flop c-bet size



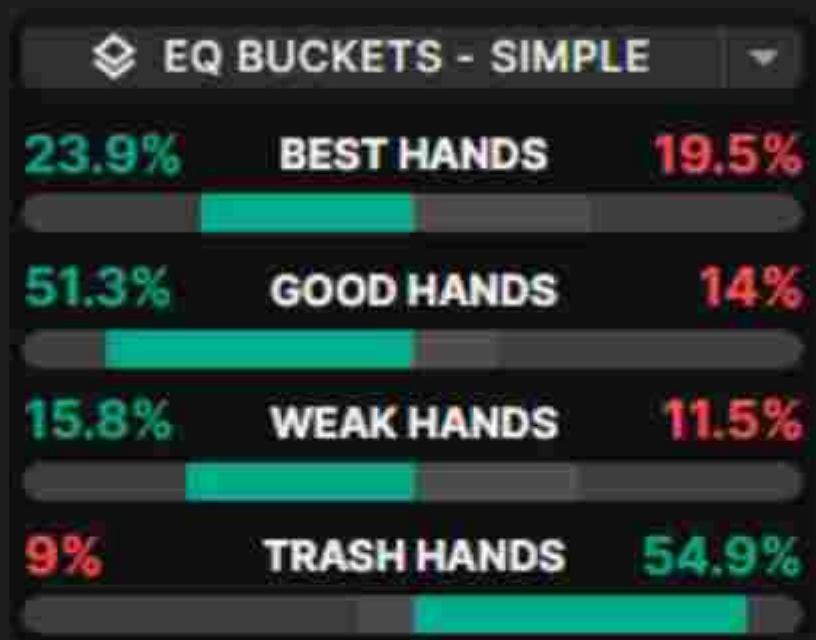
Correct answer:

C: When BTN has c-bet 75% on the flop

You donk more often when they've bet 75% pot.



The key is to think about the bottom pair imbalance in each line. BTN doesn't use a 75% pot-sized bet with bottom pair very often, but BB continues against 75% with almost all their 5x.



The smaller 33% and 50% sizes feature less donking in general, since BTN is will have better board coverage, using this size with many weaker pairs.

The overbet starts to fold out many of BB's bottom pair, and BTN actually overbets with 3rd pair as a semi-bluff.

For this reason, 75% is the best line to donk bottom pair.



Why do solvers mix their strategies?

Why not just use the same action each time?

- A: To gain more EV
- B: To remain unexploitable
- C: To become harder to play against
- D: Because different parts of your range benefit from different bet sizes or different actions

	EV
All-in 19.16%	0.75
Bet 125%	4.11
Bet 75%	4.1
Bet 50%	4.1
Bet 33%	4.1
Check	4.11

Correct answer

- B: To remain unexploitable**
- D: Because different parts of your range benefit from different bet sizes or different actions**



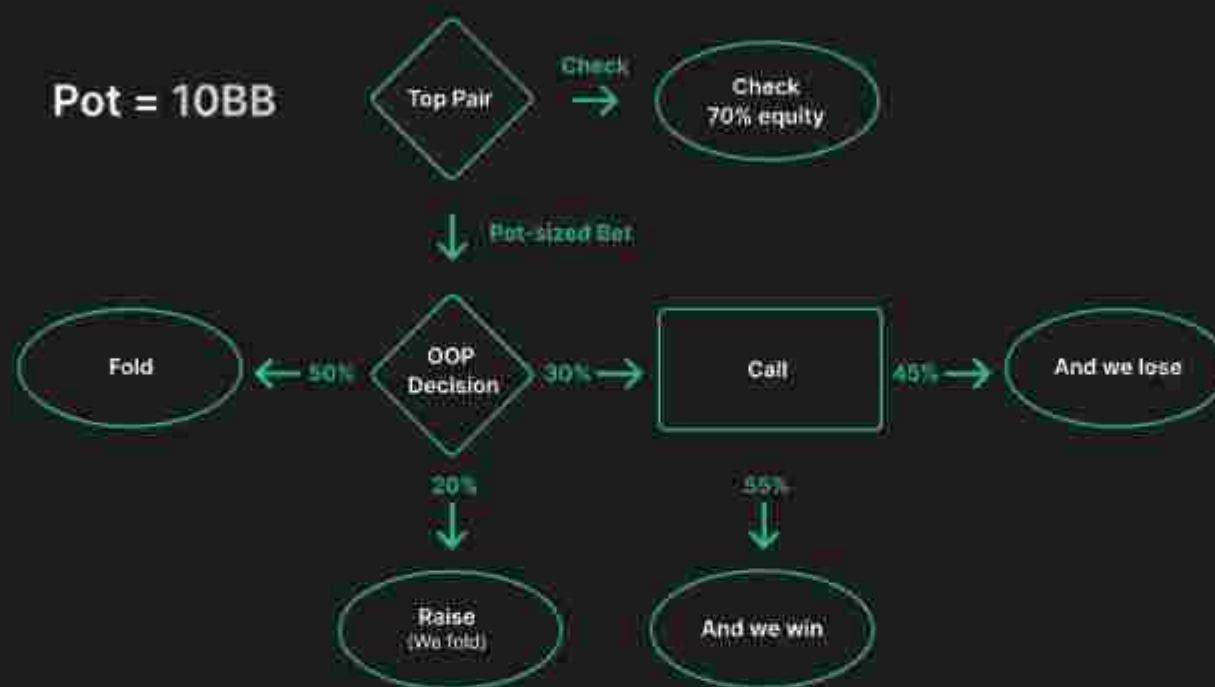
Mixed actions theoretically have the same EV against the GTO strategy.

So GTO does not mix to gain EV, nor does it care about being hard to play against.

Frequency mistakes are not punished by the GTO strategy, but they are exploitable. That means you need to mix appropriately in order to construct an unexploitable range in every line.

The solver is capable of making full use of the game tree to construct the most efficient, least exploitable strategy.

Complex game trees typically require more mixing to create more robust, less exploitable strategies.



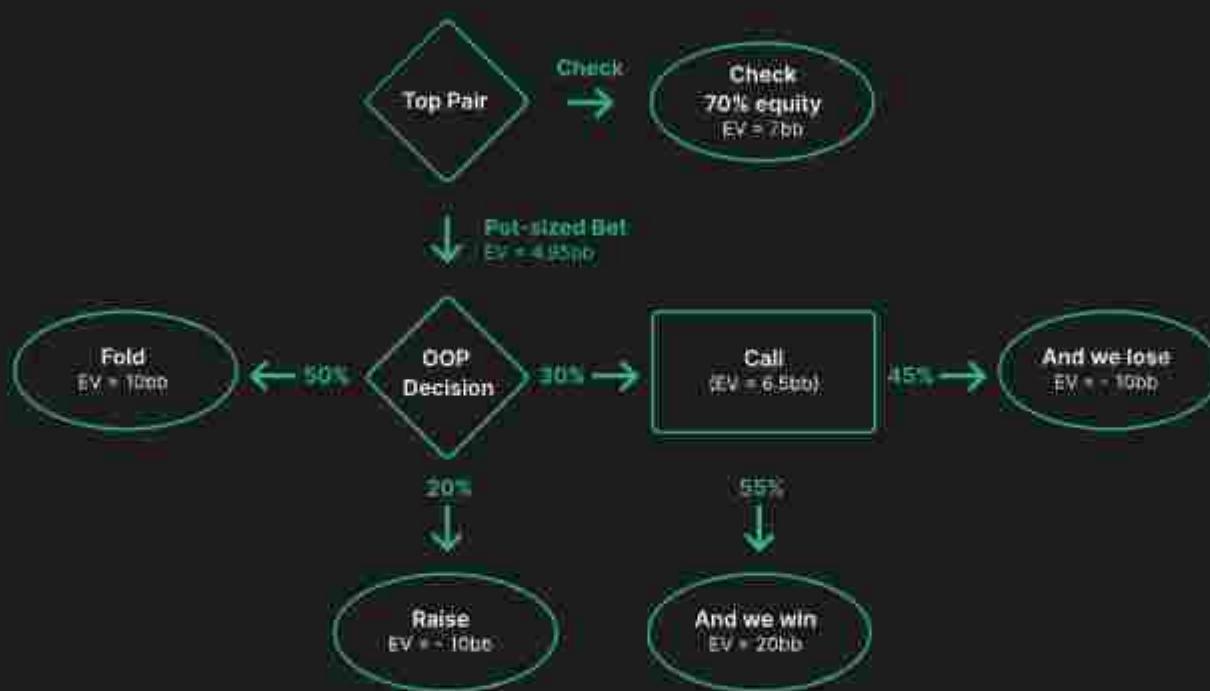
Hero has top pair, in position on the river. You can bet the pot or check back. You have 70% equity if you check back. If you bet, villain will fold half the time, call 30% of the time, and raise 20% of the time. You fold to a raise. You have 55% equity if they call.

Should hero bet the river?



Correct answer:

Hero should check back



$$EV(\text{Check}) = 70\% * 10\text{bb} = 7\text{bb}$$

$$EV(\text{Bet}) = 50\% (\text{EV when villain folds}) + 30\% (\text{EV when villain calls}) + 20\% (\text{EV when villain raises and we fold})$$

$$EV(\text{Bet}) = 50\%(10\text{bb}) + 30\%(6.5\text{bb}) + 20\%(-10\text{bb}) = 4.95\text{bb}$$

FLOP	BB CHECK BET 33% ALL-IN 1916%	CO CHECK BET 33% BET 50% BET 75% BET 125% ALL-IN 1916%	BB FOLD CALL RAISE 50% RAISE 100% ALL-IN 739%	TURN 6	BB CHECK BET 20% BET 50% ALL-IN 739%	CO CHECK BET 33% BET 50% BET 75% BET 125% BET 175%	RIVER 7	BB CHECK BET 20% BET 51% BET 75% BET 150% BET 299%
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[NL50 6-Max Cash, 100bb] this CO vs BB J♥ T♥ 6♦ 6♥ 7♦ board, CO c-bet the flop 75%, checked back the turn, action's on the BB. You have the choice to use a 20% block-bet, or a 150% overbet. Which hand class makes up the majority of your value in both ranges?

- A: Block-bet trips, overbet straights
- B: Block-bet top pair, overbet flushes
- C: Block-bet 2nd pair, overbet flushes
- D: Block-bet 2nd pair, overbet fullhouses



Correct answer:

B: Block-bet top pair, overbet flushes

The block-bet is constructed around top pair hands, whereas the overbet is constructed around flushes.



This strategy maximizes how much value you can get with each hand class; targeting different parts of your opponent's range.

River bet sizes are often split to maximize the efficiency of your range.



[NL50 6-Max Cash, 100bb] opens, BB calls. Flop is A♥ 2♥ 2♦.

Why do the weakest underpairs bet more often?

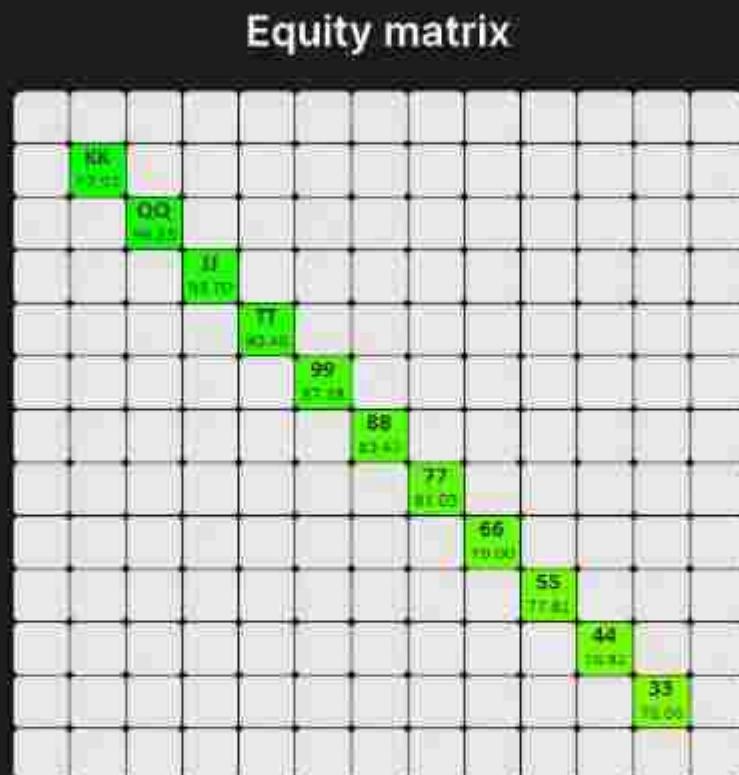
- A: For protection
- B: To deny equity
- C: Because the value of fold equity is higher when holding these hands
- D: To charge draws and overcards

Not all fold equity **has the same value**

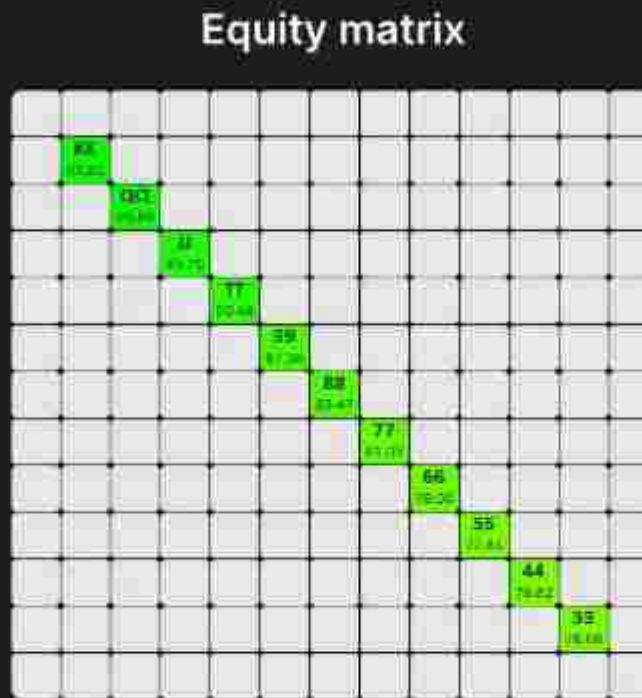
Correct answer

C: Because the value of fold equity is higher with these hands

All answers are "somewhat" correct in a vague sense, but C is the most accurate reason.

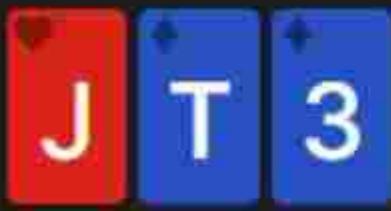


We often think of fold equity as a single value. But not all fold equity is created equally. Let's compare the equity of these underpairs against the equity of villain's **folding range**.



Lower pocket pairs are more incentivised to bet because they have less equity against villain's folding range, since they fold out many higher cards that can outdraw them. Therefore, lower pairs gain more from denying equity!

A hand like KK gains almost nothing from folding out these hands, whereas a hand like 44 at least folds out equity that can realistically outdraw it.

FLOP

	EV	EV	EV
Bet 125%	1.5	Bet 125%	1.88
Bet 75%	1.47	Bet 75%	1.88
Bet 50%	1.51	Bet 50%	1.88
Bet 33%	1.52	Bet 33%	1.88
Check	1.56	Check	1.88

	EV	EV	EV
Bet 125%	1.45	Bet 125%	1.5
Bet 75%	1.42	Bet 75%	1.47
Bet 50%	1.48	Bet 50%	1.51
Bet 33%	1.49	Bet 33%	1.52
Check	1.53	Check	1.56

[NL50 6-Max Cash, 100bb] open, BB call, flop is J♦ T♦ 3♦. Why does 22 with a diamond bet more frequently and have higher EV than 22 without a diamond?

- A: Because you block flush draws
- B: Because you hold one of villain's flushdraw outs
- C: Because it has cleaner outs
- D: Holding the diamond gives you better visibility on later streets

Your outs don't complete villain's flush draws

Correct answer:

C: Because it has cleaner outs



EV by turn card for 2♦ 2♦ after BB calls 75% flop bet

While all of these answers are partially correct, 22 derives most of its EV against a BB continue when it hits a set.

Holding the ♦ means your set will not complete the flush, and is therefore more valuable.

Board:



50NL rake = 5% capped at 4 bb

Hand:



500NL rake = 5% capped at 0.6 bb

The board is Q♦ J♦ T♦ A♦ 2♣. The pot is 7.5bb. Villain leads the river 5.5bb. If you raise your opponent only calls with a straight. Should you raise A♠ K♠? Does your answer change if we change the rake structure?

- A: Always raise, you have the nuts
- B: Never raise, you chop with any hand that calls and pay more rake
- C: Raise in 50NL, Flat in 500NL
- D: Flat in 50NL, Raise in 500NL

50NL:

	EV
All-in 492%	8.23
Raise 84%	8.49
Raise 51%	8.75
Call	8.8
Fold	0

500NL:

	EV
All-in 492%	9.01
Raise 84%	9.01
Raise 51%	9.01
Call	9.01
Fold	0

Correct answer:

D: Flat in 50NL, Raise in 500NL

The dilemma is that your opponent can force you to pay more rake by shoving their straights, and in most cases you still need to call.

In 50NL, the rake caps out in 80bb+ pots. Raising the nuts becomes a -EV strategy if you only get called by other straights and pay more rake overall.

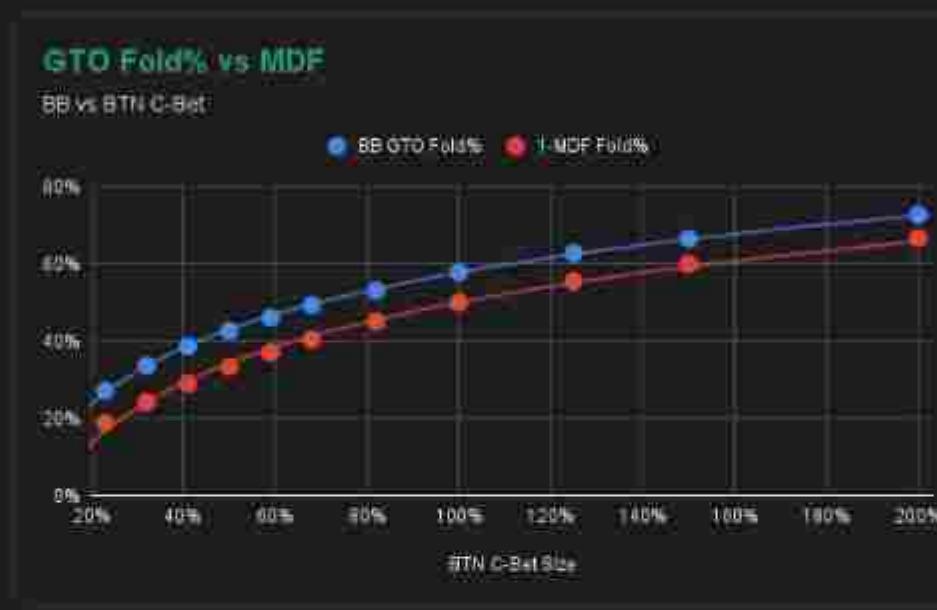
The dilemma is that your opponent can force you to pay more rake by shoving their straights, and in most cases you still need to call.

In 500NL, the rake caps out in 12bb+ pots, so you're already paying maximum rake by calling. Therefore raising and calling has the same EV.

[Learn more](#)

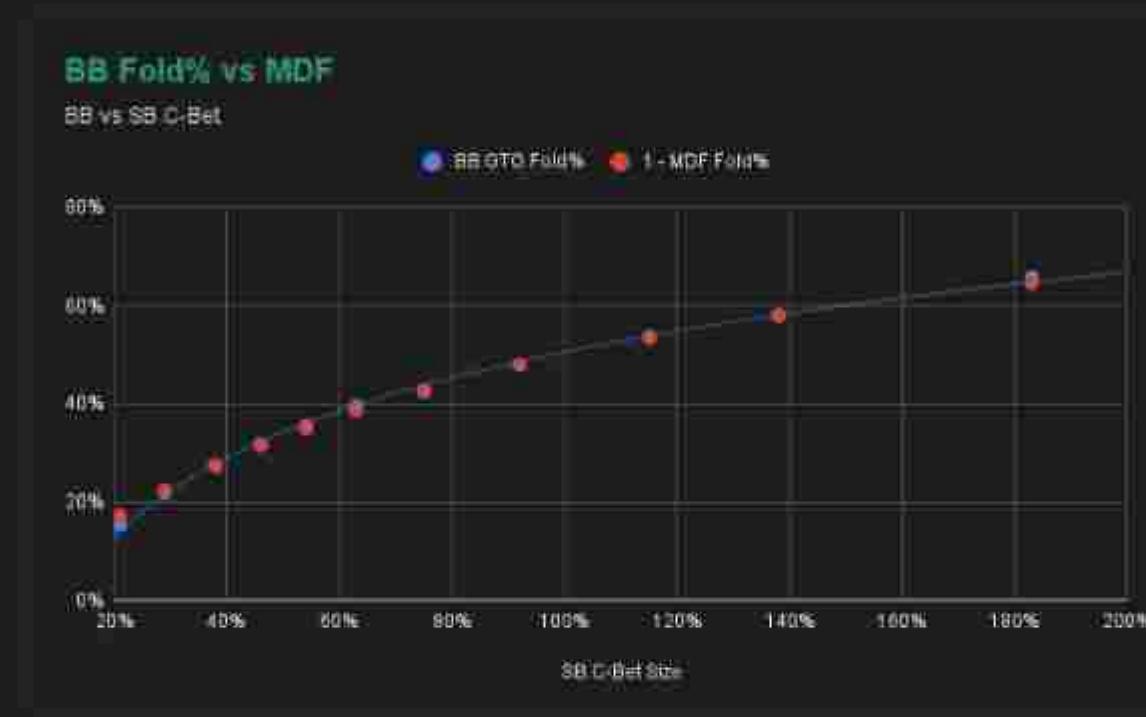
Raising is a weakly dominant strategy, since it has at least the same EV against villain's best response, and potentially more EV against a mistake.





Why does the GTO solution tend to overfold (relative to MDF) out of position in the BB?

- A: Because checking back is more valuable in position
- B: Because BB was given a discount to enter the pot preflop, so they can overfold postflop
- C: It's harder to realize equity out of position
- D: Because IP's range is too strong for BB to handle



Correct answer

A: Checking back is more valuable in position

B: is a common idea, but blind vs blind analysis shows that BB defends extremely close to MDF on average postflop, despite having a capped range and a discount to enter the pot preflop.

If OOP were to over-defend to make IP's bluffs 0EV,
then IP would simply stop bluffing, since checking
would become higher EV

The value of checking is always relative to betting.

When checking becomes more valuable, that shifts the line of indifference.

If OOP were to over-defend to make IP's bluffs 0EV,
then IP would simply stop bluffing, since checking
would become higher EV

OOP doesn't need to defend as wide since they only need to make IP's bets as valuable as checking back.

For this reason, OOP can overfold, often giving IP a profitable bluff with any two.



As stacks get deeper, all of the following statements are true except one.
Find the lie.

- A: IP's edge will increase
- B: Nut advantage has a bigger impact on the optimal strategy
- C: The value of premium hands increases preflop
- D: Implied odds, and reverse implied odds get magnified



Correct answer:

C: "The value of premium hands increases preflop" is **False**

BTN opening EV 100 bb deep



BTN opening EV 200 bb deep



While AA might gain value, most of your premiums like TT-KK, AK will actually lose significant EV preflop.

This is because as stacks get deeper, the value of big pairs usually decreases.

It becomes harder to get stacks in preflop, and these hands have poor drawing chances postflop.

[Learn more](#)



[NL500 6-Max Cash, 100bb] In this spot, BTN has opened and double barreled flop/turn on $3\heartsuit\ 3\clubsuit\ 3\spadesuit\ 9\clubsuit\ J\clubsuit$. Hero called all streets in the BB. The GTO Strategy is to range-check the river. How would hero's strategy change if they only had quads on the river, and villain continued to play the same strategy as before?

- A: Shove everything
- B: Continue to range-check
- C: Block-bet to induce a raise
- D: Mix between betting and checking

RANGE CHECK QUADS

Correct answer:

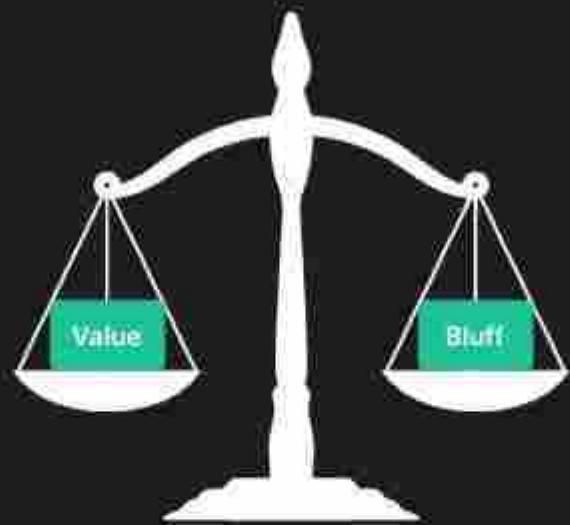
B: Continue to range-check your quads

Solvers are simply EV
maximizing algorithms

This may seem surprising, but range-checking maximizes the value of quads against the original IP strategy.

Since IP hasn't changed their strategy, range-checking continues to be the best option.

Since IP isn't adapting to our pure-quads range, trapping is the highest EV move.



Hero either has the nuts or a bluff, villain holds a bluff-catcher.

Hero shoves 75% pot on the river.

What value:bluff ratio should you use to make your opponent indifferent?

- A: 17% bluffs, 83% value
- B: 30% bluffs, 70% value
- C: 33% bluffs, 67% value
- D: 43% bluffs, 57% value



Correct answer:

B: 30% bluffs, 70% value

Examine pot odds to conceptualize how often you should be bluffing the river

Villain's pot odds dictate they need 30% equity to call. Therefore, we should be bluffing 30% of the time.

If we bluff more than 30%, they could call all their bluff-catchers. If we bluff less than 30% they could fold all their bluff-catchers.

The optimal strategy balances value bets and bluffs to make them indifferent.



[NL50 6-Max Cash, 100bb] BTN vs BB SRP. Why does BTN prefer to overbet A♥K♥9♦ but almost never overbets on A♥K♥T♦?

What is the primary reason?

- A: BB flops straights (QJ) on A♥K♥T♦ but not on A♥K♥9♦
- B: There are too many equity-changing runouts that will hurt BTN's top pair on A♥K♥T♦, e.g. any J or Q will put 4-to-a straight on the board
- C: BB can over-realize their equity on A♥K♥T♦ due to the abundance of draws
- D: BTN's top pair has less equity on A♥K♥T♦ compared to A♥K♥9♦



Correct answer:

A: BB flops straights (QJ) on A♥ K♥ T♦ but not on
A♥ K♥ 9♦



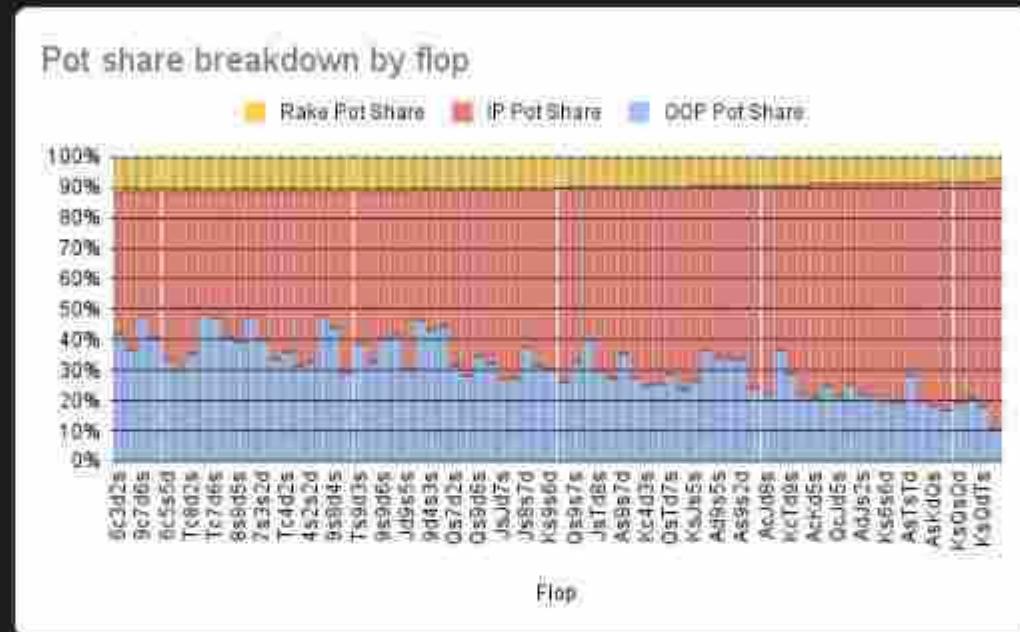
BTN lacks the nut advantage to create an aggressive overbet strategy on A♥K♥T♦.

However, if you remove all of BB's QJ and rerun this sim, then BTN will almost exclusively choose an overbet strategy!



[NL50 6-Max Cash, 100bb] BTN vs BB SRP. Which flop is most likely to "blow up the pot", as measured by the average final size of the pot when it gets raked?

- A: J ♠ T ♦ 8 ♠
- B: T ♠ 9 ♦ 3 ♠
- C: K ♠ K ♦ J ♦
- D: 6 ♦ 3 ♠ 2 ♣



Correct answer:

D: 6♦ 3♠ 2♣ is the most explosive!

$$\text{IP EV} + \text{OOP EV} + \text{Rake EV} = \text{Starting pot}$$

The biggest pots will generate the most rake. The IP and OOP EV should always sum to the starting pot without rake.

Take the difference to find the rake EV. The biggest indicator of flop “explosiveness” comes down to how closely contested the flop is.

$$\text{IP EV} + \text{OOP EV} + \text{Rake EV} = \text{Starting pot}$$

When the EV's get closer, OOP fights harder, which results in more continues and overall larger pots on average.

For that reason, 632r ends up generating the biggest pots on average.

STUDY PLANS



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SPOTS

SPOTS



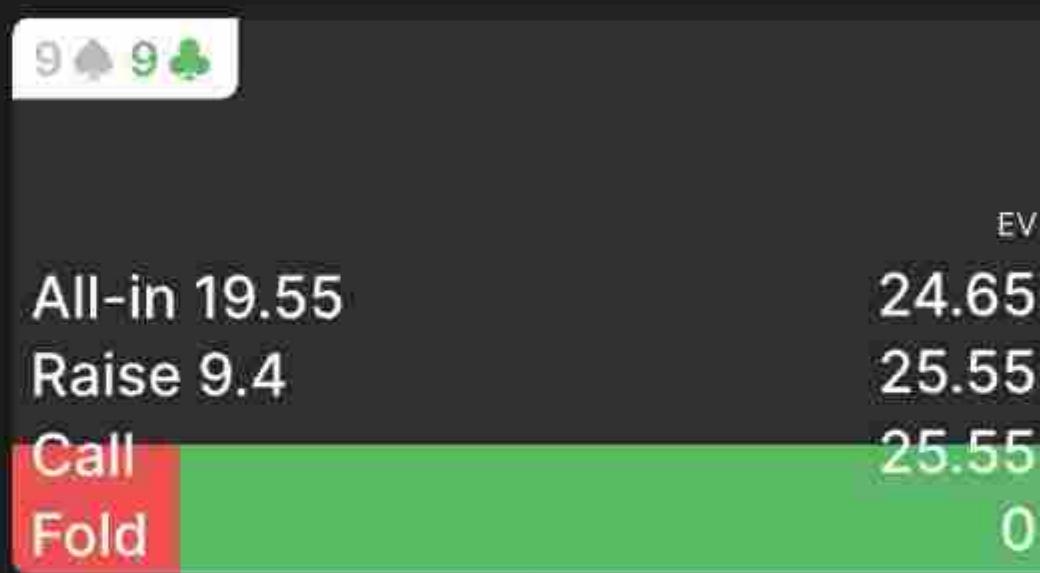
In this chapter, we'll focus more on specific spots and practical strategic decisions to help hone your skills.

Previously we've only used cash game examples. Going forward, we will incorporate many formats!

FLOP	LJ	BTN	TURN	LJ	BTN	
T 9 8	CHECK BET 25% BET 50% BET 75% BET 100% BET 150%	FOLD CALL RAISE 30% RAISE 50% ALL-IN 146%	9	CHECK BET 25% BET 50% BET 75% ALL-IN 146%	CHECK BET 25% BET 50% BET 75% ALL-IN 146%	FOLD CALL RAISE 30% ALL-IN 81%

[8-Max MTT, 25bb] LJ opens, BTN calls. T♦ 9♦ 8♦. LJ c-bets 50% pot, BTN calls. Turn 9♦. LJ Checks, BTN bets 25%. Which of these hands shouldn't shove?

- A: Q ♠ J ♠ (Straight)
- B: A ♠ A ♦ (Overpair)
- C: 9 ♠ 9 ♣ (Quads)
- D: K ♠ 9 ♠ (Trips)



Correct answer:

C: 9 ♠ 9 ♣ (Quads)

Quads should never shove here, although it can raise small sometimes.



Holding 99 decreases their calling range from 57% to 51%, as we block all the trips and most boats that call.

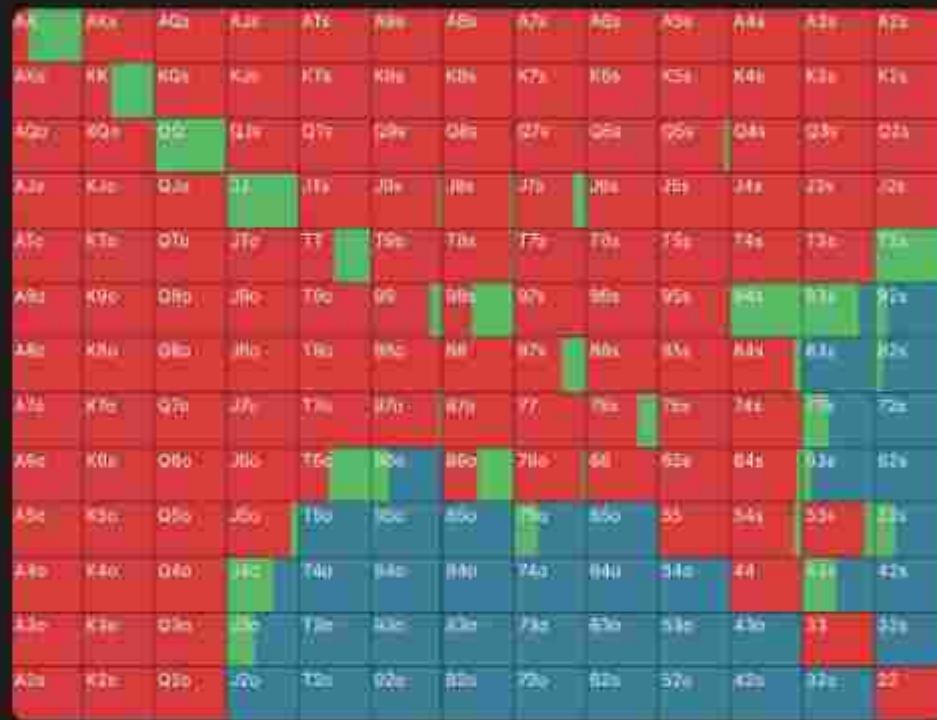
Shoving quads loses value against worse hands that may bet the river.



[HU SNG] Given the option to limp, min-raise, or shove, at what stack depth does the SB stop using a min-raise?

What stack depth should SB stop min-raising? What stack depth should SB switch to a pure push/fold strategy?

- A: 15bb / 9bb
- B: 13.5bb / 8.5bb
- C: 12bb / 8bb
- D: 11bb / 5bb



11.5bb, just before it stops min-raising completely:

Correct answer:

D: 11bb / 5bb

The solver stops min-raising at **11bb** and switches to a pure push/fold at **5bb**.

It may surprise many players to see that push/fold strategies are not preferred until stacks get quite short.

This is because the option to limp allows SB to offer a bad price on a shove while entering the pot with many hands.

If you remove the option to limp, the SB switches to a push/fold strategy much deeper.

CO 100	BTN 100	SB 99.5	BB 99
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 100	RAISE 7.5	RAISE 12.5	RAISE 14
	ALLIN 100	ALLIN 100	ALLIN 100

[NL500 6-Max Cash, 100bb] CO opens, BTN calls, action on BB.

Which hands gain EV going multiway, as compared to if BTN had folded?

Which hands gain pot share multiway?

- A: 55
- B: A6s
- C: AJo
- D: 76s

BB Hand	EV facing CO open	EV facing CO open BTN call	BB Hand	Pot share facing CO open	Pot share facing CO open BTN call
55	0.73	1.10	55	39.8%	32.4%
A6s	0.51	0.36	A6s	35.5%	22.4%
AJo	0.70	0.47	AJo	39.2%	23.9%
76s	0.30	0.24	76s	31.4%	20.8%

Correct answer:

A: 55

55 is the only hand that gains EV going multiway in this spot. However, no hand gains pot share.



B8 Multiway EV

The ability to setmine gives small pocket pairs excellent EV retention in multiway pots.

Most hands lose value going 3-ways to a flop out of position.



[8-Max MTT, 30bb] CO opens 2.1bb, folds to BB. Why does BB prefer shoving 22 and 3betting smaller with AA?

	CO Call %	CO Fold %	Equity against call	Equity against fold
Default	27%	73%		
Shove 22	28%	72%	37%	51%
Shove AA	24%	76%	84%	84%

Correct answer:

AA blocks more calls, and has less incentive to generate fold equity. Furthermore, CO will 4-bet shove facing a smaller raise with most hands that call a 3-bet shove anyway.

	A♠A♥	2♠2♥			
All-in 30	9.19	EV	All-in 30	1.06	EV
Raise 8.2	10.62		Raise 8.2	0.98	
Call	9.65		Call	0.89	
Fold	0		Fold	0	

Shoving AA is considered a 1.43bb mistake. In fact, calling appears to be higher EV than shoving AA.

22, on the other hand, always prefers to raise, with shoving 0.08bb higher than a smaller 3-bet, and 0.17bb higher than a call.

BTN	SB	BB	BTN	BB	FLOP
FOLD	FOLD	FOLD	FOLD	FOLD	
RAISE 2.5		CALL	CALL	CALL	
	CALL	RAISE 12	RAISE 13	RAISE 27	
	RAISE 12	ALL-IN 100	ALL-IN 100	ALL-IN 100	
	ALL-IN 100				

[NL500 6-Max Cash, 100bb] BTN vs BB 4BP. Flop is 8♥ 4♣ 2♦.

Which hand is least valuable for BB in this spot?

A: A♥ 2♥

B: T♠ T♥

C: 5♦ 4♦

D: 6♣ 5♣



BB EV on the flop

Correct answer:

B: T ♠ T ♥

TT is the least valuable hand. In fact, most overpairs are less valuable than other pairs or draws.



BTN range on the flop

Consider what BTN's value range looks like. It's mostly JJ+ overpairs.

BB needs to consider their outs against this value range.

Board pairs like 2x, 4x, or 8x have 5 outs to draw to two pair or a trips.
An open-end has 8 outs to outdraw these overpairs.

A hand like TT only has two outs against the value range. For this reason,
medium overpairs like 99/TT/JJ tend to have lower EV than other pairs or draws.



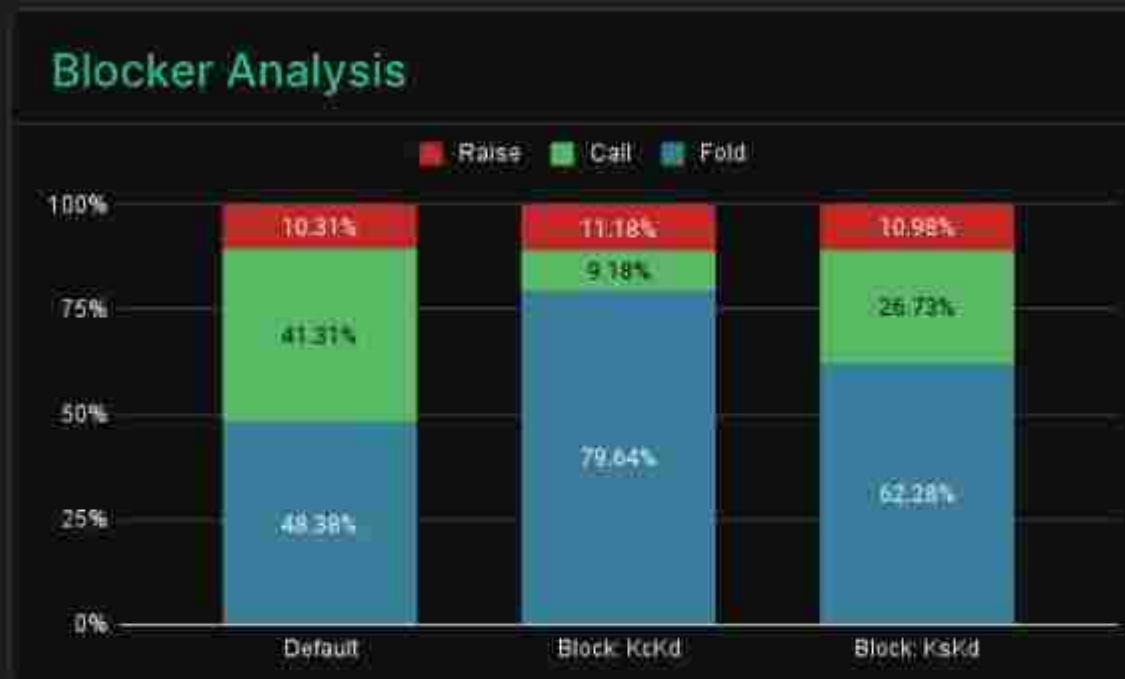
[NL50 6-Max Cash, 100bb] CO vs BB SRP, flop & turn check through, BB leads the river. Why does CO raise KK with a spade, but just calls KK without a spade?

- A: K ♠ blocks the missed flush draw
- B: K ♠ unblocks calls
- C: K ♠ blocks 3-bets
- D: K ♠ blocks folds



Correct answer:

B: K♠ unblocks calls



Villain's response when we hold different blockers

BB bets most of their K♠ on the turn, so their top pair hands mostly don't contain a K♠ in this line.

KK wants to get called by worse, and the BB mostly calls the raise with top pair.

Therefore, holding the king of spades is desirable with a value hand, as you block fewer calls.

FLOP	4.5bb	BB	BTN	BB	BTN
T	9	CHECK	CHECK	FOLD	FOLD
9	3	BET 1.5	BET 1	CALL	CALL
		ALLIN 23	BET 1.5	RAISE 5.25	ALLIN 23
			BET 2.25	RAISE 8.5	
			BET 3.4		
			BET 4.5		

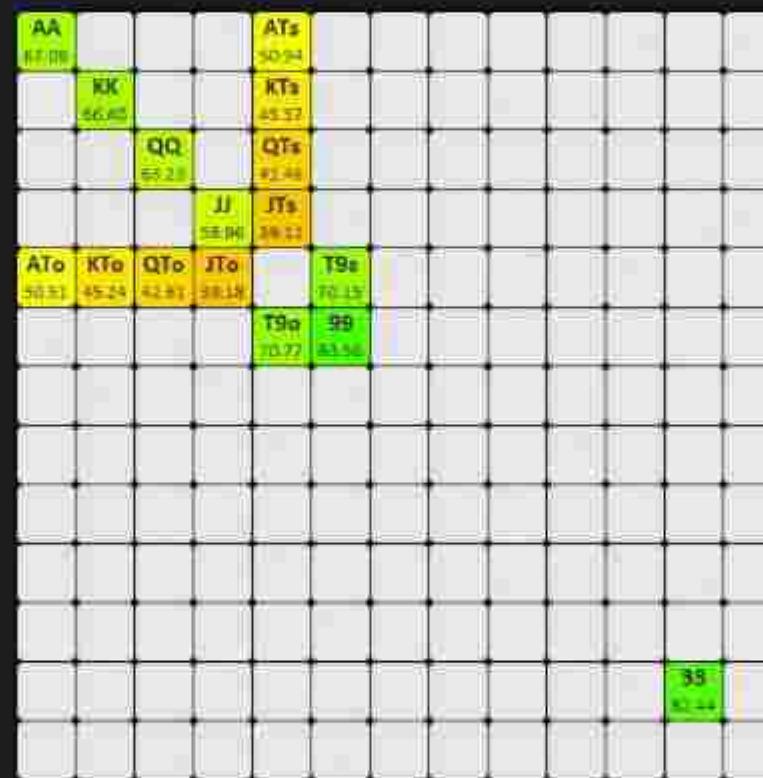
[25-25-25, Spin] BTN opens 2bb, BB calls. BTN c-bets 1.5bb, BB raises 8.5bb.
What hand class can BTN shove for value?

- A: Two pair+
- B: JJ+
- C: ATo+
- D: JTo+



Correct answer:

C: ATo+



AT is just barely ahead when called. Hands like JT-KT shove to deny equity, but are behind when called.



[HU SnG, 25bb] SB (IP) opens 2bb, BB calls. Flop is J♥ 8♦ 5♣.

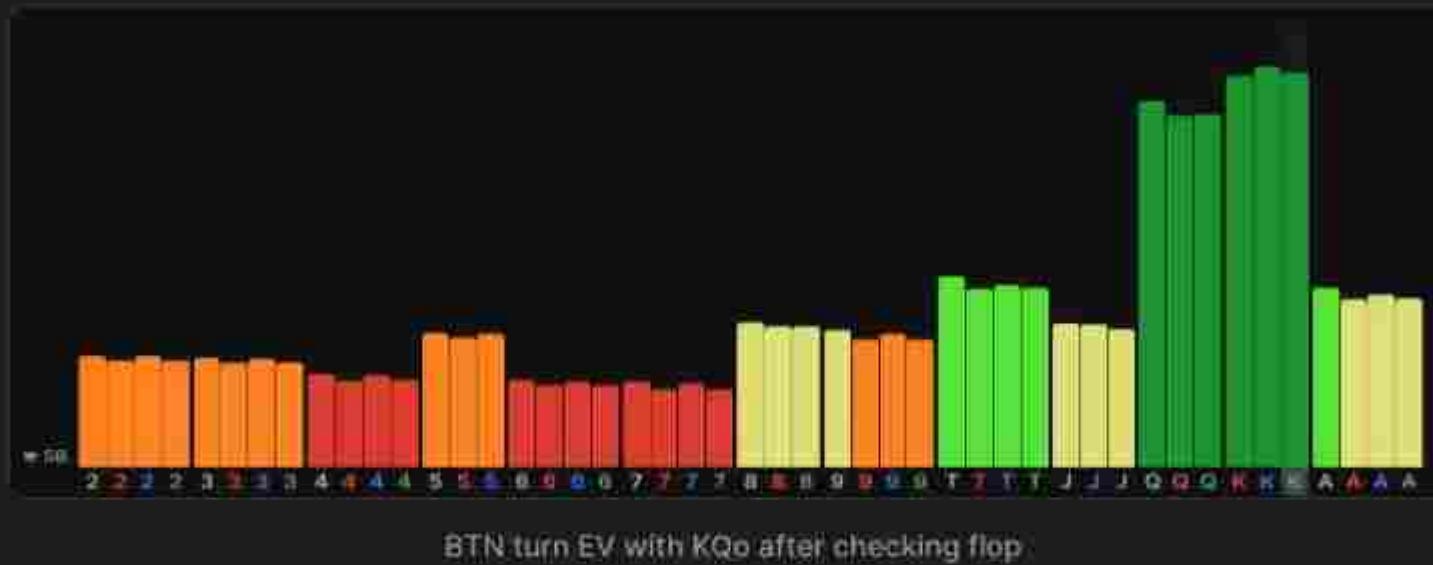
Which hand should SB check back on the flop?

- A: AA
- B: JTo
- C: KQo
- D: K7o



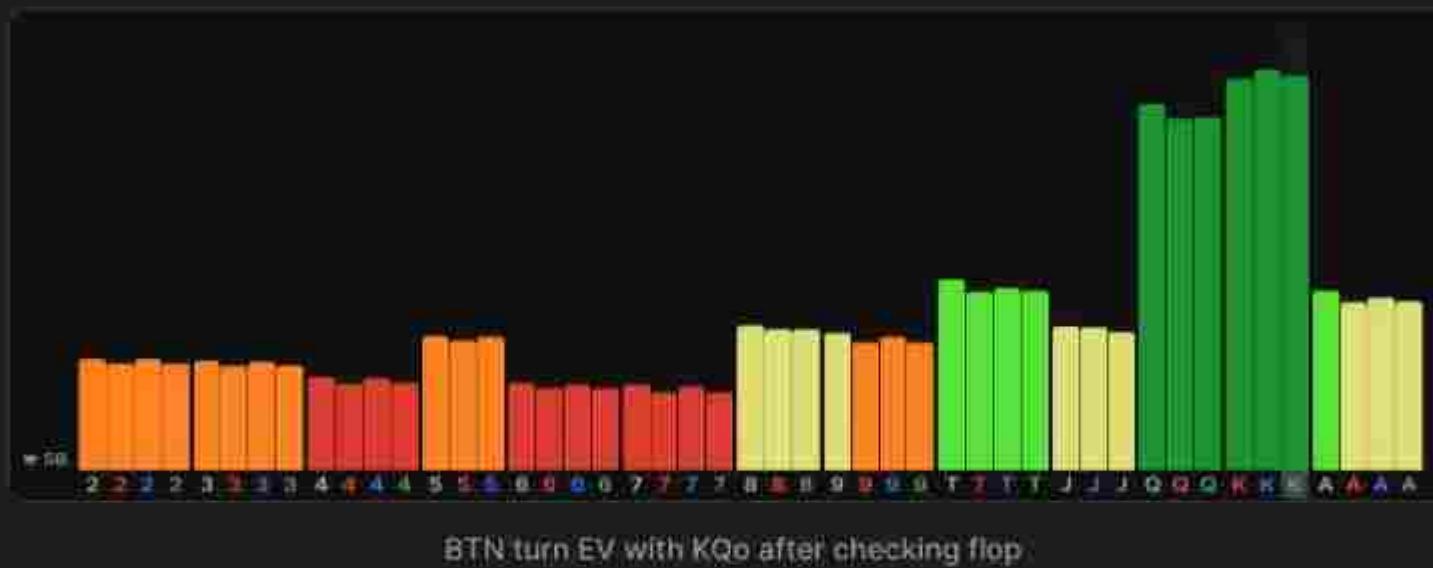
Correct answer:

C: KQo



KQo has reasonable showdown value and poor blockers.

This is a spot that calls for a polarized c-bet. AA and JT have enough value to c-bet, and K7o is weak enough to bluff.



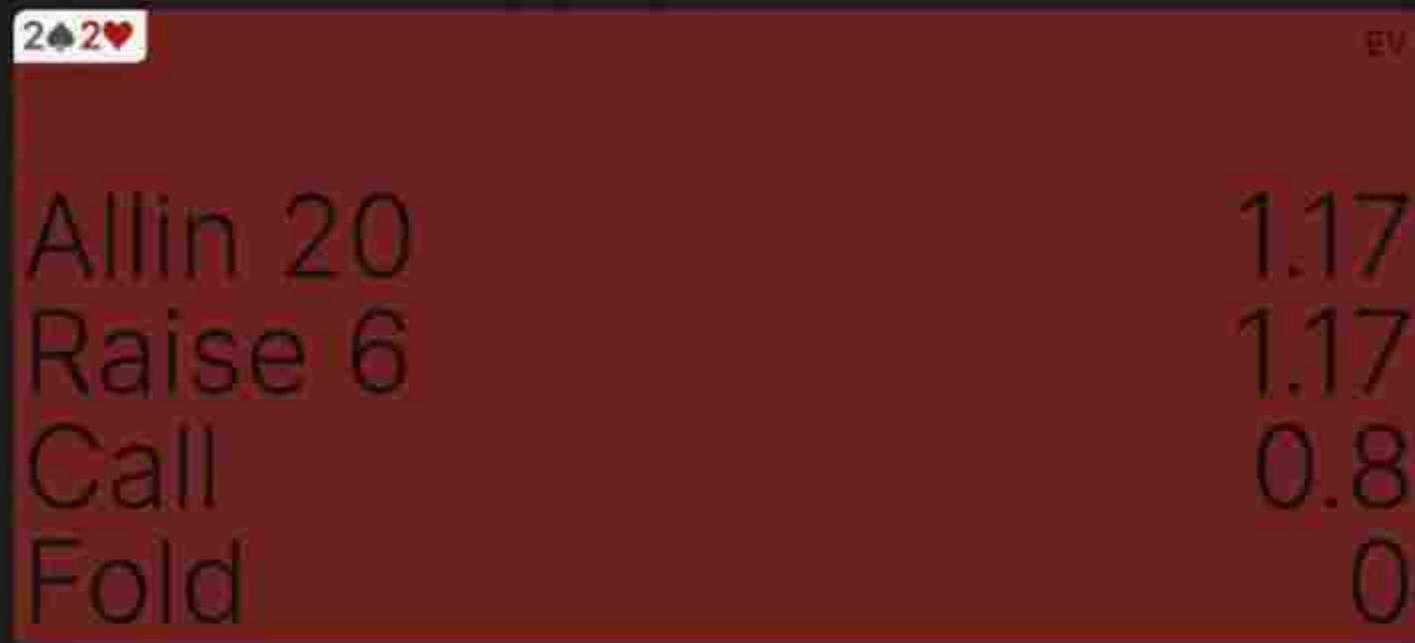
K7o also has better blockers than KQo as it blocks more of BB's continuation range.

Betting KQ folds out dominated hands like BB's weaker Kx and Qx. These are hands we can extract value from on Kx and Qx turns and rivers.

AA	AKs	AQs	Ad	ATs	ABs	ABs	ATs	Ad	A5s	A4s	A3s	A2s
AAo	KKs	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQs	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJ _s	KJ _s	QJ _s	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
AT _s	KTs	QTs	JTs	TT	TS							
AB _s	KBs	QBs	JBs	TBs	9Bs	8Bs	7Bs	6Bs	5Bs	4Bs	3Bs	2Bs
ABo	KB _s	QB _s	JB _s	TB _s	9B _s	8B _s	7B _s	6B _s	5B _s	4B _s	3B _s	2B _s
AB _s	KB _s	QB _s	JB _s	TB _s	9B _s	8B _s	7B _s	6B _s	5B _s	4B _s	3B _s	2B _s
A7 _s	K7s	Q7s	J7s	T7s	97s	87s	77s	67s	57s	47s	37s	27s
K6o	X6s	Q6s	J6s	T6s	96s	86s	76s	66s	56s	46s	36s	26s
A5o	X5s	Q5s	J5s	T5s	95s	85s	75s	65s	55s	45s	35s	25s
K4o	X4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44s	34s	24s
A3o	X3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33s	23s
A2o	X2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22s

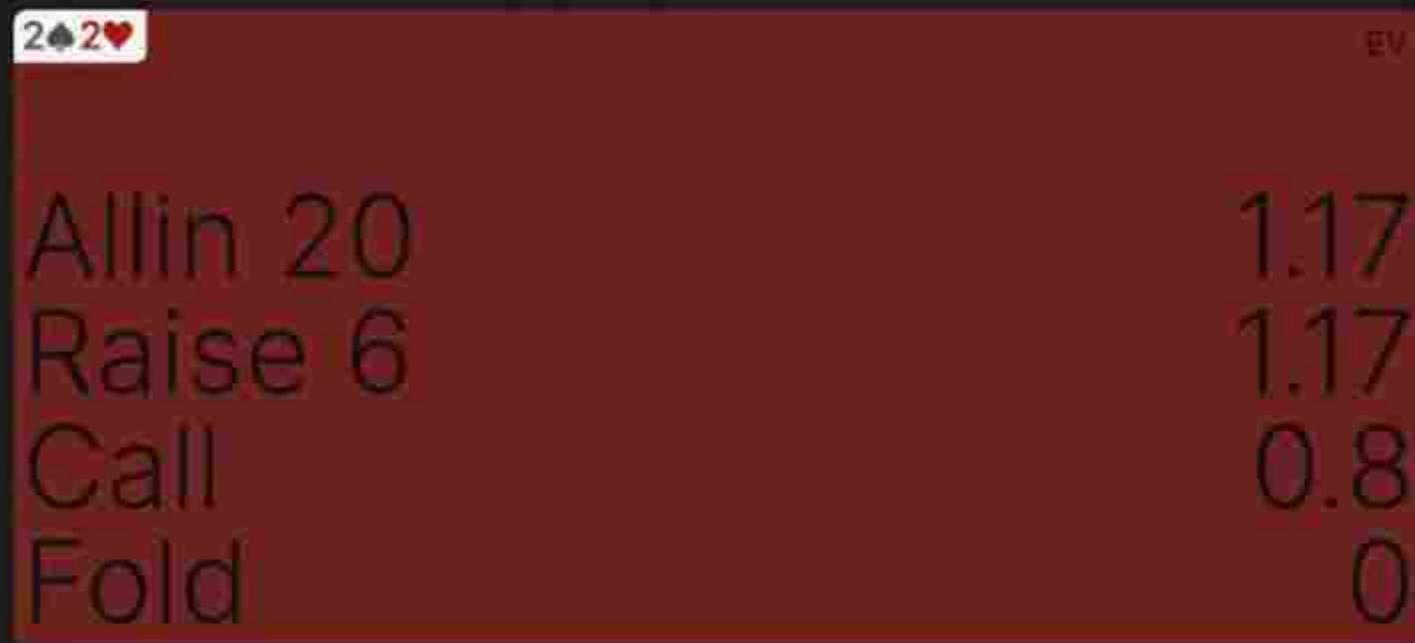
BB strategy facing SB limp

[8-Max MTT, 20bb] Folds to SB who limps. Action on BB. Why does BB prefer to shove with A2o and raise smaller with ATo+?



A2o would much rather generate folds than calls.

The stack depth is low enough that BB can establish a shoving range, however, a valuable hand like ATo would rather keep SB's calling range wide.



Hands like low pocket pairs and low offsuit Ace-x have reasonable equity against hands that call a shove, and struggle to realize their equity postflop.

FLOP	16.5bb	CO	BTN	CO	TURN	CO
A 3 2		CHECK BET 33% ALLIN 561%	CHECK BET 33% BET 50% BET 75% BET 125% ALLIN 561%	FOLD CALL RAISE 35% RAISE 55% ALLIN 318%		CHECK BET 20% BET 50% ALLIN 318%

[NL500 6-Max Cash, 100bb] CO opens 2.3, BTN raises 7.5, CO calls.
Flop is A 3 2 . BTN c-bets 33%, CO calls. Which turn card is CO most likely to donk on?

- A: 2
- B: 3
- C: 4
- D: A



Correct answer:

C: 4 ♦



CO flop calling range (left) vs BTN c-bet (right)

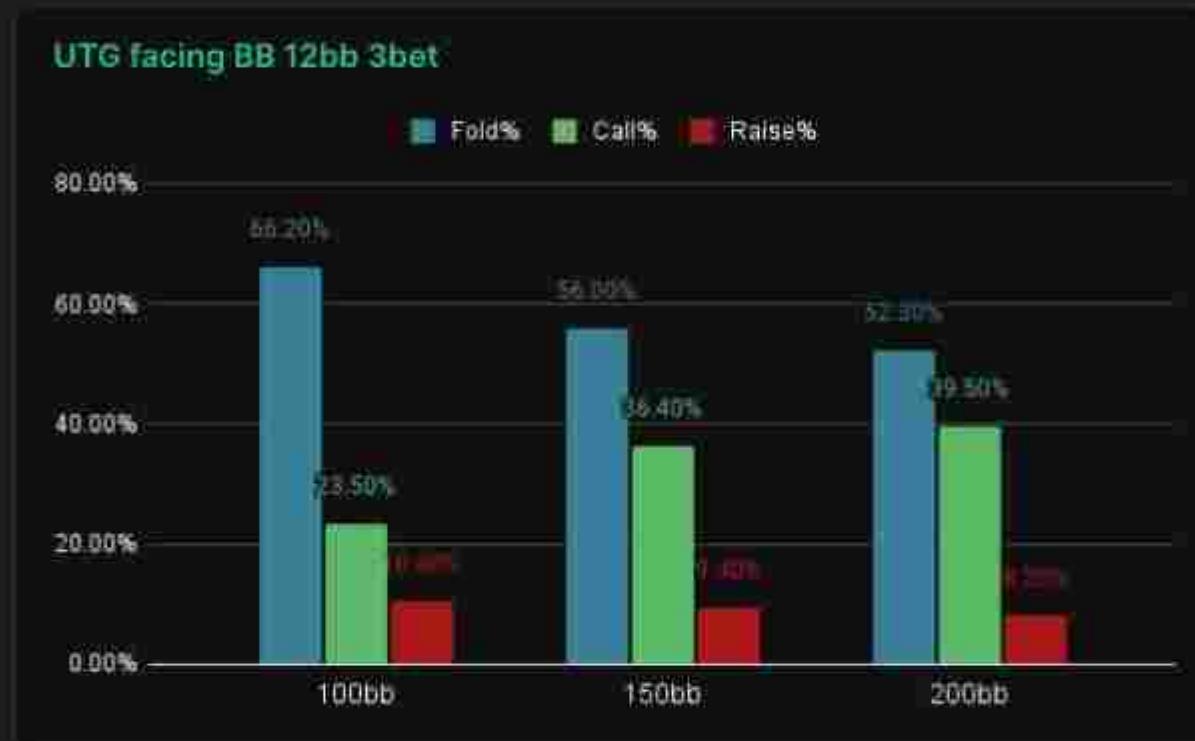
The turned 2 and 3 are unhelpful bricks.

An Ace helps the aggressor whose range is more top-heavy. A 4 or 5 helps CO as it gives them the advantage in straights and sets. This extra nut advantage allows them to donk.

UTG	HJ	CO
FOLD RAISE 2	FOLD RAISE 6.5	FOLD RAISE 6.5
BTN	SB	BB
FOLD RAISE 7.5	FOLD RAISE 10	FOLD CALL RAISE 12
		UTG
		FOLD CALL RAISE 22

[NL500 6-Max Cash] UTG opens 2, BB 3bets 12. How should UTG adjust their strategy as the stack depth increases from 100bb to 150bb to 200bb?

- A: Call more, raise less, fold less
- B: Call more, raise more, fold less
- C: Call less, raise less, fold more
- D: Call less, raise more, fold more



Correct answer:

A: Call more, raise less, fold less

Positional Edge \propto Stack Depth

As the effective stack increases, so does the positional advantage. This increases the EV of calling, so hands that were otherwise mixed raises or calls at 100bb become more inclined to call instead.

Lower pocket pairs and suited connectors improve their implied odds deeper and become pure calls.

Furthermore, as stacks get deeper UTG prefers to use a larger 4-bet size, which means their raising range tightens up.

FLOP	16.3bb	LJ	BTN	LJ
J	9	CHECK	CHECK	FOLD
	2	BET 10%	BET 10%	CALL
		BET 25%	BET 25%	RAISE 33%
		BET 50%	BET 50%	RAISE 55%
		BET 75%	BET 75%	ALLIN 118%
		BET 100%	BET 100%	

[8-Max MTT, 40bb] LJ opens 2.3, BTN raises 6.9, LJ calls. Flop is J♦ 9♥ 2♥. BTN c-bets 25%, action on LJ. Which hand makes the most sense to shove with?

- A: J ♠ J ♣
- B: Q ♥ T ♥
- C: A ♥ J ♣
- D: A ♠ J ♣



Correct answer:

D: A ♠ J ♣

All other hands prefer to simply call.

AJo without a ♡ has significantly more to gain by shoving than the other hands.

A ♥ J ♣ has great equity realization, as holding the heart allows it to continue across most runouts.

J ♠ J ♣ is too strong to shove. It would rather keep villain's range wide, and has the unfortunate effect of blocking many hands that would call a shove.

Q ♥ T ♥ may look like a draw, but it's actually ahead of 60% of BTN's range. This hand prefers to leverage the implied odds of a call rather than force fold equity with a shove.

SB	BB	FLOP	6bb	SB	BB
FOLD	FOLD			CHECK	CHECK
CALL	CALL			BET 25%	BET 25%
RAISE 3	RAISE 8			BET 44%	BET 44%
ALLIN 25	ALLIN 25	8 7 5		BET 69%	BET 69%
				BET 100%	BET 100%
				BET 150%	BET 150%

[Spin & Go, 25-25-25] SB opens 3, BB calls. Flop is 8♦ 7♦ 5♦ and checks through. Which turn card should SB lead most often?

- A: 6♦
- B: 9♣
- C: Q♥
- D: A♠



Correct answer:

D: A ♠



SB checks a significant amount of Ace-X hands on the flop.

Turns which improve draws such as a 6 or 9 tend to help BB's range as they have more of these middling cards in their check-back range.

HJ	CO	BTN	SB	BB	FLOP	5.5bb
FOLD	FOLD	FOLD	FOLD	FOLD		
RAISE 2	CALL	CALL	CALL	CALL		
ALLIN 100	RAISE 6.5	RAISE 7.5	RAISE 13	RAISE 13.5		
	ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100		

[NL500 6-Max Cash, 100bb] HJ opens 2, BTN calls. Which of these flops is closest to a range-bet for HJ?

- A: K♦ Q♦ 2♣
- B: A♦ A♣ T♥
- C: A♥ Q♦ 2♣
- D: A♦ J♥ 8♥

Flops	↓	Strategy	Check	Bet 33%	Bet 50%	Bet 75%	Bet 125%	Allin 1782%
D HJ vs BTN			71.7	19.4	6	1.7	1.2	0
T Filtered 0%			4.1	68.1	25.9	1.4	0.5	0
K♦Q♦2♣			4.1	68.1	25.9	1.4	0.5	0
A♦A♠T♥			33.9	60.2	5.5	0.2	0.1	0
A♥Q♦2♣			53.1	34.6	8.7	2.9	0.7	0
A♦J♥8♥			98.3	1.1	0.3	0.2	0.1	0

Correct answer:

A: K♥Q♦2♣



HJ has a lot more Kx in their range than BTN.

This gives them a significantly bigger advantage on King high flops.



Furthermore, King-x top pair is more inclined to bet for protection than Ace-x top pair.

A common mistake players make is betting too often against IP cold-callers, but these King-x boards are the exception.

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD RAISE 23 ALLIN 100	BTN FOLD CALL ALLIN 100
SB FOLD CALL ALLIN 100	FLOP 48.5bb	SB CHECK BET 10% BET 25% BET 50% BET 75% ALLIN 159%	BB CHECK BET 10% BET 25% BET 50% BET 75% ALLIN 159%

[NL500 6-Max Cash, 100bb] BTN opens 2.5, SB 3-bets 12, BB 4-bets 23, BTN folds, SB calls. How often should BB c-bet the flop on average?

- A: 40%
- B: 55%
- C: 70%
- D: 90%+



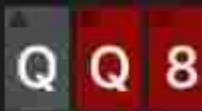
Correct answer:

D: 92.7%



Cold 4-bet ranges are extremely strong.

Cold 4-bets tend to be much more linear compared to regular 4-bets.

	CO FOLD RAISE 2.3 ALLIN 50	BTN FOLD CALL RAISE 6.9 ALLIN 50	SB FOLD CALL RAISE 15 ALLIN 50	BB FOLD CALL RAISE 15 ALLIN 50	CO FOLD CALL RAISE 15 ALLIN 50	FLOP 16.3bb 
BTN CHECK BET 10% BET 25% BET 50% BET 75% BET 100%	CO FOLD CALL RAISE 33% RAISE 55% RAISE 83% ALLIN 159%	TURN 24.5bb 	CO CHECK BET 15% BET 40% ALLIN 159%	BTN CHECK BET 10% BET 25% BET 50% BET 75% BET 100%	CO FOLD CALL ALLIN 55%	RIVER 49bb  CO CHECK BET 10% BET 36% ALLIN 55%

[8-Max MTT, 50bb] CO opens 2.3, BTN raises 6.9, CO calls. BTN c-bets 25% flop, 50% turn, the board runs out Q ♠ Q ♥ 8 ♥ 7 ♥. Which river card should the CO consider donk shoving?

- A: 2 ♥
- B: 8 ♦
- C: 9 ♠
- D: Q ♣



Correct answer

B: 8



The CO donk shoves most of its range on any rivered 8.

This is because a huge portion of CO's range by the river consists of 8-x, whereas the BTN has virtually no 8-x.

On an 8♦, the CO has 54% boats+ compared to BTN's 19%.



Furthermore, the BTN's flushes and overpairs are no longer valuable on a double-paired board.

It's worth noting that there's only a 55% pot-sized bet remaining on the river.

SB	BB	SB	FLOP	20bb	BB
FOLD	FOLD	FOLD			CHECK
RAISE 2.5	CALL	CALL			BET 20%
ALLIN 100	RAISE 10	RAISE 24			BET 33%
	ALLIN 100	ALLIN 100			BET 50%
					BET 75%
					BET 100%

[HU Cash, 100bb] SB (IP) opens 2.5, BB 3-bets to 10bb, SB calls.

Which flops should BB c-bet more frequently?

- A: 8 high flops
- B: T high flops
- C: Q high flops
- D: A high flops



Correct answer:

A: 8 high flops



Unlike 6-max, in HU 3-bet pots the aggressor actually has an advantage on middling cards. This is due to the wide linear 3-bet range.

The graph above shows the difference between card distribution of each range.



Ace high flops are an exception, as these flops create the least urgency to force fold equity since top pair is less vulnerable.

BTN	25	SB	8.5
FOLD		FOLD	
CALL		CALL	
RAISE 2		ALLIN 9	
ALLIN 25			

[Spin & Go, 25-9-25] BTN opens 2, SB (shortstack) calls, action on BB.
How should BB construct their squeezing range?

- A: Polarized
- B: Merged
- C: Linear
- D: Depolarized

AA	AKs	AQs	AJs	ATs	ABs	ABs	A2s	52s	43s	44s	AKs	A2s	A2s
AA	KK	KQs	KJs	KTs	KQs	KJs	KTs	ATs	K5s	K4s	K4s	K3s	K2s
AQs	KQs	QQ	QJs	QTs	QJs	QTs	Q2s	52s	Q2s	Q4s	Q4s	Q3s	Q2s
AJs	KJs	QJs	JJs	JTs	JTs	JTs	J2s	52s	J2s	J3s	J3s	J2s	J2s
ATs	KTs	QTs	JTs	TTs	TTs	TTs	TTs	52s	TTs	TTs	TTs	TTs	TTs
ABs	KQs	QQs	QJs	QTs	88s	88s	88s	88s	88s	84s	84s	83s	83s
A2s	K8s	Q8s	Q8s	T8s	88s	88s	88s	88s	88s	85s	85s	84s	83s
52s	K8s	Q7s	J7s	T7s	87s	87s	77s	77s	77s	76s	76s	75s	75s
43s	K9s	Q9s	J9s	T9s	89s	89s	77s	77s	77s	76s	76s	75s	75s
44s	K9s	Q9s	J9s	T9s	99s	99s	77s	77s	77s	76s	76s	75s	75s
AKs	K10s	Q10s	J10s	T10s	85s	85s	75s	75s	75s	74s	74s	73s	73s
A2s	K10s	Q10s	J10s	T10s	95s	95s	75s	75s	75s	74s	74s	73s	73s
52s	K10s	Q10s	J10s	T10s	84s	84s	74s	74s	74s	73s	73s	72s	72s
43s	K10s	Q10s	J10s	T10s	94s	94s	74s	74s	74s	73s	73s	72s	72s
44s	K10s	Q10s	J10s	T10s	95s	95s	74s	74s	74s	73s	73s	72s	72s

Correct answer:

C: Linear



SB strategy after BB shove BTN fold

Squeeze ranges tend to be quite linear in most spots.

BB not concerned about capping their calling range, as the extra caller prevents BTN from running over them over.



SB-strategy after BB-shove BTN fold

In this case, the short-stacked (9bb) SB has to call quite wide given the pot odds, which means BB can get more value with the top of their range, and less fold equity with bluffs.

BTN FOLD RAISE 2.5 ALLIN 100	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	BTN FOLD CALL RAISE 27 ALLIN 100	FLOP 26.5bb 	BB CHECK BET 33% BET 50% BET 75% BET 125% ALLIN 328%
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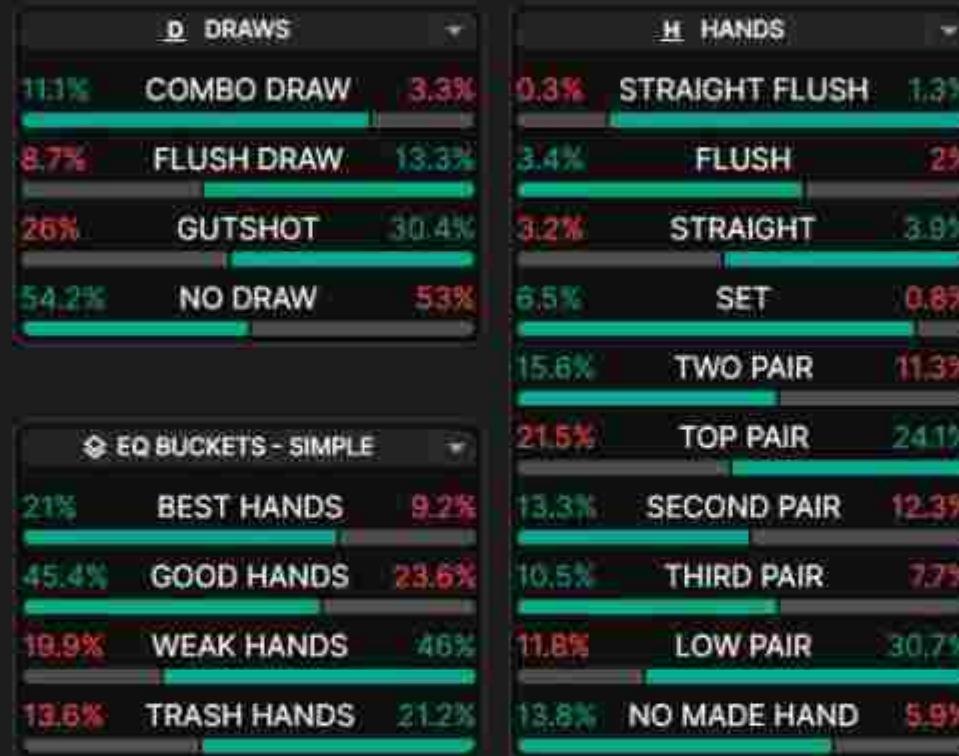
[NL500 6-Max Cash, 100bb] BTN opens 2.5, BB 3-bets 13, BTN calls. Flop is A♥ K♥ Q♥. What c-bet size does BB prefer to use with their two pair hands like AK and AQ?

- A: 33%
- B: 50%
- C: 75%
- D: 125%



Correct answer:

D: 125%



Monotone boards are known for generally preferring smaller c-bets in most pots. In this scenario however, AKQ blocks most of the natural flushes in both ranges.

What you're left with is a massive nut advantage against an opponent who has a ton of draws.

FLOP	5.5m	BB	HJ	TURN	5.5m	BB	HJ	RIVER	5.5m	BB	HJ
8		CHECK	CHECK			CHECK	CHECK	Q		CHECK	FOLD
7		BET 33%	BET 25%	J		BET 25%	BET 25%			BET 18%	CALL
6		ALLIN 327%	RET 50%			RET 50%	RET 50%			RET 45%	ALLIN 42%
		BET 75%	BET 100%			BET 75%	BET 100%			BET 75%	
		BET 100%	BET 150%			BET 100%	BET 150%			BET 100%	
		BET 150%				BET 150%	BET 150%			BET 155%	

[MTT 20bb] HJ opens 2, BB calls. Checks down to river, 8♦ 7♦ 6♦ J♦ Q♣. BB leads the river for 155% pot. Which hand class should HJ consider shoving for value?

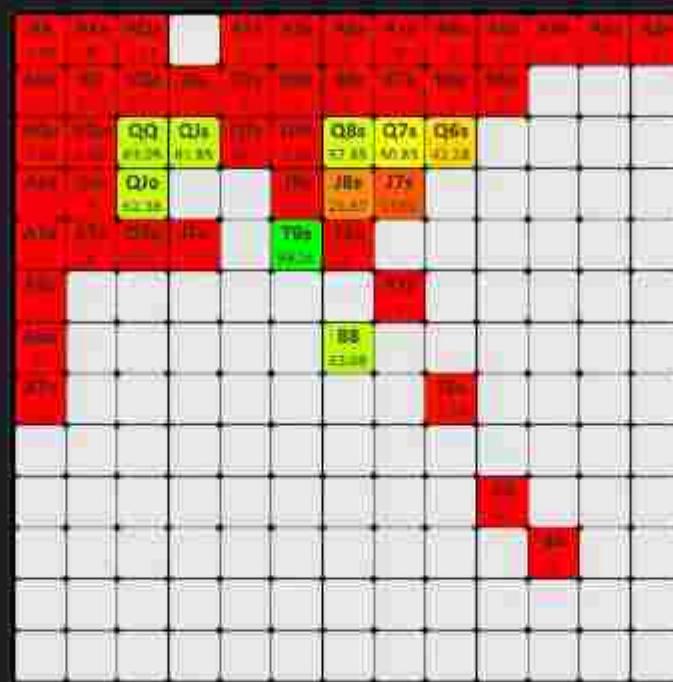
- A: Overpair+
- B: Two pair+
- C: Sets+
- D: Only Straights



Correct answer:

B: Two pair+

Specifically two pair with a Queen.



The easiest way to measure the "value line" is to find hands which have at least 50% equity against BB's felting range.

That is to say, when we shove and get called, which hands are ahead? The weakest hand that can shove for value is Q7.

BB calls with many worse 2-pair hands such as J8/J7/78.



[NL500 6-Max Cash, 100bb] CO opens 2.3, BB calls. Checks down to river. The board runs out J♦ 8♦ 7♦ 3♣ 9♦. What's the strongest hand BTN should consider checking back with?

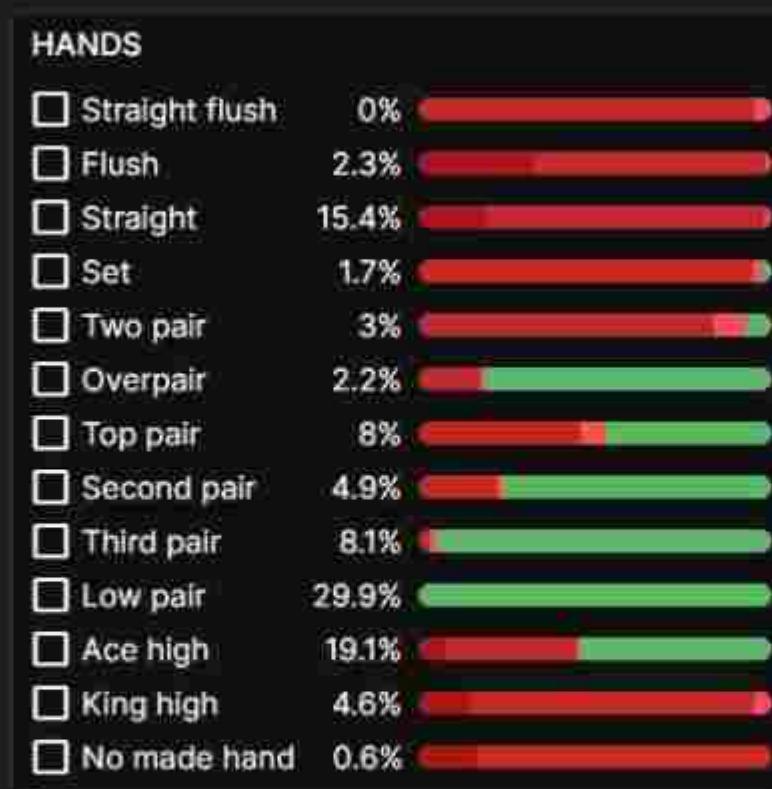
- A: A ♣ A ♠
 - B: 9 ♣ 8 ♣
 - C: 9 ♠ 9 ♥
 - D: Q ♥ J ♦



Correct answer:

A: A ♣ A ♠

Should consider checking back the river.



Two pair+ ought to bet for value despite the dangerous runout. Ranges are wide enough in this line.

A♣ A♠ is actually weaker than Q♥ J♦ on this board due to the lack of flush/straight blockers.

	SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	SB FOLD CALL RAISE 24 ALLIN 100	BB FOLD CALL RAISE 42 ALLIN 100
FLOP 48bb	BB CHECK BET 15% BET 30% BET 50% BET 75% ALLIN 158%	SB FOLD CALL RAISE 33% ALLIN 110%	TURN 62.4bb	BB CHECK BET 15% BET 30% BET 50% ALLIN 110%
3 4 5			8	SB FOLD CALL ALLIN 50%

[HU Cash, 100bb] SB (IP) opens, BB 3-bets, SB 4-bets, BB calls.

Flop is 5♦ 4♦ 3♦. BB donks 15%, SB calls. Turn 8♥. BB leads 30%.

Which hand should SB consider shoving? (50% pot-sized shove)

- A: A♦ K♦
- B: T♠ T♣
- C: K♠ K♦
- D: K♣ K♠

	AA	AKo	AQo	Ado	Tt	Ads	Aso	ATo	Ads	Aso	ATs	Ado	Aso	ATs	Ado
AA	AA	AAKo	AAQo	AAAdo	Tt	Ado	Aso	ATo	Ado	Aso	ATs	Ado	Aso	ATs	Ado
AKo	AKo	AAKo	AAQo	AAAdo	Tt	Ado	Aso	ATo	Ado	Aso	ATs	Ado	Aso	ATs	Ado
AQo		AAQo	AAQo	AAAdo	Tt	Ado	Aso	ATo	Ado	Aso	ATs	Ado	Aso	ATs	Ado
Ado			AAQo	AAAdo	Tt	Ado	Aso	ATo	Ado	Aso	ATs	Ado	Aso	ATs	Ado
AJs	KJs	QJs	JJs												
ATo	KTo	QTo	JTo	TT	TT	TT	TT	TT	TT	TT	TTs	TTs	TTs	TTs	TTs
A9o	K9o	Q9o	J9o	T9o	99	99s									
A8o	K8o	Q8o	J8o	T8o	98o	88	88	88	88	88	88	88	88	88	88
A7o	K7o	Q7o	J7o	T7o	87o	87s	87s	87s	87s	87s	74s	74s	74s	74s	74s
A6o	K6o	Q6o	J6o	T6o	86o	86s	86s	86s	86s	86s	74s	74s	74s	74s	74s
A5o	K5o	Q5o	J5o	T5o	85o	85s	85s	85s	85s	85s	74s	74s	74s	74s	74s
A4o	K4o	Q4o	J4o	T4o	84o	84s	84s	84s	84s	84s	74s	74s	74s	74s	74s
A3o	K3o	Q3o	J3o	T3o	83o	83s	83s	83s	83s	83s	74s	74s	74s	74s	74s
A2o	K2o	Q2o	J2o	T2o	82o	82s	82s	82s	82s	82s	74s	74s	74s	74s	74s

Correct answer:

B: T ♠ T ♣



When SB shoves with $T\spadesuit T\clubsuit$ and gets called, they only have 30% equity.

Vulnerable medium-strength hands often fast-play to realize equity in low SPR scenarios.

TT is the most vulnerable hand of these options, and cannot call a shove on the majority of rivers.



EV facing SB shove

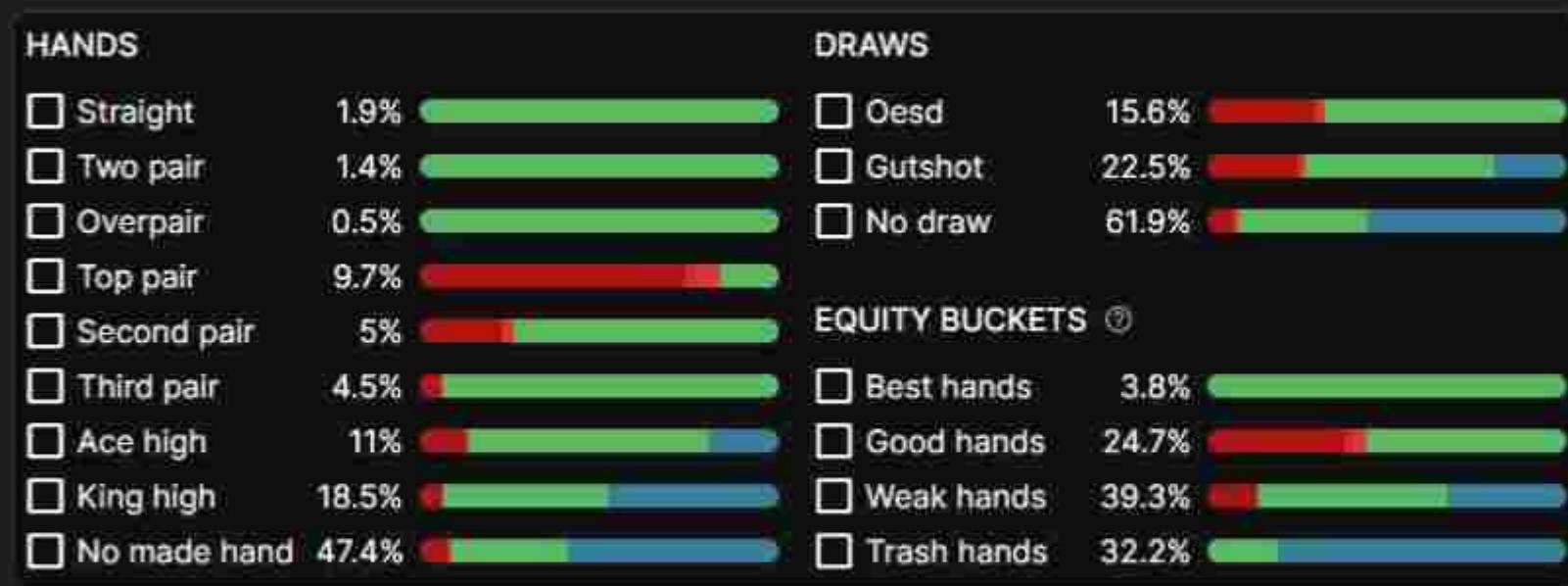
KK is strong enough to bluff-catch most rivers and tends to block more bluffs.

The nuts A♦ K♦ benefits more from keeping villain's range wider through a call, and always has the option to bet the river if BB checks.



[Spin & Go, 16-16-16] BTN open 2, BB call. Flop is 653r. BTN c-bets 50% pot.
Which hand class would BB prefer to check-raise shove for value?

- A: Straight draw
- B: Top pair
- C: Two pair
- D: Straight



Correct answer:

B: Top Pair



Top pair is the perfect mixture of strong enough to extract value from worse, and vulnerable enough to want to generate fold equity at this stack depth.



Stronger hands like two pair and straights generate more EV as slow plays, as the stacks are shallow and ranges are wide.

Straight draws also shove sometimes, but these are semi-bluffs not value raises.

FLOP	5.5bb	BB	BTN	BB	TURN	19.3bb	BB
A 9 7		CHECK BET 33%	CHECK BET 33% BET 50% BET 75% BET 125%	FOLD CALL RAISE 50% RAISE 100% ALLIN 469%			CHECK BET 20% BET 50% ALLIN 469%

[NL500 6-Max Cash, 100bb] BTN opens 2.5, SB 3-bets 12 with A♦ K♠, BTN calls. Flop is A♠ 9♥ 7♠. SB c-bets 33%, BTN calls.

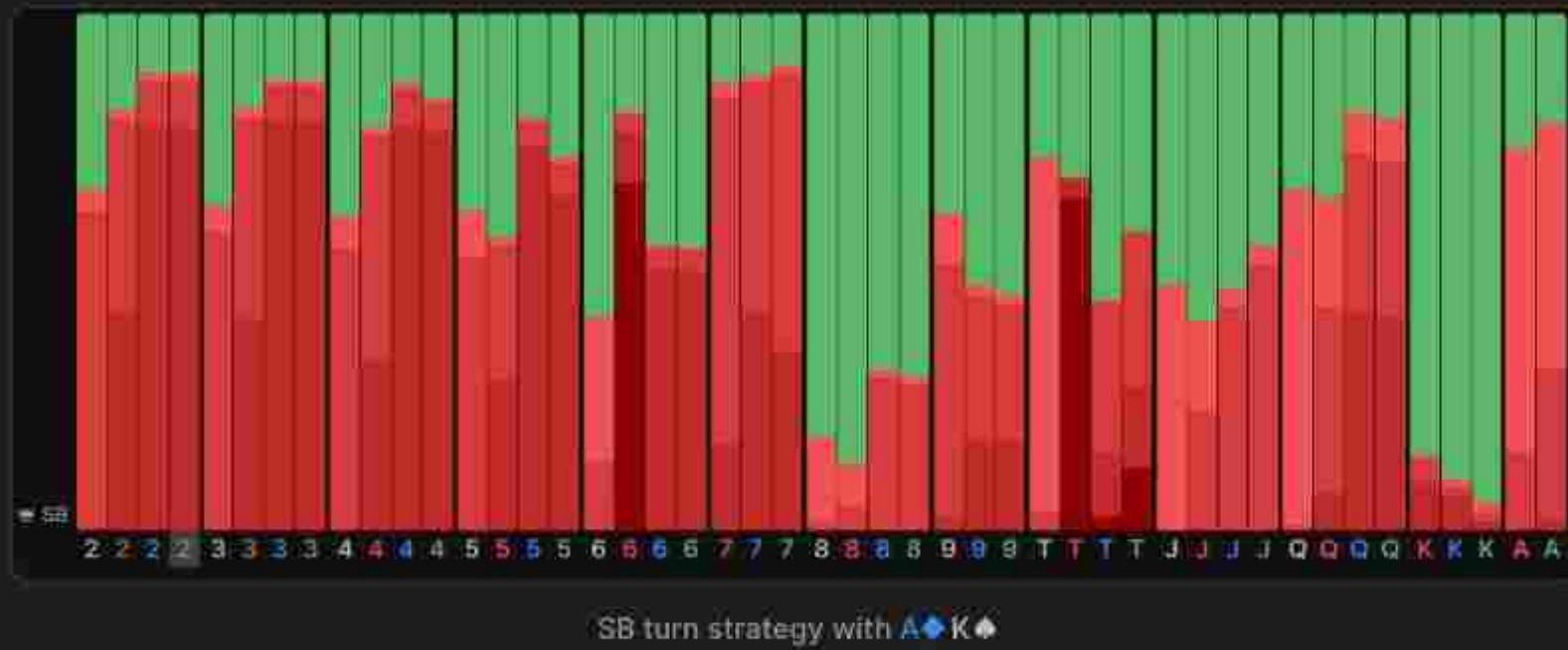
Which turn cards should SB barrel most often with A♦ K♠?

A: 2♣

B: 6♠

C: 8♥

D: K♣



Correct answer:

A: 2 ♣



The brick 2♣ allows you to extract maximum value with top pair top kicker.

The K♣ gives you top-two and is the highest EV turn card for this hand, but it hard-blocks BTN's calling range which makes it hard to extract value with a lead.

The 6♠ and 8♥ complete many draws in both ranges which downgrades the value of AK, which causes it to c-bet less often.



MTT – BB strategy vs CO open

[Cash/MTT 100bb] CO opens 2.3bb, action on BB. Why does BB call so much wider in MTTs compared to cash games?

AA	AKs	AQs	AJs	ATs	A9s	ABs	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K8s	K9s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJp	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTs	Qtos	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

6max cash - BB strategy vs CO open

	Call	To win	Pot share required
MTT	1.3	6.1	21%
Cash	1.3	4.5	29%

MTTs have antes and don't have rake.

BB only needs to capture 21% of the pot in an MTT, but they need 29% in a cash game.

In summary, BB defends more hands in MTTs because they get better pot odds.

SB	BB	FLOP	5bb	BB	SB
FOLD	FOLD			CHECK	CHECK
RAISE 2.5	CALL	A	+ 5bb	BET 33%	BET 33%
ALLIN 100	RAISE 10	J		ALLIN 1950%	BET 67%
	ALLIN 100	T			BET 100%
					BET 150%
					ALLIN 1950%

[HU Cash, 100bb] SB (IP) opens 2.5, BB calls. Flop is A♥ J♦ T♣. SB overbets 150% pot. Which of these hands should BB consider calling?

- A: A♦ 4♦ 4♣
- B: T♠ 9♥
- C: K♣ 2♣
- D: K♣ 9♦



Correct answer:

C: K ♣ 2 ♣



When facing polarized attacks, the ability to outdraw value becomes more important than raw hand strength.



Villain will continue to apply pressure on later streets, so draws tend to overperform compared to medium made hands.

K♣2♣ has a gutshot and a BDFD, which performs better against the top of villain's range than the other 3 hands.

FLOP	5.5bb	BB	BTN	BB	TURN 19.3bb	BB
A Q 7		CHECK BET 33%	CHECK BET 33% BET 50% BET 75% BET 125%	FOLD CALL RAISE 50% RAISE 100% ALLIN 469%		CHECK BET 20% BET 50% ALLIN 469%

[NL500 6-Max Cash, 100bb] BTN opens 2.5 BB calls. Flop is A♥ Q♦ 7♦. BTN overbets 125%, BB calls. Which turn card should BB consider block-bet donking?

A: A♦

B: 9♦

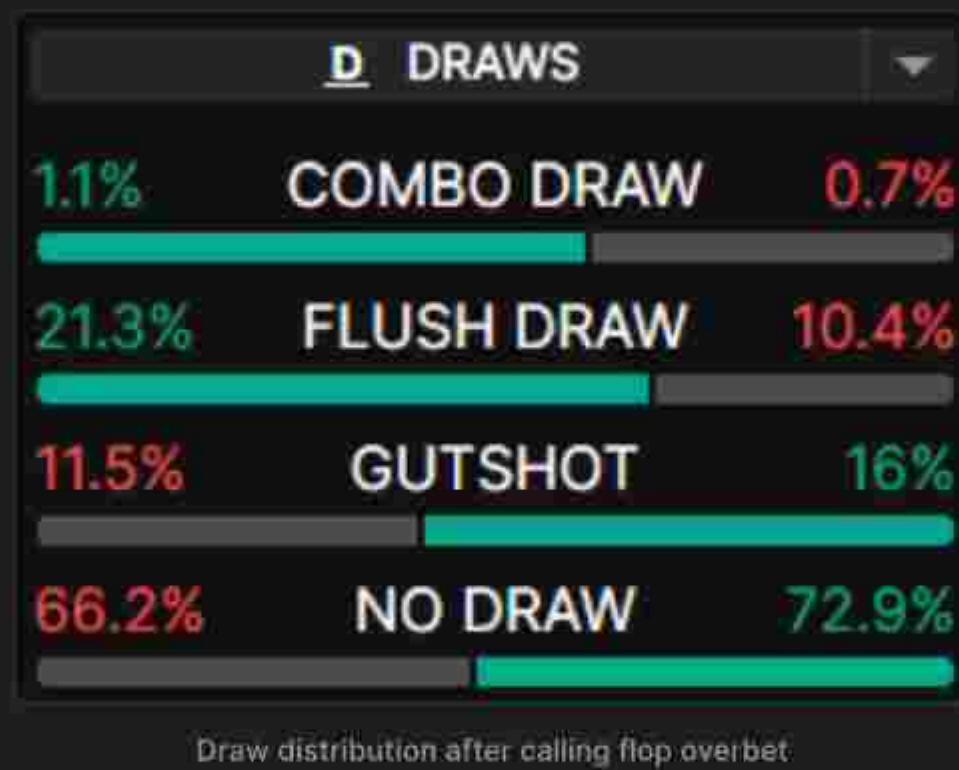
C: T♥

D: 7♥

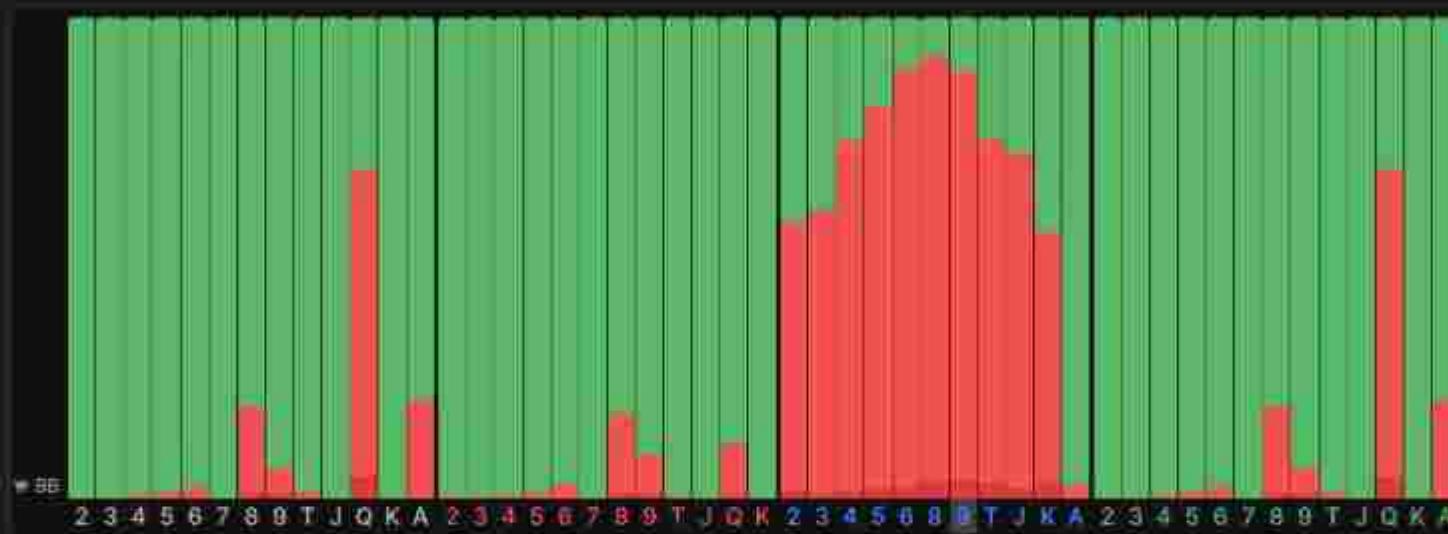


Correct answer:

B: 9 ♦



BB donks most flush-completing turns. The overbet narrows BB's range significantly, so they end up with a higher proportion of flush draws after calling the flop bet.



The 7 doesn't help BB as much since they fold most 7x on the flop.

The T♥ is somewhat neutral, completing KJ gutshots in both ranges.

The A♦ completes the flush draw, but it also gives BTN a number of AQ/A9/A7 boats which mitigates the nut advantage needed to donk.

	FLOP 4.5	BB 13	BTN 13	BB 13
		CHECK BET 1.5 (33%) ALLIN 13 (285%)	CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (75%) BET 4.5 (100%)	FOLD CALL RAISE 3.5 (98%) RAISE 6 (77%) ALLIN 13 (105%)
TURN 6.5	BB 12	BTN 12	RIVER 6.5	BB 12
		CHECK BET 1.3 (20%) ALLIN 12 (185%)	CHECK BET 1.3 (20%) BET 2.15 (33%) BET 3.25 (50%) BET 4.9 (75%) BET 6.5 (100%)	BTN 12 FOLD CALL ALLIN 12 (37%)

[Spin & Go, 15-15-15] BTN (hero) opens, BB calls. Flop is $K\heartsuit 8\heartsuit 8\diamondsuit$. BTN bets 1bb on the flop, BB calls. Turn is the $A\clubsuit$, checks through. River is the $3\diamondsuit$, BB bets 85%. BTN holds KQo. Would you rather bluff-catch with or without the $Q\heartsuit$?

- A: Prefer to call with the $Q\heartsuit$
- B: Prefer not to have the $Q\heartsuit$

Hand	Strategy	Range	EV	Equity	EQR	Blocker
K♦Q♣		30 %	0	31.4 %	0 %	0 1
K♣Q♦		30 %	0	31.4 %	0 %	0 1
K♣Q♠		29.9 %	0	31.4 %	0 %	0 1
K♦Q♠		29.9 %	0	31.4 %	0 %	0 1
K♣Q♦		26.6 %	0	31.4 %	0 %	0 1
K♣Q♦		26.6 %	0	31.4 %	0 %	0 1
K♣Q♥		35.6 %	0	30.1 %	0 %	0 1
K♦Q♥		34.6 %	0	30.1 %	0 %	0 1
K♣Q♥		35.6 %	0	30.1 %	0 %	0 1
K♥Q♦		0 %	0	0 %	0 %	
K♥Q♦		0 %	0	0 %	0 %	
K♥Q♦		0 %	0	0 %	0 %	

Correct answer:

B: Prefer not to have the Q♥

Hand	Strategy	Range	EV	Equity	EQR	Blocker
K♦Q♣		30 %	0	31.4 %	0 %	0 1
K♠Q♣		30 %	0	31.4 %	0 %	0 1
K♣Q♦		29.9 %	0	31.4 %	0 %	0 1
K♦Q♠		29.9 %	0	31.4 %	0 %	0 1
K♣Q♦		26.6 %	0	31.4 %	0 %	0 1
K♠Q♦		26.6 %	0	31.4 %	0 %	0 1
K♣Q♥		35.6 %	0	30.1 %	0 %	0 1
K♦Q♥		34.6 %	0	30.1 %	0 %	0 1
K♠Q♥		35.6 %	0	30.1 %	0 %	0 1
K♥Q♣		0 %	0	0 %	0 %	
K♥Q♦		0 %	0	0 %	0 %	
K♥Q♠		0 %	0	0 %	0 %	

The Q♥ blocks missed flush draws in BB's range.

This means BB is more likely to hold a value hand because we block their bluffs.

CO	BTN	SB	BB	CO
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.2	CALL	CALL	CALL	CALL
ALLIN 35	RAISE 6.6	RAISE 8.3	ALLIN 35	ALLIN 35
FLOP 18.6	SB	CO	TURN 18.6	SB
T 9 3	CHECK	CHECK	Q	CHECK
	BET 1.85 (10%)	BET 1.85 (10%)		BET 1.85 (10%)
	BET 4.65 (25%)	BET 4.65 (25%)		BET 4.65 (25%)
	BET 9.3 (50%)	BET 9.3 (50%)		BET 9.3 (50%)
	BET 13.95 (75%)	BET 13.95 (75%)		BET 13.95 (75%)
	BET 18.6 (100%)	BET 18.6 (100%)		BET 18.6 (100%)

[8-Max MTT, 35bb] CO open 2.2, SB 3-bet 8.3, CO Call. Flop is T ♦ 9 ♦ 3 ♦ and checks through. Turn is the Q ♦, putting two flush draws out there. SB is considering betting the turn.

Q1: Should SB bet AA more or less often when they don't hold a flush draw blocker?

Q2: Should SB bet AJ more or less often when they don't hold a flush draw blocker?

Hand	Strategy	Range	EV	Equity	EQR	Blocker
A♥A♦		86.1 %	14.29	69.7 %	110.2 %	8
A♦A♣		33.5 %	14.14	68.4 %	111.1 %	7
A♦A♦		33.5 %	14.14	68.4 %	111.1 %	7
A♥A♣		76.8 %	13.5	69 %	106.7 %	7
A♦A♥		76.8 %	13.5	68 %	106.7 %	7
A♦A♣		9.9 %	13.73	68.7 %	110.7 %	5
A♥J♦		7.7 %	4.03	35.1 %	61.7 %	9
A♥J♣		7.7 %	3.82	34.8 %	59 %	9
A♥J♣		7.7 %	3.82	34.8 %	59 %	9
A♦J♥		0.1 %	3.63	34.6 %	56.4 %	9
A♦J♣		19 %	3.37	34.3 %	52.8 %	8
A♦J♦		19 %	3.37	34.3 %	52.8 %	8
A♦J♦		13.7 %	3.33	33.9 %	52.8 %	7
A♦J♣		13.7 %	3.33	33.9 %	52.8 %	7
A♦J♦		0.1 %	3.42	33.9 %	54.2 %	8
A♦J♦		0.1 %	3.42	33.9 %	54.2 %	8
A♦J♦		21.6 %	3.22	33.6 %	51.5 %	7
A♦J♦		21.6 %	3.22	33.6 %	51.5 %	7

Correct answer:

- Q1:** Bet **AA more often** when you don't hold a flush draw blocker
- Q2:** Bet **AJo less often** when you don't hold a flush draw blocker

Hand	Strategy	Range	EV	EQ %	EQR %	Value Removal	Trash Removal
A♠A♦		33.5	14.14	68.4	111.1	4	9
A♦A♣		33.5	14.14	68.4	111.1	5	9
A♥A♦		86.1	14.29	69.7	110.2	6	6
A♠A♥		76.8	13.5	68	106.7	4	7
A♥A♣		76.8	13.5	68	106.7	5	7
A♠A♣		9.9	13.73	66.7	110.7	3	10

AA is trying to get called by worse hands, whereas AJ is trying to generate folds.

Unblocking the flush draw means you get called more often. That's great for hands that want to get called like AA, but bad for bluffs like AJo.

SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	SB FOLD CALL RAISE 24 ALLIN 100	FLOP 20 	BB CHECK BET 4 (20%) BET 6.6 (33%) BET 10 (50%) BET 15 (75%) BET 20 (100%)
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[HU Cash, 100bb] SB/BTN opens 2.5, BB 3-bets to 10, SB calls. Flop is J♦ 9♥ 7♦. Why does AJo prefer to bet the flop when it has a low blocker score, while AQo prefers to bet with a higher blocker score?



Correct answer:

The blocker score measures how much EV you block in your opponent's range!



AJ is a value bet that wants to get called by worse. Value bets want to block less value in the opponent's range.

AQ is a bluff that wants to block calls. Bluffs prefer to block more value in the opponent's range.



[NL500 6-Max Cash, 100bb] BTN opens 2.5 BB calls. Flop is Q ♡ 9 ♠ 7 ♦.

Why does BTN prefer a smaller bet size with QQ and a larger bet size with KK?

- A: Blockers
- B: Vulnerability
- C: Hand strength
- D: Implied odds



Correct answer:

A: Blockers

Hand	Strategy	Range	EV	Equity	EQR	Blocker
Q♠ Q♦		100 %	13.45	93.7 %	260.9 %	10
Q♦ Q♣		100 %	13.45	93.6 %	261.2 %	10
Q♠ Q♣		100 %	13.25	93.6 %	257.3 %	10
Q♥ Q♣		0 %	0	0 %	0 %	
Q♥ Q♦		0 %	0	0 %	0 %	
Q♠ Q♥		0 %	0	0 %	0 %	
K♠ K♦		100 %	6.25	81.3 %	139.8 %	3
K♦ K♣		100 %	6.2	81.2 %	138.7 %	3
K♠ K♣		100 %	6.2	81.2 %	138.7 %	3
K♦ K♥		100 %	6.22	81.1 %	139.6 %	2
K♠ K♥		100 %	6.22	81.1 %	139.5 %	2
K♥ K♣		100 %	6.17	81 %	138.4 %	3

QQ blocks a significant portion of BB's continuation range, which makes it harder to extract value with a large bet.

KK blocks less of BB's continues, so it can extract more value with a larger bet.

The background features a dark gray gradient with two sets of concentric, slightly curved grid patterns. One set of grids originates from the top left, and the other from the bottom right, meeting in the center.

STREETS

STREETS



In this chapter, we will focus on strategies specific to different streets throughout the hand!

On earlier streets, draws have plenty of equity, and your range has incentive to disguise itself.

On later streets, equity crystalizes. As the pot gets larger and betting opportunities fewer, players are more compelled to play according to the incentives of their hand class.

We'll cover all streets, starting preflop, and work our way towards the river.

HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	CALL	CALL	CALL	CALL
ALLIN 50	RAISE 5	RAISE 5	RAISE 6	RAISE 6
	RAISE 6	RAISE 6	RAISE 7	RAISE 7
	RAISE 7	RAISE 7	RAISE 8	RAISE 8
	RAISE 8	RAISE 8	RAISE 9	RAISE 9
				RAISE 10
				RAISE 12
				ALLIN 50

[NL50 6-Max Cash, 50bb] HJ opens 2, folds to BB.

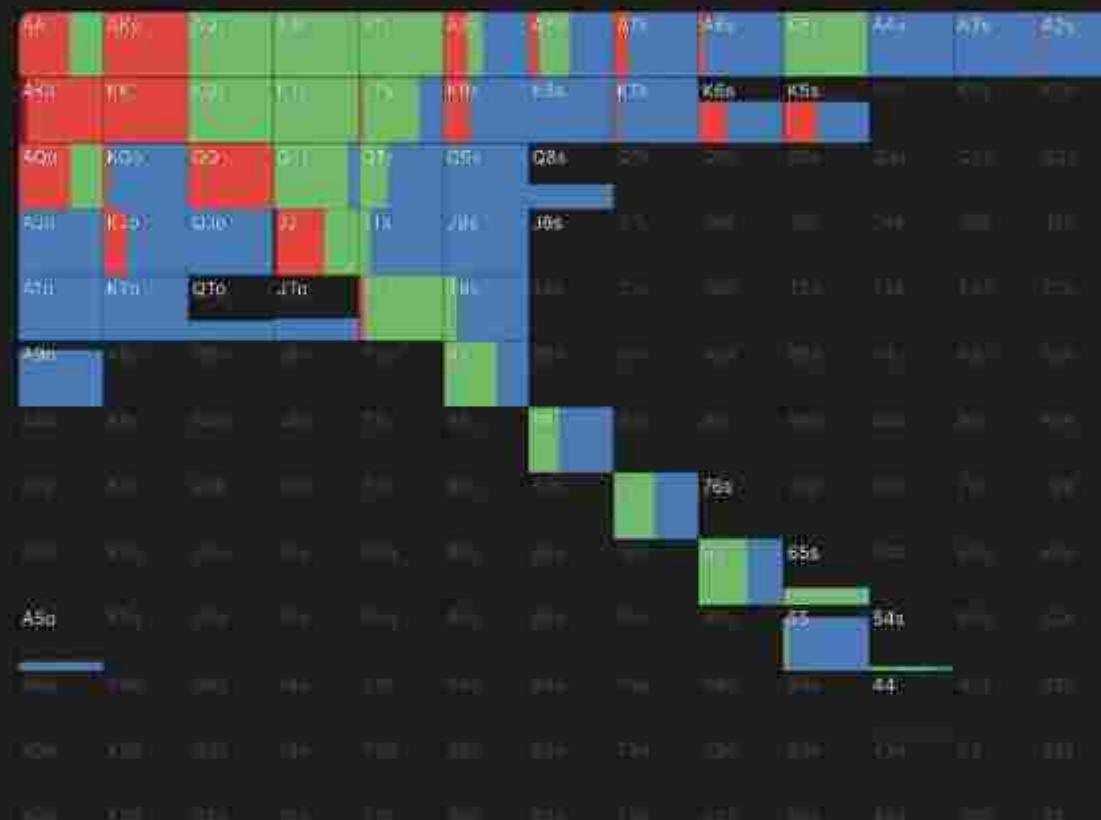
Which 3-bet size should BB use?

- A: 6 bb
- B: 8 bb
- C: 10 bb
- D: 12 bb



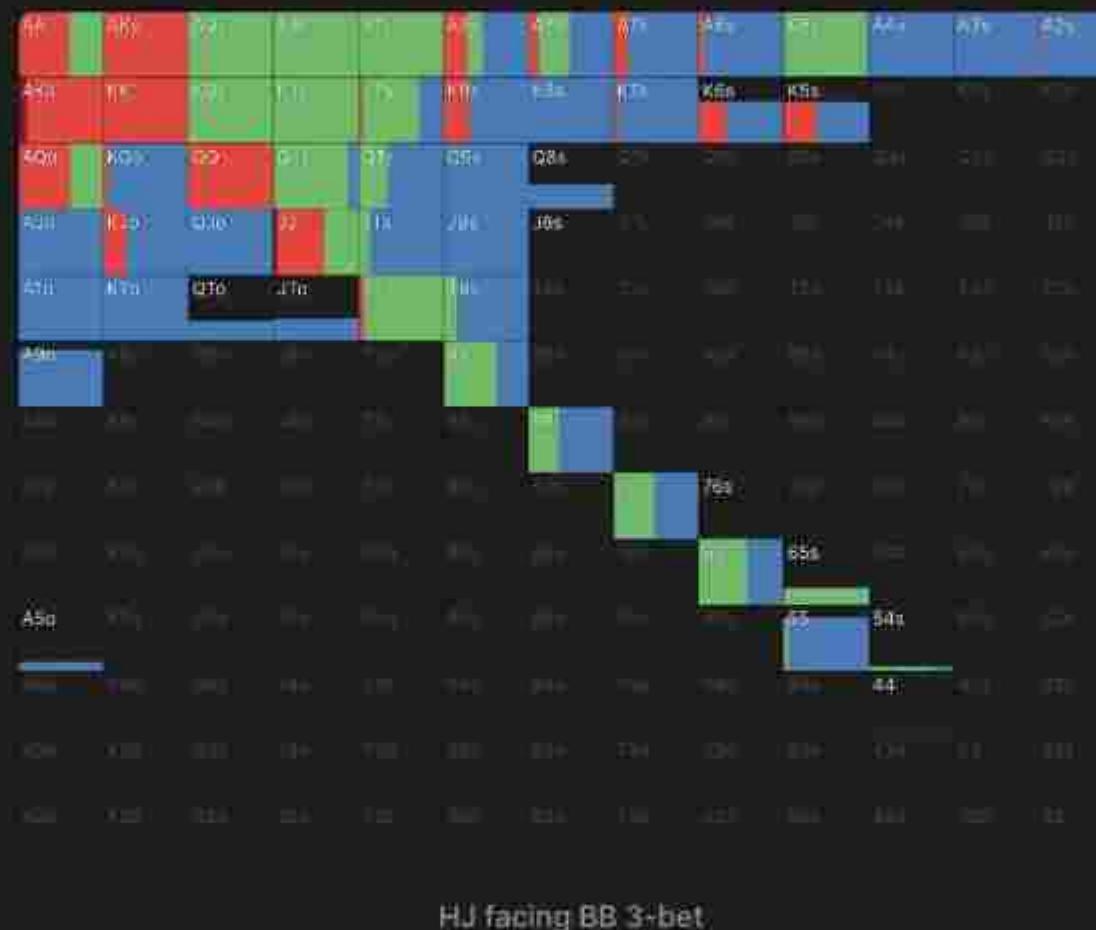
Correct answer:

B: 8 bb



HJ facing BB 3-bet

3-bet sizing when shortstacked comes down to a tradeoff between applying pressure and avoiding giving your opponent a good price on a shove.



Facing this raise, HJ's 4-betting hands have to decide between an uncomfortable 336% pot-sized shove, or a min-raise.

UTG FOLD RAISE 2 ALLIN 20	UTG+1 FOLD RAISE 2 ALLIN 20	LJ FOLD RAISE 2 ALLIN 20	HJ FOLD RAISE 2 ALLIN 20	CO FOLD CALL RAISE 2 ALLIN 20	BTN FOLD CALL RAISE 2 ALLIN 20	SB FOLD CALL RAISE 3 ALLIN 20
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[8-Max MTT] You are first to act under the gun. At what stack depth should you consider opening low pocket pairs like 44?

- A: Always open 44
- B: 20 bb
- C: 30 bb
- D: 50 bb

AA	AAs	Adr	AJs	AIs	AQs	Abx	A7s	A6s	A5s	A4s	A3s	A2s
AA	KK	KQs	KJr	KTs	KTs	KQs	K7s	K6s	K5s	K4s	K3s	K2s
AQs	KQs	QQ	QJs	QTs	QBs	Q9s	Q7s	Q5s	Q3s	Q4s	Q3s	Q2s
AJs	KJr	QJs	JJ	QTs	QJs	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AIs	K7s	Q7s	J7s	TTs								
AQs	K9s	Q9s	J9s	T9s	TTs							
Adr	K6s	Q8s	J6s	T6s	TTs							
A7s	K7s	Q7s	J7s	TTs								
A6s	K6s	Q6s	J6s	TTs								
A5s	K5s	Q5s	J5s	TTs								
A4s	K4s	Q4s	J4s	TTs								
A3s	K3s	Q3s	J3s	TTs								
A2s	K2s	Q2s	J2s	TTs								

UTG 30bb RFI

Correct answer:

C: 30 bb

AA	AKs	AKo	AQs	AQo	ATs	ATo	Aso	Ado	As2s	Ad2s	Ad2o	Ad2o	Ad2o	Ad2o	Ad2o
92%	74%	75%	71%	65%	62%	62%	57%	51%	49%	44%	34%	34%	34%	34%	34%
AKs	KKs	KQs	KKh	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s	K2s	K2s	K2s
74%	67%	68%	64%	62%	61%	60%	59%	58%	57%	53%	39%	39%	39%	39%	39%
AQs	KQs	QQs	QKh	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q2s	Q2s	Q2s
71%	63%	64%	60%	59%	57%	56%	55%	54%	53%	50%	36%	36%	36%	36%	36%
ATs	KTs	QTs	TTs	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts	7Ts
65%	62%	63%	60%	59%	58%	57%	56%	55%	54%	54%	53%	53%	53%	53%	53%
Aso	K9s	Q9s	J9s	T9s	99s	98s	97s	96s	95s	94s	93s	93s	93s	93s	93s
62%	60%	61%	59%	58%	57%	56%	55%	54%	53%	53%	52%	52%	52%	52%	52%
A8s	K8s	Q8s	J8s	T8s	88s	88s	87s	86s	85s	84s	83s	83s	83s	83s	83s
60%	58%	59%	57%	56%	55%	54%	53%	52%	51%	51%	50%	50%	50%	50%	50%
A7s	K7s	Q7s	J7s	T7s	77s	77s	77s	77s	77s	74s	73s	73s	73s	73s	73s
58%	56%	57%	55%	54%	53%	52%	51%	50%	50%	50%	48%	48%	48%	48%	48%
A6s	K6s	Q6s	J6s	T6s	66s	66s	75s	66s	65s	64s	63s	63s	63s	63s	63s
56%	54%	55%	53%	52%	51%	50%	50%	50%	50%	50%	48%	48%	48%	48%	48%
A5s	K5s	Q5s	J5s	T5s	55s	55s	75s	55s	55s	54s	53s	53s	53s	53s	53s
54%	52%	53%	51%	50%	50%	50%	50%	50%	50%	50%	48%	48%	48%	48%	48%
A4s	K4s	Q4s	J4s	T4s	44s	44s	74s	54s	54s	44s	43s	43s	43s	43s	43s
52%	50%	51%	49%	48%	48%	48%	48%	48%	48%	48%	46%	46%	46%	46%	46%
A3s	K3s	Q3s	J3s	T3s	33s	33s	73s	53s	53s	43s	33s	33s	33s	33s	33s
50%	48%	49%	47%	46%	46%	46%	46%	46%	46%	46%	44%	44%	44%	44%	44%
A2s	K2s	Q2s	J2s	T2s	22s	22s	72s	52s	52s	42s	32s	32s	32s	32s	32s
48%	46%	47%	45%	44%	44%	44%	44%	44%	44%	44%	42%	42%	42%	42%	42%

Low pocket pairs have poor blockers, and derive a lot of their value from hitting a set postflop.

Shorter stacks decrease the implied odds of set mining.

BTN	15	SB	14.5	BB	3
Fold		Fold		Fold	
Raise 2		Call		Call	
Allin 15		Raise 5		Allin 4	
		Allin 15			

[Spin & Go, 15-15-4] How should BTN adjust their opening range when BB is short stacked (4bb), compared to your usual strategy 15bb deep?

- A: Open Wider
- B: Open Tighter
- C: Same opening %, but shift to hands with better postflop playability
- D: Same opening %, but shift to hands with better blockers

Correct answer

D: Same opening %, but shift to hands with better blockers

AA	AKs	Adx	AJs	ATs	Adx	As	A7s	A6s	A5s	A4s	A3s	A2s	
	4.1%	4.9%	1.7%	1.4%	1.4%	0.9%	0.7%	0.6%	0.4%	0.4%	0.3%	0.2%	0.2%
AKs	KK	KQs	KJ	KTs	KQs	KQs	K7s	K6s	K5s	K4s	K3s	K2s	
	4.7%	3.8%	0.8%	0.6%	0.6%	0.3%	0.2%	0.1%	0.1%	0.0%	0	0	0
AQs	KQs	QQ	QJs	QTs	QBs	QBs	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	
	1.4%	0.8%	3.0%	0.4%	0.3%	0.17%	0.09%	0.01%	0	0	0	0	0
AJs	KJ	QJ	JJ	JT	JJs	JJs	J7s	J6s	J5s	J4s	J3s	J2s	
	1.2%	0.9%	0.2%	2.0%	0.0%	0.14%	0.05%	0	0	0	0	0	0
ATs	KTs	QTs	JTs	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s	
	0.4%	0.9%	0.2%	0.0%	2.2%	0.0%	0.0%	0	0	0	0	0	0
Adx	KQs	Q9s	J9s	T9s	99	98s	97s	96s	95s	94s	93s	92s	
	0.8%	0.2%	0.0%	0	0	1.8%	1.6%	0	0	0	0	0	0
A8s	K8s	Q8s	J8s	T8s	98s	88	87s	86s	85s	84s	83s	82s	
	0.4%	0.8%	0	0	0	0	0.1%	0	0	0	0	0	0
A7s	K7s	Q7s	J7s	T7s	97s	87s	77	76s	75s	74s	73s	72s	
	0.3%	0.0%	0	0	0	0	0	0	0	0	0	0	0
A6s	K6s	Q6s	J6s	T6s	96s	86s	76s	66	65s	64s	63s	62s	
	0.2%	0	0	0	0	0	0	0	0.0%	0	0	0	0
A5s	K5s	Q5s	J5s	T5s	95s	85s	75s	65s	55	54s	53s	52s	
	0.1%	0	0	0	0	0	0	0	0	0.6%	0	0	0
A4s	K4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44	33s	42s	
	0.1%	0	0	0	0	0	0	0	0	0.3%	0	0	0
A3s	K3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33	32s	
	0.1%	0	0	0	0	0	0	0	0	0	0.1%	0	0
A2s	K2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22	
	0.0%	0	0	0	0	0	0	0	0	0	0	0	0

BTN RFI when BB has 4bb

Let's compare the BTN's strategy when all players have 15bb to when BB is short stacked.

We can see the solver shift to hands with better blockers against a raise such as Ace-x/King-x.

M	KK	AA	QQ	JJ	TT	99	88	77	66	55	44	33	22
BB	KK	AA	QQ	JJ	TT	99	88	77	66	55	44	33	22
Adv	KQs	QQ	QJs	QJs	QTs	QTs	QTs	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJs	KQs	QJs	JT	JT	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
ATs	KTs	QTs	JTs	JTs	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
AKs	K9s	Q9s	J9s	J9s	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
ABs	KKs	QQs	TTs	TTs	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
ATs	KTs	QTs	JTs	JTs	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
AKs	K9s	Q9s	J9s	J9s	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
ASs	KSs	QSs	JSs	JSs	TSs	TSs	TSs	77s	66s	55s	44s	33s	22s
ATs	KTs	QTs	JTs	JTs	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
AKs	K9s	Q9s	J9s	J9s	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
ABs	KSs	QSs	JSs	JSs	TSs	TSs	TSs	77s	66s	55s	44s	33s	22s
ATs	KTs	QTs	JTs	JTs	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s
AKs	K9s	Q9s	J9s	J9s	TTs	TTs	TTs	77s	66s	55s	44s	33s	22s

BB (4bb eff) facing 2bb BTN open

When BB shoves BTN has to call everything given the pot odds.

They use a range which both blocks and can call these shoves.

BTN	SB	BB	BTN	SB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.5	CALL	RAISE 12	CALL	CALL
	RAISE 11	ALLIN 200	RAISE 38	RAISE 50
	ALLIN 200		ALLIN 200	ALLIN 200

[500NL Cash, 200bb] BTN opens 2.5, SB calls, BB raises 12.

BTN either calls or folds, action on SB. Should SB defend wider or tighter if BTN calls the squeeze bet?

- A: SB should defend wider if BTN calls
- B: SB should defend wider if BTN folds



SB folds 76% facing squeeze if BTN folds

Correct answer:

A: SB should defend wider if BTN calls



SB strategy + EV after BTN calls

When BTN calls the squeeze, SB is getting a better price to enter the pot, but has less equity/realization going 3-ways to the flop.



SB strategy + EV after BTN calls

However, a large portion of SB's initial flatting range consists of pocket pairs.

These low/medium pocket pairs have excellent EV retention in multiway pots due to their ability to set mine.

This is especially true deep-stacked given the higher implied odds of making a set. For this reason, SB continues wider when BTN calls, and tighter when BTN folds.

MTT Avg. 25bb

- ChipEV
- With limps

[8-Max MTT, 25bb] Folds to SB. The solver prefers to use a complex limp/raise/fold strategy. Why does limping improve the strategy?

Find the FALSE statement:

- A: So they can continue wider
- B: Because it's higher EV
- C: Different parts of your range benefit from different sizes
- D: It's less exploitable

SB Strategy without Limp

Correct answer

A: So it can continue wider is FALSE

Limping does allow you to continue wider, but simply getting to play more hands isn't a good reason by itself. What matters is the overall return of the strategy.

AA	AKs	AQs	AdS	ATs	ASs	ABs	AcS	AdS	ASs	ASs	ASs	ASs	ASs	ASs
742	3.8	143	108	2.23	2.24	-190	173	154	150	145	139	132	132	132
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s	K2s	K2s
	2.51	637	218	193	173	153	147	138	130	127	120	116	116	116
AQo	KQs	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q2s	Q2s
	6.04	436	434	522	446	438	434	437	438	439	438	438	438	438
AdS	KJs	QJs	JJs	QTs	JBs	JBs	J7s	J6s	J5s	J4s	J3s	J2s	J2s	J2s
	5.86	2.4	1.93	4.3	1.25	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
ATs	KTs	QTs	JTs	JJ	TJs	T8s	T7s	T6s	T5s	T4s	T3s	T2s	T2s	T2s
	2.25	1.24	1.09	1.01	1.08	1.12	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.64
ATo	K9s	Q9s	49s	79s	99	98s	97s	96s	95s	94s	93s	92s	92s	92s
	1.21	0.66	0.71	1.07	0.66	1.03	0.61	0.63	0.63	0.64	0.62	0.60	0.60	0.60
ASo	K8s	Q8s	48s	78s	88s	88	87s	86s	85s	84s	83s	82s	82s	82s
	1.43	0.78	0.84	1.15	0.65	1.04	0.77	0.77	0.74	0.74	0.74	0.74	0.74	0.74
Ado	K7s	Q7s	47s	77s	87s	87s	87	87	87s	87s	87s	87s	87s	87s
	1.19	0.65	0.71	1.12	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
ASo	K6s	Q6s	46s	76s	86s	86s	86s	86s	86s	85s	84s	83s	82s	82s
	1.01	0.38	0.19	0.09	0.31	1.13	0.33	1.07	0.33	0.33	0.33	0.33	0.33	0.33
ASo	K5s	Q5s	45s	75s	85s	85s	85s	85s	85s	85s	84s	83s	82s	82s
	1.04	0.32	0.14	0.08	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
ATs	K4s	Q4s	44s	74s	84s	84s	84s	84s	84s	84s	83s	82s	82s	82s
	0.97	0.21	0.0	0.04	0.04	0	0	0	0	0	0	0	0	0
ATo	K3s	Q3s	33s	73s	83s	82s	82s	82s						
	0.93	0.19	0.03	0.03	0	0	0	0	0	0	0	0.07	0.07	0.07
ASo	K2s	Q2s	22s	72s	82s									
	0.64	0.18	0.08	0.01	0	0	0	0	0	0	0	0	0	0.09

SB Strategy with Limp

Let's compare the EV of the raise/fold strategy against the EV of a limp/raise/fold SB strategy:



Let's compare the EV difference.

Here we see that adding limps adds value to the middle and bottom of your range, while the raise/fold strategy strictly benefits the top of your range at the cost of everything else.

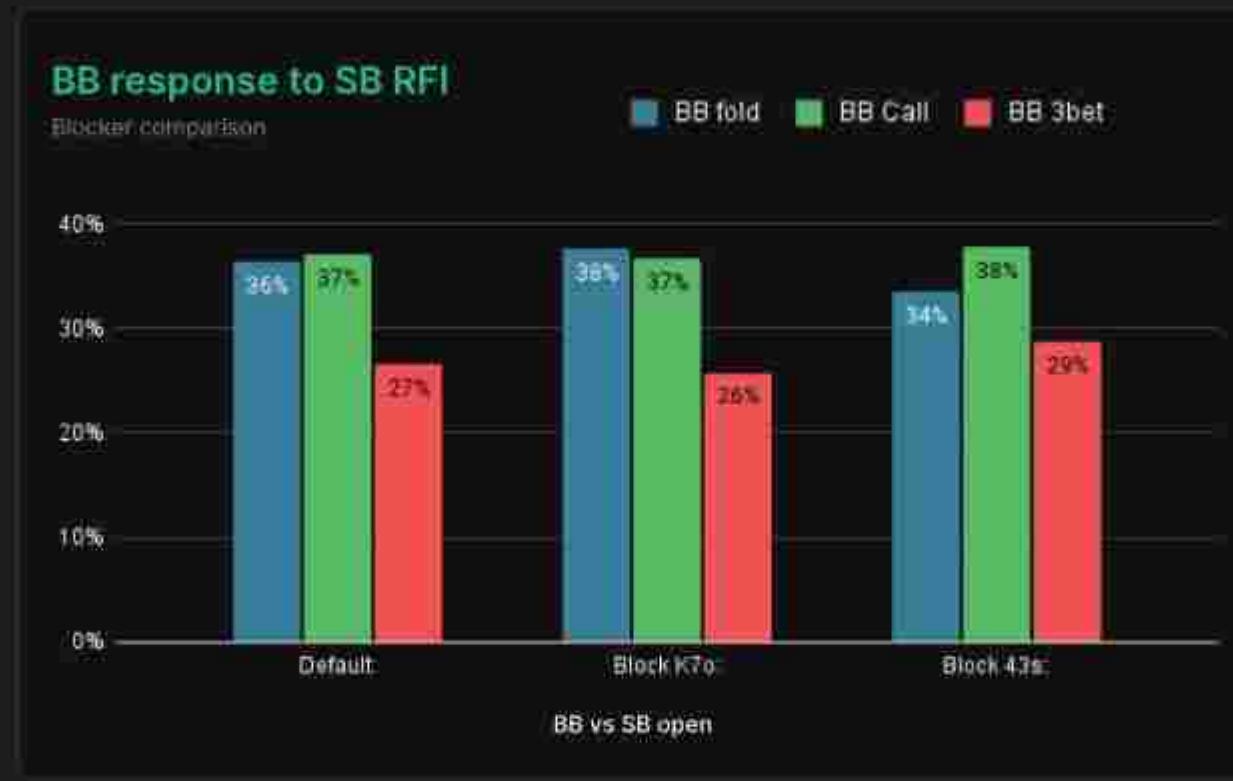


[HU Cash, 100bb] Let's examine two hands within a HU opening range - K7o and 43s. Both of these hands have 0.22 EV.

Which of these hands derive more of their EV from stealing the blinds?

Which of these hands derive more EV from postflop play?

- A: About the same
- B: 43s derives more EV from stealing the blinds, K7o derives more EV from postflop play
- C: K7o derives more EV from stealing the blinds, 43s derives more EV from postflop play



Correct answer:

C: K7o derives more EV from stealing the blinds, 43s derives more EV from postflop play

	EV	K7o	43s
Steal blinds	0.56	0.50	
Get called	0.17	0.17	
Get raised	-0.52	-0.45	
Total	0.22	0.22	

Probability weighted EV

This is something of a trick question - both hands have the same EV facing a call.

K7o has better blockers. We expect BB to continue less often when we hold K7.

	EV	K7o	43s
Steal blinds	0.56	0.50	
Get called	0.17	0.17	
Get raised	-0.52	-0.45	
Total	0.22	0.22	

Probability weighted EV

However, this hand has poor equity realization postflop, and can't call a raise.

43s has poor blockers - we actually expect to get called and raised more when holding this hand.

43s has better equity realization postflop, and can continue facing a raise.

UTG	HJ	CO	BTN	SB	BB	UTG	HJ
FOLD							
RAISE 2.5	RAISE 7.5	RAISE 15	RAISE 15	RAISE 28	RAISE 28	RAISE 28	CALL
ALLIN 100	RAISE 35						
							ALLIN 100

[NL500 6-Max Cash, 100bb] UTG opens 2.5, HJ (Hero) raises to 7.5, BTN raises to 15, UTG folds. Action on HJ. Which hand has the most EV?

- A: 65s
- B: A5s
- C: KQs
- D: JJ



HJ Strategy + EV facing BTN cold-4bet

Correct answer:

A: 65s

65s has the most EV in this spot.



BTN's range

A5s/KQs/JJ are all dominated by BTN's range. These hands have poor reverse implied odds postflop.

KQ and A5 are often dominated by AK if they make a pair, while JJ is often dominated by better overpairs on low flops.



BTN's range

65s, however, doesn't compete for the same kinds of made hands postflop, so it has better implied odds against the top of BTN's range.

In fact, 65s has the most equity of any hand against AA.

It's also worth noting that the deck tends to contain more low cards at this point due to the bunching effect.

SB	BB	FLOP	4	BB	SB	BB	SB
FOLD	FOLD			CHECK	CHECK	FOLD	
CALL	CALL			BET 1.3 (32%)	BET 1 (25%)	CALL	
RAISE 2	RAISE 5	A	K	BET 2.4 (60%)	BET 1.75 (44%)	RAISE 4 (50%)	
ALLIN 20	RAISE 7	K	Q	ALLIN 18 (450%)	BET 2.75 (69%)	RAISE 7 (100%)	
	ALLIN 20				BET 4 (100%)	ALLIN 18 (283%)	
					BET 6 (150%)		

[HU SnG, 20bb] SB opens 2, BB calls. Flop is A♥ K♥ Q♥. SB c-bets 1, BB raises to 4, action on you in the SB. What's the strongest flush draw you fold?

A: 9 ♥

B: 8 ♥

C: 7 ♥

D: 6 ♥



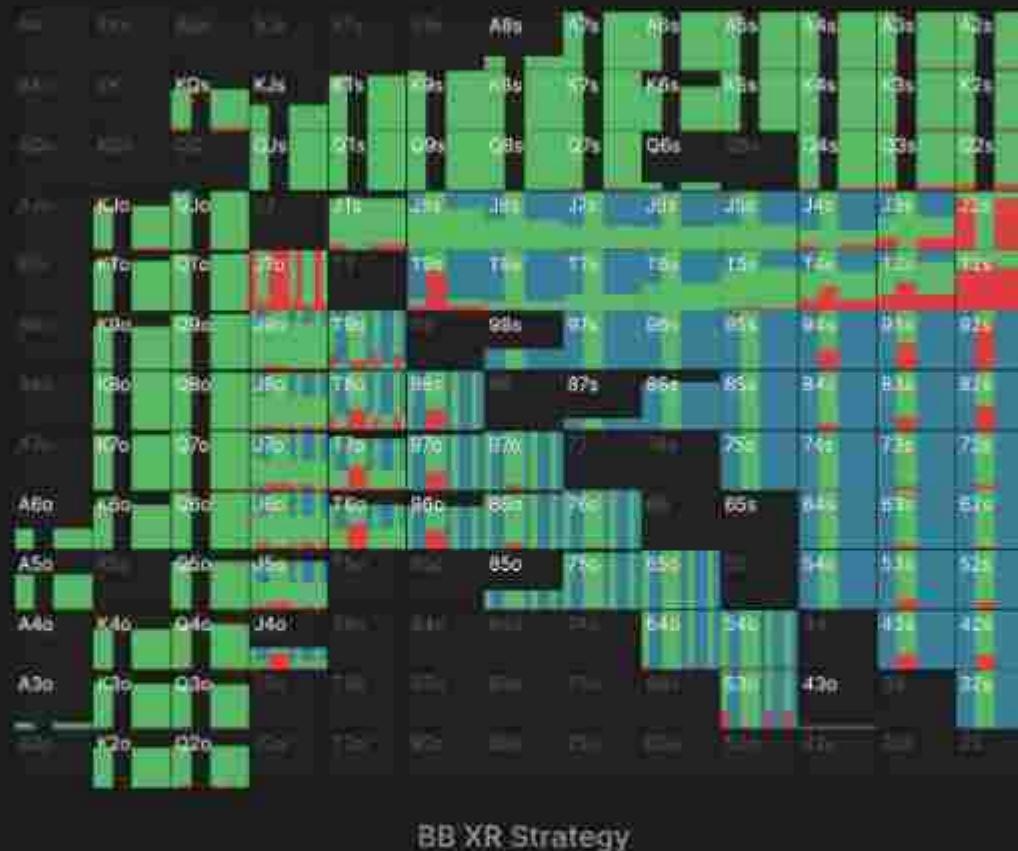
Correct answer:

C: 7

Note that 96o/86o are folding with the 6, not the 9/8.



The 7♥ is indifferent facing the raise with hands like 9x7♥ / 8x7♥ / 6x7♥. Hands with an 8♥ or higher always continue.



Suits are one of the most important factors on monotone boards.

One-card flush draws over-realize their equity significantly, and also block a large portion of villain's made flushes.

BTN	25	SB	24.5	BB	24	FLOP	4.5	BB	23	BTN	23
FOLD		FOLD		FOLD				CHECK		CHECK	
RAISE 2		CALL		CALL				BET 1.5	(33%)	BET 1	(22%)
ALLIN 25		RAISE 6		RAISE 6				BET 3	(67%)	BET 1.5	(33%)
		ALLIN 25		ALLIN 25				ALLIN 23	(51%)	BET 2	(44%)
										BET 3	(67%)
										BET 4	(89%)

[Spin & Go, 25-25-25] BTN opens 2, BB calls.

How often should BTN c-bet the flop?

- A: 53%
- B: 63%
- C: 73%
- D: 83%



Correct answer:

D: 83%

BTN should c-bet 83% of the time on the flop.

AA	AKs	AQs	Ad	Ts	As	ABs	ATs	ABs	TS	Ad	Ad	K2s
AKo	KK	KQs	Kd	KTs	KHs	K9s	K7s	K8s	K6s	K4s	K3s	K2s
AQo	KQd	QQ	QJd	QTs	Q8s	Q8s	Q7s	Q6s	Q9s	Q4s	Q3s	Q2s
Ad	Kd	QJd	Jd	JTs	JS	JS	J7s	J6s	J5s	J4s	J3s	J2s
ATs	KTs	Q1s	J1s	T1s	TS	TS	T7s	T6s	T5s	T4s	T3s	T2s
ABs	K9s	Q9s	J9s	T9s	99s	98s	97s	96s	95s	94s	93s	92s
ABo	K8s	Q8s	J8s	T8s	88s	87s	86s	85s	84s	83s	82s	81s
ATo	K7s	Q7s	J7s	T7s	97s	87s	77s	76s	75s	74s	73s	72s
ABs	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	65s	64s	63s	62s
ABo	K5s	Q5s	J5s	T5s	95s	85s	75s	65s	55s	54s	53s	52s
ATo	K4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44s	43s	42s
ATo	K3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33s	32s
ATo	K2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22s

BB's preflop calling range is extremely wide given that they only have to call 1bb.

This leads to a high-frequency c-bet, targeting all that air, as BB is usually unable to defend wide enough.

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.1	CALL		
ALLIN 30	RAISE 6.3	RAISE 8.1	RAISE 8.8
	ALLIN 30	ALLIN 30	ALLIN 30

FLOP	6.7	CO	BTN	CO
	6.7	CHECK	CHECK	FOLD
		BET 1.35 (20%)	BET 1.35 (20%)	CALL
		BET 2.2 (33%)	BET 2.2 (33%)	RAISE 4.45 (33%)
		BET 3.7 (55%)	BET 3.7 (55%)	RAISE 6.5 (55%)
		BET 5.55 (83%)	BET 5.55 (83%)	ALLIN 27.9 (282%)
		BET 8.4 (125%)	BET 8.4 (125%)	

[8-Max MTT, 30bb] CO (Hero) opens 33 for 2.1, BTN calls, blinds fold.
 Flop is A♥ 7♥ 7♦. You check, BTN bets 20% pot. What's your play?

- A: Fold
- B: Call
- C: Raise

33

All-in 27.9	0
Raise 6.5	1
Raise 4.45	17.4
Call	81.5
Fold	0

Correct answer:

B: Call

Call (or raise sometimes).



Consider how wide you need to defend against this small 20% pot-sized bet, and where 33 sits in your range.

More than half your range is worse than 33.



CO facing 20% BTN c-bet

If you were to start folding weak pocket pairs here you'd be folding upwards of 2/3 of your range to this tiny bet, and would be extremely exploitable to bluffs.

CO should defend all made hands against this size on all but the worst flops.



[NL50 Cash Game, 100bb] BTN opens 2.5, BB calls. Flop is 5♦ 4♣ 3♣. BB plays a simplified strategy and never donk bets. How wide should BTN c-bet?

- A: 65%
- B: 50%
- C: 35%
- D: 20%



Correct answer

D: 20%



Comparison: BTN strategy IF BB has a donking range

This board favors the BB, not the BTN. If we compare this to a situation where BB has a donking range, we'd see a lot more betting.

However, because BB never leads BTN needs to play a lot more cautiously.



Flop equity buckets

CO FOLD RAISE 2.5	BTN FOLD RAISE 8.5	SB FOLD RAISE 11	BB FOLD CALL RAISE 12	FLOP T 9 9	5.5	BB CHECK	CO CHECK BET 1.8 (33%) BET 3.65 (66%) BET 7.15 (130%) ALLIN 197.5 (359%)	BB FOLD CALL RAISE 6.35 (50%) RAISE 10.9 (100%) ALLIN 197.5 (2151%)
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[NL50 Cash Game, 200bb] CO opens 2.5, BB calls. Flop is T♦ 9♥ 9♦. CO c-bets 33%, action on you in the BB. Which hand would you rather call?

- A: Q♠ J♣
- B: A♥ 3♥
- C: 2♥ 2♣
- D: 8♠ 6♠



Correct answer:

A: Q ♠ J ♣



CO's betting range consists of 33% top pair+, so having overcards to the Ten along with straight draw outs gives Q♠ J♣ the edge needed to call.

This hand also blocks more value within CO's range compared to the other 3 hands.



[NL500 6-Max Cash Game, 100bb] CO opens 2.3, BTN raises to 7.5, CO calls. Flop is J♦ 7♣ 6♣. Which hand should the CO defend against a 1/3 pot bet, but fold against a 1/2 pot bet?

- A: A♦ Q♥
- B: K♠ 6♠
- C: 5♥ 4♥
- D: 2♠ 2♣

vs 1/3 bet:

	%
All-in	92.5
Raise	20.5
Raise	15.05
Call	82.5
Fold	0.5

vs 1/2 bet:

	%
All-in	92.5
Raise	26.4
Raise	19.8
Call	10.3
Fold	89.1

Correct answer:

D: 2 ♠ 2 ♣



CO vs 1/2 pot bet

Finding threshold hands is important as it allows you to adapt your strategy against different bet sizes and opponents.



CG vs 1/2 pot bet

Static bluff catchers are very sensitive to pricing.

$2\spades 2\clubsuit$ goes from a clear continue or even bluff-raise against a 1/3 pot bet, to an indifferent bluff catcher facing a 1/2 pot bet.

AQ without a club is folding in both cases. K6 and 54 continue in both cases.

SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	FLOP 	BB CHECK BET 1.65 (33%) ALLIN 97.5 (1950%)	SB CHECK BET 1.65 (33%) BET 3.35 (67%) BET 5 (100%) BET 7.5 (150%) ALLIN 97.5 (1950%)	BB FOLD CALL RAISE 17.5 (50%) RAISE 27.5 (100%) ALLIN 97.5 (450%)
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[HU Cash, 100bb] SB opens 2.5, BB calls. Flop is A♥ J♦ T♣.
SB overbets 150% pot. Which hand would you rather call with in the BB?

- A: Q ♠ 8 ♥
- B: T ♠ 6 ♠
- C: K ♠ 8 ♥
- D: J ♠ 2 ♠



BB vs SB overbet

Correct answer:

A: Q ♠ 8 ♥



When facing an overbet it's important to think about your ability to outdraw the top of their range. Marginal pairs like J2 and T6 often won't perform well against the top of villain's range due to poor reverse implied odds.

A hand like Q♦ 8♥ has 8 outs to a straight, giving it the implied odds to draw on the flop.



[MTT General 30bb] SB opens 3.5, BB calls. Flop is A♦J♦5♣. SB bets 1, BB calls. Turn is the 2♦, completing the FD. SB bets 7.5 (there's 72% behind). Which of these hands is the highest EV call?

- A: T♦ 8♠
- B: K♥ K♣
- C: 6♠ 5♠
- D: K♣ T♠



BB's strategy facing turn bet

Correct answer:

A: T♦ 8♠



Villain's turn betting range is mostly top pair or two pair for value. Any hand less than top pair is a bluff-catcher.



SB turn bet construction

SB is representing a very polarized range. $K\heartsuit K\clubsuit$, $6\spades 5\spades$, and even king high gutshots like $K\clubsuit T\spades$ are static bluff-catchers with few outs to improve. They derive most of their value from checking back on the river when SB gives up.

A flush draw like $T\diamond 8\spades$, although behind bluffs, has more outs to outdraw SB's value range. It can profitably bluff when SB gives up brick rivers, or value bet when the flush completes. This hand has more paths to outdraw value, which makes it more profitable.

LJ	HJ	CO	BTN	SB	BB
FOLD RAISE 2.1 ALLIN 25	FOLD CALL RAISE 6.1 ALLIN 25	FOLD CALL RAISE 6.1 ALLIN 25	FOLD CALL RAISE 6.1 ALLIN 25	FOLD CALL RAISE 7.1 ALLIN 25	FOLD CALL RAISE 7.6 ALLIN 25
FLOP 5.7	BB	LJ	BB	LJ	BB
	CHECK BET 1.9 (33%) ALLIN 22.9 (402%)	CHECK BET 1.4 (25%) BET 2.85 (50%) BET 4.3 (75%) BET 5.7 (100%) BET 8.55 (150%)	FOLD CALL RAISE 4.9 (41%) RAISE 8.4 (82%) ALLIN 22.9 (253%)	FOLD CALL RAISE 10.15 (34%) RAISE 15.4 (68%) ALLIN 22.9 (116%)	

[8-Max MTT, 25bb] LJ opens, BB calls. Flop is Q ♠ Q ♥ 2 ♣. LJ c-bets 25%, BB raises to 4.9bb. Which turn card should BB barrel most often?
 Which turn card should BB check most often?

- A: Barrel on a Q, check on a 2
- B: Barrel on a 2, check on a Q

Cards	Strategy	Check	Bet ↓	EV IP	EV OOP
Q J vs BB		55.3	44.7	8.2	7.3
2		17.4	82.6	6.1	9.4
J		47	53	8	7.5
A		48	52	8.3	7.2
K		51.7	48.3	8.2	7.3
T		52.9	47.1	8.3	7.2
3		55.1	44.9	7.9	7.6
6		55.6	44.4	8.1	7.4
5		56.9	43.1	8.3	7.2
4		57.6	42.4	8.2	7.3
9		64.4	35.6	8.5	7
7		66.2	33.8	8.4	7.1
8		67.2	32.8	8.5	7
Q		83.3	16.3	9.4	6.1

BB turn report

Correct answer:

B: Barrel on a 2, check on a Q



LJ doesn't have 2's in their range, but they have plenty of Queen-x hands.

BB check-raises bottom pair on the flop as a merged semi-bluff. These get upgraded to trips on a turned 2. The turned Queen reduces BB's trips.

FLOP	4.5	BB	BTN	TURN	7.5	BB	BTN
		CHECK	FOLD			CHECK	FOLD
7	6	BET 1.5 (33%)	CALL	J		BET 1.5 (20%)	CALL
6	4	ALLIN 14 (31%)	RAISE 4 (33%)			BET 2.5 (33%)	RAISE 5.6 (25%)
			RAISE 6.25 (63%)			BET 3.75 (50%)	ALLIN 12.5 (80%)
			ALLIN 14 (167%)			BET 5.6 (75%)	
						ALLIN 12.5 (167%)	

[Spin & Go, 16-16-16] BTN open 2, BB call. Flop is 7♦ 6♦ 4♣. BB donks 33%, BTN call. Turn J♦, BB bets 33%. Which hand should shove for value?

- A: 7♦ 7♣
- B: A♠ A♣
- C: K♣ 7♣
- D: A♠ J♠



BTN facing turn bet

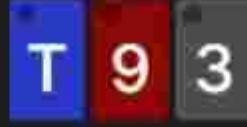
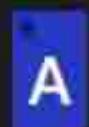
Correct answer:

D: A ♠ J ♠

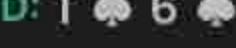
A ♠ J ♠	EV
All-in 12.5	8.31
Raise 5.6	8.23
Call	8.17
Fold	0

Sets and AA are too strong to shove. These hands extract more value keeping villain's range wide.

K ♣ 7 ♣ is too weak to shove for value. A ♠ J ♠ is strong enough to shove, and just vulnerable enough to generate enough fold equity to make shoving worthwhile.

SB FOLD CALL RAISE 2 ALLIN 20	BB CHECK RAISE 3 RAISE 4.5 RAISE 6 ALLIN 20	FLOP 2 	BB CHECK BET 1 (50%)
SB CHECK BET 1 (50%) BET 1.5 (75%) BET 2 (100%) BET 3 (150%) ALLIN 19 (950%)	TURN 2 	BB CHECK BET 1 (50%) BET 1.5 (75%) BET 2 (100%) BET 3 (150%) BET 4 (200%)	SB CHECK BET 1 (50%) BET 1.5 (75%) BET 2 (100%) BET 3 (150%) BET 4 (200%)

[HU 5nG, 20bb] SB limps, BB checks. Flop is . Checks through. Turn . BB checks. What hand should bet?

- A: 
- B: 
- C: 
- D: 

	A ♠ J ♣	Q 10 9 4
Allin 19 (950%)	0	
Bet 4 (200%)	95.2	
Bet 3 (150%)	3.4	
Bet 2 (100%)	1.1	
Bet 1 (50%)	0.3	
Check	0	

Correct answer:

B: A ♠ J ♣



SB constructs a very aggressive 200% overbet range with top pair+ for value, and checks back a lot.

43, T6, and QJ prefer to check to realize their showdown value, but a hand like A♦ J♣ fits nicely into a larger sizing.

CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 7.5 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100	BB FOLD CALL RAISE 13.5 ALLIN 100	FLOP 5.1	A K 6	BB CHECK BET 1.7 (33%) ALLIN 97.7 (1916%)
CO CHECK BET 1.7 (33%) BET 2.55 (50%) BET 3.8 (75%) BET 6.4 (125%) ALLIN 97.7 (1916%)	BB FOLD CALL RAISE 15.35 (50%) ALLIN 97.7 (1916%)	TURN 17.9	BB CHECK BET 3.6 (20%) BET 8.95 (50%) ALLIN 91.3 (110K)	CO CHECK BET 5.9 (33%) BET 8.95 (50%) BET 13.4 (75%) BET 22.4 (125%) BET 31.3 (175%)	7	

[500NL 6-max Cash, 100bb] CO open 2.3, BB calls. Flop is A ♠ K ♥ 6 ♦. CO overbets 125% pot, BB calls. Turn is 7 ♣. What's the weakest top pair CO can overbet for value on the turn?

- A: AQ
- B: AJ
- C: AT
- D: A9

AA	AQs	AKs	AJs	ATs	As	ABs	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	QQ	JQs	JTs	K9s	88s	K7s	K6s	Q7s	Q6s	Q5s	Q4s
AQs	KKo	QQs	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KQs	QJs	JQs	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATs	KTs	QTs	JTs	TTs	99s	88s	77s	77s	76s	75s	74s	73s
As	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
ABs	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A7s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A6s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A5s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A4s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A3s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o
A2s	KKo	QQo	JQo	JTo	J9o	J8o	J7o	J6o	J5o	J4o	J3o	J2o

Correct answer:

C: AT

Hand	Equity when called
AQ	71%
AJ	62%
AT	53%
A9	44%

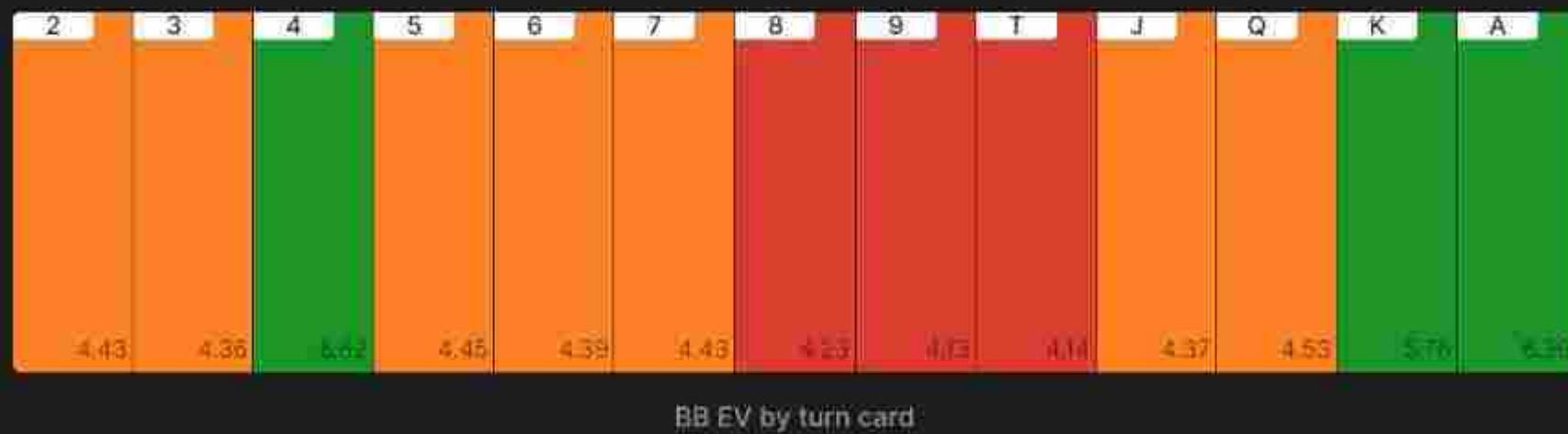
The above chart displays your equity when called on the turn. A9 is behind, while AT is just barely ahead of the calling range.

A9 is better played as a check or smaller bet.

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	FLOP 	5.5	BB CHECK BET 1.8 (33%)	BTN CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (100%)	BB FOLD CALL RAISE 8.25 (50%) RAISE 13.75 (100%)	TURN 11
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[NL500 6-Max Cash, 100bb] BTN opens, BB calls. Flop is . BTN c-bets half-pot, BB calls. Which turn card favors BB's calling range the most?

- A: 2
- B: 5
- C: 9
- D: A



Correct answer:

D: A



The BTN is range-betting the flop, whereas BB is only calling top-heavy cards and pocket pairs.

This creates an Ace-x imbalance that favors BB's range.

SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	FLOP 5	A K 2	BB CHECK BET 1.65 (33%) ALLIN 97.5 (950%)	SB CHECK BET 1.65 (33%) BET 3.35 (67%) BET 5 (100%) BET 7.5 (150%) ALLIN 97.5 (950%)	TURN 5	BB CHECK BET 1.65 (33%) BET 3.35 (67%) BET 5 (100%) BET 7.5 (150%) BET 20 (400%)
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[HU Cash, 100bb] SB (IP) opens 2.5, BB calls. Flop is A♠ K♠ 2♦. Flop checks through. Turn is the 2♥. Why does BB employ a 400% overbet?

- A: The 2 gives BB a massive equity and range advantage
- B: SB capped themselves by checking back the flop
- C: The 2 gives the BB the nut advantage
- D: Blockers prevent SB from raising aggressively



Correct answer:

C: The 2 gives the BB the nut advantage



The BB has a trips+ advantage on the turned 2.

They also have less trash in range, allowing them to play for stacks!

CO FOLD RAISE 2.3 ALLIN 50	BTN FOLD CALL RAISE 6.9 ALLIN 50	BB FOLD CALL RAISE 15 ALLIN 50	BB FOLD CALL RAISE 15 ALLIN 50	CO FOLD CALL RAISE 15 ALLIN 50
FLOP 16.3	CO CHECK BET 3.65 (10%) BET 4.1 (12%) BET 8.15 (20%) BET 12.2 (25%) BET 16.3 (33%)	BTN CHECK BET 1.65 (10%) BET 4.1 (12%) BET 8.15 (19%) BET 12.2 (25%) BET 16.3 (33%)	CO FOLD CALL RAISE 12.2 (33%) RAISE 17.6 (50%) RAISE 24.45 (66%) ALLIN 43.1 (99%)	
TURN 24.5 2	CO CHECK BET 3.7 (10%) BET 8.8 (20%) ALLIN 29 (99%) BET 12.25 (30%) BET 18.4 (50%) BET 24.5 (100%)	BTN CHECK BET 2.45 (10%) BET 5.1 (12%) ALLIN 29 (99%)	RIVER 49 K	CO CHECK BET 0 (10%) BET 12.5 (25%) BET 17.5 (50%) ALLIN 26.75 (99%)
				BTN CHECK BET 5 (10%) BET 12.5 (25%) BET 17.5 (50%) ALLIN 26.75 (99%)

[8-Max MTT, 40bb] BTN vs CO 3-bet pot. BTN cbets 25% on the flop, 50% on the turn, checks to BTN on the river. The board runs out Q ♠ J ♥ T ♦ 2 ♣ K ♣. There's a half-pot shove behind. What's the strongest hand you check back?

- A: KK
- B: KQo
- C: 99
- D: K8s



Correct answer

C: 99



BTN equity on river

More than half of both ranges are straights at this point.

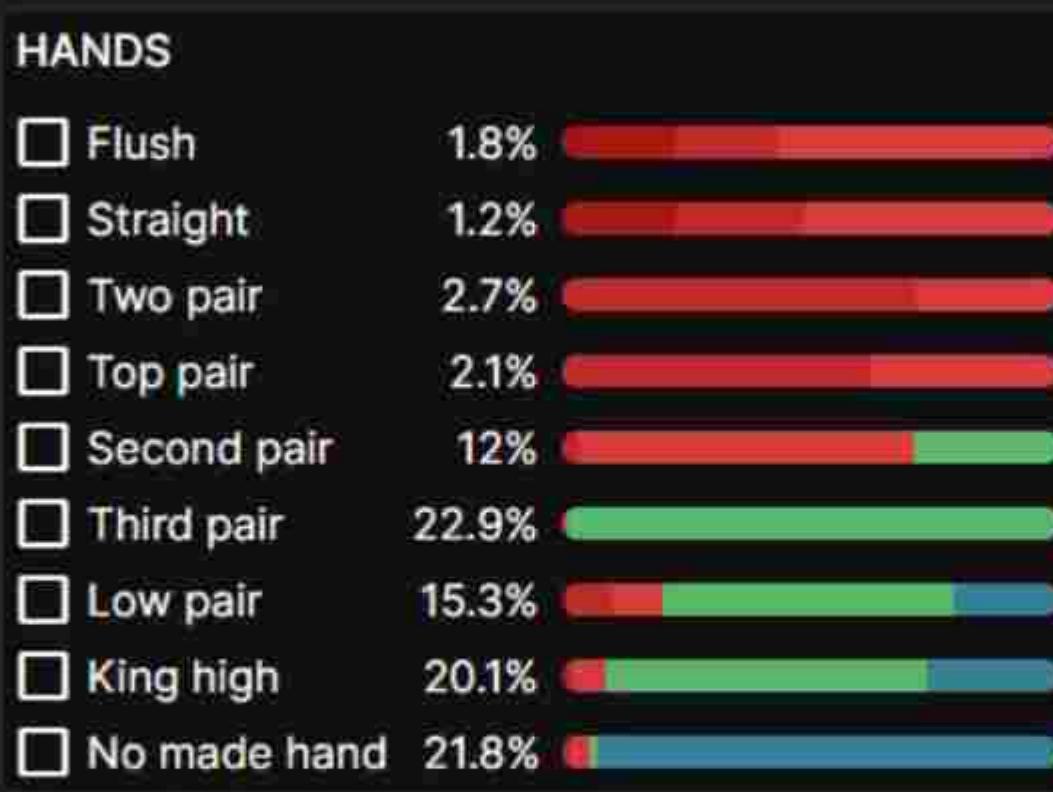
Hands like sets and two pair are marginal medium-strength at best, and should check back to realize their equity. Top pair (K8s) is actually a bluff.

UTG		UTG+1		LJ		HJ	
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40	RAISE 2.3 ALLIN 40
BTN	SB	BB	FLOP	3	SB	BB	
FOLD RAISE 2.3 ALLIN 40	FOLD RAISE 3.5 ALLIN 40	CHECK RAISE 3.5 ALLIN 40	A Q 4		CHECK BET 1 BET 2 BET 3 BET 4.5 ALLIN 39 (1300)	CHECK BET 1 BET 2 BET 3 BET 4.5 ALLIN 39 (1300)	
TURN	3	SB	BB	RIVER	3	SB	BB
7	CHECK BET 1 BET 2 BET 3 BET 4.5 BET 5.5	CHECK BET 1 BET 2 BET 3 BET 4.5 BET 5.5	J		CHECK BET 1 BET 2.5 BET 4.5 ALLIN 39 (1300)	FOLD CALL RAISE 3.5 (50) RAISE 5.5 (100) ALLIN 39 (1300)	

[8-Max MTT 40bb] SB limps, BB checks. Players check to the river,
 A♦ Q♦ 4♥ 7♣ J♦. SB bets 1/3 pot (1bb).

What's the weakest hand class BB can raise for value?

- A: Flush
- B: Two pair
- C: Top Pair
- D: Second Pair



Correct answer:

D: Second Pair



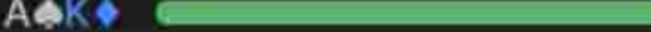
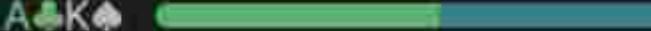
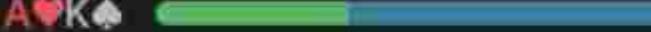
Second pair has more than 80% equity in this line and can play for value. Hand strength is relative.

Given the wide ranges and passive line, most made hands are reasonably strong here, and 2nd pair is among the stronger hands in your range.



[Spin & Go, 25-25-25] SB opens 3, BB calls. Flop is J♦ J♥ 6♦. SB bets 25%, BB calls. Turn 6♦ checks through. River A♦. SB bets 39%, BB shoves.
Which bluff catcher has the best blockers

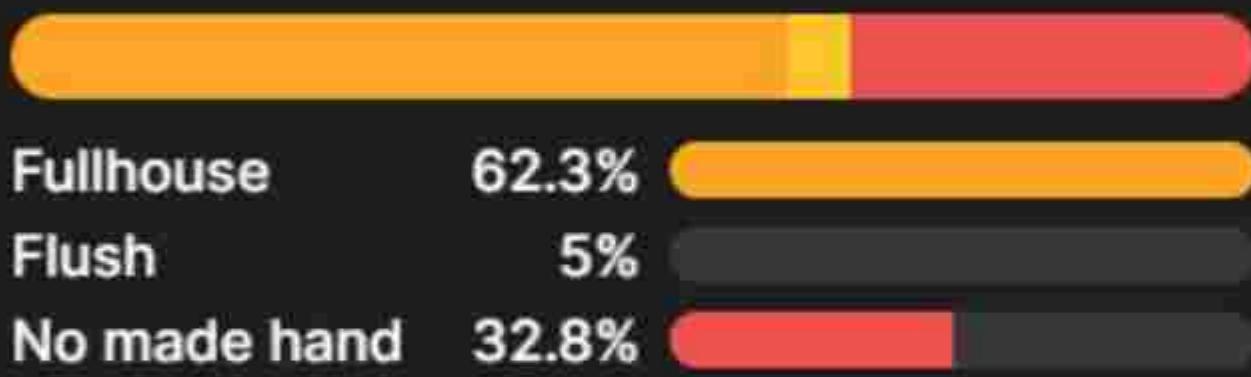
- A: 5 ♠ 5 ♦
- B: A ♠ K ♦
- C: Q ♦ 7 ♦
- D: 5 ♦ 4 ♦

Hand	Strategy	Range	EV	Equity	EQR	Blocker
A♣K♦		26.3 %	0.56	35.1 %	10 %	3
A♠K♦		26.3 %	0.56	35.1 %	10 %	3
A♥K♦		28 %	0.51	35 %	9.2 %	3
A♠K♣		39.5 %	0.01	34.1 %	0.3 %	2
A♣K♠		39.5 %	0.01	34.1 %	0.3 %	2
A♣K♥		31.9 %	-0.01	34 %	-0.1 %	2
A♠K♥		31.9 %	-0.01	34 %	-0.1 %	2
A♥K♣		24.2 %	-0.01	34 %	-0.1 %	2
A♥K♠		24.2 %	-0.01	34 %	-0.1 %	2

Correct answer:

B: A♠K♦

HANDS



BB shoving range construction

BB's shoving range is polarized to full houses and trash, so all bluff-catchers less than a boat (e.g. top pair, flushes, etc) are close to indifferent.

In this situation, raw hand strength is less important than blockers.

HANDS



Fullhouse 62.3%

Flush 5%

No made hand 32.8%

BB shoving range construction

AK unblocks bluffs, as BB shouldn't be shoving top pair.

AK also blocks AA and AJ, if BB traps with these hands preflop.

SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	SB FOLD CALL RAISE 24 ALLIN 100	FLOP 20 9 3 3	BB CHECK BET 4 (20%) BET 6.6 (33%) BET 10 (50%) BET 15 (75%) BET 20 (100%)
SB FOLD CALL RAISE 25 (38%) RAISE 40 (75%) ALLIN 90 (200%)	TURN 40 Q	BB CHECK BET 8 (20%) BET 13.2 (33%) BET 20 (50%) BET 30 (75%) ALLIN 80 (200%)	SB FOLD CALL ALLIN 80 (75%)	RIVER 80 T

[HU Cash, 100bb] SB (IP) vs BB 3-bet pot. The board runs out 9♦ 3♦ 3♣ Q♥ T♣. BB bets half-pot on the flop and turn, then shoves 75% on the river. What's the strongest hand SB can fold?

- A: Straight
- B: Trips
- C: Top pair
- D: Second Pair



SB facing river shove

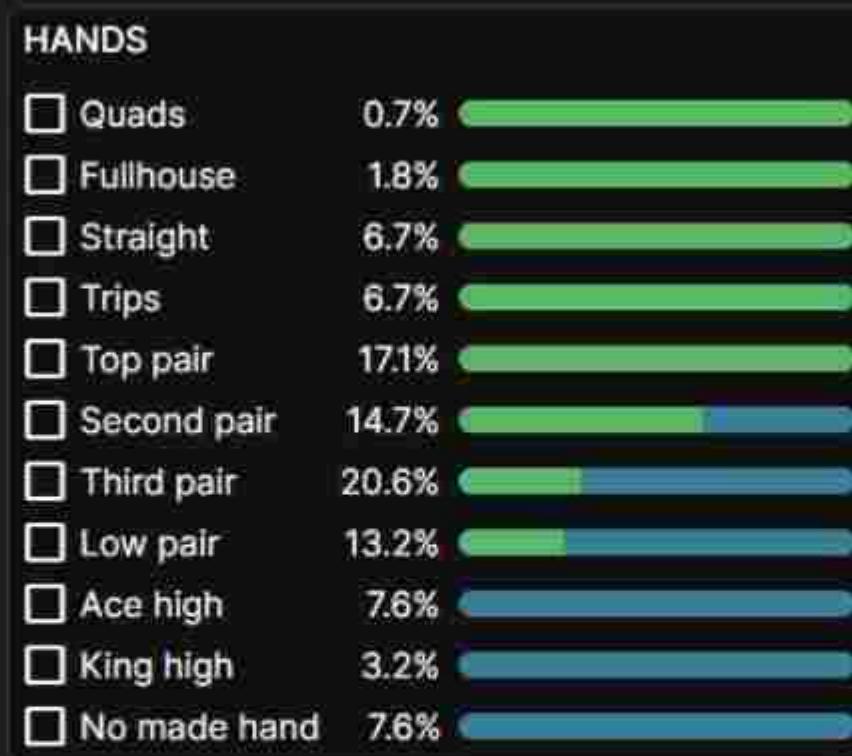
Correct answer:

D: Second Pair



Calling down with 2nd pair is a result of two things:

- 1: Ranges being wide and not containing many trips
- 2: Low stack-to-pot ratio



The lower the SPR, the wider you need to defend.

Considering how few nutted hands are possible, something like top pair bottom kicker is too valuable to fold here.

	BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD RAISE 33 ALLIN 100	BTN FOLD CALL RAISE 26 ALLIN 100	SB FOLD CALL ALLIN 100
FLOP	63	SB CHECK K 7 7	BTN C-CHECK BET 5.3 (10%) BET 13.25 (25%) BET 26.5 (50%) BET 52.75 (100%) ALLIN 74 (100%)	BB FOLD CALL RAISE 26.2 (50%) RAISE 52.4 (100%) ALLIN 74 (100%)	TURN 63.6 9
SB CHECK BET 12.2 (20%) BET 31.6 (50%) ALLIN 68.7 (100%)	BTN CHECK BET 0.85 (10%) BET 15.9 (25%) BET 31.8 (50%) BET 47.7 (100%) ALLIN 68.7 (100%)	RIVER 63.6 2	SB CHECK BET 0.5 (10%) BET 22.5 (25%) BET 38.5 (50%) ALLIN 68.7 (100%)	BTN CHECK BET 6.5 (10%) BET 22.5 (25%) BET 38.5 (50%) ALLIN 68.7 (100%)	BB FOLD CALL

[500NL, 6-Max Cash Game, 100bb] BTN vs SB 4BP. The board runs out K♦ 7♦ 7♣ 9♠ 2♠. BTN c-bets 10% on the flop, checks back turn, then makes a pot-sized shove on the river. Which hand would you prefer to bluff catch with?

- A: 66
- B: 88
- C: TT
- D: JJ



SB strategy + EV facing shove

Correct answer:

A: 66

BTN's showing range

Let's examine the bluffs in BTN's shoving range. We see they use AJ, AT, and A8 as bluffs.

	AKs	22s	AA	TTs	AGs	AJs	ATs	KKs	QQs	88s	77s	66s	55s	44s
AKo	KK	99	AA	TT	AGs	AJs	ATs	KK	QQ	88	77	66	55	44
88s	99s	00s	12%	10%	09s	08s	07%	06%	05%	04%	03%	02%	01%	00%
AJo	KKs	00s	11%	10%	09s	08s	07%	06%	05%	04%	03%	02%	01%	00%
Ats	KKs	00s	10%	09%	08s	07s	06%	05%	04%	03%	02%	01%	00%	00%
AKs	KKs	00s	20%	19%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	20%	19%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	17%	16%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	17%	16%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	16%	15%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	16%	15%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	15%	14%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	15%	14%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	14%	13%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	14%	13%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	13%	12%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	13%	12%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	12%	11%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	12%	11%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	11%	10%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	11%	10%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	10%	9%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	10%	9%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	9%	8%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	9%	8%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	8%	7%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	8%	7%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	7%	6%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	7%	6%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	6%	5%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	6%	5%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	5%	4%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	5%	4%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	4%	3%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	4%	3%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	3%	2%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	3%	2%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	2%	1%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
ATs	KKs	00s	2%	1%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%
AKs	KKs	00s	1%	0%	08s	09s	07%	06%	05%	04%	03%	02%	01%	00%

BTN's shoving range

This means when we hold 88/TT/JJ we block those bluffs and make it more likely that they hold a value hand like AK or KK or 99. 66 unblocks bluffs, which gives it higher equity than 88/TT/JJ.



[NL500 6-Max Cash, 100bb] BTN vs BB SRP. Flop is 4♥ 4♦ 4♣.

BTN c-bet half-pot, BB call. Turn is the rainbow A♠, BB donks 20% pot, BTN call. River is the last 4♠. How should BB construct their betting range?

- A: Range check
- B: Mix small and large bets
- C: Overbet / check
- D: Range shove

AJ	AQs	KQs	AK	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
KQ	KQs	KKs	KK	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
XQs	XQs	XQs	XQs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJc	KJc	QJc	Jc	JTc	J9c	J8c	J7c	J6c	J5c	J4c	J3c	J2c
ATc	KTc	QTc	JTc	JTc	T9c	T8c	T7c	T6c	T5c	T4c	T3c	T2c
A9c	K9c	Q9c	J9c	J9c	99	88	87s	86s	85s	84s	83s	82s
A8c	X8c	C8c	J8c	J8c	88	87s	86s	85s	84s	83s	82s	81s
A7c	X7c	C7c	J7c	J7c	87s	86s	77	76s	75s	74s	73s	72s
A6c	X6c	C6c	J6c	J6c	86s	85s	76s	75s	66s	65s	64s	63s
A5c	X5c	C5c	J5c	J5c	85s	84s	75s	74s	65s	64s	63s	62s
A4c	X4c	C4c	J4c	J4c	84s	83s	74s	73s	64s	63s	62s	61s
A3c	X3c	C3c	J3c	J3c	83s	82s	73s	72s	63s	62s	61s	60s
A2c	X2c	C2c	J2c	J2c	82s	81s	72s	71s	62s	61s	60s	59s

Correct answer:

D: Range shove



Look at the rake cap on chop boards. The rake structure here is 5% to a 0.6bb cap, which has already been reached.

So there's no penalty for putting in extra chips. BB should range shove and BTN should range call.

Shoving is the same EV as checking, however, shoving weakly dominates checking (since BTN can make a mistake and fold).



[NL500 6-Max Cash, 100bb] BTN vs BB SRP. Flop is K♦ J♥ 7♥. BTN overbets 125%, BB calls. Turn 4♥ checks through. River 2♠. BB block-bets 10% pot. Which hand classes constitute the majority of the BB's value range?

- A: Flushes and sets
- B: Two pair and top pair
- C: Top and second pair
- D: Second and third pair



BB 10% bet range construction

Correct answer:

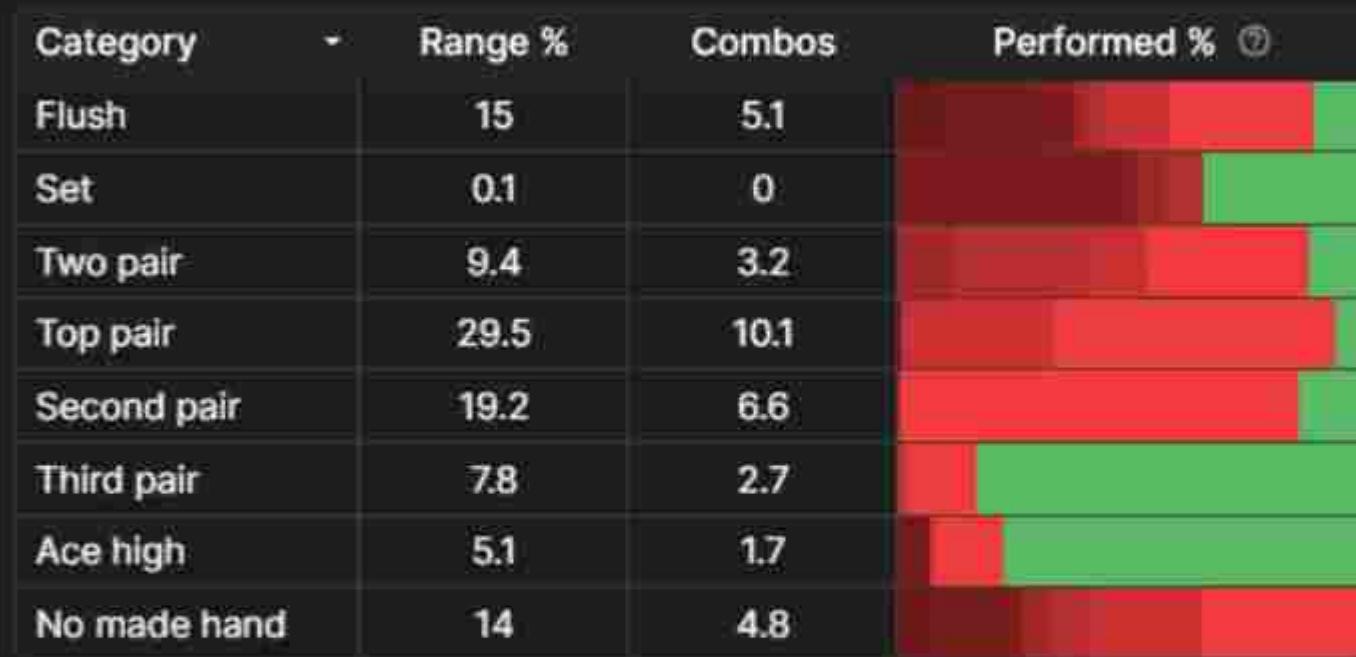
C: Top and second pair



BB strategy on river

Solvers often split their strategy on the river.

The block-bet is designed to maximize equity realization with otherwise vulnerable hands, such as top/2nd pair.



Stronger hands like flushes typically use an overbet strategy.

Two pair and sets mix between a small and medium size, but this only accounts for a small portion of BB's range.

DRILLS FOR EVERY SITUATION



Start Practicing!



Want to internalize the concepts you're learning in this book? Our [Trainer](#) will help you transform GTO strategies into your default actions while at the table.

ADVANCED CONCEPTS

ADVANCED CONCEPTS

Game Theory Optimal



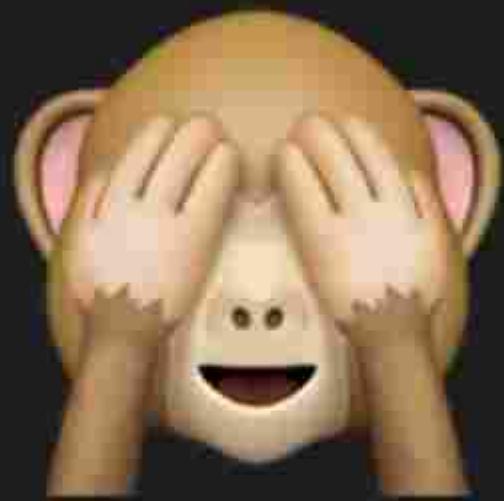
Mathematics plays a crucial role in the development of sound poker strategies. This chapter aims to provide a deeper understanding of the mathematical principles that form the backbone of GTO.

In this chapter, we'll explore the mathematics underpinning poker strategy, including toy games, theoretical situations, and complex theoretical ideas.



[Toy game] You are constructing a 75% pot-sized shove on the river.
You are polarized - your range consists of stone-cold nuts or complete bluffs.
Villain has bluff catchers. What portion of your shove should be bluffs?
How often should villain call?

- A: 30% bluffs, villain calls 57%
- B: 30% bluffs, villain calls 43%
- C: 43% bluffs, villain calls 30%
- D: 43% bluffs, villain calls 70%



Correct answer:

A: 30% bluffs, villain calls 57%

$$MDF = 1/(s+1)$$

$$\text{Pot odds} = s/(2s+1)$$

$$s = \text{bet/pot}$$

The bluff% represents your opponent's equity with their bluff catchers.

If you make a 75% pot-sized bet, your opponent needs at least 30% equity to call.

If you bluff 30% of the time, they are indifferent between calling and folding.

$$MDF = 1/(s+1)$$

$$\text{Pot odds} = s/(2s+1)$$

$$s = \text{bet/pot}$$

Villain needs to fold often enough for your bluffs to at least break even.

If they fold at least 43% of the time then your bluffs become indifferent between betting and checking.

Therefore, villain should defend 57% of their range.

	Defender		Aggressor	
Bet size Percentage pot	Pot Odds Required Equity to call	MDF Minimum Defence Frequency	Alpha (α) Required fold equity when bluffing	Value / bluff % construction
10%	8%	91%	9%	92% / 8%
25%	17%	60%	20%	83% / 17%
33%	20%	75%	25%	80% / 20%
50%	25%	67%	33%	75% / 25%
75%	30%	57%	43%	70% / 30%
100%	33%	50%	50%	67% / 33%
125%	36%	44%	56%	64% / 36%
150%	38%	40%	60%	63% / 37%

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[Toy game] The pot is 10bb. You are constructing a 150% pot-sized shove on the river. You are polarized - your range consists of stone-cold nuts or complete bluffs. Villain doesn't believe in math - they will always call 50% of the time. How much EV does the GTO strategy gain or lose against this player?

- A: Lose 3bb
- B: Same EV
- C: Gain 3bb
- D: Gain 7.5bb

	Pot 10	Bet 15	
	Proportion (GTO)	Call 40% (GTO)	Call 50% (villain)
EV (Value)	62.5%	16	17.5
EV (Bluff)	37.5%	0	-2.5
EV (Total)		10	10

	Proportion (Exploit)	Call 40% (villain)
EV (Value)	100%	17.5
EV (Total)		17.5

Correct answer:

B: Same EV

$$\text{EV (Value)} = (\text{call\%} \times 25\text{bb}) + (\text{fold\%} \times 10\text{bb})$$

$$\text{EV (Bluff)} = (\text{fold\%} \times 10\text{bb}) - (\text{call\%} \times 15\text{bb})$$

The GTO strategy for a 150% overbet is to use a range of 62.5% value and 37.5% bluffs. This lays the right pot odds to make your opponent indifferent between calling and folding.

Facing this size, villain should fold 60%, and call 40% (MDF). However, they are calling 50% instead.

$$\text{EV (Value)} = (\text{call\%} \times 25\text{bb}) + (\text{fold\%} \times 10\text{bb})$$

$$\text{EV (Bluff)} = (\text{fold\%} \times 10\text{bb}) - (\text{call\%} \times 15\text{bb})$$

If hero continues to use the GTO strategy their EV will not change. The value hands will overperform, the bluffs will underperform, and altogether the EV remains the same.

If hero decides to stop bluffing, they are left with value hands that overperform.

This would be the optimal exploit against this player.



[NL500 6-Max Cash, 100bb] BTN vs BB SRP. BTN c-bets 125% on flop and turn and puts in a pot-sized shove on the river. The board runs out Q ♠ J ♥ 6 ♦ 2 ♠ 3 ♣. What value:bluff ratio should BTN use on the river to make villain indifferent?

- A: 75% value, 25% bluffs
- B: 67% value, 33% bluffs
- C: 60% value, 40% bluffs
- D: 50% value, 50% bluffs



BTN river shove construction

Correct answer:

B: 67% value, 33% bluffs

The low pairs and worse are pure bluffs. In this case, the solver is using about 70% value to 30% bluffs. This is due to the rake and blocker effects which skew the ratio slightly more value heavy.

Theoretically, a pot-sized shove with a perfectly polar range should use a ratio of 2/3 value to 1/3 bluffs, as a pot-sized bet lays 2:1 pot odds.

We can also observe the solver giving up 36% of the time with mostly 0% EQ hands. This is designed to make BB's turn calls indifferent. BB's pot odds facing the 125% turn c-bet are about 36%.





[Theory] What does it mean in poker theory when we say a hand is "*indifferent*"?

- A: The hand is uncertain about the best action
- B: The hand is 0EV
- C: The hand mixes between two or more actions that have the same EV
- D: The hand takes a pure action and does not mix

EV (Action 1) = EV (Action 2)

Correct answer

- C: The hand mixes between two or more actions that have the same EV

EV (Bet) = EV (Check)

A common misconception about indifference is that it means a hand is 0EV. However, a value hand can be indifferent between calling and raising which are both +EV.

Theoretically, mixed actions should always have the same EV in a perfectly accurate GTO solution.



[Theory] In this picture, we can see the solution is mixing between folding, raising, and calling. However, calling seems to be higher EV.

Why doesn't the solver simply always call?

Solver noise

This is an example of "*solver noise*", which are small inaccuracies within the solution.

Theoretically, a perfectly accurate solution would always use the highest EV line, and mixed actions would have the exact same EV.

But if you've ever worked with a solver you'll know it's not feasible to solve everything to perfect accuracy, so there are small discrepancies.

In this case, the solution is solved to about 99.75% accuracy, meaning the entire solution could be exploited for about 0.25% of the pot.



If you solved this to perfect accuracy:

- A: Some actions would converge to lower EV and stop being used completely
- B: The actions which remain would have exactly the same EV

It's impossible to know with absolute certainty which actions would remain.

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However, we can make assumptions that low-frequency actions like the fold would stop being used completely, and the raise would most likely converge to the same EV as the call.





[Theory] Bob is a 5bb/100 winner that plays 20,000 hands per month.
Alice is a 10bb/100 winner that only plays 5,000 hands per month.
Both players have a standard deviation of 100bb/100.
Which player is more likely to have a winning month?

- A: Alice is more likely to have a winning month as she has a higher win rate
- B: Bob is more likely to have a winning month as he puts in more volume
- C: Alice and Bob are equally likely to have a winning month

EV \geq	5.00 BB/100
Standard deviation \geq	100.00 BB/100
Hands \geq	20000
Expected winnings \geq	1000.00 BB
Standard deviation after 20000 hands \geq	1414 BB, 7.07 BB/100
70% confidence interval \geq	[−414 BB, 2414 BB], [−2.07 BB/100, 12.07 BB/100]
95% confidence interval \geq	[−1828 BB, 3228 BB], [−9.14 BB/100, 19.14 BB/100]
Probability of loss after 20000 hands \geq	21.9750%
Probability of running at or above observed win rate (10.00 BB/100) over 20000 hands with a true win rate of 5.00 BB/100 \geq	76.0250%
Probability of running below observed win rate (10.00 BB/100) over 20000 hands with a true win rate of 5.00 BB/100 \geq	23.9750%
Minimum bankroll for less than 5% risk of ruin \geq	2896 BB

Bob's expected variance

Correct answer:

C: Alice and Bob are equally likely to have a winning month

EV >?<	10.00 BB/100
Standard deviation >?<	100.00 BB/100
Hands >?<	5000
Expected winnings >?<	\$50.00 BB
Standard deviation after 5000 hands >?<	707.88 14.14 BB/100
70% confidence interval >?<	[207.88, 1207.88] [-4.14 BB/100, 24.14 BB/100]
95% confidence interval >?<	[-914.88, 1914.88] [-18.29 BB/100, 38.26 BB/100]
Probability of loss after 5000 hands >?<	23.9750%
Probability of running at or above observed win rate (10.00 BB/100) over 5000 hands with a true win rate of 10.00 BB/100 >?<	76.0250%
Probability of running below observed win rate (10.00 BB/100) over 5000 hands with a true win rate of 10.00 BB/100 >?<	23.9750%
Minimum bankroll for less than 5% risk of ruin >?<	1498.88

Alice's expected variance

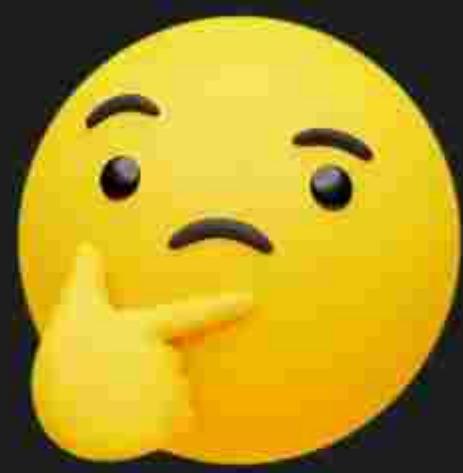
Understanding variance is an extremely important concept for poker players.

We recommend every poker player spend time using a variance calculator to get a feel for how swingy poker can be. Credit to Primedope's variance calculator for these reports.

Since Alice wins twice as much, they only need to put in a quarter of the volume to achieve the same probability of winning for the month.

Players who are closer to breakeven, or more specifically, players whose standard deviation is high compared to their win rate, need to put in exponentially more volume to reach the "*long-run*".

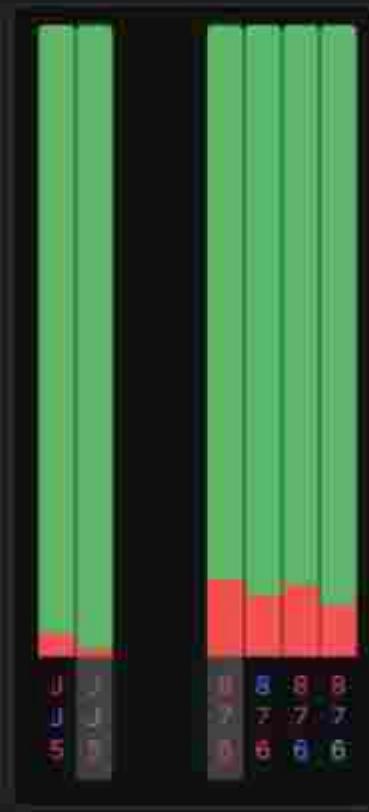
Players who are closer to breakeven are significantly more likely to experience extended downswings. This is why it's important to develop a good win rate before focusing on volume.



[Theory] Which flop is more likely?

- A: 876r
- B: 876tt
- C: JJ5r
- D: JJ5tt

(r = rainbow, tt = two-tone)



Correct answer:

B: 8♥ 7♦ 6♥

Pairing		Suits	
□ BTN vs BB		□ BTN vs BB	
▼ Filtered	100%	▼ Filtered	100%
Not paired	82.8%	 Monotone	5.2%
Paired	16.9%	 Flush draw	55.1%
Tripled	0.2%	 Rainbow	39.8%

Unpaired flush draw boards are the most likely flop in Hold'em. You can count the number of combinations of each type of flop to see why 876tt is the most common.

The following numbers account for strategically similar flops:

- A: 876r: 24 combos
- B: 876tt: 36 combos
- C: JJ5r: 12 combos
- D: JJ5tt: 12 combos



[Toy game] P1 and P2 are playing an Ace/Queen vs King toy game. P1 either has the stone-cold nuts (A) or a bluff (Q). IP always has a bluff-catcher (K).

Pot: \$100. Stack: \$400. Player 1 (OOP) bets \$100 on the turn with a range that consists of 2/3 nuts, 1/3 bluffs. Player 2 (IP) snap folds their entire range. Why?

- A: P2 isn't getting the right pot odds to call this bet
- B: P2 doesn't need to defend their bluff-catchers against this bet size
- C: P2 will not be able to realize enough equity, as P1 can bet again on the river
- D: P1 will not give up with enough bluffs on the river to make floating this bet profitable



Correct answer

C: & D: are correct!

P2 can bet again on the river, so P1 will not realize their equity.

OOP is under-bluffing.

Range composition by street:	Value %	Bluff %
Turn	44.4%	55.6%
River	66.7%	33.3%

IP is getting correct pot odds to call the turn bet. However, for IP to break even calling the turn bet, OOP sometimes needs to give up on the river.

There's a pot-sized bet remaining on the river. When OOP shoves, they lay pot odds of 2:1, meaning they can use 2 nutted hands for every bluff.

OOP will therefore shove their entire range on the river.

Range composition by street:	Value %	Bluff %
Turn	44.4%	55.6%
River	66.7%	33.3%

Facing this shove, IP is indifferent between calling and folding. Their expected value is exactly 0.

If IP can't generate EV when OOP shoves then they must rely on OOP's give-ups to recoup the cost of calling the turn bet.

However, OOP never has give-ups because they're too value-heavy.

Range composition by street:	Value %	Bluff %
Turn	44.4%	55.6%
River	66.7%	33.3%

A balanced OOP strategy would use a ratio of 4 value hands to every 5 bluffs on the turn.

Then it would give up with 3 bluffs on the river and shove the remaining 4 value hands and 2 bluffs to set up a balanced 2:1 pot-sized shove.

Since OOP is giving up 3/9 hands on the river, IP has a break-even float on the turn.

[Learn more](#)

The moral of the story is that when your opponent chooses a range that can always double-barrel, you should think twice about calling marginal bluff-catchers.



BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALL-IN 100	BB FOLD RAISE 23 ALL-IN 100	BTN FOLD CALL RAISE 26 ALL-IN 100	FLOP 25 A Q 9	SB CHECK BET 8.25 (33%) BET 12.5 (50%) BET 18.75 (75%) BET 31.25 (125%) ALL-IN 88 (352%)
BTN FOLD CALL RAISE 22.75 (35%) RAISE 31.05 (65%) ALL-IN 88 (192%)	TURN 41.5 T	SB CHECK BET 13.7 (33%) BET 20.25 (50%) BET 31.1 (75%) BET 51.9 (125%) ALL-IN 79.75 (192%)	BTN FOLD CALL RAISE 37.8 (35%) RAISE 51.8 (55%) ALL-IN 79.75 (192%)	RIVER 68.9 A	SB CHECK BET 7 (10%) BET 24 (35%) BET 41 (60%) ALL-IN 66.05 (196%)

[NL500 6-Max Cash, 100bb] SB vs BTN 3BP. SB c-bets 1/3 pot on flop and turn. The board runs out A♠ Q♦ 9♣ T♦ A♣. Which of the following made hands should consider bluffing the river?

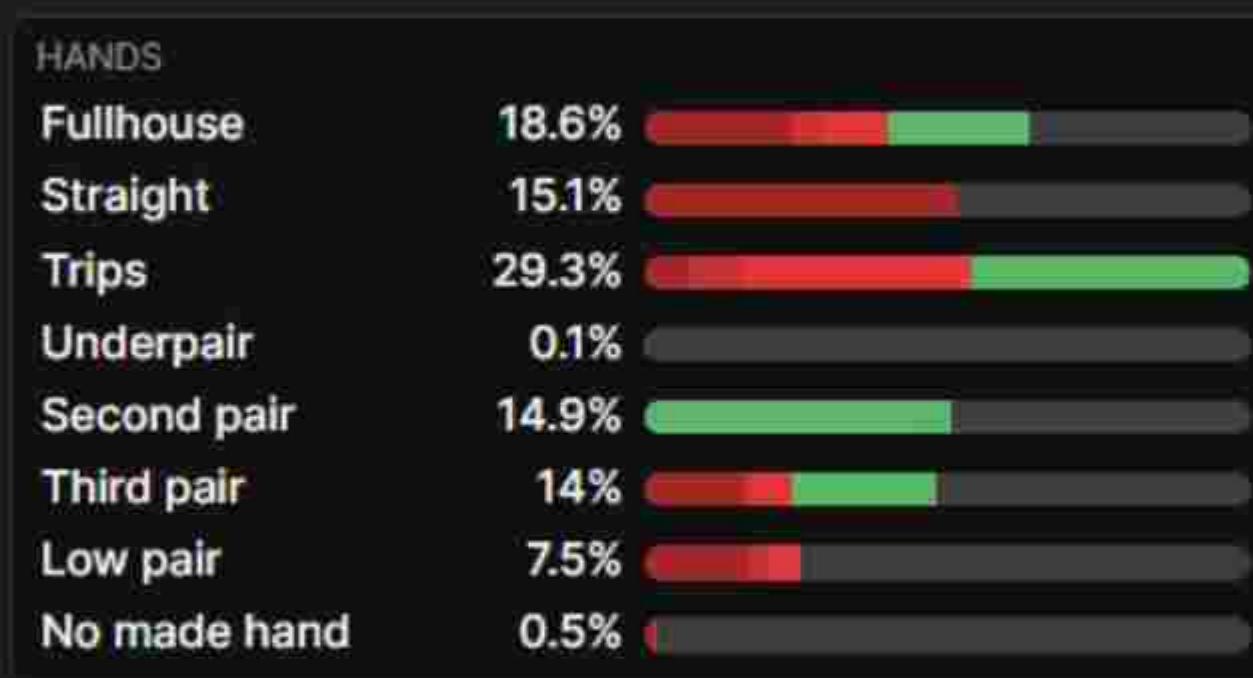
- A: K9s
- B: JJ
- C: J9s
- D: T9s



SB river strategy

Correct answer:

All of these hands should consider bluffing the river



This is a spot where SB has run out of natural bluffs. Almost every hand in their range connects with the board, which is why the solver needs to turn some made hands into bluffs.

The most common bluffs tend to be those which block the KJ straight as well as boats.

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

[Theory] Villain shoves for pot in position on the river. Their bluffs would have 20% equity as a checkback. How wide should you defend to make their bluffs indifferent?

- A: Call 60% of your range
- B: Call 50% of your range
- C: Call 40% of your range
- D: Call 30% of your range

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

Correct answer

C: Call 40% of your range

Your goal is to make the EV of a bluff equal to the EV of checking back. We know the EV of a checkback is 20% pot.

$$\text{EV bluff} = 0.2 \text{ (pot)} = (\text{fold\%} \times \text{pot}) - (\text{call\%} \times \text{pot}) \rightarrow 0.2 = (1-\text{call\%}) - \text{call\%} \rightarrow \text{call\%} = 40\%$$

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

Indifference Region

A more intuitive way to interpret this is that only hands which beat a bluff count towards MDF.

80% of your range can beat a bluff. Normally the MDF for a pot-sized bet is 50%.

In other words, if you defend half your range which can beat a bluff, you'd be defending 40% of your range.

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

Indifference
Region

This is why solvers typically underdefend facing a bet out of position, relative to MDF.

Another way to think about this: You can give your opponent a profitable bluff, as long as that bluff isn't more profitable than checking back.

[Learn more](#)



[Theory] Villain shoves pot on the turn. Their bluffs are exclusively draws which retain 20% equity against your calling range. The EV of checking the turn with these draws is also 20% pot.

How wide should you defend to make these draws indifferent between betting and checking?

- A: Call 67% of your range
- B: Call 57% of your range
- C: Call 47% of your range
- D: Call 37% of your range

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

Indifference Region

Correct answer

B: Call 57% of your range

Your goal is to make the EV of a bluff equal to the EV of checking back. We know the EV of a checkback is 20% pot.

$$\text{EV bluff} = 0.2 \text{ (pot)} = (\text{fold\%} \times \text{pot}) - \text{call\%}(\text{win\%} \times 2 \times \text{pot} - \text{lose\%} \times \text{pot})$$
$$0.2 = (1 - \text{call\%}) + \text{call\%}$$
$$(20\% * 2 - 80\%)$$
$$\text{call\%} = 57\%$$

Polar	Bluff-catcher
1	0
1	0
0	1
0	1
0	1
0	1
0	1
1	1
0	1

Indifference
Region

A more intuitive way to interpret this is that draws risk less as a semi-bluff (compared to a pure bluff) because they have equity when called.

Semi-bluffs are carry less risk
compared to pure bluffs

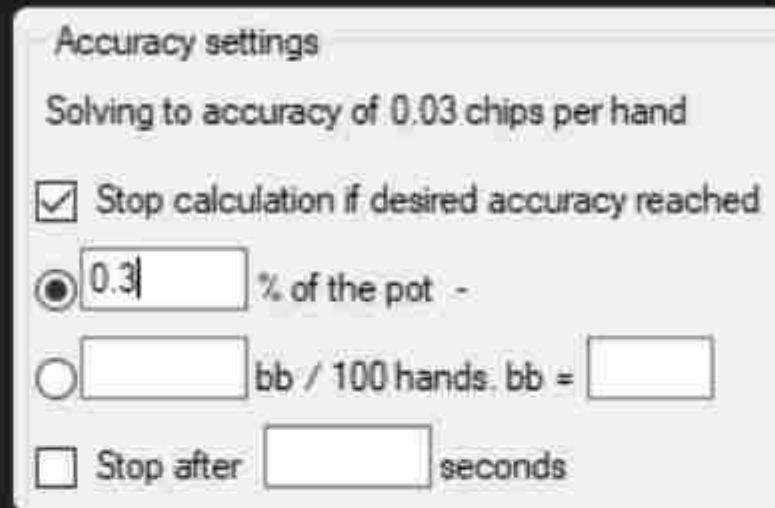
A pot-sized shove with a 20% draw results in about the same risk-reward ratio as a 60% pot shove with a pure (0% equity) bluff.

In that sense, it's almost as if the bet were smaller. This ties into why you can often bet larger on draw-heavy boards.



[Theory] GTO Wizard's General solutions are solved for between 0.2% to 0.3% accuracy, AKA Nash Distance. Let's call that 0.3%. What does this mean, exactly?

- A: The EV of each combination's actions is accurate to 0.3% of the best decision
- B: The EV of each combination's actions is accurate to 0.3% of the pot
- C: The entire solution is accurate to 0.3% of the best solution
- D: The entire solution can be exploited for 0.3% of the pot



Correct answer

D: The entire solution can be exploited for 0.3% of the pot

Let's imagine you're playing against OOP who uses the exact GTO Wizard strategy with perfect frequencies.

If you always took the most profitable action against this (fixed) strategy, you could win 0.3% pot more than the current strategy.

Results:

EV OOP: 4.519

OOP's MES: 4.554

EV IP: 5.481

IP's MES: 5.507

Exploitable for: 0.3%

MES measures the Maximally Exploitative Strategy against this solution.

For a 5.5bb pot, that comes out to $(0.3\% \times 5.5\text{bb} \times 100 \text{ hands}) = 1.65 \text{ bb}/100$.

Results:

EV OOP: 4.519

OOP's MES: 4.554

EV IP: 5.481

IP's MES: 5.507

Exploitable for: 0.3%

Individual hands/decisions can be exploitable for more than that amount, but the total EV of the entire solution can only be exploited for 0.3% pot.

To put this more accurately, the opposing players' most exploitative strategy (MES) can gain at most 0.3% pot against the current solution.

Individual actions within the solution can be even more exploitable.

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	FLOP 5.5	BB CHECK BET 1.8 (33%)	BTN CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (125%)
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[500NL 6-Max Cash, 100bb] BTN vs BB SRP, AK5. Why does BTN prefer to overbet with value hands like AK/KK/55/A5/K5, but typically bets small or checks with the nuts, AA?

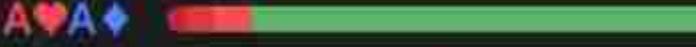
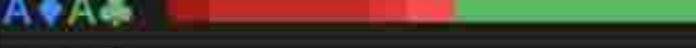
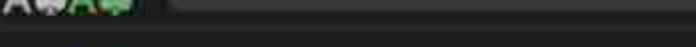
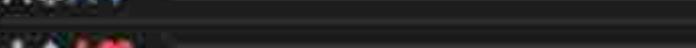
- A: AA is less vulnerable than these other made hands
- B: AA blocks villain's folding range
- C: AA blocks villain's calling range
- D: Too many equity-changing runouts



BB strategy facing 125% flop overbet

Correct answer:

C: AA blocks villain's calling range

Hand	Strategy	Range	EV	Equity	EQR	Blocker
A♥A♣		100 %	11.5	94.7 %	220.8 %	 10
A♥A♦		100 %	11.5	94.7 %	220.8 %	 10
A♦A♣		100 %	11.45	92.8 %	224.3 %	 7
A♠A♣		0 %	0	0 %	0 %	
A♠A♦		0 %	0	0 %	0 %	
A♠A♥		0 %	0	0 %	0 %	

You need some traps in your checking range to avoid being exploited on later streets.

Conversely, you can phrase this as AA can extract more money by trapping.



The best traps are those which are:

- A: Less vulnerable to future runouts
- B: Block hands that will continue facing your bet
- C: Unblock hands that will fold facing your bet

AA meets all of these criteria, which is why it typically has higher EV as a trap than an overbet.



[Theory] The Independent Chip Model (ICM) attempts to translate your tournament stack into an actual cash value. Which of these statements is true?

- A: Doubling your stack doesn't double your value
- B: ICM applies to winner-take-all scenarios
- C: ICM overestimates the big stack advantage
- D: ICM accounts for player's positions

Chip Stack



Cash Value



Correct answer:

A: Doubling your stack doesn't double your value

Chip Stack

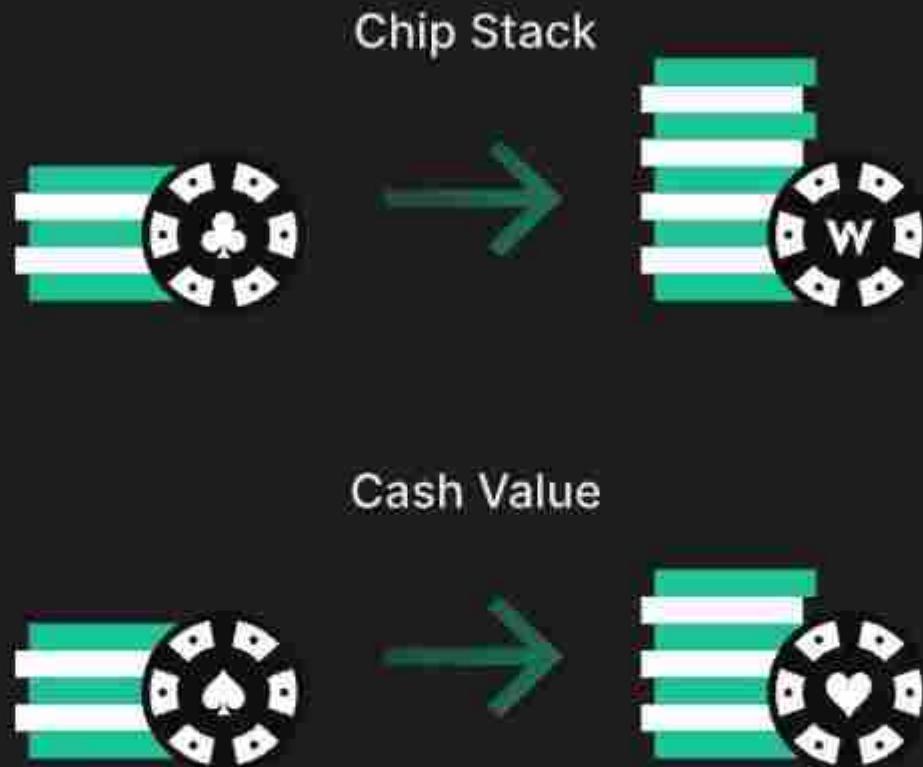


Cash Value



B, C, and D are false.

B: is false. ICM does not apply to winner-take-all situations.

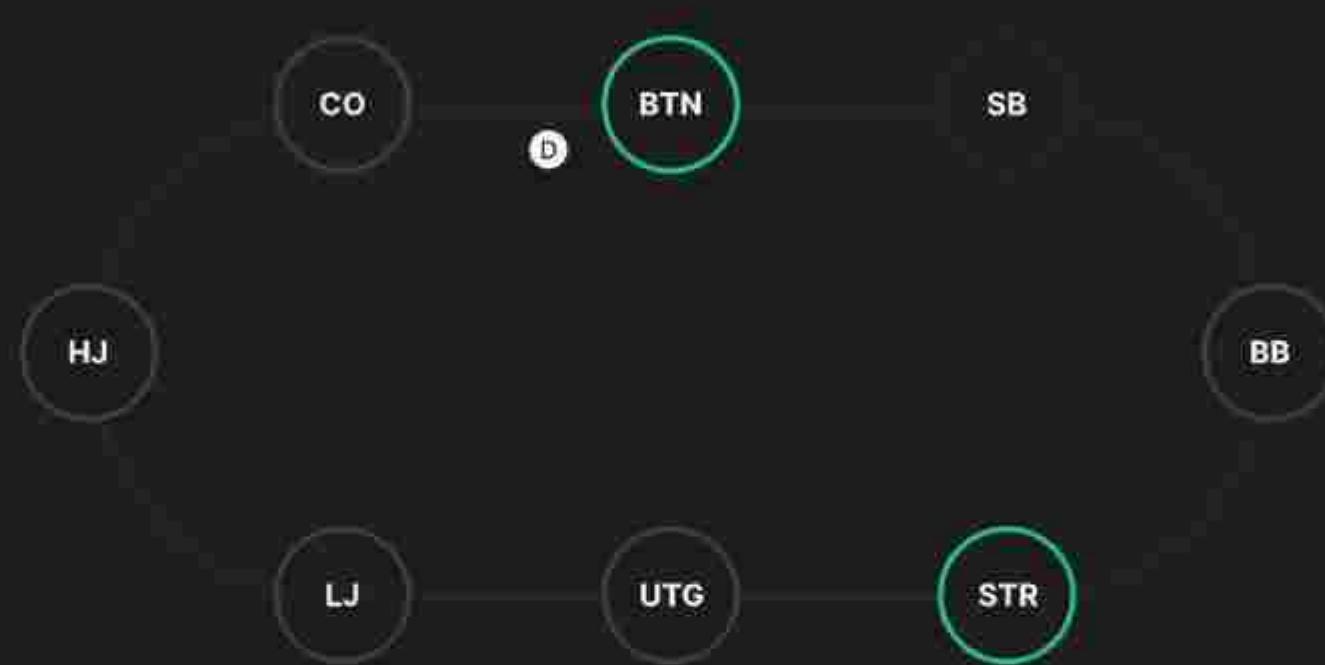


C is false. ICM actually tends to underestimate the big stack advantage.

D is false. ICM does not account for positions.

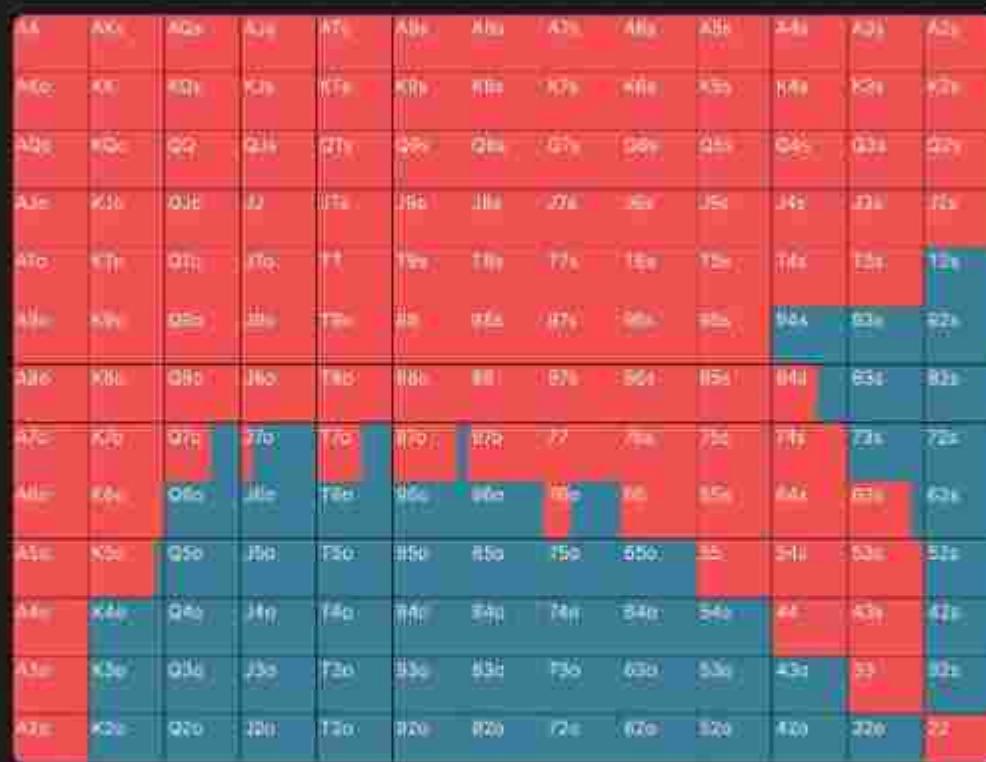
[Learn more](#)





[Theory] Should you open the BTN tighter or wider if someone straddles?
Assume no skill edge. 100 straddles deep.

- A: Open Tighter
- B: Open Wider



100bb MTT General - BTN opening strategy (55.9% RFI)

Correct answer

A: Open Tighter

Even though there's more money in the pot, there are also more players who want to defend their blinds. This is similar to being pushed back one seat.

The third blind tends to decrease the opening % of late positions who rely on stealing the blinds to open wide.

Let's compare 200bb Straddle/Ante 8-Max solutions to 100bb MTT solutions to demonstrate this concept.

This is not exactly an "*apples to apples*" comparison as the straddle/ante solutions use a much larger ante and should therefore open wider in general.

200bb Straddle/Ante - BTN opening strategy (47.1% RFI)

The Straddle/Ante solutions start with 7.5bb (3.25 straddles) in the pot.

The MTT solutions start with 2.5bb in the pot. Both solutions are solved without rake.

AJ	AK	KK	AA	AT	AKs	AKo	QJ	AAo	As	AKo	KKo	AAo
AKs	AK	KKs	K2s	K7s	K2s	K2s	K7s	KKs	K2s	K2s	K2s	K2s
AKo	AKo	Q2s	Q3s	Q2s	Q2s	Q2s	Q4s	Q2s	Q2s	Q2s	Q2s	Q2s
KKo	K2s	Q4s	Q5s	Q7s	Q7s	Q8s	Q7s	Q7s	Q5s	Q5s	Q5s	Q5s
ATo	K7s	Q7s	Q7s	TT	Q2s	Q2s	Q7s	Q2s	Q2s	Q2s	Q2s	TTs
As	K5s	Q9s	Q9s	TTs								
AAo	K9s	Q3s	Q9s	TTs								
AKs	K2s	Q7s	Q7s	TTs								
AKo	K2s	Q2s	Q2s	TTs								
KKo	K2s	Q2s	Q2s	TTs								
ATo	K2s	Q2s	Q2s	TTs								
As	K2s	Q2s	Q2s	TTs								
AAo	K2s	Q2s	Q2s	TTs								
AKs	K2s	Q2s	Q2s	TTs								

200bb Straddle/Ante - BTN opening strategy (47.1% RFI)

Despite having more money in the pot, the BTN plays tighter in the Straddle/Ante game compared to MTT.

Again, this is because the 3rd blind limits how often you can steal the blinds, which prevents BTN from profitably opening too many trash hands.

SB	BB	FLOP	2	BB	SB
FOLD	CHECK			CHECK	CHECK
CALL	RAISE 2.5			BET 1 (50%)	BET 1 (50%)
RAISE 2	RAISE 3.5			ALLIN 7 (350%)	BET 1.5 (75%)
ALLIN 8	ALLIN 8				BET 2 (100%)
					ALLIN 7 (350%)

[HU SnG, 8bb] SB (IP) limps, BB checks. How often should SB shove the flop when checked to (7bb behind) on average?

- A: 30%
- B: 20%
- C: 10%
- D: 0%

Player	EV	Equity		EQR	
BB	- 0.62	- 41.77 %		- 74.29 %	
SB ♠	+ 1.38	+ 58.23 %		+ 118.21 %	
Allin 7 350% 0%	Bet 4 200% 0%	Bet 3.5 175% 0%	Bet 3 150% 0.1%	Bet 2.5 125% 0.2%	Bet 2 100% 0.8%
Bet 1.75 88% 3.2%	Bet 1.5 75% 3.8%	Bet 1.25 62% 16.3%	Bet 1 50% 36.5%	Check	39.2%

Aggregate flop report - Complex solutions

Correct answer:

D: 0%



Aggregate flop report – General Solutions

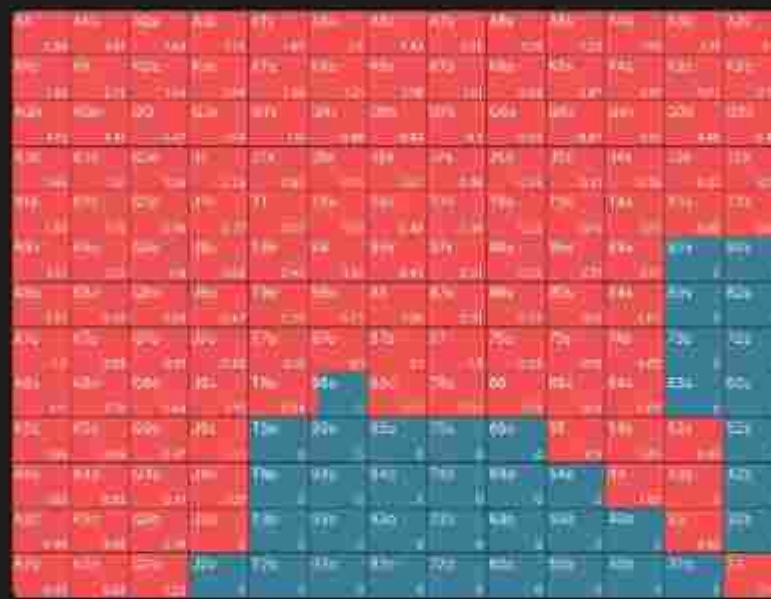
Shoving the flop sacrifices your positional advantage.

The optimal strategy is to spread your bets over multiple streets to leverage position for max EV.

Leverage Positional Advantage

If the stacks were a bit shorter then SB can develop a flop shove strategy, but this (7/2) 350% pot-sized bet offers a poor risk/reward ratio.

Starting with a smaller bet has the added advantage of forcing your opponent to reveal information about their holding.



SB shoving range

[HU SnG, 5bb] Hero in SB shoves 5bb with J3o. BB will call 62% of their range.
How much equity does J3o need to break-even on a shove?

- A: 25% equity against BB call
- B: 30% equity against BB call
- C: 36% equity against BB call
- D: 42% equity against BB call

KA	AKs	AQs	AJs	ATs	As	ABs	ATs	ADs	ABs	Ad	ASs	ASs
4.5	2.7	2.6	2.4	2.3	2.6	1.9	1.6	1.6	1.7	1.6	1.6	1.6
KK	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
2.5	4.1	3.6	3.0	1.9	1.8	1.7	1.7	1.7	1.6	1.6	1.6	0.9
QD	QD	Q9	Q8s	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
3.8	1.6	2.7	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.4
ADs	KJd	QJd	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
2.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.0
ATs	KTs	QTs	JTs	Ts	9s	8s	7s	6s	5s	4s	3s	2s
3.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K9s	Q9s	J9s	T9s	9s	8s	7s	6s	5s	4s	3s	2s
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K8s	Q8s	J8s	T8s	8s	7s	6s	5s	4s	3s	2s	0.0
1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ATs	K7s	Q7s	J7s	T7s	7s	6s	5s	4s	3s	2s	1s	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K6s	Q6s	J6s	T6s	6s	5s	4s	3s	2s	1s	0.0	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K5s	Q5s	J5s	T5s	5s	4s	3s	2s	1s	0.0	0.0	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K4s	Q4s	J4s	T4s	4s	3s	2s	1s	0.0	0.0	0.0	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K3s	Q3s	J3s	T3s	3s	2s	1s	0.0	0.0	0.0	0.0	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0
ABs	K2s	Q2s	J2s	T2s	2s	1s	0.0	0.0	0.0	0.0	0.0	0.0
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0

BB calling range (Calling 62% of range)

Correct answer:

C: 36% equity against BB call

Like everything in poker, this can be solved with an EV equation. There are three outcomes after shoving.

Here are those outcomes, and the relative change in our stack:

- BB folds, and we gain (+1.5bb)
- BB calls, and we lose (-4.5bb)
- BB calls, and we win (+5.5bb)

To solve this, multiply each outcome by its probability, and solve for the required equity to break even.

Set EV (Shove) to 0 to find the breakeven point:

$$0 = (\text{fold\%} \times 1.5\text{bb}) + \text{call\%}(\text{win\%} \times 5.5\text{bb} - \text{lose\%} \times 4.5\text{bb})$$

$$0 = (.38 * 1.5) + .62(w * 5.5 - (1-w) * 4.5)$$

win% (w) to breakeven $\approx 36\%$

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 100	RAISE 7.5	RAISE 21	RAISE 20
	ALLIN 100	ALLIN 100	ALLIN 100
CO	FLOP	CO	BTN
FOLD		CHECK	FOLD
CALL		BET 5.45 (33%)	CALL
RAISE 21		BET 8.25 (50%)	RAISE 14.5 (33%)
ALLIN 100		BET 12.4 (75%)	RAISE 19.15 (50%)
	8 7 5	BET 20.6 (125%)	ALLIN 92.5 (561%)
		ALLIN 92.5 (561%)	

[50NL Cash Game, 100bb] CO vs BTN 3BP. Flop is 8♠ 7♥ 5♦. CO donks 1/3 pot. Action on BTN with AA. Which suit would BTN prefer to hold when they raise AA?

- A: Club ♣
- B: Spade ♠
- C: Heart ♥
- D: Diamond ♦



BTN vs CO donk bet

Correct answer:

A: Club 

A♦A♥ 6	A♦A♣ 6	A♥A♦ 6
Allin 92.5	0	Allin 92.5
Raise 19.15	9.9	Raise 19.15
Raise 14.5	30	Raise 14.5
Call	60.1	Call
Fold	0	Fold
A♦A♣ 6	A♥A♣ 6	A♦A♣ 5
Allin 92.5	0	Allin 92.5
Raise 19.15	30.2	Raise 19.15
Raise 14.5	55.7	Raise 14.5
Call	14.1	Call
Fold	0	Fold



When analyzing suits on rainbow boards you should first look at which suit is not on the board.

CO calls the raise with overcards that have a BDFD like AQs/AJs/KQs, but they tend to fold those same hands without a backdoor flush draw.

Flop:



Key Unblocker:



Therefore, BTN prefers to raise with value hands with a club.

Holding a club tends to block folds and unblock calls, which is desirable when you hold a value hand that wants action.

We can see AA, KK, and even AKs prefer to raise with a club that unblocks these floats.

BTN 100	SB 99.5	BB 99	BTN 97.5
FOLD	FOLD	FOLD	FOLD
RAISE 2.5	CALL	RAISE 23	CALL
	RAISE 12	ALLIN 100	RAISE 26
	ALLIN 100		ALLIN 100

[500NL Cash Game, 100bb] BTN opens 2.5, BB 3-bets to 13bb, action on BTN. The solver splits its 4-betting range between 27bb 4-bet and a 100bb 4-bet shove. Why does the solver construct a 4-bet shoving range in this spot?

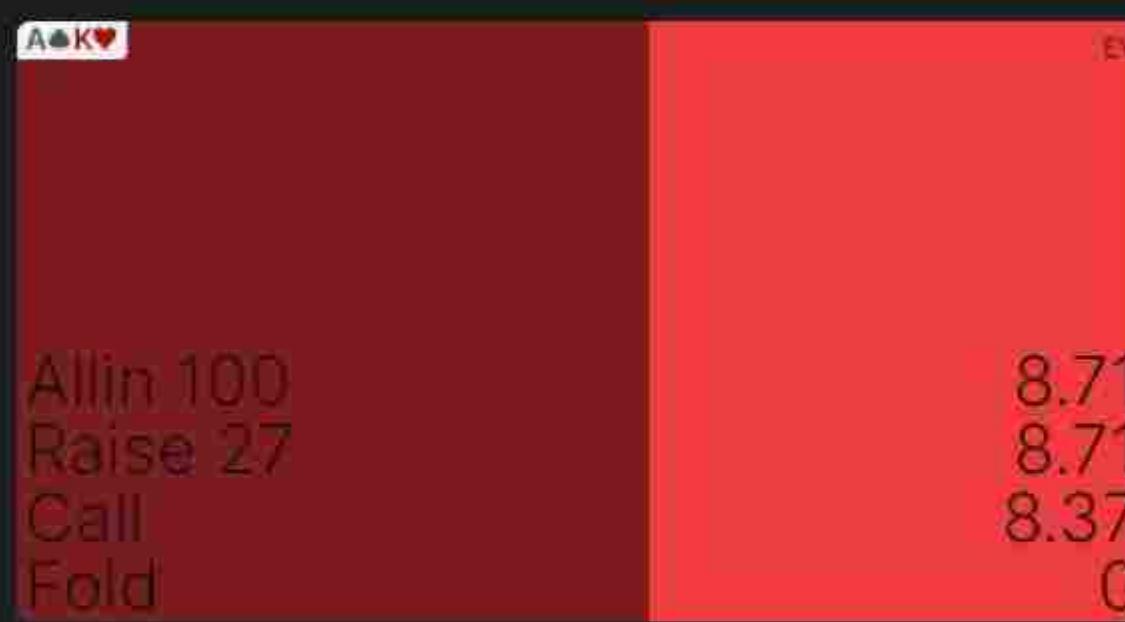
- A: Hands like AKo and JJ have more EV when shoving than using a normal 4-bet size
- B: Hands like AKo and JJ prefer the immediate fold equity rather than taking a flop and getting outdrawn
- C: To avoid seeing a flop and paying more rake
- D: The threat of a 4-bet shove prevents the 3-bettor from raising too linearly



BTN facing BB (13bb) 3-bet

Correct answer:

- D: The threat of a 4-bet shove prevents the 3-bettor from raising too linearly



BTN's AKo EV facing 3-bet

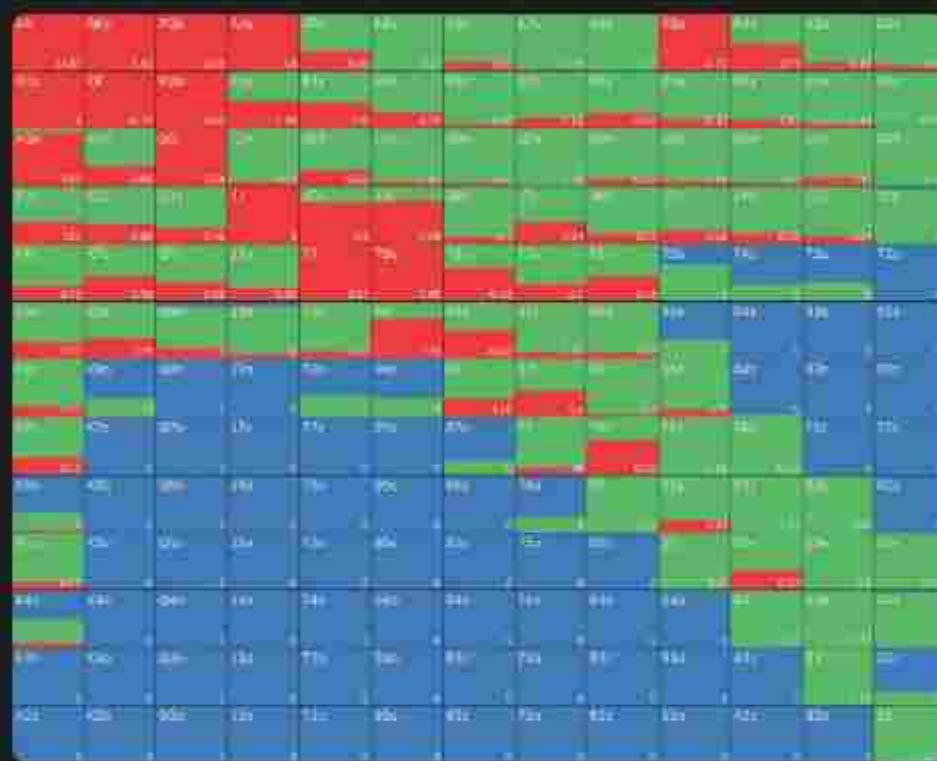
AKo and JJ are indifferent between 4-bet shoving and 4-betting for a smaller size.

No rake simulations also use a 4-bet shove. The answer comes down to how BB adjusts their 3-betting range given the threat of a 4-bet shove.

BB 3-bet when BTN cannot 4-bet shove

Let's compare the BB's 3-bet strategy with and without a 4-bet shove.

We can do this by comparing the General and Simple solutions.



BB 3-bet when BTN can 4-bet shove

High EV hands which can call a normal 4-bet, but fold to a 4-bet shove, lose value when BTN has the option to shove.

You can see that reflected in hands like AJs and KJs and suited broadways/connectors.

BB adapts by 3-betting fewer suited broadways and suited connectors, and adding more "blocker bluff" type 3-bets.

BB is forced to weaken their 3-betting range in order to avoid being blasted off their equity, which increases the EV of BTN's calling range facing the 3-bet.



[NL50 6-Max Cash, 100bb] SB vs BTN 3BP. J♠ 9♥ 7♦ 6♦ 5♠. Flop checks through, BTN bets 1/3 pot on turn, SB calls. BTN bets 86% pot on the river with hands like A♦ 9♦ and T♦ 9♦. Is this a value bet or a bluff?

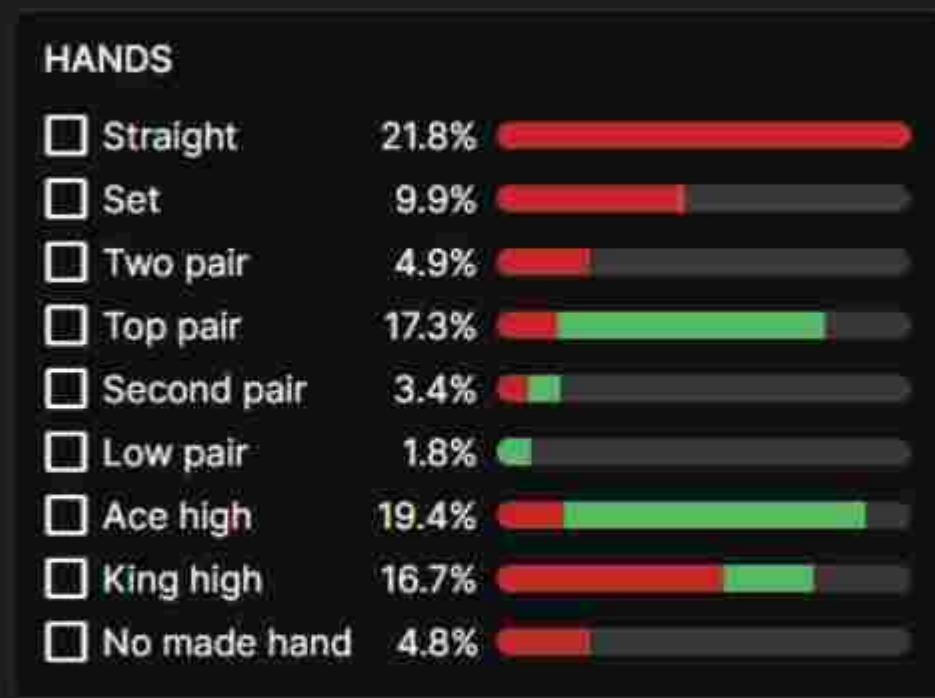
- A: It's a bluff. SB will fold better hands like top pair
- B: It's a value bet. SB will bluff-catch with worse hands

BTN river strategy



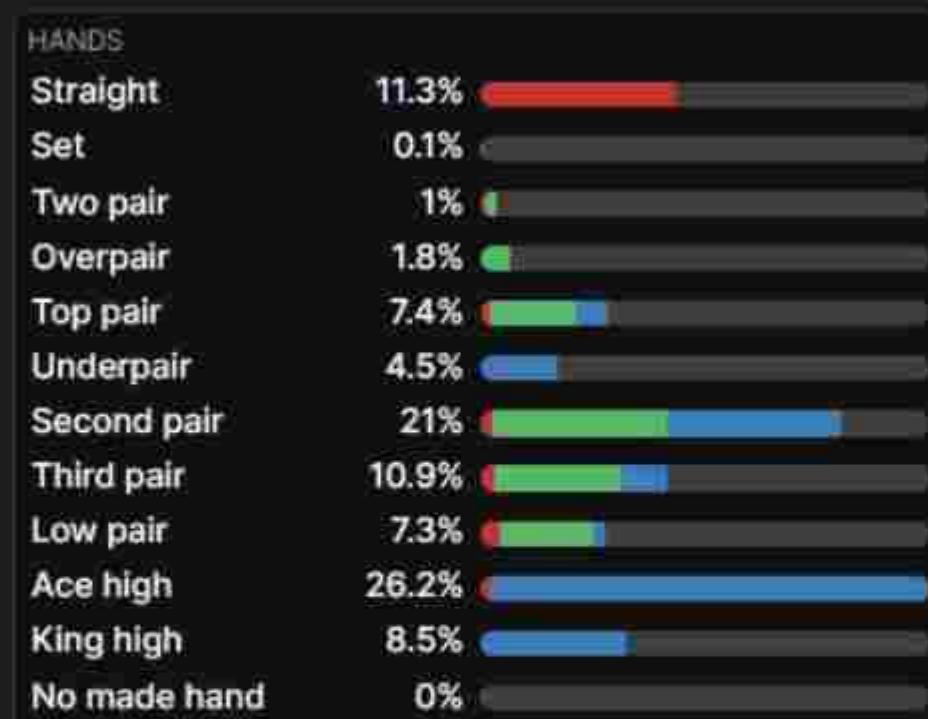
Correct answer

The answer is BOTH. This is a "value bluff", or a "merge". SB will fold better hands like QJ/KJ, and bluff-catch with worse hands like A6 and A7.



BTN is representing a polarized range of two-pair+ for value and bluffs.
This means that SB's best bluff-catchers will block hands like 66, 76s, and 8x straights.

SB uses blockers rather than raw hand strength to decide which hands to call.



This means that when BTN bets a hand like T9s, it is simultaneously folding out better AND getting called by worse.

In practice, this merged bet is best used when you're representing a polarized range and expect your opponent to respond with blocker-based calls rather than call linearly.



[Theory] BTN opens, BB (Hero) calls. The flop is 6♦ 5♦ 4♣. This is a board that BB should donk on quite often. However, you have history with villain and know they will range-bet the flop when checked to. Should you ever lead this board?

- A: Yes, donking is still the strongest play on a board like this
- B: No, let villain build the pot for you
- C: Let the RNG decide

UTG HJ CO BTN SB BB 5.5 BB 5.5 BB 6 5 4

Check

100%

351.13
combinations

Correct answer:

B: No, let villain build the pot for you

You need to consider the underlying reason that causes BB to donk in the first place.

"You need to consider the underlying reason that causes BB to donk in the first place."

This is a good board for BB's range.

They have many hands which want to extract value. If you were to range-check, BTN could exploit that by playing defensively and checking back most of their range, costing you value. This is why BB donks sometimes.

This range split weakens your range which prompts BTN to put in more money overall, acting more aggressively when you check and also putting in money through calls.raises when you lead.

Let your opponent hang themselves

However, if BTN will always bet regardless then you have no reason to lead.

BTN is guaranteed to reopen the action if you check. You always have the option to put more money in on the flop via a check-raise.

The main takeaway here is that you don't need to build the pot if your opponent will do it for you.

Tom: 500 chips

Amy: 300 chips

Bill: 200 chips

1st place: \$70

2nd place: \$30

[Theory] Blinds are 25/50. Tom shoves in the BTN, folds to Bill in the BB. Bill's pot odds indicate they need at least $(150 / 425)$ 35% equity to call. **How much extra equity does Bill require to make this call, given the ICM implications?**

- A: +5% (Bill needs 40% equity to call)
- B: +10% (Bill needs 45% equity to call)
- C: +15% (Bill needs 50% equity to call)
- D: +20% (Bill needs 55% equity to call)

Player	Bill Folds	Bill calls and wins	Bill calls and loses
Tom	575	300	725
Amy	275	275	275
Bill	150	425	0

Correct answer:

B: +10% (Bill needs 45% equity to call)

Player	Bill Folds	Bill calls and wins	Bill calls and loses
Tom	\$49.84	\$31.07	\$58.60
Amy	\$31.88	\$28.90	\$41.40
Bill	\$18.28	\$40.03	\$0.00

To understand why, we need to convert stacks to actual value using ICM.

There are 3 possible scenarios, Bill folds, calls and wins, or calls and loses.

The above table shows Bill's tournament equity in all three scenarios.

	Calculation	Equity required to call
Required (chip) Equity	150 / 425	35.3%
Required (\$) Equity	\$18.28 / \$40.03	45.7%
Risk Premium	45.7% - 35.3%	+10.4%

Bill can fold and still has \$18.28 in tournament equity.

So Bill is risking \$18.28 to win \$40.03. $\$18.28 / \$40.03 = 45.7\%$ equity.

[Learn more](#)

So Bill needs an additional 10.4% equity to justify calling. That extra 10% is his risk premium.



CO	BTN	SB	BB	FLOP	5.5	BB
FOLD	FOLD	FOLD	FOLD			CHECK
RAISE 2.5	RAISE 8	RAISE 11	CALL			
			RAISE 12			
				A ♦ Q ♣ T ♣		
CO	BB	CO		TURN 18.2	BB	CO
CHECK	FOLD	FOLD		J ♠	CHECK	FOLD
BET 1.8 (33%)	CALL	CALL			BET 8 (33%)	CALL
BET 3.65 (66%)	RAISE 6.35 (50%)	RAISE 15.45 (50%)			BET 12 (66%)	
BET 7.15 (130%)	RAISE 10.9 (100%)	RAISE 24.55 (100%)			BET 23.65 (130%)	
ALLIN 147.5 (2682%)	ALLIN 147.5 (1801%)	ALLIN 147.5 (776%)			ALLIN 147.5 (776%)	

[NL500 6-Max Cash, 150bb] CO (HERO) opens with KK. BB calls. Flop is A♦ Q♣ T♣. CO bets 33% pot, BB check-raises 50%, CO calls. Turn J♠. BB shoves 776% pot. What should CO do?

- A: Always call, you have the nuts
- B: Only call KK when you don't hold a club, fold the rest (unblock flush draws)
- C: Only call KK when you hold a club, fold the rest



Correct answer:

C: Only call KK when you hold a club, fold the rest



BB's shoving range contains no bluffs.

Their range is entirely composed of straights, with and without the flush draw. This shoving range makes CO indifferent with some of their non-FD straights. Unlike most spots, bluffs are not required here, since some nuts can outdraw other nuts

CO needs to lay down some King-x hands as they don't have the pot odds to call.

If your opponent is incapable of folding a straight on this kind of board, consider an exploitative jam when you have the flush draw on top of the nuts.



BB's equity distribution is not polarized.

Rather it is a straight line of pure value designed to freeroll CO's King-x without a club.

HJ	CO	BTN	SB
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 100	RAISE 8	RAISE 8	RAISE 11
	ALLIN 100	ALLIN 100	ALLIN 100
BB	FLOP	6.1	BB
FOLD			CHECK
CALL			BET 2 (33%)
RAISE 11.5			ALLIN 97.7 (1602%)
ALLIN 100	A K 5		
			HJ
			CHECK
			BET 2 (33%)
			BET 4.05 (66%)
			BET 6.1 (100%)
			BET 9.15 (150%)
			ALLIN 97.7 (1602%)

[8-max MTT, 100bb] HJ opens, BB calls. Flop is A♠ K♥ 5♦.

Which of these pocket pairs should HJ consider overbetting the flop with?

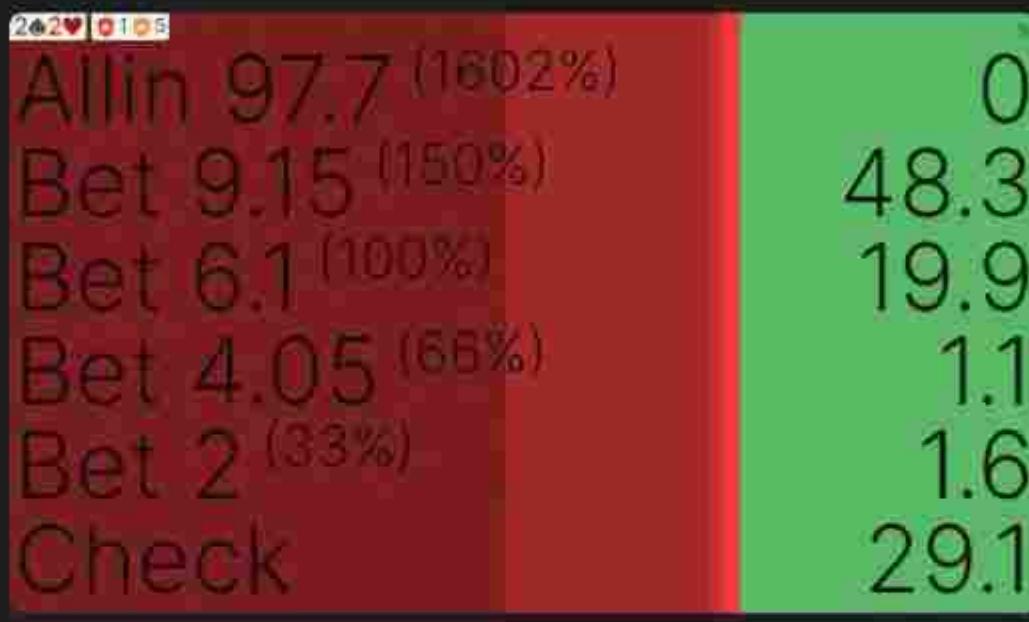
- A: 22
- B: 99
- C: QQ
- D: AA





When HJ overbets they narrow BB's range significantly. Hands like 99 and QQ are too strong to turn into bluffs.

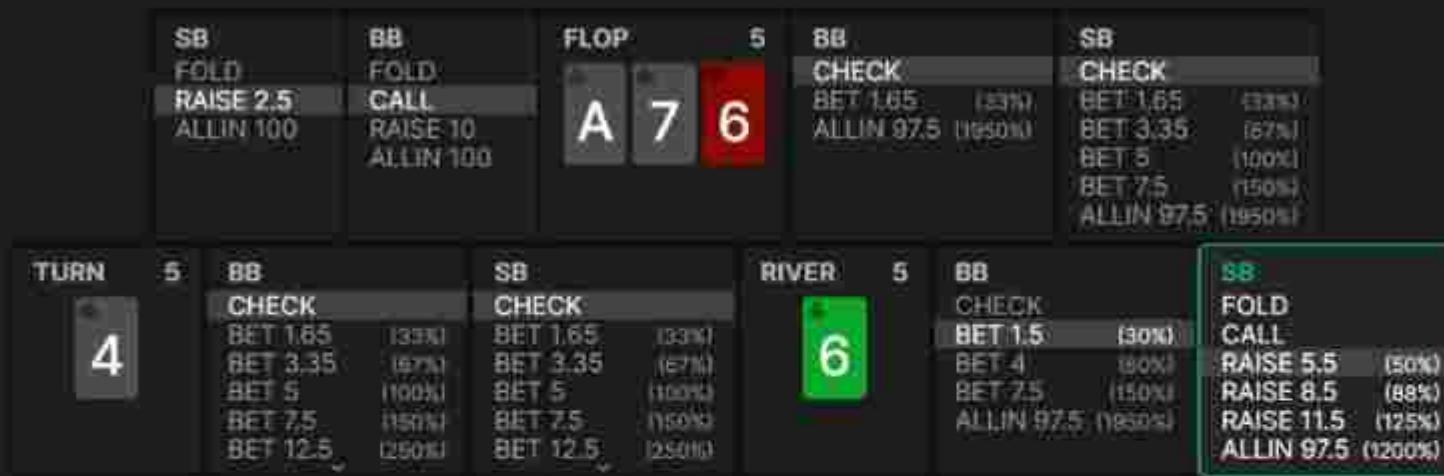
AA is so strong that it hard-blocks the majority of hands BB calls with, making it harder to extract value.



22 is weak enough to turn into a bluff, and it has backdoor straight draw potential.

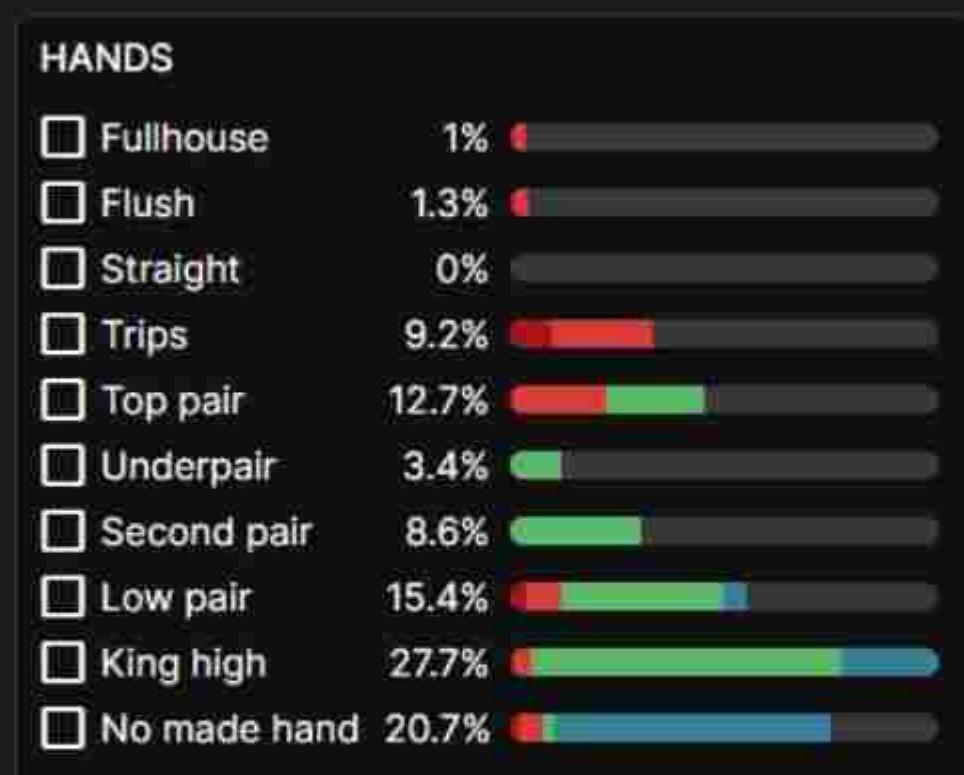
This pair struggles to realize its equity through passive lines. It also unblocks more of CO's folding range.

These factors together make it a great bluffing candidate.



[HU Cash, 100bb] SB (IP) opens, BB calls. Flop and turn check through and the board runs out A ♠ 7 ♠ 6 ♥ 4 ♠ 6 ♣. BB block-bets 30% pot. What's the weakest hand SB can raise for value?

- A: Flush
- B: Trips
- C: Top Pair
- D: Underpair, 88-KK



Correct answer:

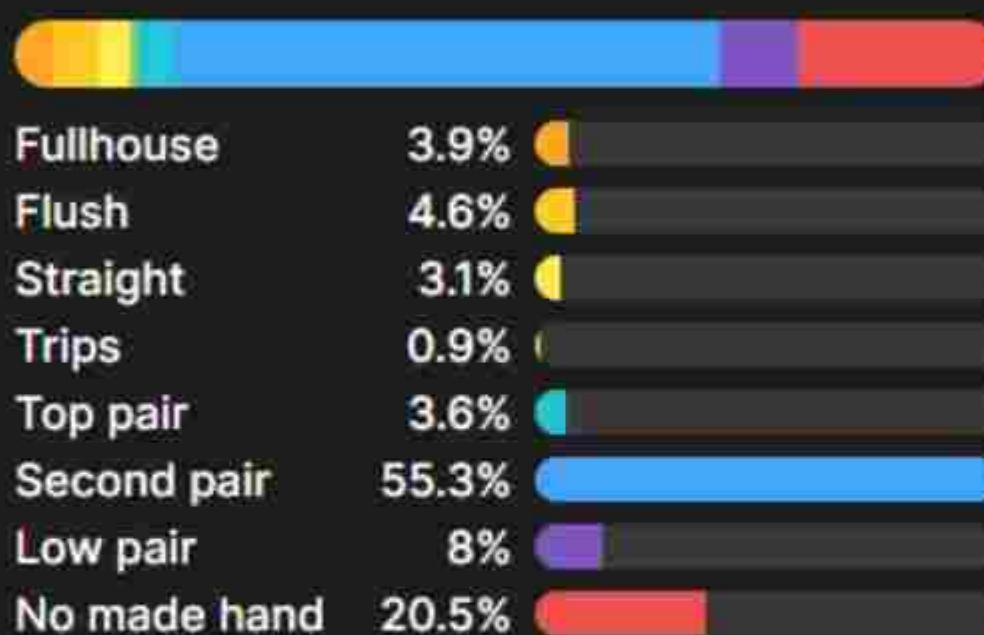
C: Top Pair

Specifically top pair with a kicker higher than a 7.



BB's block bet is comprised primarily of 2nd pair for value.

That means that top pair can target 7x hands for indifference.

HANDS

BB block-betting strategy

Most of BB's top pair would have bet earlier streets, so the river block is mostly composed of second pair hands.

The wide ranges and passive line mean a hand like A8o has nearly 90% equity facing this bet.



[Theory] Billy "The Maniac" Bob is a professional player with a 5 bb/100 win rate. Billy's aggressive style results in more variance, so he has a standard deviation of 120 bb/100. He plays with a 20 buy-in bankroll, buying in for 100bb at a time. Poker is his only form of income, and he refuses to move down stakes when he runs bad. What is the probability that Billy busts his bankroll?

- A: 5%
- B: 10%
- C: 20%
- D: 25%

How Big Should Your Poker Bankroll Be?

Enter Data

Win Rate:	<input type="text" value="5"/>
Standard Deviation:	<input type="text" value="120"/>
Risk of Ruin (%)	<input type="text" value="25"/>

Results

Win Rate	5
Standard Deviation	120
Risk of Ruin	25%
Required Bankroll	1,996.26

Risk of Ruin	Bankroll Required
50%	998.13
25%	1,996.26
10%	3,315.72
5%	4,313.85
2%	5,633.31
1%	6,631.45
0.5%	7,629.58
0.1%	9,947.17
0.01%	13,262.89

Bankroll in bb

Correct answer:

D: 25%



Risk of Ruin is the concept that you can run out of money which prevents you from generating profit in the future.

Managing RoR is an essential component of good bankroll management.

Need \$ to make more \$

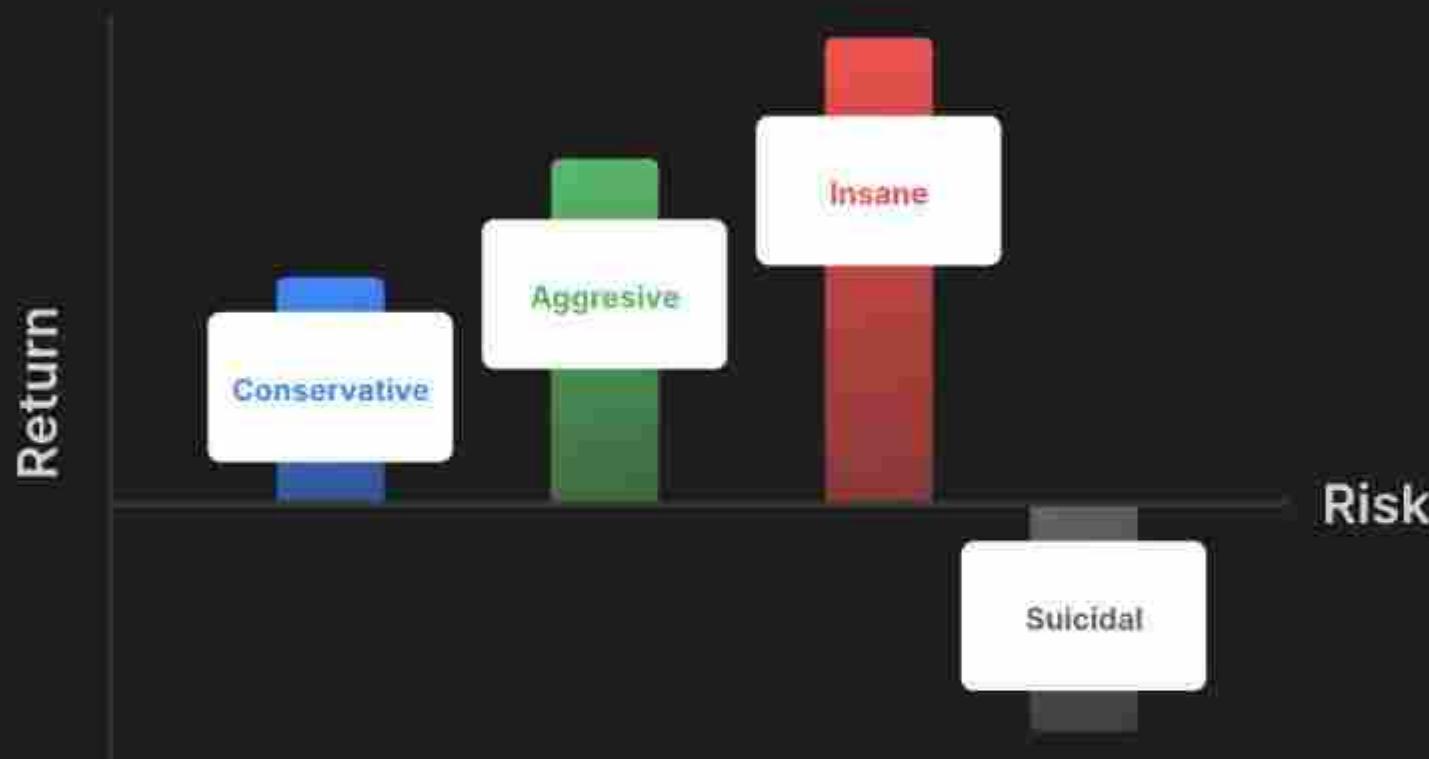
Billy's aggressive (high variance) style, refusal to drop down stakes, and 20BI bankroll are a recipe for busto. Good bankroll management is especially important when your bankroll is not refillable.

Your goal is to maximize the long run, and in order to do that effectively, you need to ensure you have enough money to keep making money.



[HU SnG Theory] You play HU SnG and average a 5% return on investment (ROI). Your bankroll is \$1000. What stakes should you play to grow your bankroll as quickly as possible?

- A: \$100 buy-in
- B: \$50 buy-in
- C: \$25 buy-in
- D: \$10 buy-in



Correct answer:

B: \$50 buy-in

$$f^* = p - \frac{q}{b} = p + \frac{p-1}{b}$$

where:

- f^* is the fraction of the current bankroll to wager.
- p is the probability of a win.
- q is the probability of a loss ($q = 1 - p$).
- b is the proportion of the bet gained with a win. E.g. If betting \$10 on a 2-to-1 odds bet, (upon win you are returned \$30, winning you \$20), then $b = \$20/\$10 = 2.0$.

The Kelly Criterion was designed to answer exactly this kind of question.

It tells you what portion of your bankroll to wager in order to maximize long-term growth.

So how much should you wager to maximize growth without blowing up your bankroll?

Hero has a 5% ROI, so we can imagine each SnG as flipping a coin with a 52.5% chance of winning and a 1:1 payoff ($b=1$).

Plugging this into the equation $f^* = 5\%$. In other words, if you have a 5% edge, you should wager 5% of your bankroll.

This formula can apply to all forms of poker including ring games, although the math is more complex converting bb/100 to edge.

As a poker player, you can use this concept to create extremely powerful and mathematically precise bankroll strategies.

Never go full Kelly

One thing to keep in mind is that you need to refresh this calculation each time your edge or bankroll changes.

Most investors and professional gamblers do not recommend Full-Kelly, and instead, opt for Half-Kelly or even Quarter-Kelly strategies in order to reduce risk and account for unstable edges.

[Learn more](#)

You can capture 75% of the growth with a 50% kelly bet. So although a \$50 buy-in is the correct answer, a \$25 buy-in is perhaps a better answer in practice.





[Theory] You are playing a home game where there are no blinds or antes. How wide should your opening range be on the BTN?

- A: Any two
- B: ~43%
- C: Only AA
- D: Nothing



Correct answer:

C: Only AA



Any bet is infinite relative to the (non-existent) pot. You should only open hands that are stronger than what will call, and your opponents should only defend hands that are stronger than you open.

This creates a feedback loop that leads the optimal strategy to be as tight as possible.

Opening AA and opening nothing is the same EV facing optimal opponents.



The blinds are what cause you to play hands in the first place.

Without the blinds, there would be no reason to play.

This is why ante games, lack of rake, or other dead money in the pot incentivize you to play more hands.

Why isn't answer D: correct?

In game theory, we use a concept called "strategic dominance" to differentiate between strategies. A "weakly dominant" strategy is one that results in at least the same payoff against perfect opposition, and sometimes better if the opponent can make a mistake.

Showing AA is always at least as good as folding, and the opponent can only make mistakes by calling too wide, so betting weakly dominates checking.

Minimum Defense Frequency

[Theory] Your opponent makes a pot-sized shove on the river. You know that facing this size you need at least 33% equity to call (pot odds), and you need to defend half your range (MDF). However, your opponent is clearly under-bluffing. You have a pure bluff catcher that's in the top half of your range.

Should you call to prevent them from exploiting you? Or should you fold given that they're too value-heavy?

- A: Call - You need to defend often enough to reach MDF
- B: Fold - You don't have pot odds to call

Pot Odds >> MDF

Correct answer:

B: Fold

You don't have enough equity to profitably call this bet.



GTO strategy facing a 230% shove on AQ428

This is probably the most common way people misuse game theory.

If a hand is not profitable to call, then don't call.

AA	AKs	KQs	AJs	ATs	AKo	Ad	Ac	AS	AA	AKs	KQs	AJs	ATs	AKo
AA	KK	QQ	JJ	TT	KKo	Ad	Ac	AS	AA	KK	QQ	JJ	TT	KKo
AQs	KKo	QQ	JQs	TTs	QDs	Ad	Ac	AS	QDs	KKo	QQ	JQs	TTs	QDs
6.2%	KQs	QJs	JJ	TTs	JJs	Ad	Ac	AS	QJs	KQs	QJs	JJ	TTs	JJs
6.1%	ATs	QDs	JTs	TTs	QDs	Ad	Ac	AS	QDs	ATs	QDs	JTs	TTs	QDs
AJs	QDs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QDs	QJs	JJs	TTs	QJs
AKo	QDs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QDs	QJs	JJs	TTs	QJs
ATs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AJs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AKo	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
ATs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AJs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AKo	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
ATs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AJs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AKo	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
ATs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs
AJs	QJs	QJs	JJs	TTs	QJs	Ad	Ac	AS	QJs	QJs	QJs	JJs	TTs	QJs

Here is the same strategy if villain is bluffing 5% less often than they should be

MDF is designed to prevent them from exploiting you by over-bluffing, but that isn't relevant if they're clearly not bluffing enough.

AA	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
AA	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
AKs	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
AKo	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
88	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
77	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
66	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
55	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
44	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
33	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
22	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
AKs	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
AKo	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
88	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
77	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
66	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
55	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
44	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
33	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T
22	KK	QQ	JQ	TT	9T	8T	7T	6T	AT	9T	8T	7T	6T	5T

Here is the same strategy if villain is bluffing 5% less often than they should be

A solver will snap-fold any hand without correct pot odds to call (on the river) regardless of MDF because calling is simply not profitable.

This is especially true facing polarized betting ranges.

AA	AKs	AQs
AKo	KK	KQs
AQo	KQo	QQ

[Theory] Both players are dealt one random card out of a deck containing 3 cards: Ace, King, Queen. The pot is \$1000 with \$500 behind. OOP block-bets 25% pot with: {100% Ace, 40% King, 20% Queen}. How does block-betting improve OOP's strategy?

- A: Block-betting over realizes the equity of medium hands like the King
- B: Block-betting increases the EV of KK
- C: Block-betting increases the EV of AA
- D: This strategy is the same EV as range-checking OOP

OOP Hand	Range check	With block-bet
Ace	\$1,083.30	\$1,094.40
King	\$333.30	\$333.30
Queen	\$0.00	\$0.00
Total Average EV:	\$472.20	\$475.90

Correct answer

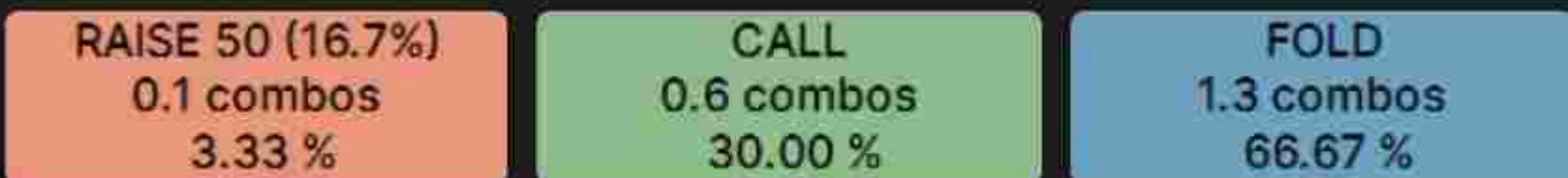
C: Block-betting increases the EV of AA

AA	AKs	AQs
AKo	KK	KQs
AQo	KQo	QQ

IP strategy facing block-bet

It is true that when you block bet a King you expect to face less aggression. This is because we've set the price, and IP's minimum raise size can only include a small fraction of bluffs.

However, this also means that your King extracts less value picking off bluffs against villain's Queen, so the end result is the same EV for KK.



IP frequency (when OOP holds/blocks AA)

The reason block betting adds EV to OOP's strategy is that OOP extracts more value with AA by getting called or bluff-raised when IP has KK/QQ.

IP needs to call and bluff-raise some portion of the time to make OOP indifferent.

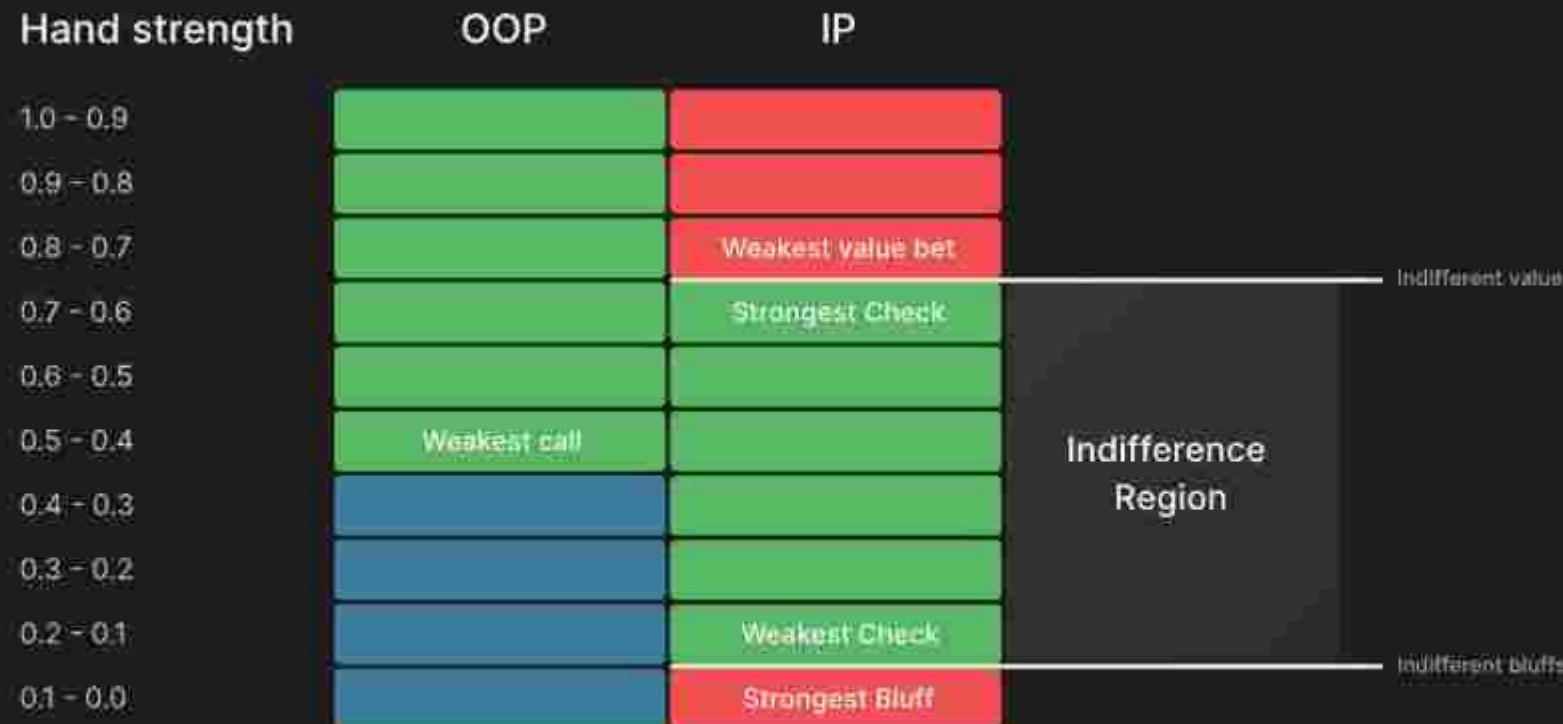
The moral of the story: *When villain reacts to your block-bet correctly it should increase the value of your nutted hands.*

This concept comes up a lot on 4-flush boards where one-card blockers to the nuts become important.



[Theory] Hero (IP) is playing the [0, 1] game. In this game, each player is dealt a random number between 0 and 1 and the highest number wins. OOP is forced to check. IP can shove half-pot or check. What's the weakest hand you bet for value? What's the strongest hand you bluff?

- A: Weakest value bet: 0.80, Strongest bluff: 0.07
- B: Weakest value bet: 0.70, Strongest bluff: 0.10
- C: Weakest value bet: 0.65, Strongest bluff: 0.11
- D: Weakest value bet: 0.60, Strongest bluff: 0.13



Correct answer

B: Weakest value bet: 0.7, Strongest bluff: 0.10

$$\left\{ f = \frac{b+s}{1+s}, v = \frac{1+f}{2}, b = (1-v) \cdot \frac{s}{1+s} \right\}$$

s = bet/pot = 50% f = strongest hand that folds v = weakest value bet b = strongest bluff.

When working with toy games we often try to make villain's bluffs indifferent.
However, in practice, you're usually trying to make their strongest bluff indifferent, and their weakest value bet indifferent between betting and checking.

So the goal is to find those points of indifference, v, b, f.

The general equation is shown above, but let's try and make this more intuitive:

$$b = \frac{1}{10}, f = \frac{2}{5}, s = \frac{1}{2}, v = \frac{7}{10}$$

The weakest value bet needs at least 50% equity when called. Writing this as a function of the strongest hand villain folds: $v = (1 + f)/2$

We need to lay 3:1 pot odds for a half-pot bet, so a quarter of our range should be bluffs.

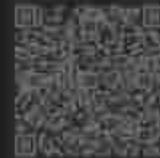
The strongest bluff is then 1/3 of the value region, $b = (1-v)/3$

Apply the minimum defense frequency to the region of hands that beats a bluff.

MDF for a half-pot bet is 2/3, so two-thirds of hands which are better than b should call:
 $f = 1 - (2/3 * (1-b))$

[Learn more](#)

Now we have 3 unknown variables and 3 equations. Solving this system of equations yields the indifference points b, v, and f.



WEEKLY LIVE COACHING



Join our next coaching session here!



Deepen your understanding of advanced poker concepts by joining GTO Wizard's [Weekly Coaching](#). Here, you can engage with experts on complex topics like ICM, nodelocking, and solver-based exploits, turning theory into practical technique.



EQUITY

EQUITY



Chapter 6 will delve into the influence of equity distributions on your strategy in poker. Equity, which represents the likelihood of winning a hand assuming the pot is checked down, can be thought of as your expected “share” of the pot.

Various methods of equity analysis exist in poker, but we will concentrate on four primary techniques: **Range Morphology**, **Equity Distribution Graphs**, **Equity Realization**, and **Equity Buckets**.

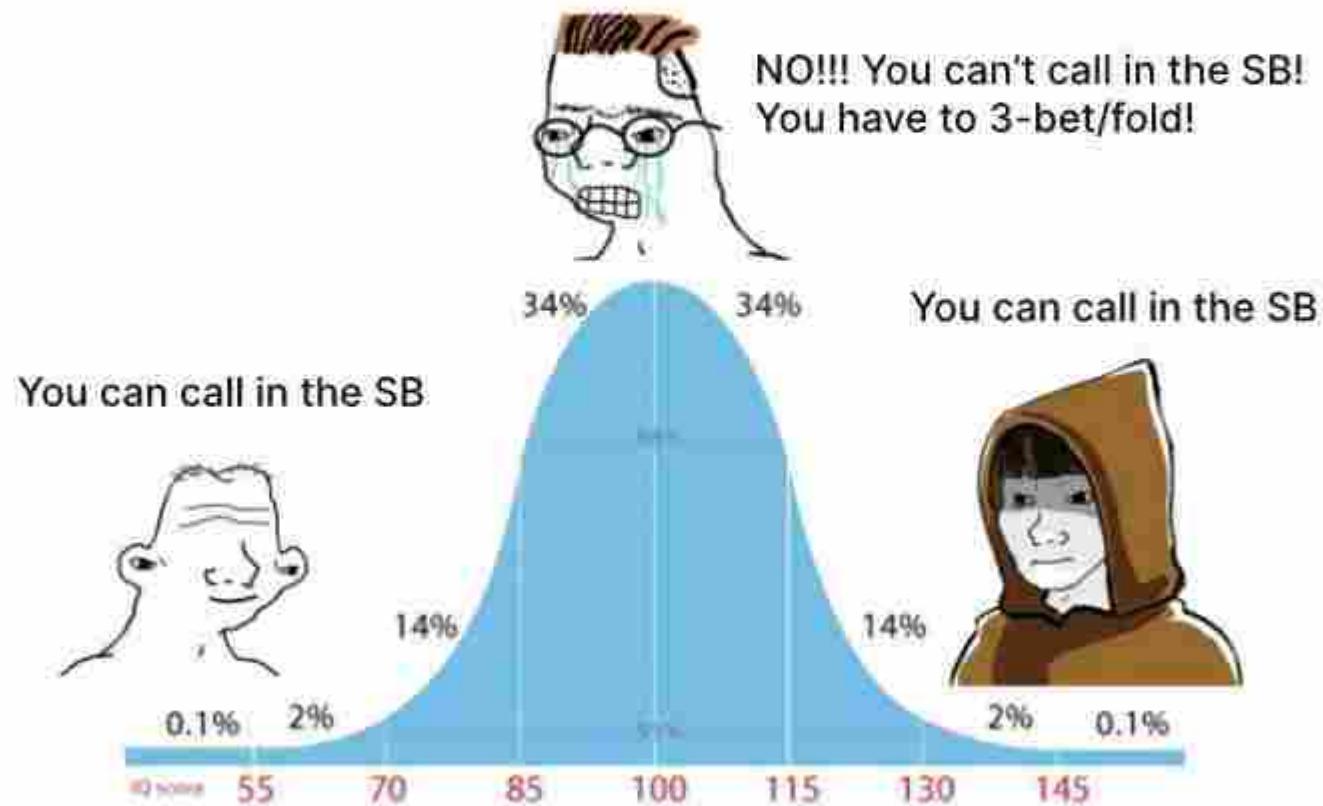
Examining the relationship between equity distributions and GTO strategy can provide insight into the fundamental principles of poker theory.



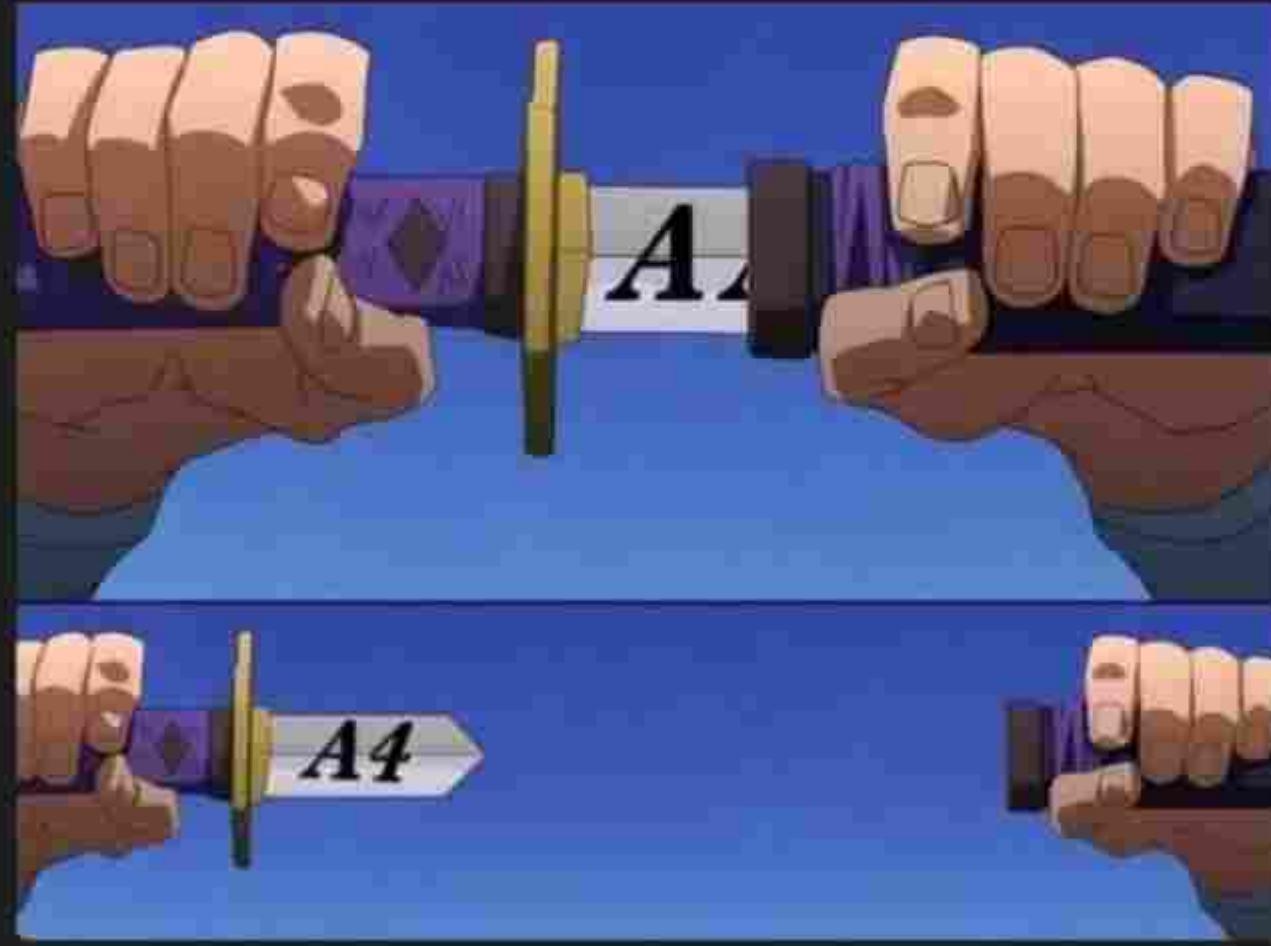
If you've made it this far, you've earned a break!

This Daily Dose was originally made as an April Fools joke, but we thought you'd appreciate the memes :)

Cold-calling the SB



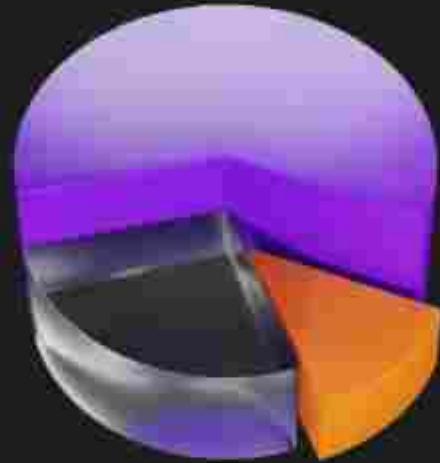
When you peak at the first card



One does not simply



Give up the river when you
miss your straight flush draw



The term "equity" is ubiquitous throughout poker. But what does equity actually mean?

- A: Equity refers to what percentage of the pot you expect to win
- B: Equity refers to how often you expect to win
- C: Equity refers to how often you expect to win if the pot were checked down
- D: Equity refers to your fair "share" of the pot



Correct answer

- C: Equity refers to how often you expect to win if the pot were checked down**



Equity is the percentage of the pot you'd win if the hand were checked down, factoring in ties.

There are different kinds of equity measurements, such as hand vs hand, range vs range, or hand vs range.

Equity more loosely refers to the value of a hand. However, factors such as equity realization can influence how much you actually expect to win.



Your "*true equity*", in the sense an investor uses the term, would be your expected value divided by the pot.

However, you cannot expect to win your "*fair share*" of the pot if there are actions on future streets.

Postflop factors such as positional, range, and nut advantages can give an edge to one player, skewing the EV in their favor.

[Learn more](#)



GTO Wizard gives you the ability to break down equity into buckets for further analysis. The following situation is taken from a BB (left) vs CO (right) spot. How would you describe CO's range shape relative to BB?

- A: Linear
- B: Polarized
- C: Merged
- D: Depolarized / Condensed

Hand Strength



Polarized	Linear	Condensed	Merged
1	1	0	1
0.8	1	0.2	0.8
0.7	0.8	0.4	0.7
0.2	0.6	0.8	0
0	0.4	1	0.25
0	0.2	0.8	0.4
0	0	0.4	0.25
0	0	0.2	0
0.2	0	0	0.2
0.7	0	0	0.7
1	0	0	1

Correct answer:

B: Polarized

 EQ buckets - Simple

Hands are separated by their Equity:

Best hands 100%-75%

Good hands 75%-50%

Weak hands 50%-33%

Trash hands 33%-0%

CO's range has "*Best hands*" and "*Trash hands*", whereas BB's range has bluff-catchers with mostly "*Weak hands*".

CO's equity distribution is polarized - nutted hands and bluffs, relative to BB's range.

Equity distributions inform us about the shape of the ranges, which presents strategic insight.

Polarized distributions tend to use huge bets with the intention of getting chips in by the river.

This is because the polarity gives the aggressor a "*clairvoyant*" information advantage.

The aggressor knows if they are ahead or behind the defender's hand, but the defender does not know if they are ahead or behind.

[Learn more](#)

When a player is "*perfectly polarized*", as is the case here, they should implement a strategy to get all the chips in by the river, ideally betting an equal fraction of the pot on each street (AKA betting geometrically) to maximize villain's call-down range.





BB Left, CO Right

[500NL Cash, 100bb] CO opens 2.3, BB calls. Which flop is mostly likely to result in this relatively symmetrical equity distribution?

- A: A ♥ 4 ♥ 3 ♥
- B: T ♥ 8 ♦ 6 ♣
- C: 5 ♥ 5 ♦ 4 ♣
- D: J ♠ T ♠ 4 ♦

FLOP 5.1

A 4 3

FLOP 5.1

T 8 6

FLOP 5.1

5 5 4

FLOP 5.1

J T 4

EQ BUCKETS - ADVANCED

5.4%	HANDS 90-100	8.3%
6.1%	HANDS 80-90	6.3%
5.5%	HANDS 70-80	6.9%
16.1%	HANDS 60-70	25.8%
9.3%	HANDS 50-60	11.5%
34.7%	HANDS 25-50	30.5%
22.8%	HANDS 0-25	12.7%

EQ BUCKETS - ADVANCED

2.8%	HANDS 90-100	2%
2%	HANDS 80-90	2.5%
1.9%	HANDS 70-80	24.5%
17.5%	HANDS 60-70	9.7%
13.9%	HANDS 50-60	8.8%
48.6%	HANDS 25-50	52%
13.4%	HANDS 0-25	0.3%

EQ BUCKETS - ADVANCED

7.1%	HANDS 90-100	3.2%
0%	HANDS 80-90	4.9%
1.1%	HANDS 70-80	6.5%
14%	HANDS 60-70	14.3%
22.8%	HANDS 50-60	21.6%
45.4%	HANDS 25-50	48.4%
6.6%	HANDS 0-25	11%

EQ BUCKETS - ADVANCED

0%	HANDS 90-100	1.5%
1.5%	HANDS 80-90	6.5%
6.3%	HANDS 70-80	19.7%
17.4%	HANDS 60-70	14.8%
12.7%	HANDS 50-60	20.0%
46%	HANDS 25-50	34.6%
16%	HANDS 0-25	1.9%

Correct answer:

A: A♥ 4♥ 3♥



Monotone flops are known for equalizing equity distributions.

The A♥ may seem like a bad card for BB, but it connects with the two lower cards adding wheel straight potential, removes more flushes from CO's range than BB's range, and helps neutralize CO's broadway high card advantage.

This board is so good for BB that they actually donk at a low frequency, and CO checks back over 72% of their range when checked to.



JT4s and to a lesser extent T86r power up CO's high card advantage.

Paired boards like 554r tend to create asymmetrical equity distributions.



CO Left, BTN Right

[NL50 6-Max Cash, 100bb] CO opens 2.3, BTN calls. What flop is most likely to result in this naturally polarized equity distribution?

- A: A ♠ K ♥ 2 ♥
- B: 8 ♥ 8 ♦ 8 ♣
- C: J ♥ 8 ♦ 7 ♦
- D: 5 ♦ 4 ♦ 3 ♣

FLOP 6.1
A K 2FLOP 6.1
8 8 8FLOP 6.1
J 8 7FLOP 6.1
5 4 3

Correct answer:

B: 8 ♦ 8 ♣ 8 ♠

$8\heartsuit 8\clubsuit 8\spadesuit$ is an interesting flop as no one has many 8x quads, however, it has the effect of powering up pocket pairs and overcards.

When we examine the range asymmetries between CO's RFI and BTN's flat we find that, CO's advantage is exactly in overpairs and higher overcards.

This allows CO to create a polarized strategy consisting of overpair/boats for value, and high-card boat draws as semi-bluffs.

BTN's calling range is condensed towards medium pocket pairs, which gives them more equity in middling cards, but because they lack nutted hands they can't polarize effectively.





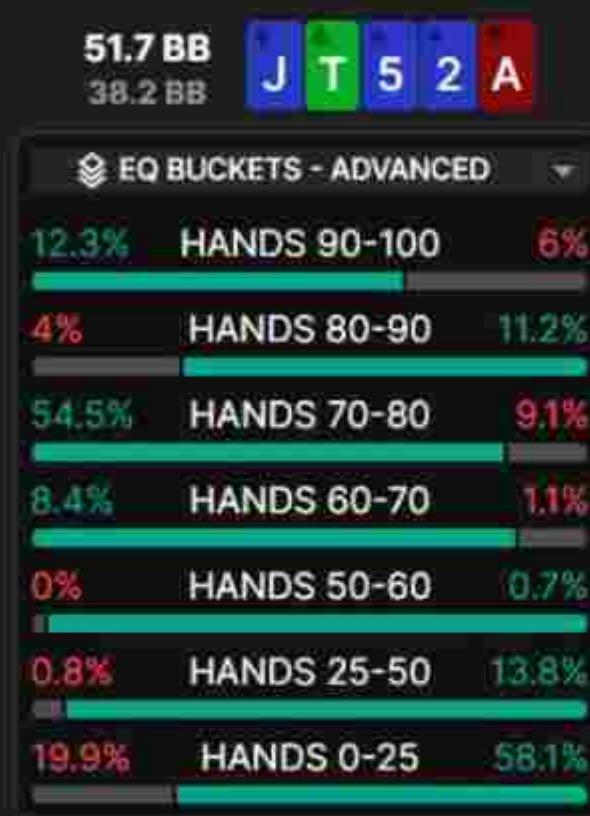
[NL500 6-Max Cash, 200bb] HJ opens 2.5, SB 3-bet 11, HJ calls. The board runs out J♦ T♣ 5♦ 2♦ A♥. Which of these lines is most likely to result in this equity distribution? (SB Left, HJ Right)

- A: Bet 33% Call, Check Check, Bet 35%
- B: Bet 33% Call, Bet 66% Call, Check
- C: Check Check, Check Bet 66% Call, Check
- D: Check Bet 33% Call, Check Check, Bet 85%



Correct answer:

A: Bet 33% Call, Check Check, Bet 35%



The trick to solving this one is noticing that only one answer is a block-bet.

River block-bet equity distributions typically contain many "*medium value*" hands in that 60-80% range, with a few nutted traps and some absolute trash sprinkled in.

You should be able to rule out answers **B:** & **C:** ending with a check, as checking ranges contain more weak hands and give-ups.

This distribution contains too many strong hands and wouldn't incentivize villain to bet often enough, costing you value.

The 85% bet in the last answer is much more polarized, containing many more nutted hands and trash relative to villain's distribution.

Betting this large on the river with this many medium-value hands would be an overplay.



SB River strategy



[8-Max Straddle+Ante Cash, 150bb] BTN opens, STR calls. The board runs out K♥ Q♦ 5♥ J♠ 9♥. Which of these lines is most likely to result in this equity distribution? (STR Left, BTN Right)

- A: Check Bet 33% Call, Check Check, Bet 34% (River block-bet)
- B: Check Bet 33% Call, Check Bet 75% All in 138% (Turn shove)
- C: Check Bet 33% Call, Check Bet 75% Call, All-in 138% (Donk shove)

A: Bet 33% Call,
Check Check, Bet 34%
(River block-bet)



B: Check Bet 33% Call,
Check Bet 75% All-in 138%
(Turn shove)



C: Check Bet 33% Call,
Check Bet 75% Call, All-in 138%
(Donk shove)



Correct answer:

**C: Check Bet 33% Call, Check Bet 75% Call, All-in 138%
(Donk shove)**

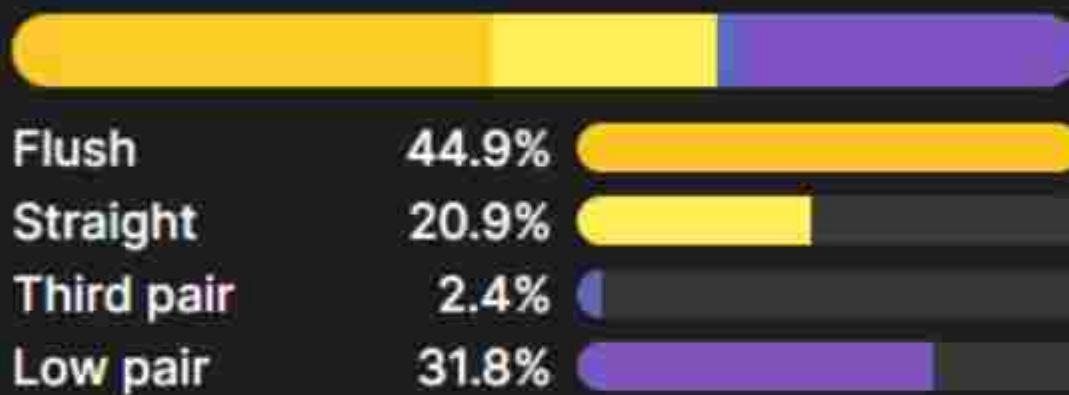


River hand distribution before shoving

You can solve this one using the process of elimination.

You can rule out A: as a block-bet should contain more medium hands and be less polarized.

HANDS



Shoving range construction

You can rule out B: as equity on the turn is less clarified. Turn equity is blurred as many hands can still outdraw each other, so the distribution is less polarized.

That leaves C: The 9♥ completes most draws, so the Straddle can construct a polarized river donk-shoving range.

FLOP	BB CHECK	CO CHECK BET 33% BET 66% BET 130% ALLIN 976%	BB FOLD CALL RAISE 50% RAISE 100% ALLIN 570%	CO FOLD CALL RAISE 50% RAISE 100% ALLIN 260%	BB FOLD CALL ALLIN
9 9 7					

[500NL 6-Max Cash] CO Opens, BB calls. Flop is 9♠ 9♥ 7♦. CO bets 33%, BB raises 50%, CO 3bets 50%. At which stack depth should CO have the most value (80%+ equity) in their 3-betting range?

- A: 50bb effective (105% behind)
- B: 100bb effective (245% behind)
- C: 150bb effective (363% behind)
- D: 200bb effective (500% behind)



Correct answer:

A: 50bb effective (105% behind)

When there's less money behind, CO needs to put more strong value into their 3-betting range.

They need to be prepared to defend a wider portion of their range to counter the threat of a BB shove.

The positional advantage gets magnified as stacks get deeper. CO can construct their 3-bet using more draws deep stacked.

The threat of a BB shove is reduced when there's more money behind, as CO isn't obligated to defend as wide.

Match each of these preflop spots to the correct range morphology:

Preflop spot**Morphology**

- (A) BB 3-bet vs SB RFI
- (B) CO Opens
- (C) BTN Calls HJ Open
- (D) BB 3-bet vs BTN Open

Linear

Polarized

Merged

Condensed

Match each of these preflop spots to the correct range morphology:

Preflop spot

Morphology

(A) BB 3-bet vs SB RFI

(B) Linear

(B) CO Opens

(A) Polarized

(C) BTN Calls HJ Open

(D) Merged

(D) BB 3-bet vs BTN Open

(C) Condensed

The BB 3-bet vs SB open is **Polarized** since they raise very strong and very weak hands.

The CO open is **Linear** (top-down value) since they only open good hands and fold the rest.

The BTN call vs HJ open is **Condensed** (or "depolarized") since it mostly contains medium hands, with very few nutted and trash hands.

The BB 3-bet vs BTN open is **Merged** since it uses a mixture of nuts, bluffs, and medium value draws.

Hand Strength



Polarized	Linear	Condensed	Merged
1	1	0	1
0.8	1	0.2	0.8
0.7	0.8	0.4	0.7
0.2	0.6	0.8	0
0	0.4	1	0.25
0	0.2	0.8	0.4
0	0	0.4	0.25
0	0	0.2	0
0.2	0	0	0.2
0.7	0	0	0.7
1	0	0	1

[Learn more](#)



[6-Max Cash, 100bb] SB opens 3, BB calls. The flop is K♦ Q♦ J♣.

How would you describe SB's c-betting range?

- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged



Correct answer

D: Merged

This c-betting range uses a small size with a wide range consisting of value, bluffs, and plenty of medium hands.



SB c-bets using a “*merged*” range using a small size.

This betting range is slightly more polarized than their starting range but contains a wide variety of hand classes including nuts, bluffs, semibluffs, and medium-strength value.



On these boards, it's often easier to construct your checking range before your betting range.

Medium pocket pairs, Jack-x, and trash without a backdoor draw mostly check.

Therefore, the checking range is quite condensed towards medium hands (with a few trash give-ups). The remaining hands c-bet at a high frequency.

CO	BTN	SB	BB	CO	FLOP	19.1	BB
FOLD	FOLD	FOLD	FOLD	FOLD			CHECK
RAISE 2.2	CALL	CALL	CALL	CALL			BET 1.9 (10%)
ALLIN 35	RAISE 6.8	RAISE 8.3	RAISE 8.8	ALLIN 35			BET 4.8 (25%)
	ALLIN 35	ALLIN 35	ALLIN 35	ALLIN 35			BET 9.55 (50%)
					9 8 7		BET 14.3 (75%)
							ALLIN 26.2 (137%)

[8-Max MTT, 35bb] CO opens 2.2, BB 3bets to 8.8, CO calls.

Flop is 9♥ 8♥ 7♦. How should BB construct their checking range here?

- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged

Category	Range %	Combos	Performed %	Represented %
Straight	1.3	1.7	97.6	2.9
Set	0.1	0.1	84.5	0.1
Overpair	6.4	81	27	14
Top pair	0	0	0	0
Second pair	0.6	0.8	8	1.4
Third pair	4.6	5.8	54.5	10.1
Low pair	0.9	1.1	15.8	2
Ace high	19.4	24.5	53.7	42.5
King high	6.7	8.4	65.7	14.6
No made hand	5.7	7.2	97.1	12.4
Combo draw	0.8	1	98.2	1.7
Flush draw	2.4	3.1	87.3	5.3
Oesd	6.8	8.6	34.8	14.8
Gutshot	10	12.7	46.1	22
No draw	25.7	32.4	46.3	56.2

Correct answer:

A: Polarized

Strong hands and weak hands.



This exciting board promotes aggressive strategies due to the low SPR and lack of suited hands that make flush draws in BB's 3-betting range.

BB should shove or bet large with most of their vulnerable made hands and draws, such as 2nd or 3rd pair, JJ, QQ, ATo, etc.

Their checking range consists primarily of trash give-ups and a few powerful traps. The check is therefore polarized.

It's important to realize that polarized doesn't equate to strong; it just means a distribution of nutted hands and weak hands.

The weak hands in BB's checking range are all overcards to top pair, which can become value later. This incentivizes CO to stab at the flop to fold these hands. This encourages BB to put some nutted traps into their checking line.

BTN	SB	BB	STR	FLOP	20.5
FOLD	FOLD	FOLD	FOLD	J T 5	
RAISE 7	CALL	CALL	CALL		
ALLIN 149.5	RAISE 28	RAISE 28	RAISE 32.5		
	ALLIN 149.5	ALLIN 149.5	ALLIN 149.5		
BB	BTN		TURN	20.5	
CHECK	CHECK				
BET 6.75 (33%)	BET 6.75 (33%)				
ALLIN 142.5 (695%)	BET 10.25 (50%)				
	BET 15.4 (75%)				
	BET 20.5 (100%)				
	BET 30.75 (150%)				

[8-Max Straddle+Ante Cash, 200bb] BTN opens 7, BB calls. Flop is J♥ T♦ 5♣ and checks through. How should BB construct their turn probe range on a low brick like a 2, 3, 4, or 6?

- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged



Correct answer:

A: Polarized

Strong hands and bluffs.



BB strategy on turned 4

OOP turn probe bets typically use a geometric overbet size with a tight polarized range.



Equity distribution after turn overbet

OOP constructs their range with strong top pair+, and draws as bluffs. Even hands like KJ are strong enough to play for stacks here, stacking off on brick rivers.



[HU Cash, 100bb] SB (IP) opens 2.5, BB (OOP) 3-bets to 10.

How should BB construct their 3-betting range?

- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged

AA	AKs	KQs	AJs	ATs	AKs	AKs	A7s	AKs	AKs	AKs	AKs	A2s	A2s
AKo	10s	92s	KJs	KTs	97s	98s	87s	96s	95s	94s	93s	K2s	K2s
AQs	99s	Q9s	QJ4s	QT6s	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q2s
AJs	K7s	Q3s	J4s	J7s	97s	98s	87s	96s	95s	94s	93s	J2s	J2s
ATs	KTs	QT6s	J7s	J1s	97s	98s	87s	96s	95s	94s	93s	J2s	J2s
ABs	K9s	Q9s	J9s	T9s	99s	98s	97s	96s	95s	94s	93s	92s	92s
ABs	K8s	Q8s	J8s	T8s	98s	97s	96s	95s	94s	93s	92s	92s	92s
ATs	K7s	Q7s	J7s	T7s	97s	97s	87s	96s	95s	94s	93s	92s	92s
ATs	K6s	Q6s	J6s	T6s	96s	96s	86s	95s	94s	93s	92s	92s	92s
ATs	K5s	Q5s	J5s	T5s	95s	95s	85s	94s	93s	92s	92s	92s	92s
AJs	K4s	Q4s	J4s	T4s	94s	94s	84s	93s	92s	92s	92s	92s	92s
AJs	K3s	Q3s	J3s	T3s	93s	93s	83s	92s	91s	91s	91s	91s	91s
AJs	K2s	Q2s	J2s	T2s	92s	92s	82s	91s	90s	90s	90s	90s	90s

BB strategy facing 2.5 open

Correct answer:

B: Linear

Top-down value and medium hands.



SB (IP) facing 3-bet.

SB is opening wide, 80% of hands.

So facing the 3-bet, they will call proportionally more often than they 4-bet.

It's costly to 3bet-fold high EV hands that could have just called instead. So if you expect to be blasted off your equity quite often, you should switch to a more polarized strategy.

Conversely, a linear strategy works better when you expect to face a higher proportion of calls rather than raises, like in this case, BB expects to face a call almost 4x as often 4-bet, so they 3-bet linearly using hands that draw well postflop, rather than focusing on blocker bluffs.

BTN	SB	BB	FLOP	4.5	BB	BTN
FOLD	FOLD	FOLD			CHECK	CHECK
RAISE 2	CALL	CALL			BET 1.5 (33%)	BET 1 (22%)
ALLIN 19	RAISE 5	RAISE 5			ALLIN 17 (378%)	BET 1.5 (33%)
	ALLIN 19	ALLIN 19				BET 2.25 (50%)
			4	3	3	BET 3.4 (76%)
						BET 4.5 (100%)

[Spin & Go, 19-19-19] BTN opens 2, BB calls. Flop is 4♥ 3♥ 3♦.

How should BTN construct their check-back range?

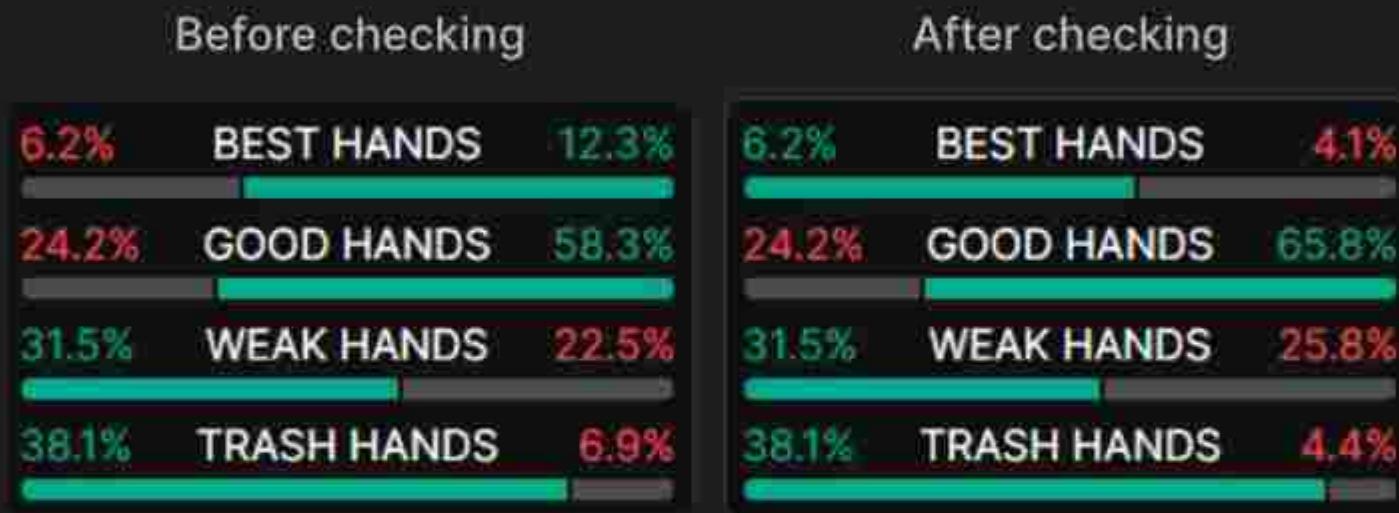
- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged



Correct answer:

C: Condensed / Depolarized

The range contains mostly medium hands.



4♥ 3♥ 3♦ is a very dynamic flop that encourages betting to fold out overcards, and also a lot of check-raising.

BTN only checks back about a quarter of their range, so they use medium-strength hands like King high and Ace high that want to avoid getting check-raised off their equity.



BTN flop strategy

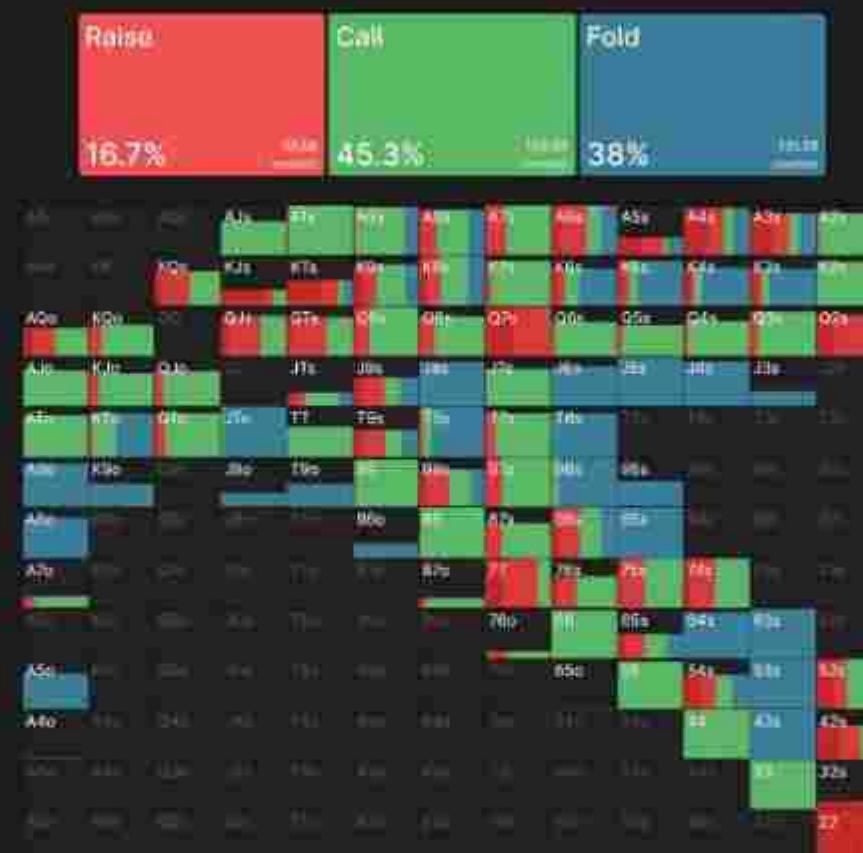
BTN's check-back range is "condensed" because it doesn't contain many weak hands or strong hands.

It's mostly medium-strength hands. Keep in mind, Ace-high is a solid bluff catcher on many runouts after the flop.



[NL500 6-Max Cash, 100bb] CO opens 2.3, BB calls. Flop is Q ♦ 7 ♥ 2 ♣.
CO c-bets 33%. How should BB construct their check-raising range?

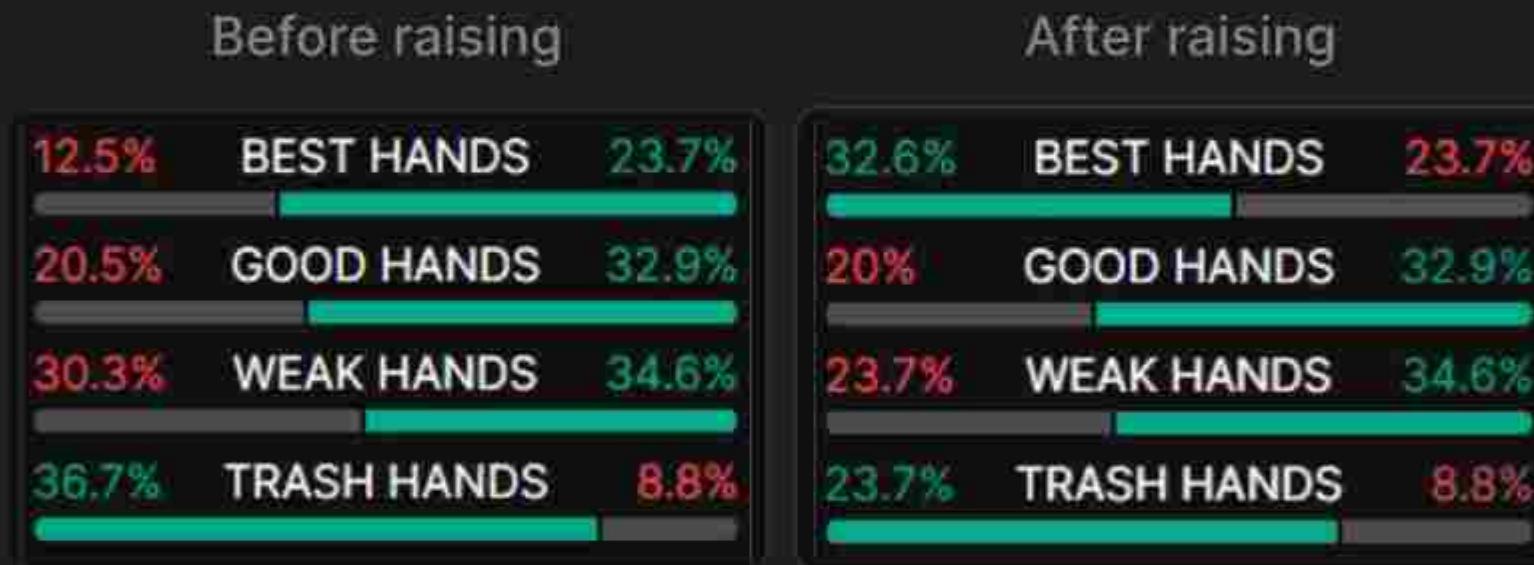
- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged



Correct answer:

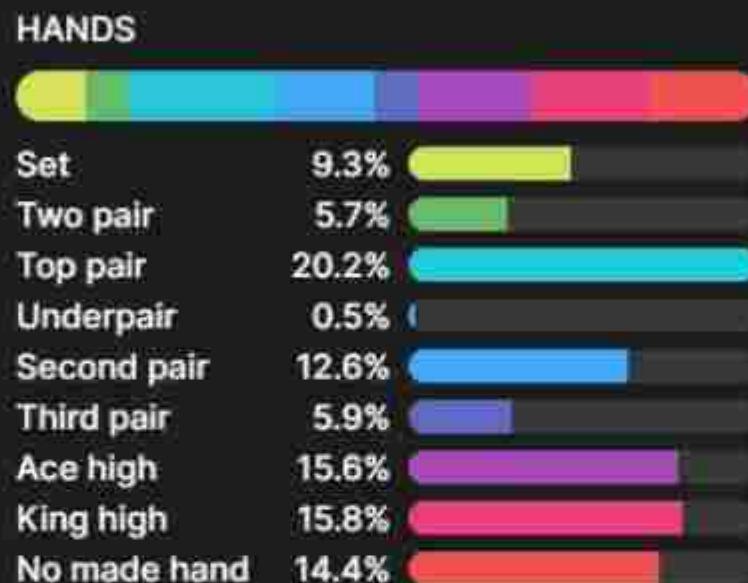
D: Merged

Containing very strong hands, weak bluffs, and medium-value hands.



Dry boards like this don't have many natural bluffs. BB will struggle to defend wide enough here.

As a result, BB starts turning medium-strength made hands like weak 7x and 2x into semi-bluffs.



These hands will struggle to realize their equity through a defensive line, but act as decent semi-bluffs drawing to 5 outs.

Aggressive check-raising strategies are often required in these spots to prevent CO from range-betting with impunity.

The check-raise is merged because it contains nutted hands, weak bluffs, and many medium-strength hands like 2nd and 3rd pair.

SB FOLD RAISE 3 ALLIN 150	BB FOLD CALL RAISE 12 ALLIN 150	SB FOLD CALL RAISE 28 ALLIN 150	BB FOLD CALL RAISE 50 ALLIN 150	FLOP 56 K Q J	SB CHECK BET 14 (25%) BET 28 (50%) BET 42 (75%) ALLIN 122 (118%)
BB CHECK BET 14 (25%) BET 28 (50%) BET 42 (75%) ALLIN 122 (118%)	TURN 56 T	SB CHECK BET 14 (25%) BET 28 (50%) BET 42 (75%) ALLIN 122 (118%)	BB FOLD CALL RAISE 39.2 (30%) RAISE 56 (50%) ALLIN 122 (129%)	RIVER 84 2	SB CHECK BET 8.5 (10%) BET 29.5 (35%) BET 50.5 (60%) BET 71.5 (85%) ALLIN 108 (129%)

[NL500 6-Max Cash, 150bb] SB vs BB 4BP. Flop is K♥ Q♥ J♥, checks through. Turn's T♥, SB bets 25%, BB calls. The river bricks. How should OOP construct their 10% block-betting strategy here? (SPR = 1)

- A: Polarized
- B: Linear
- C: Condensed / Depolarized
- D: Merged



Correct answer:

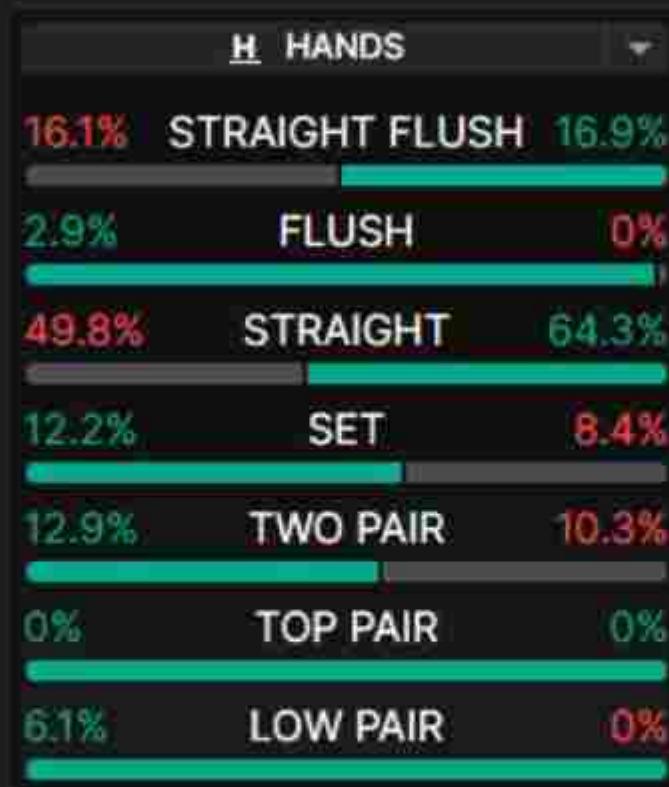
C: Condensed / Depolarized

The range contains mostly medium hands.



This is a peculiar runout as the nature of the board prevented either player from capping themselves on earlier streets.

Despite the passive line, both players get here with a relatively strong range.



On this board, you either have a straight, a straight flush, or you have a bluff.

There are relatively few flushes in range due to the board blocking most natural flush combinations.

The block-bet is **condensed** towards (non-heart) Ace high straights with ~60% equity; they are effectively medium-strength hands attempting to over-realize their equity.

The block-bet removes strategic options from your opponent by forcing them to take on a worse risk/reward ratio when they raise.

As such, your straights expect to face less aggression by taking this play rather than checking.



This is an Equity Distribution Graph for BTN vs CO.

What do the numbers 50 and 70.2% represent for BTN's hand, $Q\spadesuit Q\clubsuit$?

- A: $Q\spadesuit Q\clubsuit$ has 50% equity against CO's range, and is better than 70% of hands in BTN's range by equity
- B: $Q\spadesuit Q\clubsuit$ has 70% equity against CO's range, and is better than 50% of hands in BTN's range by equity



Correct answer:

B: Q♠ Q♦ has 70% equity against CO's range, and is better than 50% of hands in BTN's range by equity

Hand	Strategy	Range	EV	Equity	EQR	Blocker
Q♠ Q♥		100 %	9.28	71.5 %	78.6 %	4
Q♠ Q♣		100 %	9.28	71.5 %	78.6 %	4
Q♠ Q♦		100 %	9.07	70.2 %	78.3 %	4
Q♥ Q♣		100 %	8.17	68 %	72.8 %	2
Q♦ Q♣		100 %	7.93	66.6 %	72.2 %	2
Q♥ Q♦		100 %	7.93	66.6 %	72.2 %	2

The horizontal (x-axis) represents the percentile of this hand within your own range, sorted by raw equity. QQ is in the 50th percentile of Hero's range.

The vertical (y-axis) represents your hand-vs-range equity against Villain's range. QQ has 70% equity against Villain.

Hand	Strategy	Range	EV	Equity	EQR	Blocker
Q♠ Q♥		100 %	9.28	71.5 %	78.6 %	4
Q♠ Q♣		100 %	9.28	71.5 %	78.6 %	4
Q♠ Q♦		100 %	9.07	70.2 %	78.3 %	4
Q♥ Q♣		100 %	8.17	68 %	72.8 %	2
Q♦ Q♣		100 %	7.93	66.6 %	72.2 %	2
Q♥ Q♦		100 %	7.93	66.6 %	72.2 %	2

As we've learned throughout this month, equity is so much more than a 1-dimensional number. This method of graphing equity distributions provides higher resolution than equity buckets, and can be used to quickly visualize range and nut advantages.

[Learn more](#)

This type of analysis helps us understand the underlying strategic motifs.





[NL500 6-Max Cash, 150bb] This is a HJ vs BB river spot, SPR = 2.76. Without knowing any information about the board, what is HJ's best bet sizing strategy when they choose to bet?

- A: Mostly overbets and/or shoves (100% - all in)
- B: Mostly larger bets (67%-100%)
- C: Mostly medium sizes (36%-67%)
- D: Mostly small sizes (<36%)

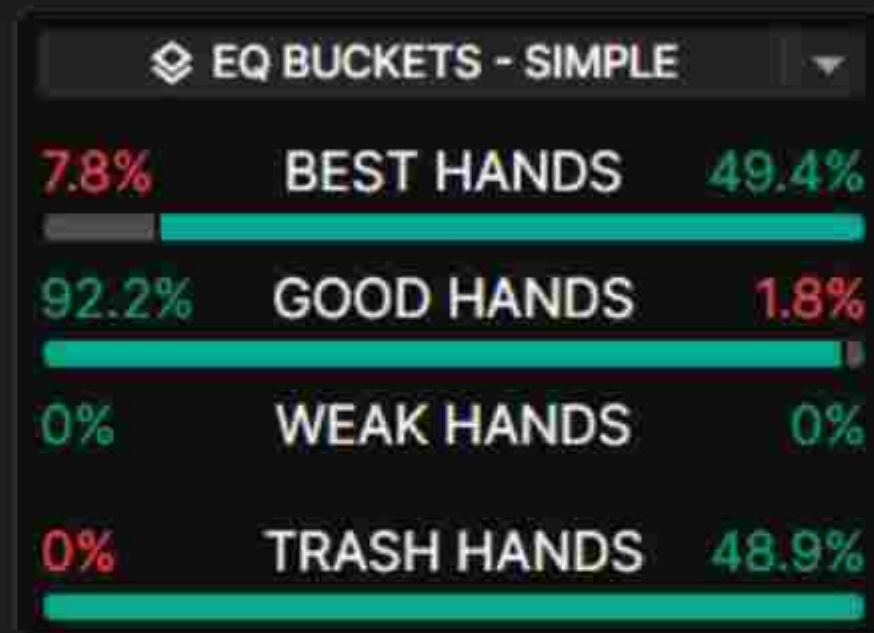
UTG HJ CO BTN SB BB 46.1 BB 46.1 BB A J 5 * J 8

Allin 127.2 276% 40.2% 2.56 combos	Bet 69 150% 15.7% 1 combos	Bet 39 85% 6.1% 0.39 combos	Bet 27.5 60% 3.9% 0.25 combos
Bet 16 35% 0% 0 combos	Bet 4.5 10% 0% 0 combos	Check 2.07 combos	

Correct answer:

A: Overbets and shoves (100% - 276%)

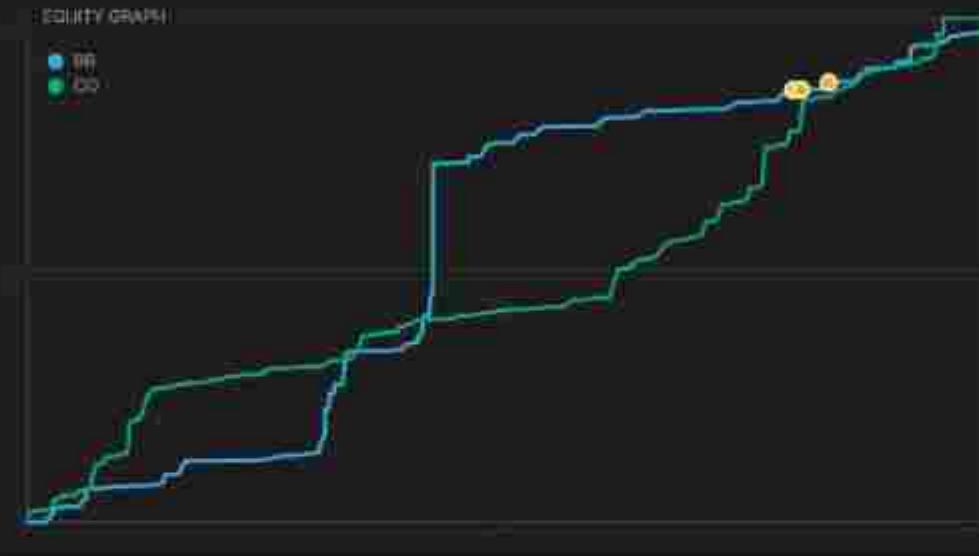
Mostly all in.



Equity Buckets on river before betting (HJ right)

HJ's equity distribution is **polarized**. Their range is comprised of strong nutted hands, and bluffs with no equity.

Anytime you see this polarized distribution, the best strategy will involve playing for stacks.



[NL50 6-Max Cash, 100bb] This is a CO vs BB river spot, SPR = 7.92. Without knowing any information about the board, what is BB's best strategy?

- A: Mostly overbets and/or shoves (100% - all in)
- B: Mostly larger bets (67%-100%)
- C: Mostly medium sizes (36%-67%)
- D: Mostly small sizes (<36%)



Correct answer:

C: Mostly medium sizes (36%-67%)



BB has an advantage over the upper-middle of their range, but they lack the nutted advantage at the top.

These middling hands extract the most value with small-medium bet sizes. If BB were to use larger bet sizes they would mostly end up folding out worse and getting called or raised by better.



[NL50 6-Max Cash, 100bb] This is a BTN vs BB river spot, SPR = 3.21.
Without knowing any information about the board, what is BB's best strategy?

- A: Mostly overbets and/or shoves (100% - all in)
- B: Mostly larger bets (67%-100%)
- C: Mostly medium sizes (36%-67%)
- D: Mostly small sizes (<36%)



Correct answer:

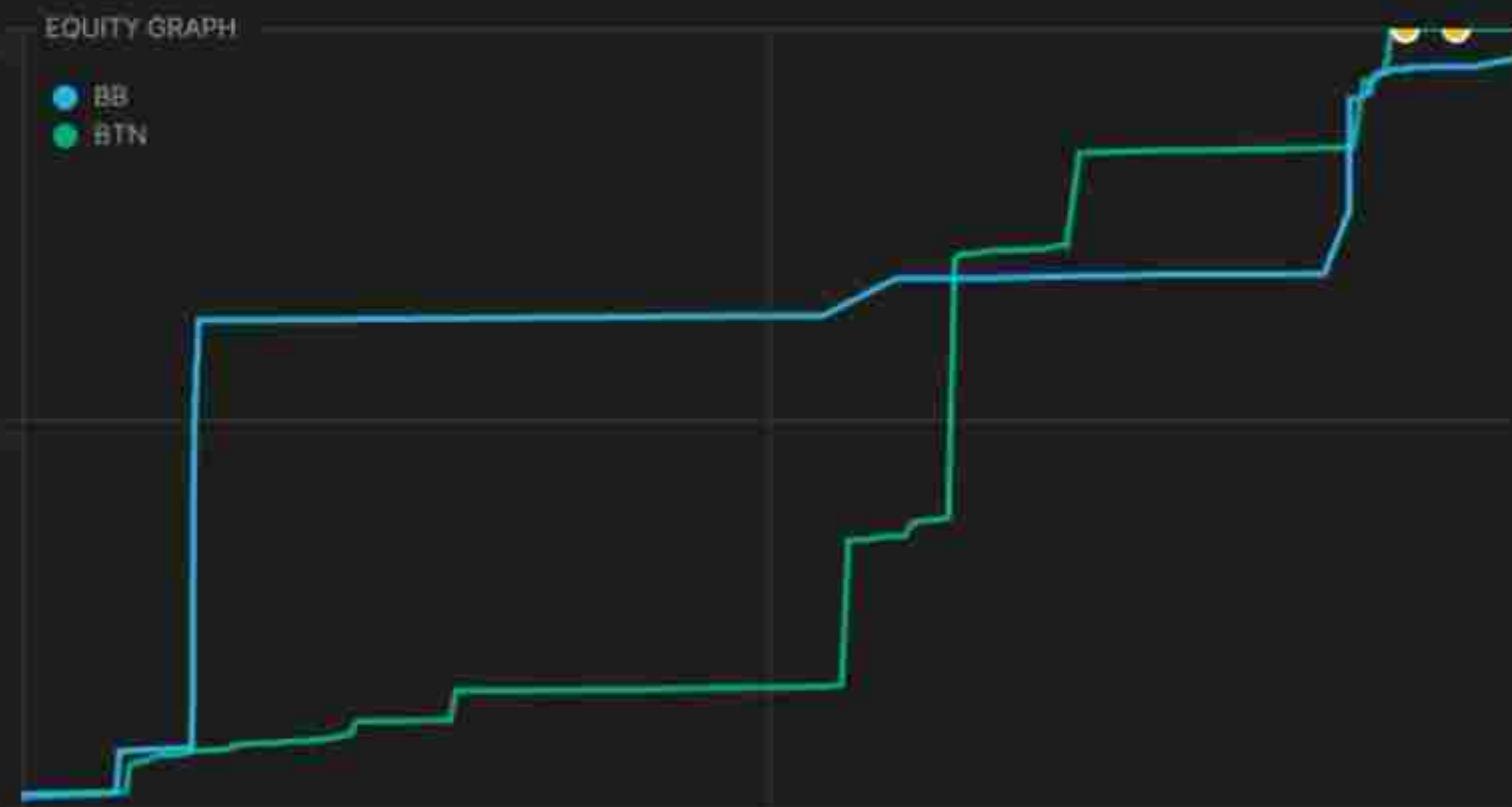
Both A: and D: are correct!

BB splits their range between small block-bets and 150% overbets.



BB's equity advantage is mostly split into two parts: Weak-Medium hands, and nutted hands. The most efficient way to organize this equity distribution is to split it between a small block bet, and an overbet.

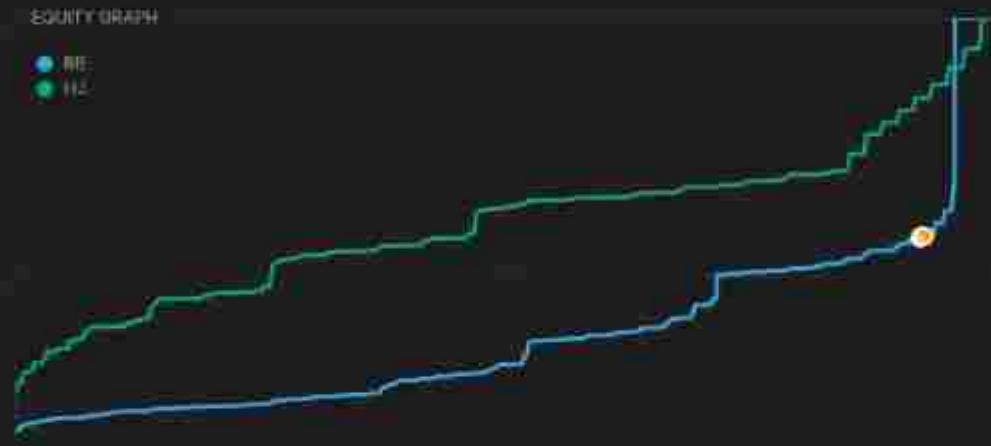
These next two pages show how BB organizes its equity distribution for each strategy:



Pushing middle equity with a few bluffs and nutted hands for balance



Classic polarized nuts/bluffs distribution



[8-Max MTT, 40bb] HJ Opens, BB calls. What flop is most likely to result in this equity distribution?

- A: J ♦ T ♦ 9 ♦
- B: 7 ♥ 7 ♦ 7 ♣
- C: A ♥ A ♠ 3 ♠
- D: Q ♥ 8 ♠ 7 ♠



Correct answer:

B: 7♥ 7♦ 7♣



The giveaway is in the classic "*staircase distribution*"; representing the overpair advantage in HJ's range.

We can also observe a sudden jump in the equity distribution for BB's range near the top, representing their 7x Quads advantage.

FLOP 6.1



These wet boards create smoother distributions and diminish nut advantage.

FLOP 6.1



Classic overpair staircase distribution representing pronounced overpair advantage.

FLOP 6.1



The flop board consists of three cards: two Aces (one red, one grey) and a 3 (grey).



Paired boards create plateaued nut advantage representing trips

FLOP 6.1



The flop board consists of three cards: a Queen (red), an 8 (grey), and a 7 (grey).



Draw equity diminishes range advantages bringing lines closer together



[NL50 6-Max Cash, 100bb] HJ opens 2.5, BTN 3bets to 7.5, HJ Call.
Flop's A ♠ 2 ♠ 2 ♥. BTN c-bets 33% on the flop, then overbet shoves 318%
on the turn. What turn card would result in this aggressive strategy and equity
distribution?

- A: 2 ♦ (Board is: A ♠ 2 ♠ 2 ♥ 2 ♦)
- B: 5 ♠ (Board is: A ♠ 2 ♠ 2 ♥ 5 ♠)
- C: K ♣ (Board is: A ♠ 2 ♠ 2 ♥ K ♣)
- D: A ♥ (Board is: A ♠ 2 ♠ 2 ♥ A ♥)



BTN strategy on K♣ turn

Correct answer

C: K ♣ (Board is: A ♠ 2 ♠ 2 ♥ K ♣)



This is an extremely rare equity distribution because the aggressor has no bluffs.

Their shove consists of pure value, as shown in the equity distribution.

This strategy is something you'll only see on chop boards. The turned King causes all top pair to chop.

Instead of using value and bluffs, you can construct your strategy with pure value, under these conditions:

- 1) The strongest hands chop (All top pair chop)
- 2) There is an incentive to blast draws off their equity (e.g. ♠♠ FD's)
- 3) You can freeroll or outdraw their chops (AQ outdraws A3-AJ on any K or Q river)

These conditions allow you to make a wide portion of your opponent's range indifferent without bluffs.

See DD#143 - [Freerolling Straights](#), for another example.



[Spin & Go, 25-25-25] BTN Open 2, SB 3-bets to 6, BTN calls.

Flop is 9♥ 8♥ 6♠. SB overbet shoves 146% pot. Why doesn't SB have the nut advantage in their shoving range?

- A: This draw-heavy board incentivizes them to shove with vulnerable value
- B: Draws and nutted value run very close on this board, so SB can make BTN indifferent without the nuts
- C: The low SPR forces BTN to call wider, diluting the importance of nut advantage
- D: The draw-heavy texture forces BTN to call wider to make SB's semi-bluffs indifferent



SB flop strategy

Correct answer:

All of the answers are correct!



A: This draw-heavy board incentivizes them to shove with vulnerable value.

SB shoves with vulnerable overpairs and top pairs, but doesn't shove with their strongest hands like sets and two pair.

- B: Draws and nutted value run very close on this board, so SB can make BTN indifferent without the nuts.

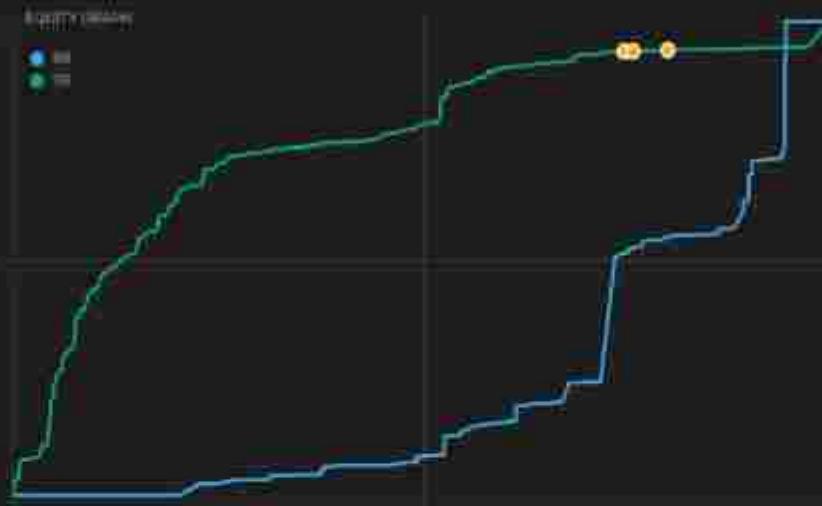
Everything runs close on this board, so you're almost never drawing dead.

- C: The low SPR forces BTN to call wider, diluting the importance of nut advantage.

Stack-off ranges are proportional to stack depth. When stacks are shallow you need to felt with a wider range.

- D: The draw-heavy texture forces BTN to call wider to make SB's semibluffs indifferent.

See DD#131 - MDF facing draws, for a more complete explanation.



[HU Cash, 100bb] SB (IP) opens 2.5, BB Calls. BB donks 33% flop, overbets 150% turn, then checks the river. The runout is 5♥ 4♦ 3♣ K♥ A♣. Why does BB leave some traps in their river "give-up" range?

- A: To guard the small amount of showdown value worth protecting
- B: BB expects SB to be aggressive when they check
- C: To guard the vast majority of 0% hands in their range
- D: To not "overflow" their value region with too many strong hands



Correct answer:

A: To guard the small amount of showdown value worth protecting

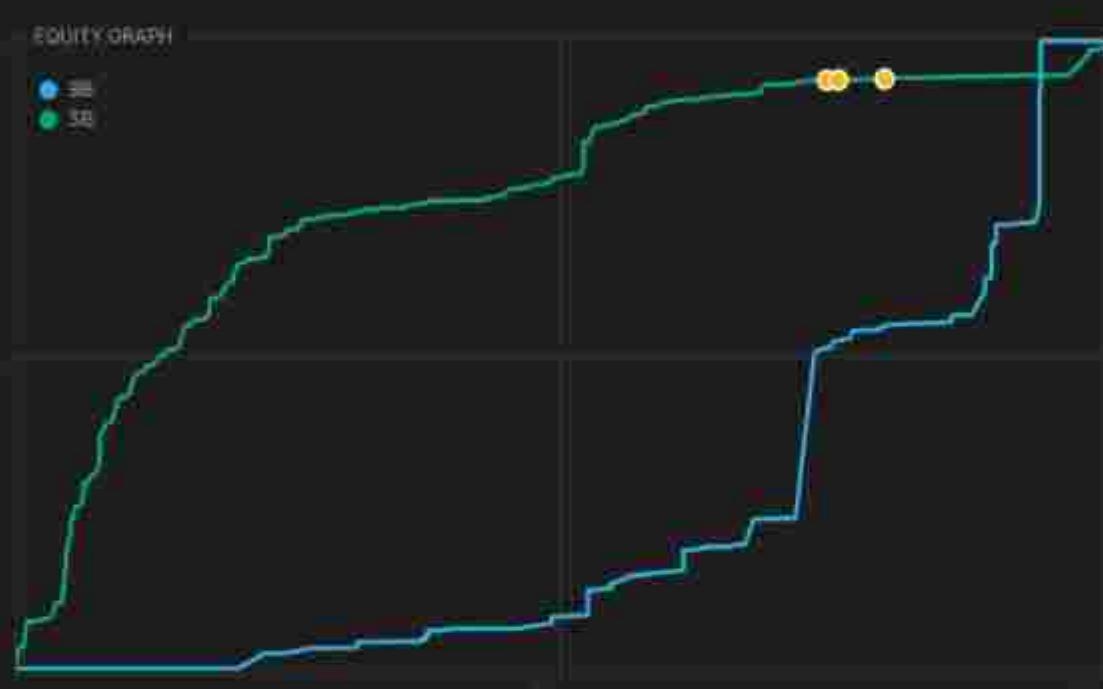
B: is somewhat correct but phrased poorly since IP checks back 60% of the time.

If BB's checking range were "*perfectly polarized*" (pure traps and 0% hands) then SB wouldn't have an incentive to bet and would simply check back everything.

There's no incentive to make 0% equity hands fold, and there's no incentive to attack the nutted traps.

The few medium SDV hands in BB's checking range are what prompt SB to bet the river.

These "*medium hands*" give SB an incentive to try and make better fold with their bluffs, and make worse call with their value.



This incentivizes BB to put some traps in their checking range. These traps expect to gain at least as much EV when they check compared to betting.

The traps also ensure their medium hands get to realize equity by preventing SB from attacking these hands with impunity.



EQR?

EQR stands for Equity Realization. What does this metric measure?

- A: How often you make it to showdown to "realize" your fair share
- B: The EV performance of a hand relative to its equity
- C: Your implied odds and nut potential
- D: The ability to bet later streets for value

Equity Realization

$$\text{EQR} = \frac{\text{EV pot share}}{\text{EQ pot share}}$$

Correct answer

- B: The EV performance of a hand relative to its equity**



Equity Realization compares your "pot share" between the equity and expected value of a hand.

EQR is a great metric for comparing how well different hands perform on different boards!

[Learn more](#)

The exact formula is $(EV * pot) / Equity$



HJ FOLD RAISE 2	CO FOLD RAISE 6.5	BTN FOLD RAISE 13	SB FOLD RAISE 18	
BB FOLD RAISE 18	HJ FOLD CALL RAISE 19	CO FOLD CALL RAISE 34 ALLIN 100	FLOP 39.5 	HJ CHECK BET 10% BET 25% BET 50% BET 75% ALLIN 205%

[NL500 6-Max Cash, 100bb] HJ vs CO 4BP. Flop is Q♦ J♣ T♥. Which of HJ's hands has the best equity realization?

- A: T♠ T♦
- B: K♠ K♥
- C: A♠ Q♠
- D: A♥ 5♥

Hand	Strategy	Range	EV	Equity	EQR	Blocker
T♠ T♦		49.5 %	29.31	67.8 %	109.5 %	3
K♠ K♥		100 %	19.67	64.3 %	77.5 %	6
A♠ Q♠		54.5 %	11.88	54.2 %	55.5 %	7
A♥ 5♥		41 %	24.92	48.5 %	130 %	7

Correct answer:

D: A♥ 5♥

Equity Realization isn't about raw strength; it measures how well a hand performs relative to its equity.

Everything runs close on this board. Draws overperform, and made hands underperform. According to equity, A♥5♥ is the weakest of the four choices, yet it's among HJ's most valuable hands.

The nut flush draw significantly outperforms its raw equity due to implied odds and the ability to barrel multiple streets.



EQR of both players on the flop Q ♦ J ♣ T ♦



[5NL 6-Max Cash Game, 100bb] CO opens, BB calls. Flop is 6♦ 4♦ 3♣.

The equity realization for both players' ranges is as follows: CO 80.7% EQR, BB 90.5% EQR. How is it possible that both players are under-realizing their equity in this spot?

- A: There are more combinations of hands that under-realize, which outweigh the hands that over-realize
- B: The dynamic nature of the board forces both players off their equity too often
- C: The rake decreases the EV of both players which is detrimental to EQR
- D: EQR isn't zero-product

50NL:

5% Rake

4 bb cap

Correct answer

- C: The rake decreases the EV of both players which is detrimental to EQR



BB		CO
329.2	COMBOS	368.5
2.34	EV	2.03
50.6%	EQUITY	49.4%
90.5%	EQR	80.7%

As shown in [DD #61 - Explosive flops](#), these textures are hotly contested; both players contribute a lot of money to the pot, increasing the total rake paid.

Unfortunately, this decreases their total expected values, so both ranges underperform!



If there was no rake then the players' EVs would sum to the pot - 5.1bb. In this spot, the rake takes an extra 0.73bb or about 14% of the pot.

SB	BB	FLOP	A	BB	SB	TURN	A	BB
FOLD	FOLD			CHECK	CHECK			CHECK
CALL	CALL	T	9	BET 32%	BET 25%			BET 25%
RAISE 2	RAISE 5	9	4	BET 60%	BET 44%			BET 44%
ALLIN 25	RAISE 7.5			ALLIN 575%	BET 69%			BET 69%
	ALLIN 25				BET 100%			BET 100%
					BET 150%			BET 150%

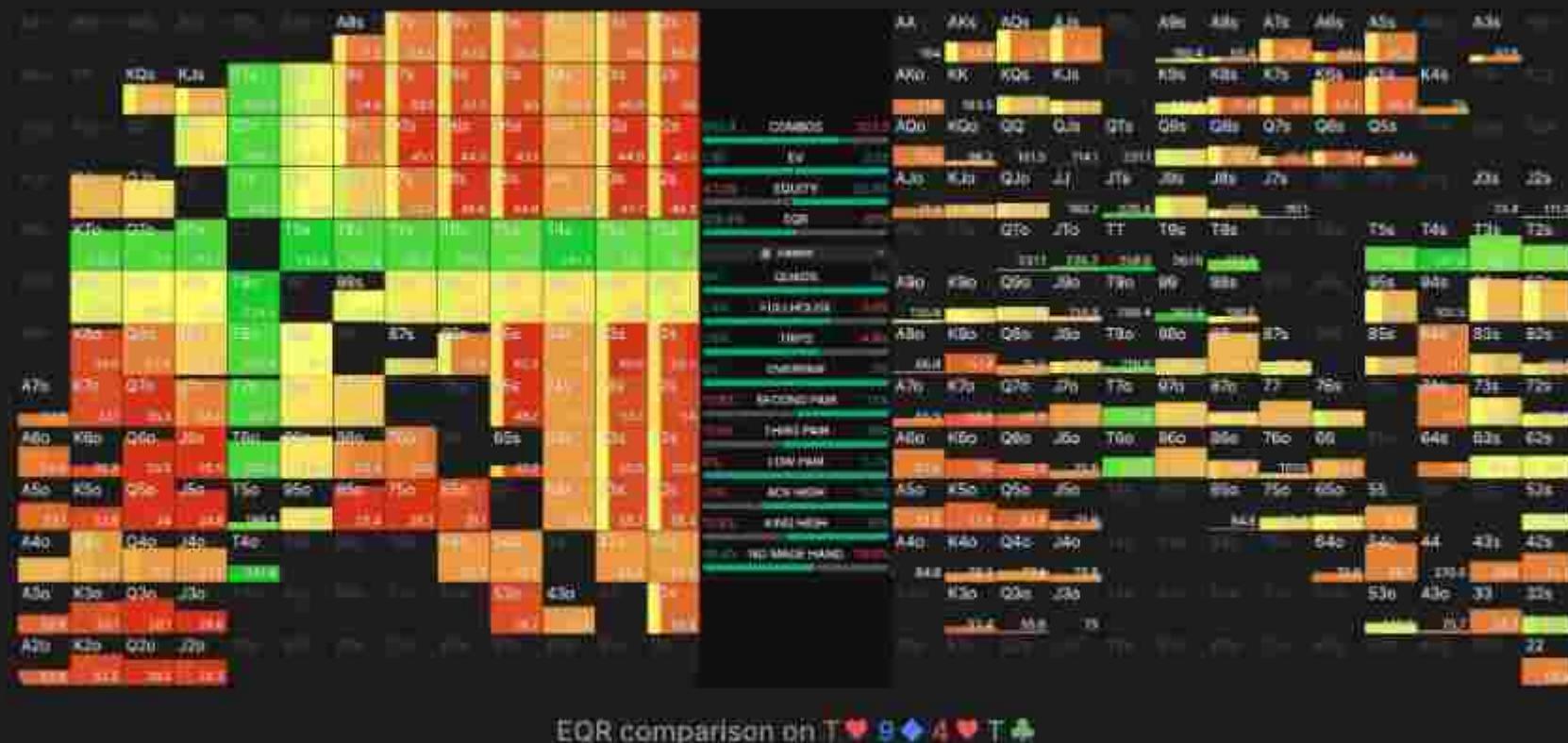
[HU 5nG, 25bb] SB (IP) opens, BB calls. Flop is T♦9♦4♥, checks through.
What turn card maximizes BB's equity realization?

- A: T♣
- B: A♦
- C: 8♥
- D: A♥



Correct answer:

A: T ♣



SB bets most of their top pair on the flop, so BB gains an advantage in Ten-x hands when SB checks.



That advantage gets nullified on overcard or draw-completing turns.

But it gets magnified on a paired Ten, which gives them the nut advantage needed to over-realize equity with the rest of their range!

CO	BTN	SB	BB	FLOP	6.9	CO
FOLD	FOLD	FOLD	FOLD			CHECK
RAISE 2.2	CALL	CALL	CALL			BET 20%
ALLIN 35	RAISE 6.6	RAISE 8.5	RAISE 9.1			BET 33%
	ALLIN 35	ALLIN 35	ALLIN 35			BET 55%
				T 9 5		BET 83%
						BET 125%

[8-Max MTT, 35bb] CO opens 2.2 with KJo. BTN calls. Flop is T♦ 9♦ 5♥.
Which combination of KJo has the highest equity realization?

- A: K♠ J♣
- B: K♦ J♠
- C: K♣ J♥
- D: K♥ J♦

Hand	Strategy	Range	EV	Equity	EQR	Blocker
K♥J♦		100 %	2.46	41.5 %	85.9 %	6
K♥J♣		100 %	2.41	41.4 %	84.4 %	6
K♥J♠		100 %	2.41	41.4 %	84.4 %	6
K♦J♥		100 %	2.21	41 %	78.2 %	6
K♣J♥		100 %	2.14	40.9 %	76 %	5
K♣J♦		100 %	2.14	40.9 %	76 %	5
K♦J♣		100 %	1.61	37.9 %	61.5 %	4
K♦J♠		100 %	1.61	37.9 %	61.5 %	4
K♣J♦		100 %	1.59	37.9 %	60.8 %	4
K♣J♣		100 %	1.59	37.9 %	60.8 %	4
K♣J♠		100 %	1.55	37.8 %	59.3 %	4
K♣J4		100 %	1.55	37.8 %	59.3 %	4

Correct answer:

D: K♥J♦

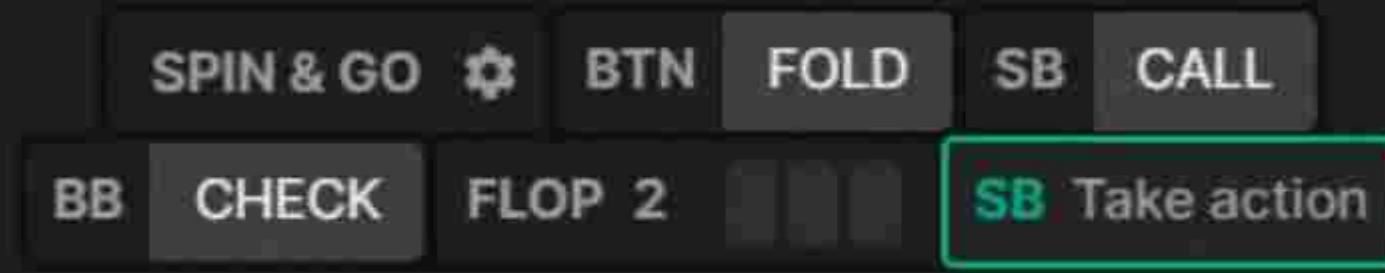
K♥ J♦	
Bet	38.7%
Range	1
EV	2.46
EQ	41.5%
EQR	85.9%
Blocker	6

Holding blockers to both the front and backdoor flush draws significantly increases your equity realization with a gutshot straight draw like KJ!

The equity difference between these hands is only a trivial 4%. But the best KJ has 36% of the pot share, whereas the worst KJ only has 22% of the pot share.

Blocking the flush card means you can turn top pair without completing the flush draw, draw to backdoor hearts, and your opponent is more likely to fold to aggression as you block continues.

This combo may lead less initially, but it plays an aggressive check-raising strategy later on in the hand.



[Spin & Go] BTN folds, SB limps, BB (IP) checks. What stack depth will BB realize the most equity?

- A: 25bb effective
- B: 19bb effective
- C: 15bb effective
- D: 12bb effective

Metric by Stack depth

Metric	12bb	15bb	19bb	25bb
BB EV	0.87	0.92	0.96	0.96
SB EV	1.13	1.08	1.04	1.04
BB Equity	43.4%	44.3%	45.3%	45.2%
SB Equity	56.6%	55.7%	54.7%	54.8%
BB EQR	100.2%	103.4%	105.5%	105.8%
SB EQR	99.3%	96.6%	94.9%	94.8%

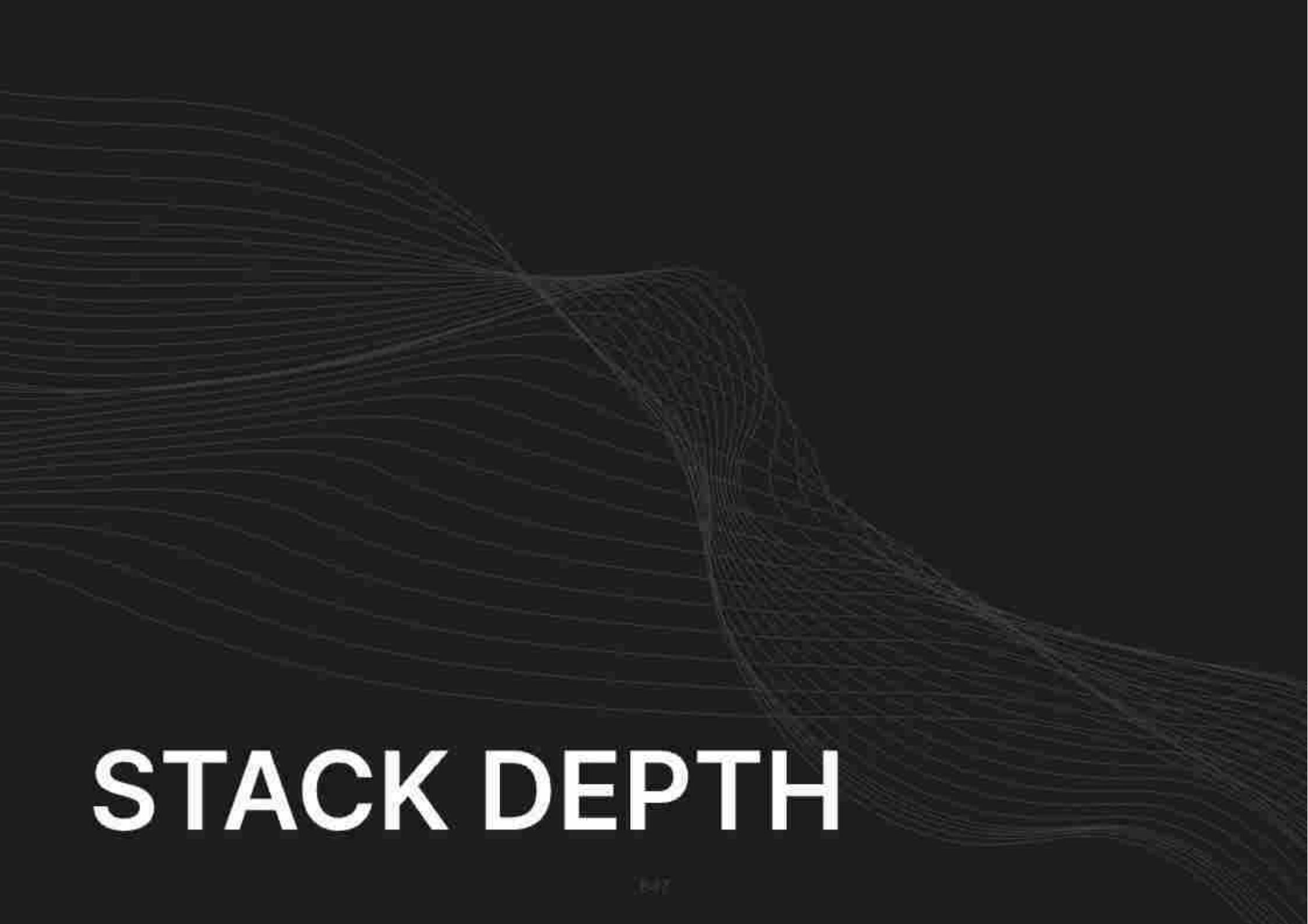
Correct answer:

A: 25bb effective



Positional advantages get magnified as stacks get deeper. IP can apply more pressure throughout the hand and has better implied odds as the SPR increases.

The overall equity of both limped ranges stays about the same, but BB's EV increases with stack depth, which improves their equity realization!



STACK DEPTH

STACK DEPTH



In Chapter 7, we will investigate how stack depth affects your strategy in poker.

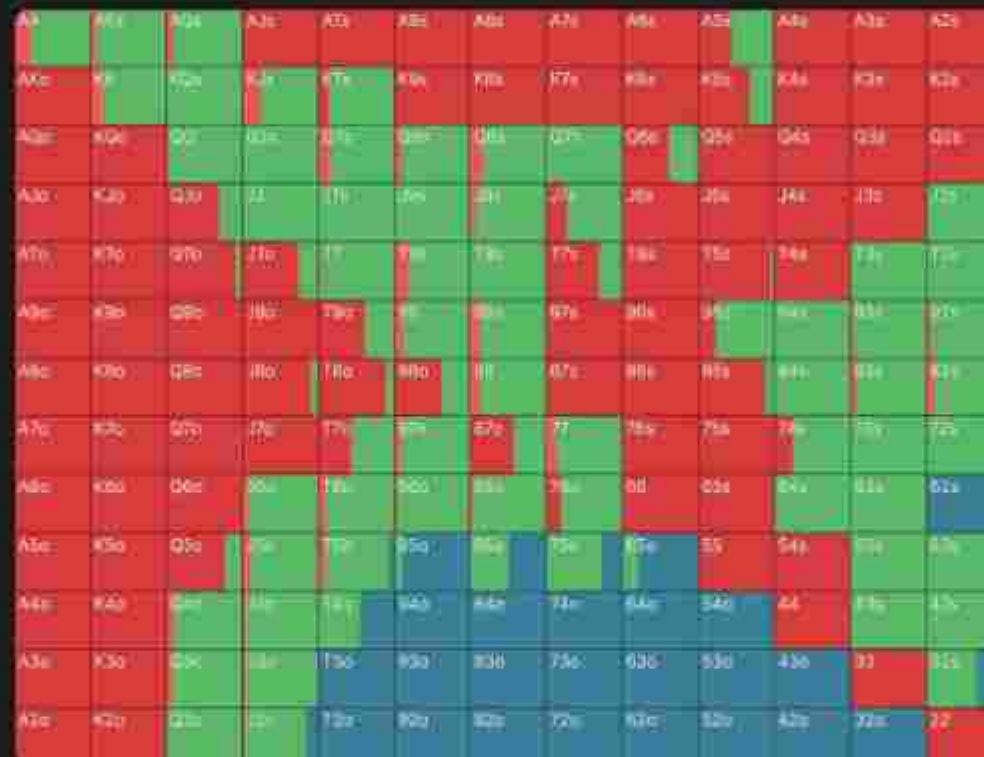
The proportion of chips in your stack compared to the pot determines the amount of additional risk you can take, which affects the value of hands and the types of hands you should use to build a pot.

Starting with shallower stack depths and progressing to deeper stack scenarios, we will explore how stack depth impacts GTO (Game Theory Optimal) strategy.



[8-Max MTT, 10bb] Folds to SB pre. Why does SB limp premium hands like QQ+?

- A: To induce bluffs. Limping entices BB to raise more hands which increases EV with QQ+
- B: Limping premiums helps SB continue with more hands overall
- C: To improve the EV of the bottom of our range
- D: Limping guarantees postflop play with your premium hands



SB strategy

Correct answer:

C: To improve the EV of the bottom of our range



1) EV of SB limp/shove strategy

Let's compare the expected value of two strategies.

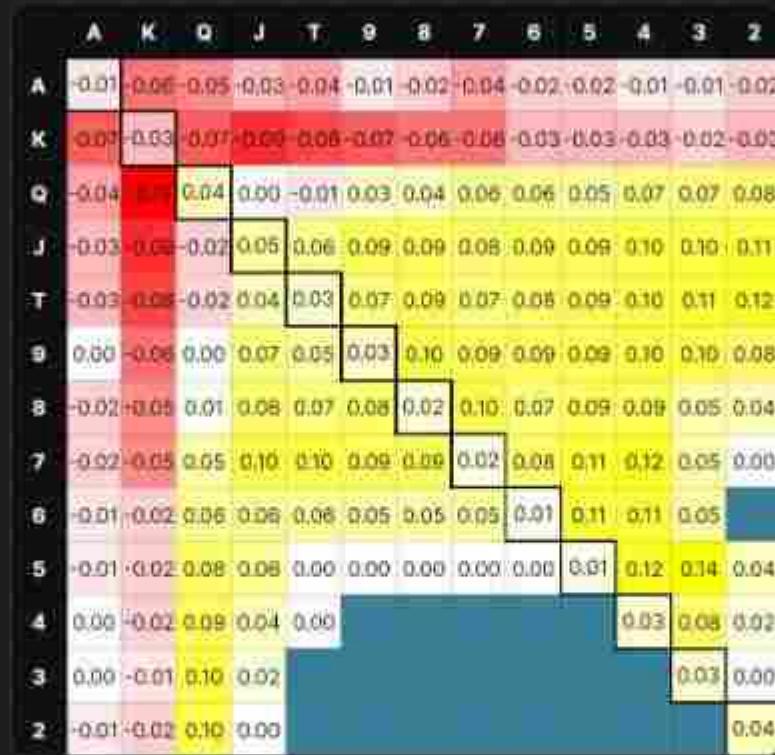
Here we see the EV of the limp/shove strategy:



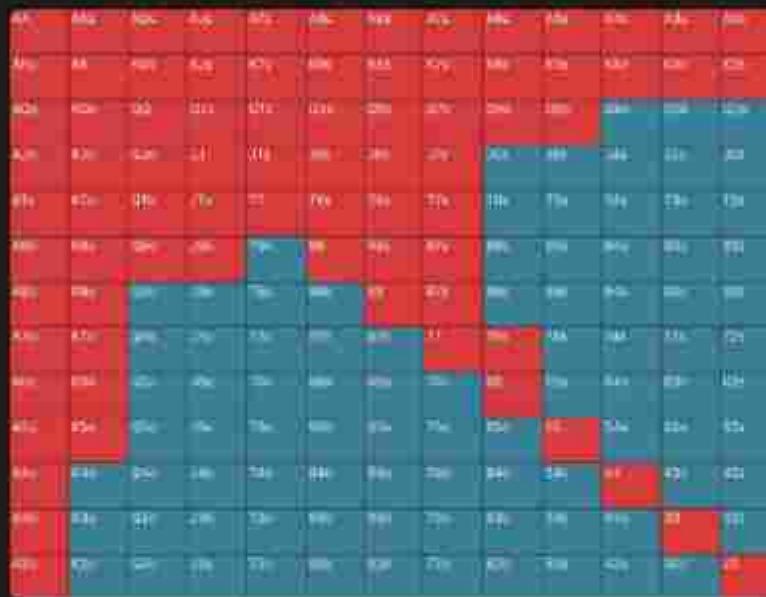
2) EV of SB 2bb/shove strategy

Here we see the EV of the no-limp strategy:

EV limp strategy - EV no limps



In this spot, limping improves the EV of the bottom of your range. The limp is polarized towards weak hands and value, while the shove is condensed towards high-equity hands with generally decent blockers and equity retention.



[Spin & Go, 5bb] Why does BTN shove 5bb with 76s, despite hands like K4o, Q8o, T9o having higher 3-way equity?

- A: 76s has better implied odds
- B: 76s blocks more calls
- C: 76s retains more equity when called
- D: Equity and EV aren't the same

	As	Ks	Qs	Ts	9s	8s	7s	6s	5s	4s	3s	2s	
A	73.4	50.7	49.4	48.2	47.1	44.5	43.5	42.4	41.2	41.5	40.5	39.7	38.7
K	48.2	68.9	47.1	45.9	44.8	42.3	40.1	39.2	38.3	37.4	36.5	35.7	34.8
Q	46.8	44.4	64.9	44.2	43.1	40.6	38.5	36.5	35.7	34.9	34.0	33.2	32.4
J	45.5	43.1	41.4	61.2	41.9	39.5	37.4	35.3	33.3	32.8	31.9	31.2	30.4
T	44.3	41.9	40.2	39.0	57.5	38.8	36.6	34.7	32.7	30.8	30.2	29.4	28.6
9	41.6	39.3	37.6	36.4	35.7	53.6	35.9	34.1	32.2	30.3	28.4	27.8	27.1
8	40.4	37.0	35.3	34.1	33.4	32.7	50.0	33.8	31.9	30.1	28.2	26.3	25.8
7	39.2	36.0	33.0	31.9	31.2	30.7	30.4	46.4	31.9	30.0	28.2	26.4	24.6
6	37.9	34.9	32.3	29.8	29.1	28.6	28.4	28.4	43.2	30.3	28.6	26.7	24.8
5	38.2	34.0	31.3	29.1	27.1	26.6	26.4	26.5	26.7	40.0	29.1	27.3	25.4
4	37.2	33.0	30.3	28.2	26.4	24.5	24.4	24.5	24.7	25.3	36.7	26.4	24.7
3	36.2	32.1	29.5	27.3	25.6	23.9	22.4	22.5	22.8	23.5	22.5	33.6	23.8
2	35.2	31.2	28.6	26.5	24.7	23.1	21.8	20.5	20.8	21.5	20.7	19.7	30.6

3-way equity before shoving

Here we see BTN's 3-way equity before shoving:

	As	Ks	Qs	Ts	9s	8s	7s	6s	5s	4s	3s	2s	
A	85.5	65.6	62.8	60.5	58.3	54.3	51.9	49.9	48.2	47.9	46.9	46.3	45.6
K	63.9	75.8	51.0	49.1	47.3	43.9	41.8	41.2	40.7	40.0	39.4	38.7	38.1
Q	60.9	48.4	71.4	45.5	43.8	41.0	39.6	38.2	38.1	37.5	37.0	36.4	35.7
J	58.4	46.3	42.5	67.8	42.5	40.2	39.0	37.7	36.4	36.1	35.6	34.9	34.3
T	56.0	44.4	40.7	39.3	64.3	40.4	39.3	38.0	36.7	35.1	34.9	34.2	33.6
9	51.8	40.7	37.7	36.8	37.1	60.4	39.9	38.7	37.4	35.8	34.3	33.9	33.3
8	49.2	38.5	36.2	35.5	35.9	36.5	57.8	39.6	38.4	36.8	35.3	33.6	33.3
7	47.1	37.9	34.7	34.2	34.5	35.3	36.3	55.6	39.0	37.6	36.0	34.4	32.7
6	45.2	37.3	34.6	32.8	33.2	33.9	35.0	35.7	53.7	38.2	36.8	35.1	33.4
5	45.0	36.5	34.0	32.5	31.5	32.2	33.3	34.1	34.8	51.8	37.5	35.9	34.2
4	43.9	35.8	33.4	31.9	31.2	30.6	31.7	32.5	33.3	34.1	49.6	35.3	33.6
3	43.2	35.2	32.7	31.2	30.5	30.2	29.9	30.7	31.5	32.4	31.7	47.5	32.9
2	42.5	34.5	32.0	30.5	29.8	29.5	29.5	28.9	29.7	30.6	29.9	29.2	45.3

BTN equity against SB call

Correct answer:

C: 76s retains more equity when called

Here we see BTN's equity against a SB caller.

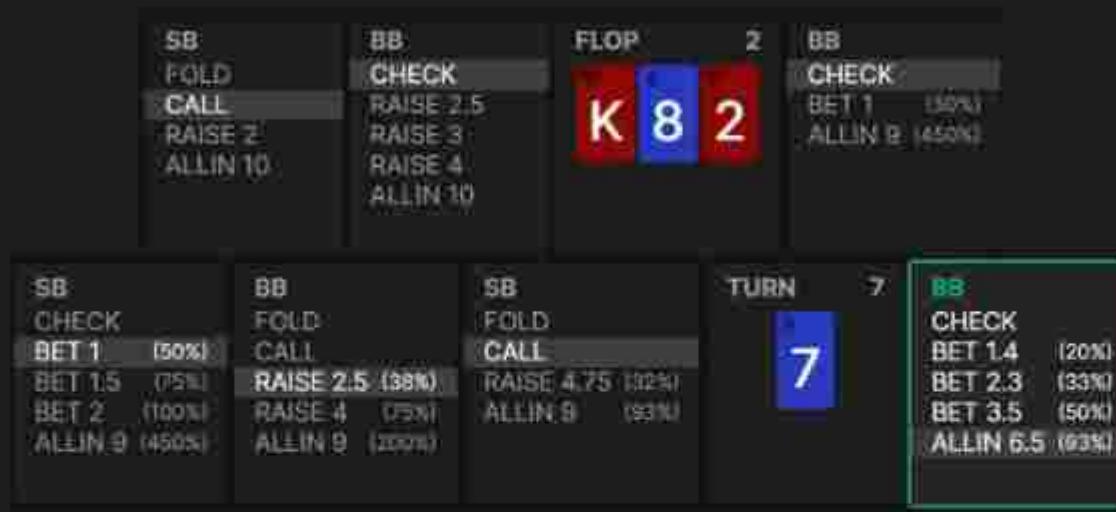
Hands like K4o, Q8o, T9o are more likely to be dominated when called. Suited connectors, such as 76s, retain more equity when called, so they become better shoves.

Other answers:

76s actually has worse blockers, but that doesn't outweigh the above point.

Implied odds don't exist after you've shoved, as you can't extract more money on later streets.

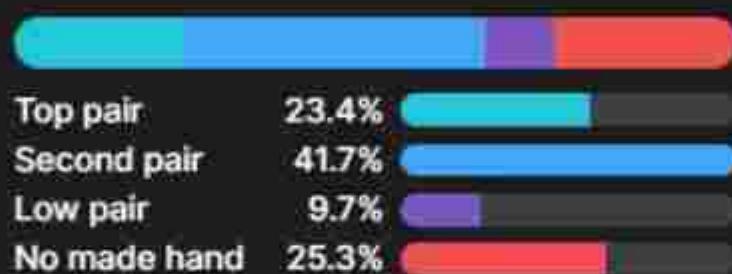
EV and equity are synonymous when all in.



[HU SnG, 10bb] SB (IP) limps, BB checks. Flop is K♦ 8♦ 2♥, SB bets, BB check-raises. Turn is the 7♦ and BB shoves. What hand class comprises the majority of BB's value shoving range?

- A: Sets
- B: Two pair
- C: Top pair
- D: Second pair

HANDS



SB 6.5 BB 6.5 7 BB 7 BB K 8 2 7



Turn shove range construction

Correct answer:

D: Second pair

Hand	Strategy	Range	EV	Equity	EQR	Blocker
Q♦ 8♥		27.8 %	3.61	58.8 %	87.7 %	🛡 4
Q♦ 8♦		32.9 %	3.55	58.4 %	86.7 %	🛡 5
Q♦ 8♠		32.9 %	3.55	58.4 %	86.7 %	🛡 5
Q♣ 8♥		33.5 %	3.59	58.3 %	87.9 %	🛡 4
Q♠ 8♥		33.5 %	3.59	58.3 %	87.9 %	🛡 4
Q♣ 8♠		34.4 %	3.52	57.9 %	86.9 %	🛡 4
Q♠ 8♣		34.4 %	3.52	57.9 %	86.9 %	🛡 4
Q♥ 8♦		33.5 %	3.45	57.3 %	85.9 %	🛡 5
Q♥ 8♠		33.5 %	3.45	57.3 %	85.9 %	🛡 5

Shoving with vulnerable medium hands is a common strategy in short-stacked spots out of position, especially on draw-heavy boards.



BB shoves 8x as an equity realization strategy. Second pair only has about 39% when called.

However, this play denies equity, gets called by worse, forces SB to overfold, while guaranteeing BB's equity and improving the EV of the top of their range.

HU SNG	SB	BB	FLOP	2	BB	SB	BB
General	FOLD	CHECK			CHECK	CHECK	FOLD
13bb	CALL	RAISE 2.5	A	K	BET 1 (50%)	BET 1 (50%)	CALL
	RAISE 2	RAISE 3.5	K	2	ALLIN 12 (600%)	BET 1.5 (75%)	RAISE 2.5 (38%)
	ALLIN 13	RAISE 5			BET 2 (100%)	BET 2 (100%)	RAISE 3.5 (62%)
		ALLIN 13			BET 3 (150%)	BET 3 (150%)	RAISE 5 (100%)
					ALLIN 12 (600%)	ALLIN 12 (275%)	ALLIN 12 (275%)

[HU SnG, 13bb] Limped pot. Flop is A♥ K♦ K♣. SB (IP) range-bets 1bb.
 How should BB construct their strategy?

- A: Check-raise or fold
- B: Call or fold, no raises
- C: Mix calls, raises, and folds



Correct answer:

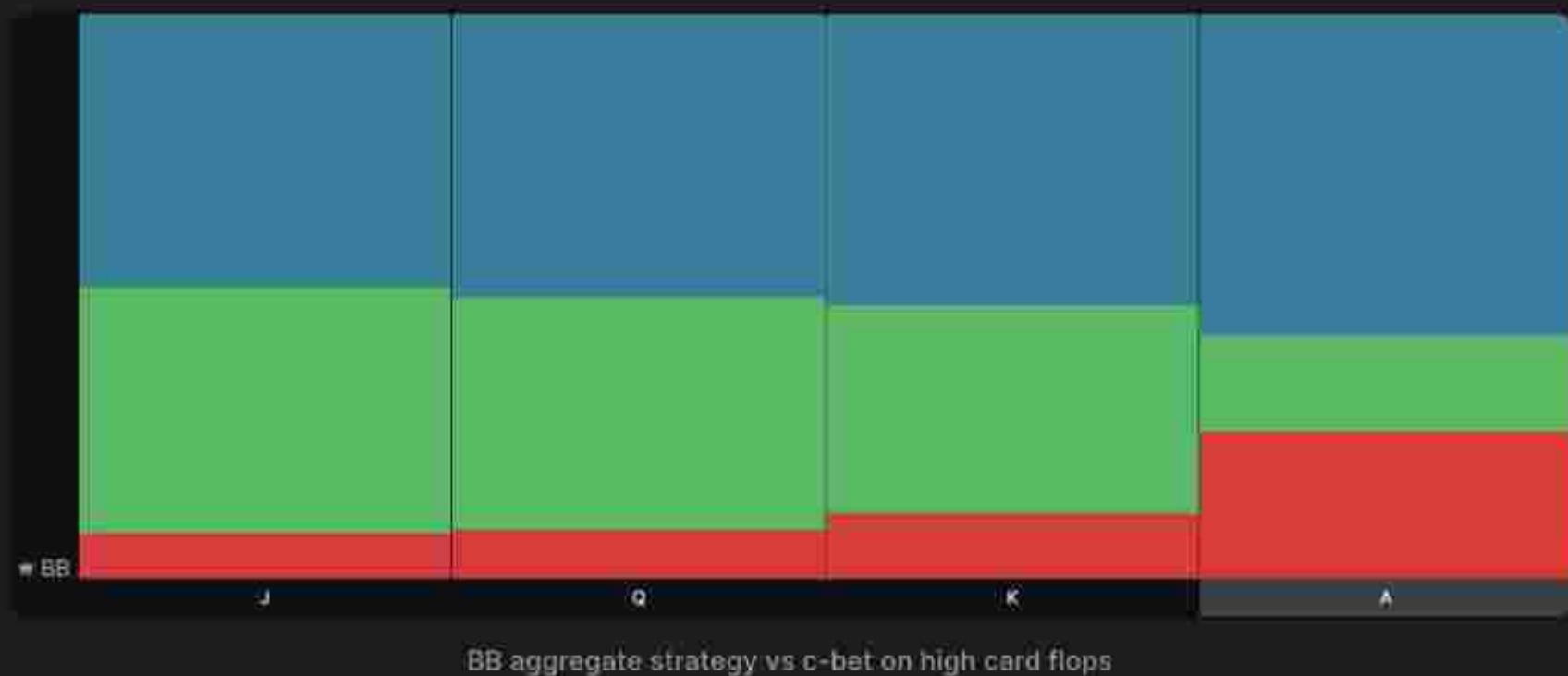
A: Check-raise or fold

This aggressive XR strategy is due to a number of factors.

SB is range-betting half-pot. The minimum bet size is quite large for this type of texture. This decreases the incentive to call and increases the incentive to check-raise and force them off their equity.

BB is forced to overfold, so they need to counter with more check-raising in general.

Furthermore, the probability of a chop is quite high on this texture which tends to generate more aggressive strategies.



This heuristic is common on most Ace-high paired boards.



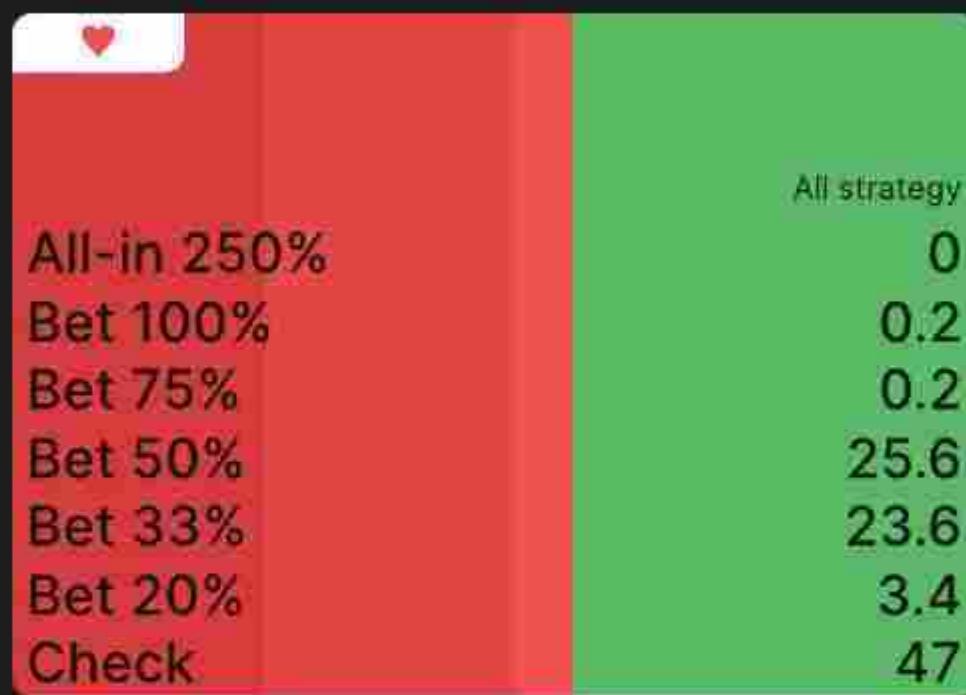
[HU SnG, 10bb] SB (IP) opens 2.5, BB calls. Flop is Q♦ 8♦ 4♦, checks through. SB checks turn. What turn card suit should BB check back most often when holding 9♥ 8♥?

- A: ♥ Heart, completing the flush draw
- B: ♦ Diamond, putting two flush draws on board
- C: ♠ Spade
- D: ♣ Club



Correct answer:

A: ♥ Heart, completing the flush draw



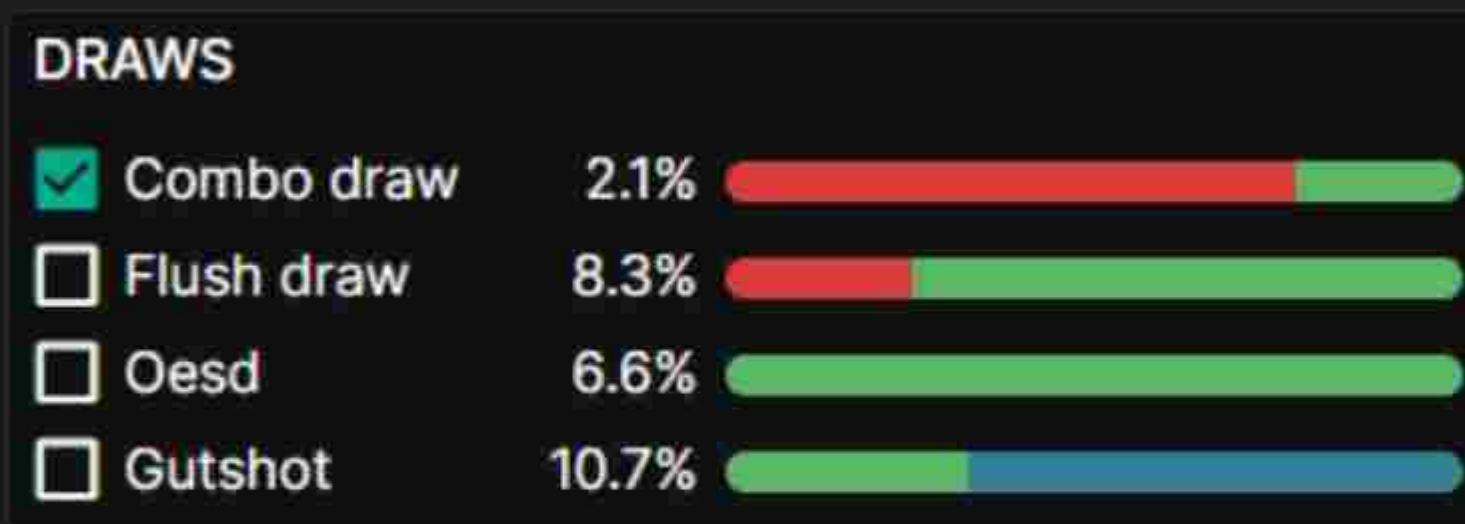
BB needs to trap with some flushes in order to balance their checking range.

As a general heuristic, flushes that block calls (e.g. pairs) tend to be checked back most often.

HU SNG	SB FOLD CALL RAISE 2 ALLIN 16	BB CHECK RAISE 3 RAISE 4.5 RAISE 6 ALLIN 16	SB FOLD CALL RAISE 7 ALLIN 16	FLOP 6	BB CHECK BET 17% BET 33% BET 50% BET 75% BET 100%	SB FOLD CALL ALLIN 57%
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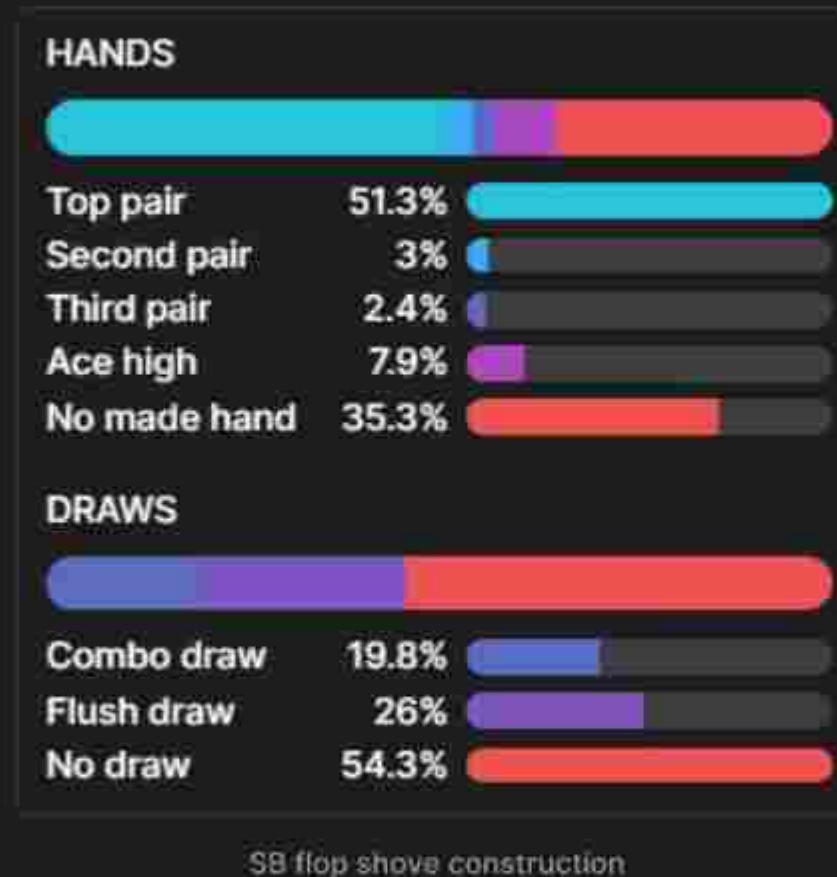
[HU SnG, 16bb] SB (IP) limps, BB raises to 3, SB calls. Flop is K♦ 9♦ 7♦, BB bets 75%. There's a 57% shove behind. **What kind of draw should SB shove most often?**

- A: Combo draw
- B: Flush draw
- C: Open-ended straight draw
- D: Gutshot

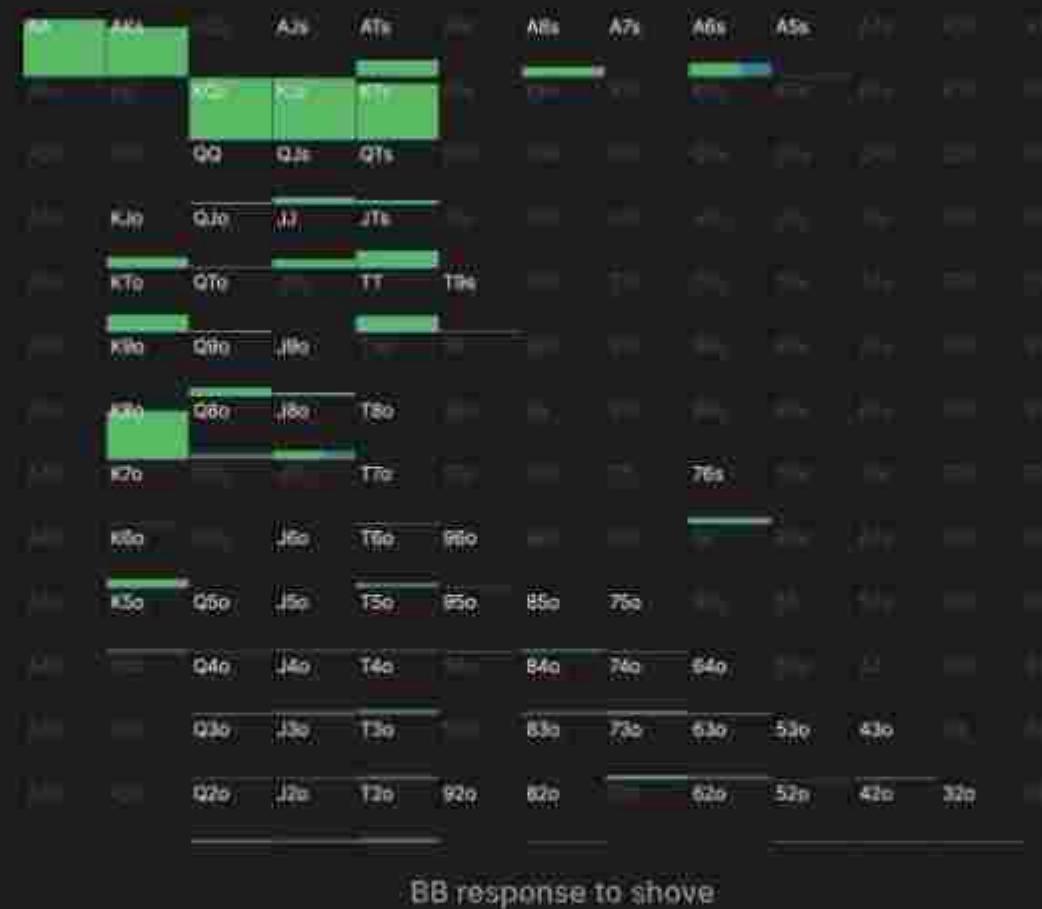


Correct answer:

A: Combo draw



There's only a half-pot shove behind, which forces BB to call a shove wider. For this reason, SB constructs a linear strategy using vulnerable top pair and high equity combo draws.



This strategy targets BB's air (the bottom of their c-bet), and prevents them from c-betting with impunity.



[8max MTT, 17bb] UTG opens 2, BTN calls. Flop is T♦ 5♦ 2♣. UTG bets 55%, BTN calls. UTG shoves turn 9♣. What's the strongest hand BTN folds?

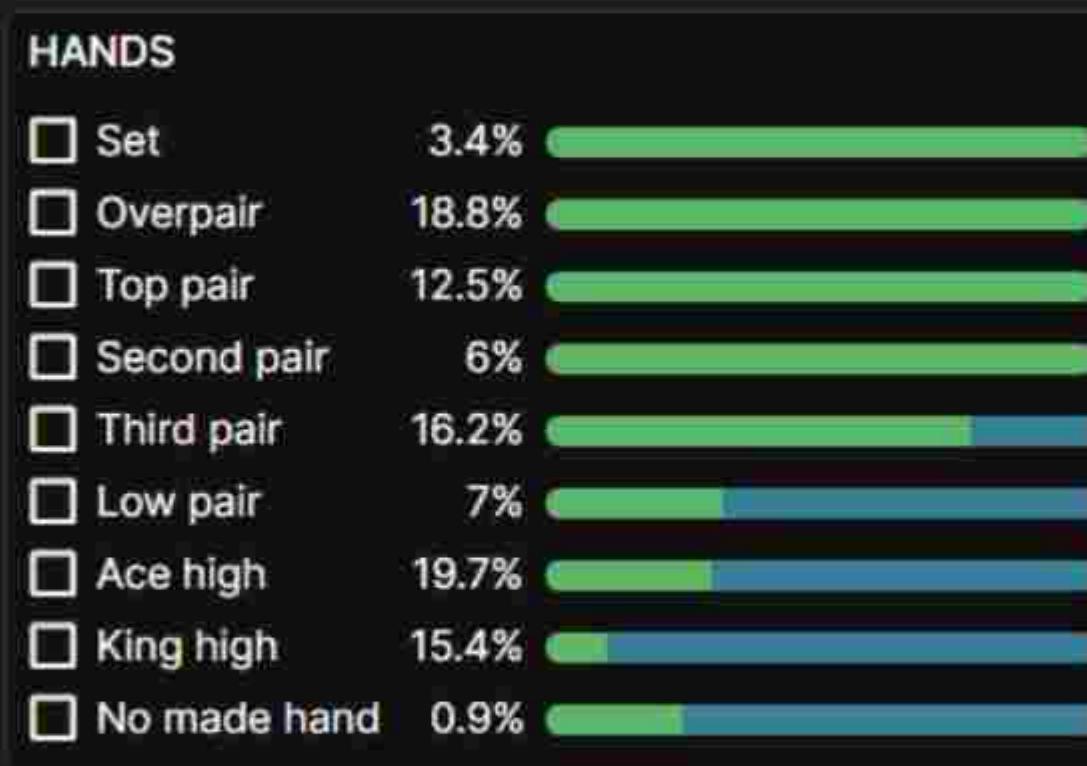
- A: JT^s
- B: J9^s
- C: A5^s
- D: 66



BTN strategy facing turn shove

Correct answer:

D: 66



When the SPR is this shallow, the defender needs to call off wide to prevent the aggressor from overbluffing.



BTN calls most made hands, only low pocket pairs are indifferent.

BTN FOLD RAISE 2 ALLIN 20	SB FOLD RAISE 6 ALLIN 20	BB FOLD CALL RAISE 6 ALLIN 20	FLOP 4.5 	BB CHECK	BTN CHECK BET 33% BET 66% BET 130% ALLIN 400%	BB FOLD CALL RAISE 50% ALLIN 145%
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[6Max Cash, 50NL, 20bb] BTN opens 2, BB calls. Flop is 9♥ 8♠ 7♥. BTN c-bets 66%, action on BB with top pair. Which of BB's top pair has the lowest EV facing this bet?

- A: T♦ 9♠
- B: 9♦ 6♦
- C: A♠ 9♠
- D: Q♥ 9♠

Hand	Strategy	Range	EV	Equity	EQR	Blocker
T♦9♠		100 %	1.84	59.6 %	68.4 %	6
9♦6♦		100 %	0.89	54.4 %	36.5 %	2
A♠9♠		100 %	0.88	52.5 %	37.3 %	3
Q♥9♠		89.5 %	0.51	52.1 %	21.9 %	3

Correct answer:

D: Q ♥ 9 ♠

Has the lowest EV.



BB equity realization facing flop bet

On draw-heavy boards like this, draws overperform and made hands underperform. Pairs that connect with the 987 tend to over-realize their equity as they're more likely to get to showdown.



BB equity realization facing flop bet

$\text{Q}\heartsuit\text{9}\spades$ doesn't connect with the straight draws, and backdoor hearts are less valuable when stacks are short. $96s$ and $T9o$ have an open-end, while $A\spades\text{9}\spades$ is less dominated by other top pairs and unblocks bluffs.

CO FOLD RAISE 2 ALLIN 20	BTN FOLD RAISE 5 ALLIN 20	SB FOLD RAISE 8 ALLIN 20	BB FOLD CALL RAISE 6 ALLIN 20
FLOP 4.5 	BB CHECK	CO CHECK BET 33% BET 66% BET 130% ALLIN 400%	BB FOLD CALL RAISE 50% RAISE 100% ALLIN 220%

[NL50 6-Max Cash, 20bb] CO opens 2, BB calls. Flop is K♠ K♥ 6♦. CO c-bets 33%, BB check-raises 50%. What hand should CO 3-bet shove the flop with?

- A: 77
- B: AKo
- C: 66
- D: QJs



Range comparison facing XR

Correct answer

A: 77

Hand	Strategy	Range	EV	Equity	EQR	Blocker
7♦7♣		96 %	2.75	54.5 %	67.4 %	1
7♠7♣		96.9 %	2.5	53.8 %	62.1 %	1
7♥7♣		96.9 %	2.5	53.8 %	62.1 %	1
7♠7♦		91.4 %	2.2	52.7 %	55.7 %	1
7♥7♦		91.5 %	2.2	52.7 %	55.7 %	1
7♠7♥		79.2 %	2	52 %	51.4 %	1

When stacks are short, vulnerable medium hands have the most incentive to shove.

This denies equity to overcards while making most of BB's 6x indifferent.

Hand	Strategy	Range	EV	Equity	EQR	Blocker
7♦7♣		96 %	2.75	54.5 %	67.4 %	1
7♠7♣		96.9 %	2.5	53.8 %	62.1 %	1
7♥7♣		96.9 %	2.5	53.8 %	62.1 %	1
7♦7♦		91.4 %	2.2	52.7 %	55.7 %	1
7♥7♦		91.5 %	2.2	52.7 %	55.7 %	1
7♠7♥		79.2 %	2	52 %	51.4 %	1

In order to justify this strategy, one needs to realize that CO is mostly range-betting, and BB check-raises most of their continuation range.

CO raises with their most vulnerable pocket pairs that beat a 6, particularly 77/88 with a club that unblocks BB's BDFDs

HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	CALL	CALL	CALL	CALL
ALLIN 20	RAISE 5	RAISE 5	RAISE 5.5	RAISE 6
	ALLIN 20	ALLIN 20	ALLIN 20	ALLIN 20

FLOP	5.5	BB	HJ	BB	TURN	11	BB
J	6	5	CHECK	CHECK			
			BET 1.8 (33%)	BET 1.4 (25%)			
			ALLIN 18 (32%)	BET 2.75 (50%)			
				BET 4.1 (75%)			
				BET 5.5 (100%)			
				BET 8.25 (150%)			

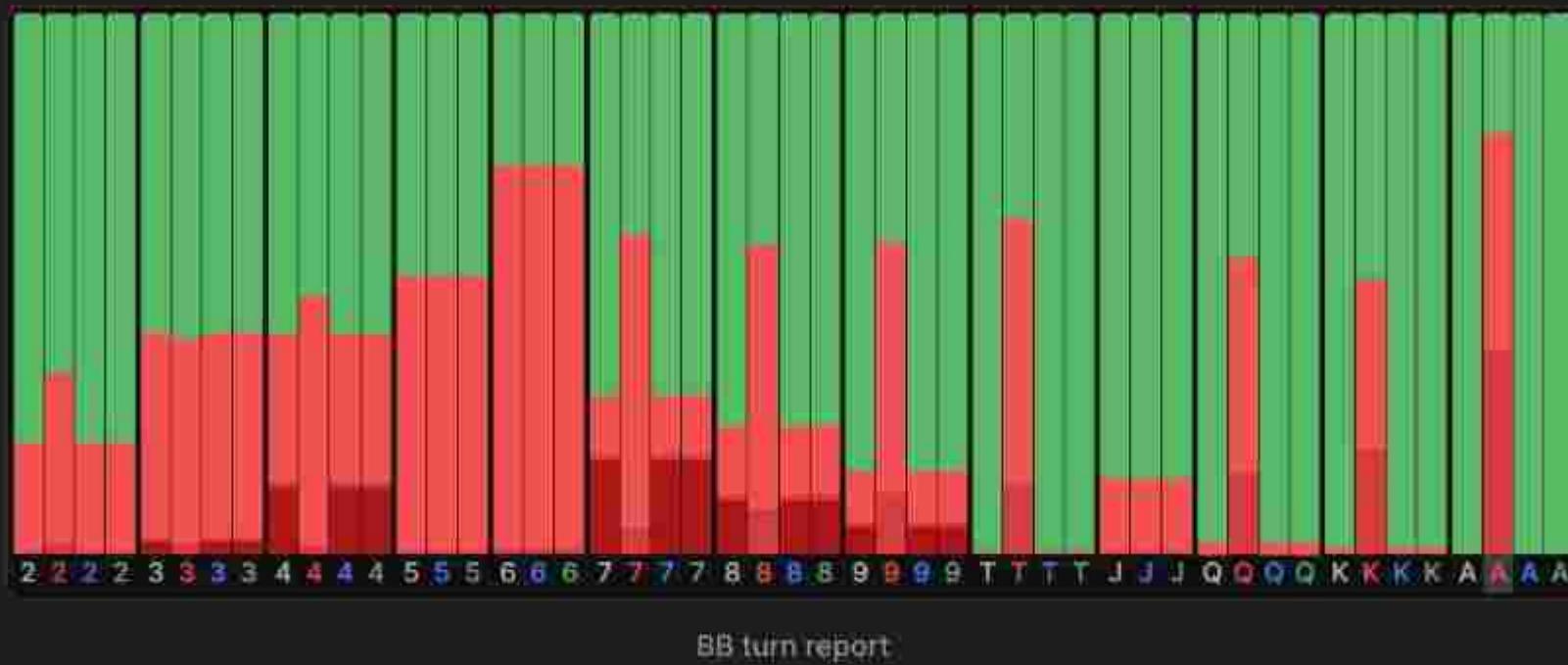
[8-Max MTT, 20bb] HJ opens 2, BB calls. Flop is J♥ 6♥ 5♥.
HJ bets half pot, BB calls. What turn card should BB donk most often?

A: A♥

B: 2♠

C: 6♦

D: T♠



Correct answer:

A: A ♥



The Ace ♦ removes many flushes from BTN's range, whereas BB doesn't have many Ace-x hands to start with because they raise these preflop.

This gives BB a big nut advantage on the turn, allowing them to donk most of their range.

A 6♦ is also good, as HJ checks back most of their 6x on the flop, whereas BB calls these hands.

The 2♠ and T♠ are not good for BB's range.



Range comparison after BB call (before turn)

SPIN & GO	BTN	SB	BB	FLOP	
General	FOLD	FOLD	FOLD	CALL	4.5
25-25-25	RAISE 2	CALL	RAISE 6	RAISE 6	
	ALLIN 25	ALLIN 25	ALLIN 25	ALLIN 25	

[Spin & Go, 25-25-25] BTN opens 2, BB calls. Which flop does BTN prefer to use the largest c-bet size?

A: A♦ A♥ A♣

B: Q♦ J♥ T♥

C: J♥ T♦ 6♥

D: 9♥ 6♦ 3♣

Flops	Strategy	Check	Bet 22%	Bet 33%	Bet 50%	Bet 76%	Bet 100%	Bet 150%	Allin 511%
□ BTN vs BB		16.7	37	20	11.7	9.5	4.9	0.2	0
A♦A♣A♠		0	20.4	42	33.7	2.9	1	0	0
Q♦J♦T♦		0	1.3	13.9	65.8	17.1	1.3	0.4	0
J♦T♦8♦		3	38.3	27.6	19.4	10.4	1	0.3	0
9♦6♦3♦		34.6	7.5	3	3.1	10.6	41.2	0	0

Correct answer:

D: 9♦ 6♦ 3♣

The bottom of BTN's offsuit opening range is 9x.

This gives BTN a sufficient top pair advantage on 963r to create an aggressive strategy.

These 9x top pairs are quite vulnerable, while still being ahead of most of BB's range.

This gives BTN an incentive to bet larger to fold out overcards and gutshots, cleaning up their outs so that they can continue to attack on most turn cards.



BTN strategy on 963r

HU SNG	SB	BB	FLOP	4	BB	SB	TURN	4	BB
General 25bb	FOLD CALL RAISE 2 ALLIN 25	FOLD CALL RAISE 5 RAISE 7.5 ALLIN 25	J T 6		CHECK BET 1.3 (0.250) BET 2.4 (0.600) ALL-IN 23 (0.765)	CHECK BET 1 (0.500) BET 1.75 (1.438) BET 2.75 (2.890) BET 4 (10.000) BET 6 (15.000)		2	CHECK BET 1 (25%) BET 1.75 (44%) BET 2.75 (69%) BET 4 (100%) BET 6 (150%)

[HU SnG, 25bb] SB (IP) opens, BB calls. Flop is J♠ T♥ 6♥, checks through. Turn is the 2♠. How should BB construct their turn probe range?

- A: Condensed range - Block bet using mostly medium-strength hands
- B: Polarized - Overbet size using bluffs and strong value hands
- C: Merged - Mix of sizes using medium hands, nutted hands, and draws
- D: BB should mostly check this turn card



Correct answer:

B: Polarized - Overbet size using bluffs and strong value hands

The 2♠ puts a ton of draws on board, incentivizing larger bet sizes.

Furthermore, this low turn card gives BB more medium hands, so they can delegate more top pair into an aggressive line without compromising their checking range.

Meanwhile, the 2♠ does nothing to help the opposing SB's check-back range.

SB	BB	SB	FLOP	7	SB
FOLD	CHECK	FOLD			CHECK
CALL	RAISE 3	CALL			BET 1 (14%)
RAISE 3	RAISE 5	RAISE 8.5			BET 2 (29%)
ALLIN 25	RAISE 7	ALLIN 25			BET 3.15 (45%)
	ALLIN 25				BET 4.6 (66%)
					BET 6.3 (90%)

[8-Max MTT, 25bb] Folds to SB who limps, BB raises to 3, SB calls.

Which of these is the best flop for SB?

- A: A ♦ 3 ♦ 2 ♣
- B: K ♦ Q ♦ 3 ♦
- C: 6 ♦ 4 ♦ 2 ♦
- D: 4 ♦ 3 ♦ 2 ♣

Flops	Strategy	Check	Bet	EV IP	EV DOP	EV IP %	EV DOP %	EDR IP %	EDR DOP %
Q♦ 5♦ vs BB		04.4	15.6	4.08	2.92	51.2	48.8	113.7	85
A♥ 3♦ 2♣		29.9	0.1	5.47	1.53	59.8	40.2	130.7	54.4
K♥ Q♦ 3♥		28.6	01.4	3.61	3.39	48.6	51.4	106.1	94.2
6♦ 4♦ 2♥		80	11	4.5	2.5	55.7	44.3	115.4	80.7
4♥ 3♦ 2♣		29.9	0.1	4.64	2.37	58.9	41.1	112.5	82.2

Correct answer:

B: K♥ Q♦ 3♥

KQ3 doesn't seem like a great board for the defender. However, you have to compare range construction to understand what flops benefit what player.

SB's range is condensed - they have many medium hands, more suited hands, and most importantly, significantly more King-x hands. BB's range is polarized, they have plenty of Ace-x, pocket pairs, and offsuit bluffs.

These factors together power up SB's range on a flop like K♦ Q♦ 3♦.

The other 3 flops are actually among the worst flops for SB. The low flops smash BB's preflop bluffs, while Ace high flops hit the top of BB's range.





[8-Max MTT, 30bb] CO open, SB calls. Flop is Q \heartsuit 9 \diamond 8 \clubsuit . CO c-bets 33%, SB calls. Turn is the Q \clubsuit , checks through. The river is the Q \diamond . How does SB construct their river probe betting range? (129% shove behind)

- A: Polarized Shove - With quads, 9x boats, and bluffs
- B: Linear half-pot bet - Top down value with quads, 9x, 8x, pocket pairs, no bluffs
- C: Merged block bet - Mostly middle strength value hands like 9x and 8x, and straights, balanced with a few quads and bluffs



Correct answer:

C: Merged block bet - Mostly middle strength value hands like 9x and 8x, balanced with a few quads and bluffs



SB uses a block-betting strategy to over-realize their equity with made hands.

The block-betting range is merged as it contains strong hands, bluffs, and a large proportion of medium hands (8x) in that 60-70% equity range.

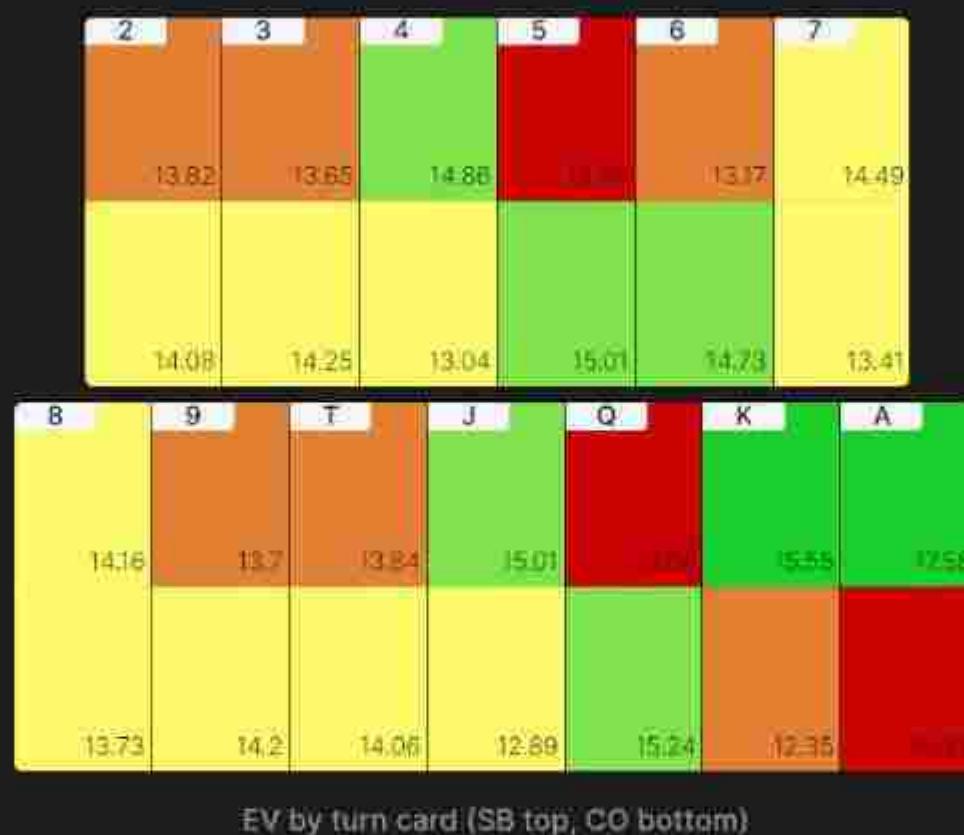


CO has many **strong overpairs** to the 9, and quads, which **prevent SB from betting too large on the river**.



[8-Max MTT, 35bb] CO vs SB 3BP. Flop is Q♦ 4♦ 4♣, SB range-bets 25%, CO (Hero) calls. What turn card benefits CO's range the most?

- A: Ace
- B: King
- C: Queen
- D: Four



Correct answer:

C: Queen



Range comparison after CO calls flop

Examine the range asymmetries! SB doesn't have much offsuit Qx in range, whereas CO does.

SB's main advantage are their overpairs. CO has proportionally twice as many top pair after they call the flop.

Those Qx hands become a boats advantage in the defender's favor on a queen turn.



[NL50 6-Max Cash, 40bb] Folds to hero in SB who opens, BB calls.

Flop is A♦ J♦ T♦. SB c-bets 33%, BB calls. Turn is J♥, SB checks, BB bets 50%.

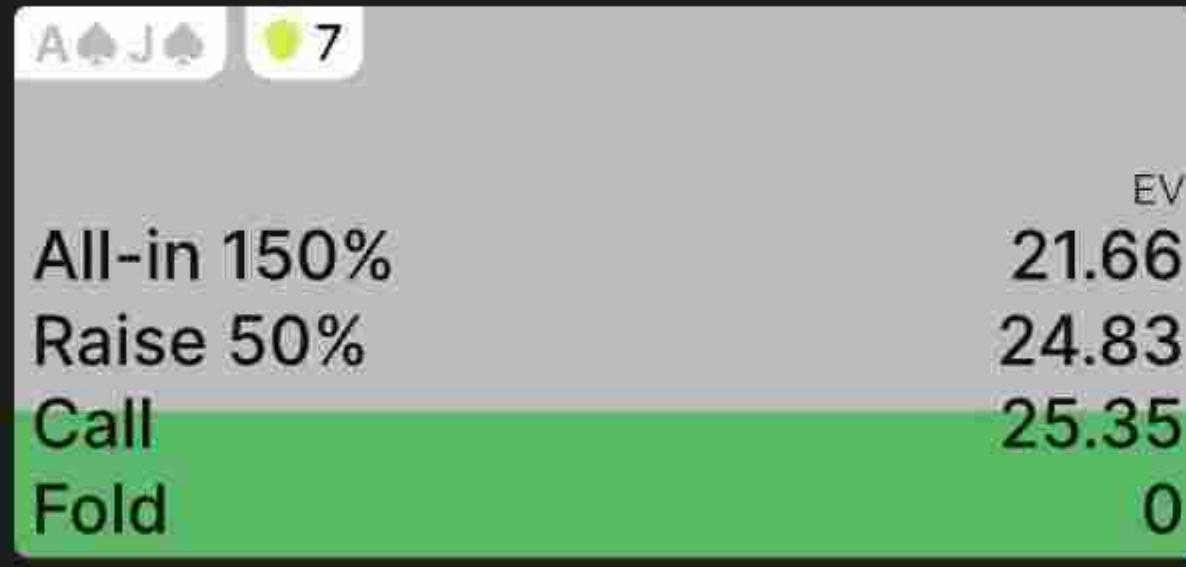
Which of these hands does SB prefer to call and slow-play?

A: A♠ J♠

B: K♠ Q♠

C: K♥ Q♥

D: T♠ T♣



Correct answer:

A: A ♠ J ♠

Hand	Strategy	Range	EV	Equity	EQR	Blocker
A♠J♠		11.2 %	25.35	99.7 %	254.2 %	7
K♥Q♥		0.5 %	16.33	84.1 %	194.2 %	4
K♦Q♦		19.9 %	14.5	81.2 %	178.6 %	3
T♣T♣		6.2 %	21.86	92.8 %	235.4 %	1

A♠J♠ has the unfortunate property of blocking most of BB's continuation range, which makes it harder to extract value with a raise.

This hand is not vulnerable, and doesn't mind letting BB draw.

B: K♠Q♠ - This vulnerable straight has a lot of incentive to get stacks in immediately, cooler trips, and fold out flush draws.

C: K♥Q♥ - This straight is less vulnerable, but it unblocks most of BB's calls (Ax/Jx), making it a good fast-play.

D: T♠T♣ - This boat can go either way. It is somewhat vulnerable to Ax/Jx runouts, but it doesn't block any value.

It can extract value through a raise, although you also expect BB to bet more often on the river when we hold TT.



[HU Cash, 40bb] SB (IP) opens 2. What hands does BB never 3-bet 40bb effective?

- A: Suited wheel aces (A2s-A5s)
- B: Low pocket pairs (22-55)
- C: Offsuit wheel aces (A2o-A5o)
- D: Low offsuit Kx (K2o-K5o)



BB preflop strategy

Correct answer:

A: Suited wheel aces (A2s-A5s)

	EV
All-in 40	1.1
Raise 10	1.08
Raise 6.5	1.15
Call	1.19
Fold	0

BB A4s EV facing open

Implied odds **decrease as stacks get shorter**. Suited wheel aces like A5s rely on a deeper SPR to extract value on later streets when they hit a big hand.

That's why BB's 3-betting strategy shifts to more offsuit blocker hands and pairs at low stack depths.

	EV
All-in 40	1.1
Raise 10	1.08
Raise 6.5	1.15
Call	1.19
Fold	0

BB A4s EV facing open

Furthermore, the threat of facing a shove and being forced off your hand deters these suited wheel aces from 3-betting.

However, at deeper stack depths, these types of hands become great 3-bets!

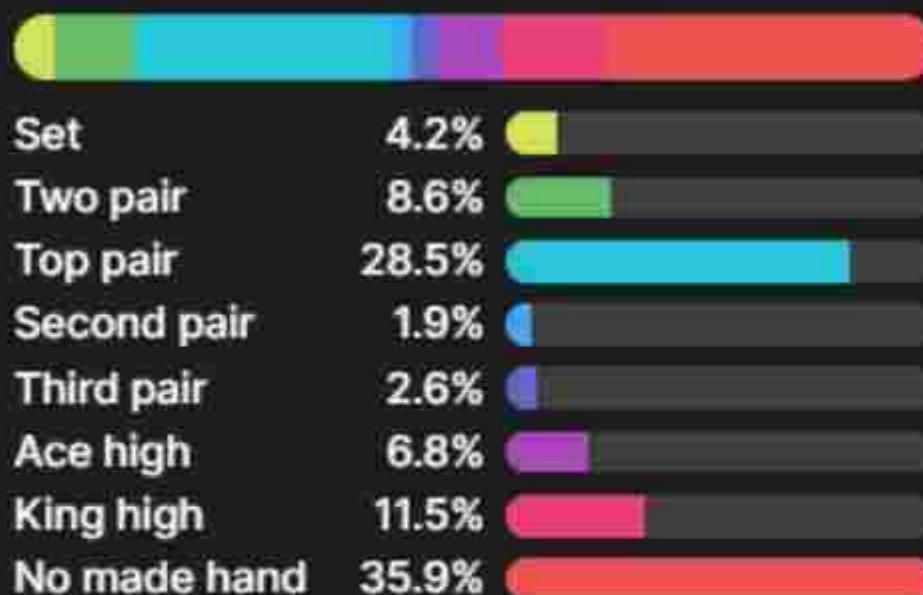


[6-Max Cash Straddle+Ante, 100bb] BTN opens 4.5, STR calls.

Flop is 9♦ 8♥ 4♦, BTN c-bets 50%.

What made hand comprises most of STR's check-raise range?

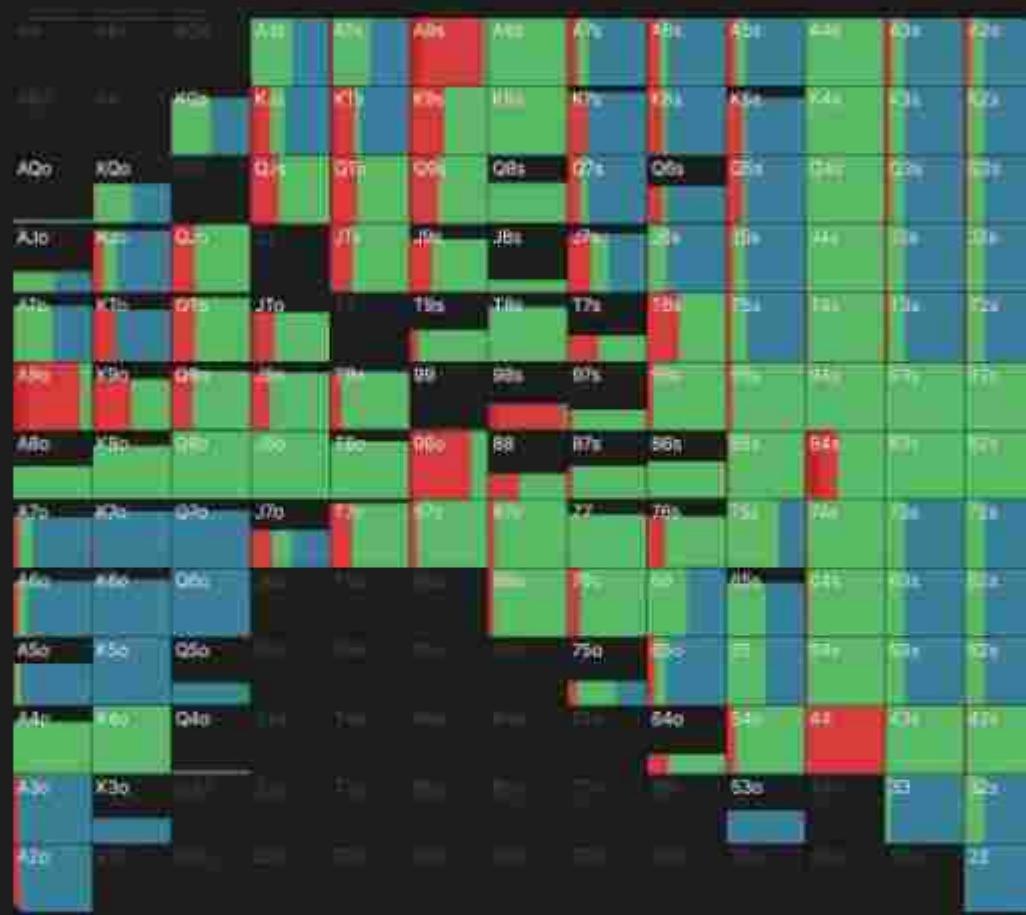
- A: Two pair
- B: Sets
- C: Top Pair
- D: Second pair + FD

HANDS

Straddle check-raise construction

Correct answer:

C: Top Pair



Straddle strategy vs BTN c-bet

As we've seen throughout this month, when stacks are short, vulnerable made value hands tend to have the most incentive to fast-play.

100 bb = 50 straddles

Keep in mind that **100bb = 50 straddles!** So the strategy resembles a 50bb game without straddles.

On a draw-heavy board like 9♦ 8♥ 4♦, top pair folds out significant equity (overcards) with a raise.

Moreover, the Straddle's range is so wide that they can't afford to only raise premiums like two-pair or sets.

They need to raise wider to prevent BTN from c-betting with impunity.

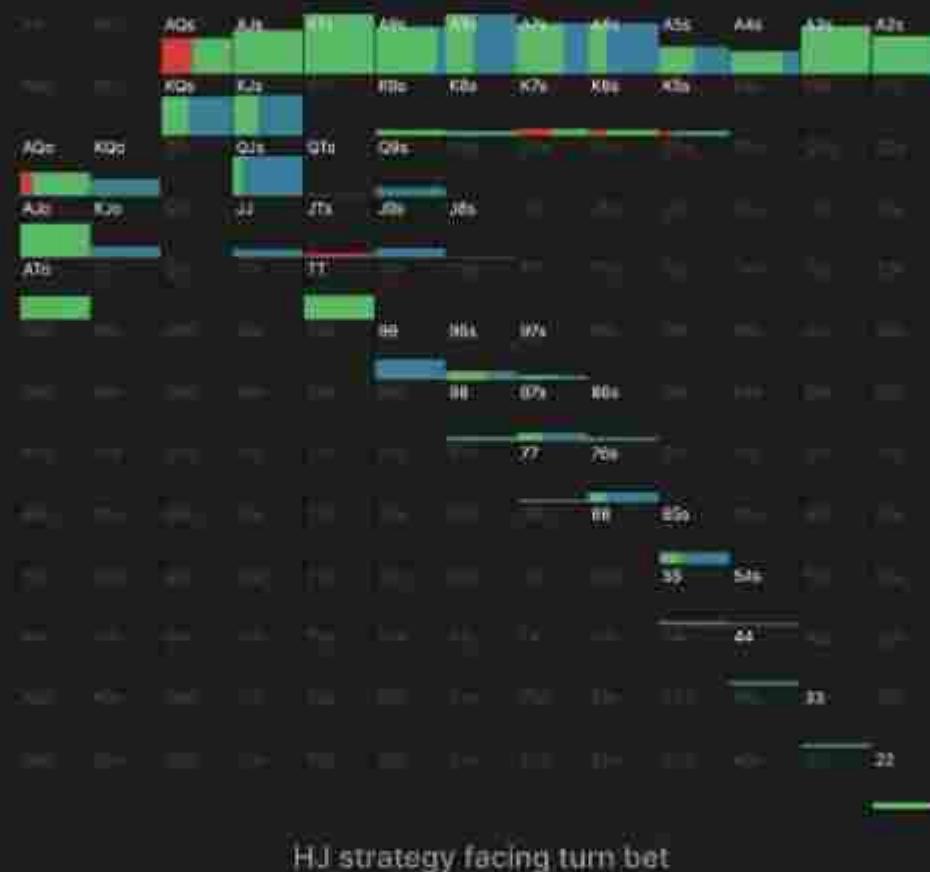


[8-Max MTT, 60bb] BTN vs HJ 3BP. BTN c-bets 25% flop and 75% turn, runout is A♠ T♠ T♥ 2♣. What's the strongest hand HJ should consider folding to the turn barrel?

- A: A♦ 7♦
- B: K♠ Q♠
- C: J♠ J♦
- D: A♥ J♦

Stack Depth 2ND BARREL BLUFF-CATCHING IN MIDSTACK 3BP

200



Correct answer

A:A 7

A: A♦ 7♦ - This is the top of HJ's folding range. These dominated top pair hands have poor reverse implied odds, but must defend at some frequency to prevent BTN from overbluffing.

B: K♠ Q♠ - This flush draw should always call - it's still ahead of BTN's bluffs, and can outdraw their value. In addition, it has some implied odds with another half-pot shove behind on the river.

C: J♠ J♦ - This hand is too weak to call, and has very few prospects against the value portion of BTN's range.

D: A♥ J♦ - This hand beats a decent chunk of BTN's value range, and is too strong to fold.

SB	CALL	BB	RAISE 12	STR	FOLD	SB	CALL	FLOP 30	K 5 4	SB	CHECK	BB	BET 33%
SB	CALL	TURN 49.8	6	SB	BET 33%	BB	CALL	RIVER 82.7	T	SB	ALLIN 134%	BB	Take action

[8-Max Cash Straddle+Ante, 150bb] Folds to SB who limps, BB ISO's to 12, STR folds, SB calls. Flop is K♦ 5♥ 4♥, SB checks, BB c-bets 33%, SB calls. SB donks 33% on turn 6♥, BB calls. SB shoves 134% on T♦ river. What's the strongest hand BB folds?

A: 4♠ 4♦

B: K♣ 5♣

C: A♠ A♣

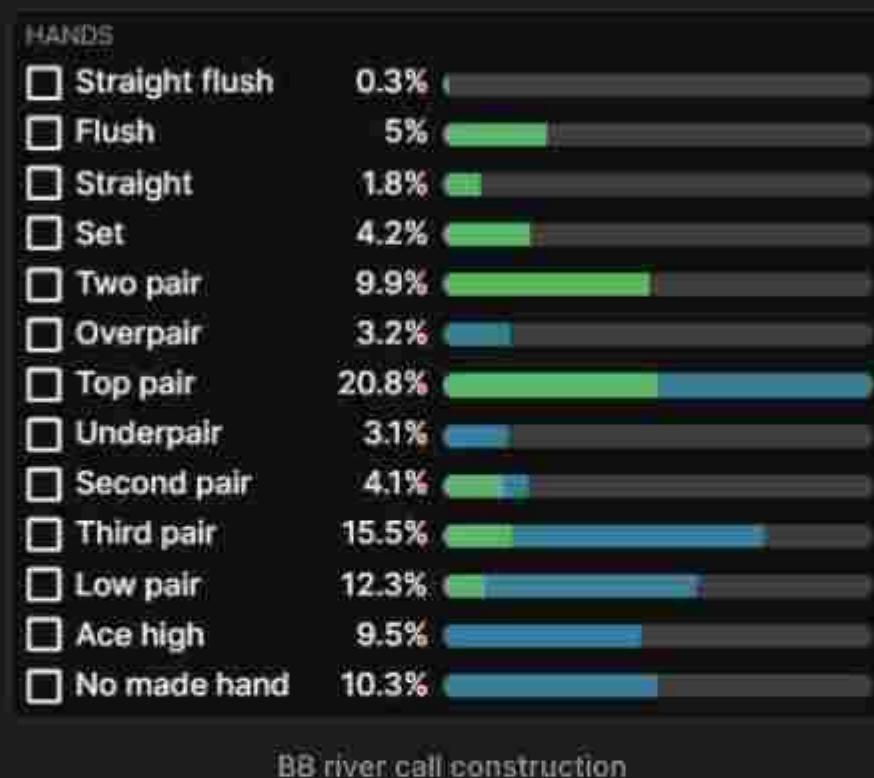
D: A♥ K♠



BB facing SB river shove

Correct answer:

C: A ♠ A ♣



Keep in mind 150bb = 75 straddles! When stacks are shorter, you need to stack off wider as a consequence of MDF.

Facing this river shove, BB needs to find calls with many top pairs and worse, as they cannot afford to fold 95% of their range and only defend flushes.



This obscure line sees the defender becoming the aggressor as the 6.♥ turn and brick river greatly benefits their range.

Interestingly, A♠ A♣ is actually weaker than A♥ K♠ as it blocks fewer Kx two pair and fewer flushes.

44 and K5s are too strong to fold.



[8-max MTT, 80bb] UTG opens, BB calls. What flop texture features the most UTG overbetting?

- A: Ace-high
- B: Connected
- C: 9-high
- D: Paired



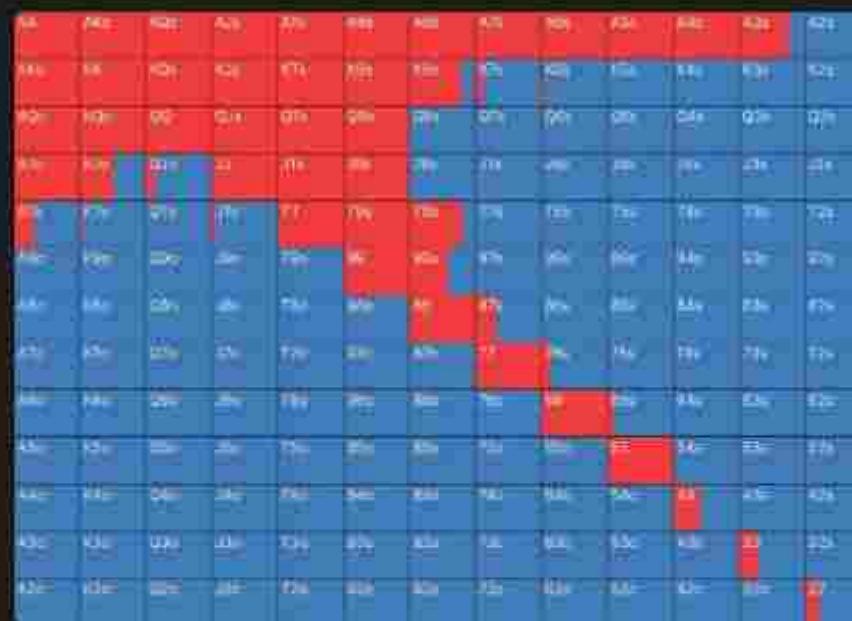
Correct answer:

C: 9-high



Correct answer

C: 9-high



UTG open

9-high flops hit the edge of UTG's suited opening range, giving them plenty of vulnerable top pair that want to push BB off their overcards.

Ace-high flops tend to be bet more frequently using a smaller size. There's less need for equity denial on these boards.

Connected and paired boards tend to prefer a smaller size challenging the air, and pot controlling against the nutted hands in BB's range.



[NL50 6-Max Cash, 75bb] CO opens 2.2, BB calls. Flop is Q♠ 7♥ 4♥, checks through. CO delay c-bets 76% on the A♠. What flush draw should BB consider calling with?

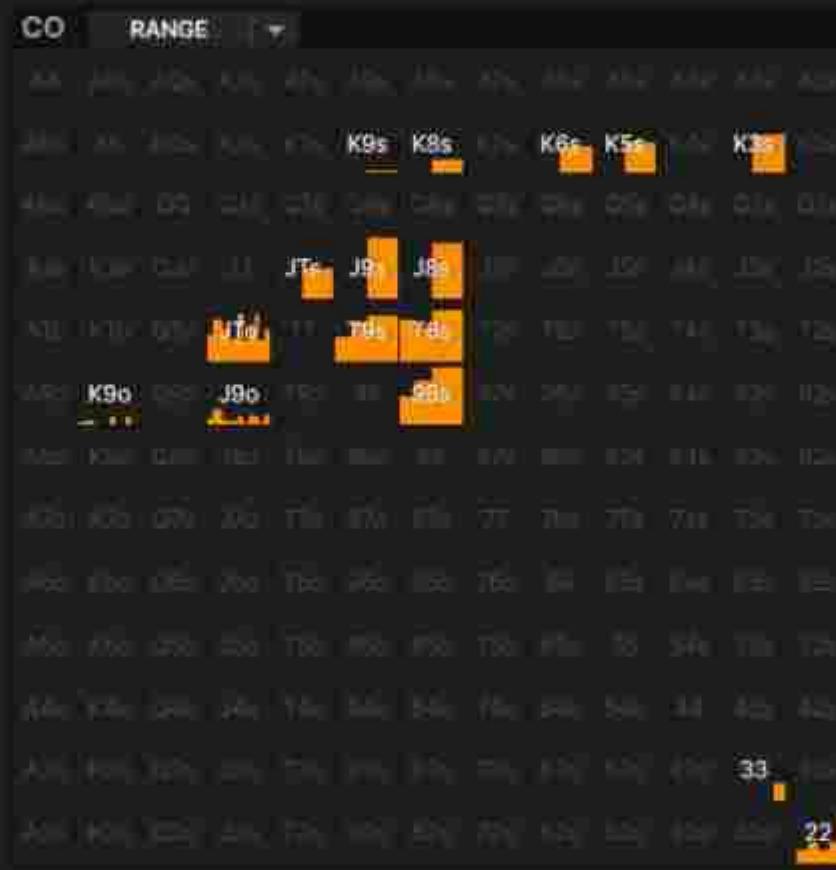
- A: K♥ 2♥
- B: 4♠ 3♠
- C: T♥ 9♥
- D: J♠ 5♠



BB FDs facing 74% turn bet

Correct answer:

B: 4 ♠ 3 ♠



Flush draws account for almost 16% of BB's range on this double-FD runout.

They need to **select their draws carefully** here, as continuing with too many makes them exploitable to value bets.



Here we've filtered CO's betting range for bluffs, and we can see that BB prefers to call with draws that do not interact with (unblock) these bluffs.

CASH ⚡ SB RAISE 2.5 BB RAISE 10 SB CALL FLOP 20 BB Take action

[HU Cash, 100bb] SB (IP) opens, BB 3-bets, SB calls. What flop texture features the most frequent and largest c-bets?

- A: Low flops (2-6 high)
- B: Mid flops (7-9 high)
- C: High flops (T-K high)
- D: Ace high flops



Correct answer:

B: Mid flops (7-9 high)



Range comparison

BB's 3-bet is quite linear 100bb deep, containing many medium-suited connectors/gappers.

These boards hit the BB's 3-bet well and provide incentive to fold out overcards and attack aggressively.



Here we've compared the card distribution for both ranges. BB tends to have proportionally more 7x-9x and more Kx-Ax combos, whereas SB has more of everything else.

High cards	+	Strategy	Check	Bet Small	Bet Medium	Bet Large	Overtbet
□ SB vs BB			38	40	8.1	11.9	1.9
▼ Filtered	100%		38	40	8.1	11.9	1.9
A	21.7%		35.3	46.5	5.7	10.6	1.8
K	18.2%		42.2	43.3	5.9	6	2.5
Q	15.2%		43.4	39.8	7.4	7	2.4
J	12.4%		45.7	38.4	7.7	7.9	2.2
T	9.9%		42.2	32.7	8.8	14.8	1.5
9	7.6%		25.4	36.9	13.8	22.4	1.6
8	5.7%		21	38.7	14.2	24.7	1.4
7	4%		23.6	38.4	12.6	24.2	1.2
6	2.6%		39.2	32.1	9.1	18.9	0.6
5	1.5%		44.6	29.1	8.9	16.8	0.7
4	0.7%		41	28.4	12.1	18.4	0.1
3	0.2%		33.8	27.7	14.5	24	0
2	0%		4.5	29.6	24.5	41.4	0

Even though they have an advantage on A-high boards, it also dulls their TT-KK advantage and reduces the incentive to generate fold equity.

Therefore, they're most aggressive on medium boards.

BTN	RAISE 2.3	SB	RAISE 10.5	BB	FOLD	BTN	CALL	FLOP 23	T 6 3	SB	BET 75%
BTN	CALL	TURN 57.5	Q	SB	BET 50%	BTN	CALL	RIVER 115	2	SB	ALLIN 38%

[8-max MTT, 100bb] BTN (hero) opens, SB 3-bets, BTN calls.
Flop is T ♦ 6 ♣ 3 ♠, SB c-bets 75%, BTN calls. Turn is Q ♠ and SB barrels 50%,
BTN calls. River 2 ♠ SB shoves 38%. At what point should BTN fold static
pocket pairs like 77-99?

- A: Facing the preflop 3bet
- B: Facing the flop bet
- C: Facing the turn barrel
- D: Facing the river shove



BTN facing turn bet

Correct answer:

C: Facing the turn barrel

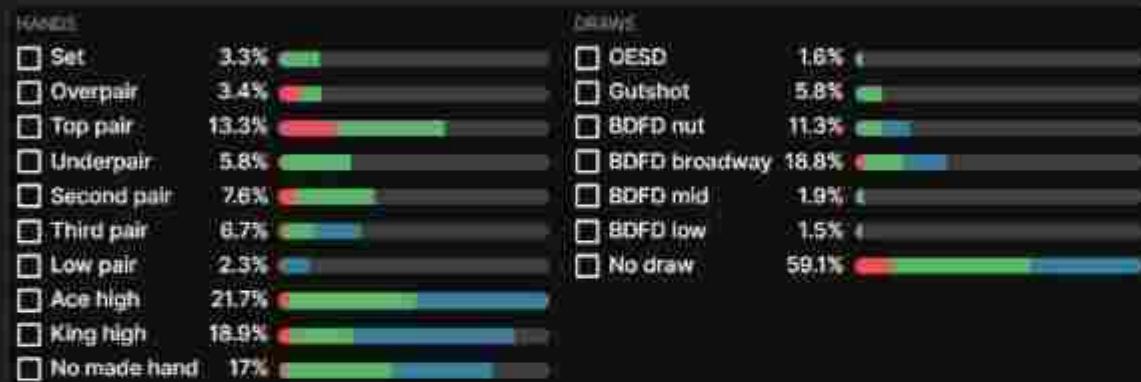


100bb deep, BTN should always call the 3-bet preflop to setmine.

On this dry flop BTN needs to defend more made hands, even against this large size.
BTN needs to find calls with hands like 3x, 6x, gutshots, and all hands stronger than 2nd pair.

The turned Q♦ hits SB's bluffs, and further **decreases** the equity of BTN's 77-99.
BTN should fold their static pairs worse than a Ten at this point.

Flop



Turn



BTN flop and turn strategy

	CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 7.5 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100	BB FOLD CALL RAISE 13.5 ALLIN 100	FLOP 5.1 J 2 2
BB CHECK BET 33%	CO CHECK BET 33% BET 50% BET 75% BET 125%	BB FOLD CALL RAISE 50% RAISE 100%	CO FOLD CALL RAISE 50% RAISE 100% ALLIN 540%	TURN 17 A	BB CHECK BET 33% BET 50% BET 75% BET 125% BET 175%

[NL50 6-Max Cash, 100bb] CO opens, BB calls. CO range-bets J♦ 2♦ 2♣, BB check-raises, CO calls. Turn is A♣, BB overbets 125%. Which of CO's bluff catchers has the highest call EV?

- A: A♦ Q♦
- B: A♠ K♣
- C: J♣ 7♣
- D: Q♠ T♣

HANDS		SUMMARY	FILTERS				
Hand	Strategy		Range	EV	Equity	EQR	Blocker
A♦ Q♦			78.9 %	0.95	57.2 %	9.7 %	● 4
A♦ K♦			79.7 %	0.87	56.1 %	9.1 %	● 10
J♦ 7♦			70.2 %	8.25	59.8 %	81.2 %	● 5
Q♠ T♦			38.7 %	0	15.9 %	0 %	● 6

CO bluff catcher comparison on turn

Correct answer:

C: J ♣ 7 ♣

	20%	30%	40%	50%	60%	70%	80%	90%	100%	A4s	A2s
AKs	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	K2s
AQo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	Q2s
AJo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	J2s
ATo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	T2s
AKo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	K2s
AKo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	K2s
A5s	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	52s
A4s	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	42s
A3s	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	32s
ATo	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	T2s

BB turn value overbets

BB's turn overbet represents AJ two-pair and 2x trips for value.

J7 blocks BB's main value bet - AJ.

Hands like AK and AQ block bluffs such as QT, KT, and KQ. Furthermore, these hands suffer from reverse implied odds as hitting a two pair like a K or Q on the river turns some of BB's 2x into boats.

Deepstacked play allows more polarized lines, and increases the implied odds of draws, and reverse implied odds of dominated made hands. Hands like AK and AQ will often be dominated against BB's range, and play as bluff catchers with few outs to improve.

Combo draws like Jc7c have many more outs to outdraw BB's value range. These hands have better implied odds and more equity facing this polarizing line.



[NL500 6-Max Cash, 100bb] UTG opens 2, HJ 3-bets to 6.5, UTG calls. Flop is 6♦ 5♦ 2♣ and checks through. Turn is A♥, UTG overbet-probes the turn for 175%, action on HJ with a pot-sized shove behind. Which of HJ's bluff catchers has the highest EV?

- A: 3♥ 3♣
- B: A♠ 4♠
- C: A♦ K♦
- D: A♦ Q♠

HANDS	SUMMARY	FILTERS				
Hand	Strategy	Range	EV	Equity	EQR	Blocker
3♦3♣		11.6 %	1.83	32.9 %	38.4 %	3
A♠4♠		20.1 %	5.49	58.8 %	64.4 %	4
A♦K♦		33.2 %	0.3	58 %	3.6 %	1
A♦Q♠		65.5 %	0	57.6 %	0 %	1

HJ bluff catcher comparison on turn

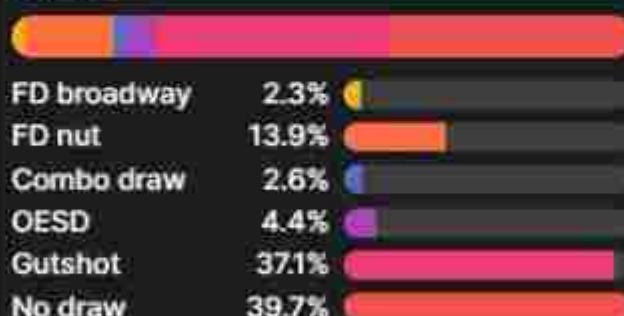
Correct answer:

B: A♠ 4♠

HANDS



DRAWS



UTG probe overbet construction

UTG's probe overbet represents mostly sets and two pair for value. HJ's best bluff catchers will have implied odds against this range.

Similar to yesterday's DD, we note that in deepstack games implied odds become a larger factor.

The deeper stacks allow the aggressor to polarize harder with stronger value, forcing us to reconsider our bluff catchers.

A♠4♠ has outs to a gutshot, trips, and two pair.

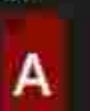
This hand has reasonable implied odds and can outdraw some of UTG's value hands. It also unblocks bluffs, and blocks some value such as UTG's two pair.

3♦3♣ also has outs to a gutshot and a weak set. It has good implied odds, but less equity overall.

The 3x outs are somewhat poisoned as a 3 completes some of BB's straight draws

A♦K♦ and A♦Q♠ play closer to a static bluff catcher with few outs to improve.
These hands have high equity but terrible realization.

Half of your outs are poisoned by the flush draw, and none of your outs can outdraw a set.

SB FOLD RAISE 3 ALLIN 150	BB FOLD CALL RAISE 12 ALLIN 150	FLOP 6 	SB CHECK BET 33% BET 66% BET 130% ALLIN 2450%	BB CHECK BET 33% BET 66% BET 130% ALLIN 2450%	TURN 6 
SB CHECK BET 33% BET 66% BET 130% ALLIN 2450%	BB CHECK BET 33% BET 66% BET 130% ALLIN 2450%	RIVER 6 	SB CHECK BET 33% BET 75% BET 150% ALLIN 2450%	BB FOLD CALL RAISE 50% RAISE 87% ALLIN 950%	SB FOLD CALL RAISE 50% ALLIN 135%

[NL500 6-Max Cash, 150bb] SB opens, BB calls. Checks through to the river, the board runs out J♥ T♥ 2♥ A♥ 6♥. SB bets 75%, BB raises 50%, action on SB. What's the weakest flush SB can 3-bet for value?

- A: K♥
- B: Q♥
- C: J♥
- D: T♥



SB strategy facing river raise (filtered for flushes)

Correct answer:

B: Q



Deepstacked monotone boards force both players to slowplay a lot of value in order to remain unexploitable and adequately defend their middling made hands.

Consequently, both players arrive at the river with wide uncapped ranges in this checked-down line.



Equity distribution comparison

On boards like this, most of the range chops. So a large part of the strategy comes down to bluffing the other player off a chop.



Equity distribution comparison

The wide uncapped ranges and chop dynamics forces both players to raise wider on the river, pushing the river 3-bet value thresholds down to the 2nd nut flush.

SB FOLD RAISE 2.5 ALLIN 150	BB FOLD CALL RAISE 10 ALLIN 150	FLOP A T 9	S BB CHECK BET 33% ALLIN 2950%	BB CHECK BET 33% BET 67% BET 100% BET 150% ALLIN 2950%	BB FOLD CALL RAISE 50% RAISE 100% RAISE 150% ALLIN 700%
TURN 20 K	BB CHECK BET 33% BET 67% ALLIN 700%	SB CHECK BET 33% BET 67% BET 100% BET 150% BET 250%	BB FOLD CALL RAISE 50% RAISE 100% ALLIN 200%	RIVER 60 2	BB CHECK BET 10% BET 35% BET 60% BET 85% ALLIN 200%

[HU Cash, 150bb] SB (IP) opens, BB calls. SB c-bets 150% on the flop, 100% on the turn, and the board runs out A♥ T♣ 9♠ K♥ 2♦.

What's the weakest hand SB can shove (200%) the river with?

- A: Straight
- B: Set
- C: Two pair
- D: Top pair

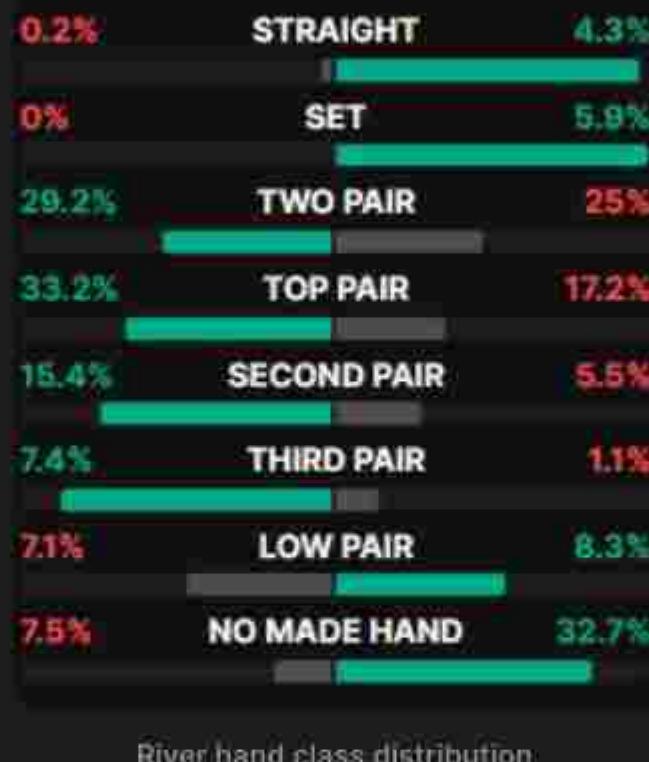


Correct answer:

C: Two pair



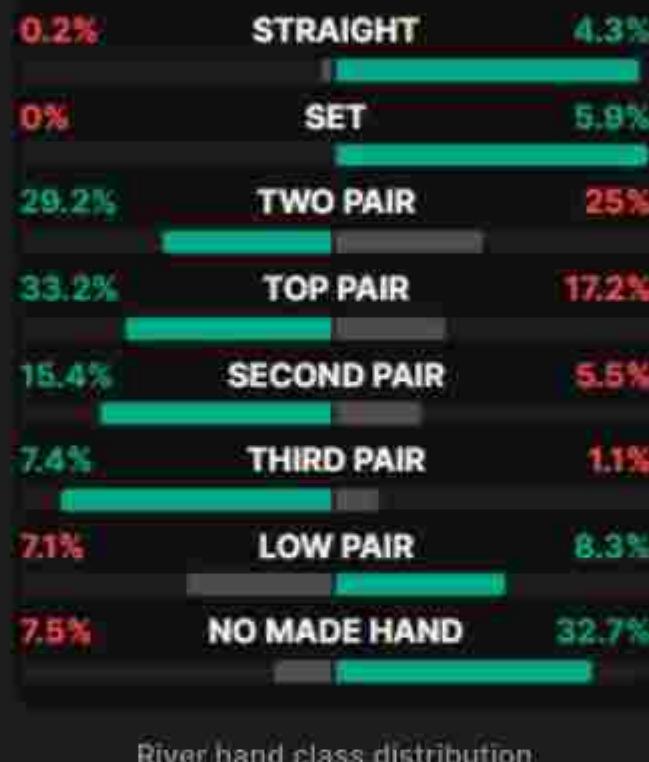
SB has a massive polarizing nut advantage when all the draws brick on the river.



River hand class distribution

As stacks get deeper, your stack-off range gets narrowed towards stronger hands.

Two pair with an Ace is just strong enough to shove for value, however this would be an overplay on many runouts.



However, this brick river is great for SB's range, as all their value retains equity and none of the defenders draws complete.

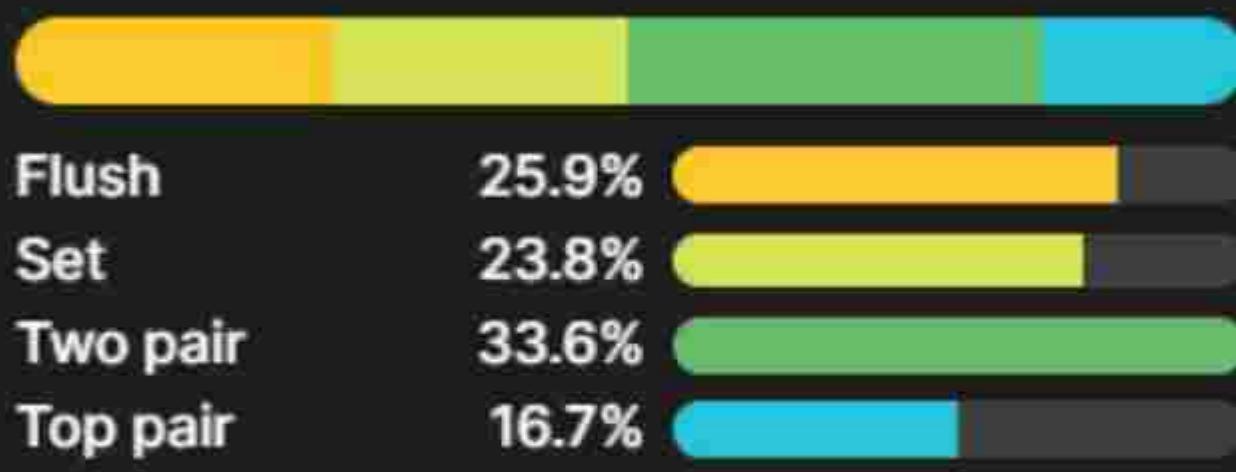
This allows the aggressor to expand their value threshold to hands as weak as T9.

	UTG	RAISE 2.5	HJ	FOLD	CO	FOLD	BTN	FOLD	SB	FOLD
BB	RAISE 12	UTG	CALL	FLOP 24.5	AK2	BB	BET 66%	UTG	CALL	
TURN 56.8	7	BB	BET 66%	UTG	CALL	RIVER 131.8	8	BB	ALLIN 102%	UTG CALL

[NL50 6-Max Cash, 200bb] BB vs UTG 3BP. BB triple-barrels 66%, 66%, 102% on flop-turn-river, UTG calls it down. The board runs out A♥ K♥ 2♥ 7♣ 8♣. If UTG starts with 4.5% flushes on the flop, and never raises. What percentage of their final call-down range will be a flush by the river?

- A: 10%
- B: 25%
- C: 35%
- D: 50%

HANDS



UTG call-down range

Correct answer:

B: 25%

Street	Bet size	MDF
Flop	66%	60%
Turn	66%	60%
River	102%	50%

Call down% 18%

$$\text{MDF} = 1/(1+\text{bet}\%)$$

Multiply the Minimum Defense Frequency of each street, starting on the flop, to figure out how wide they call down.

UTG's final range is only 18% of their starting range. $4.5/18 = 25\%$.



UTG only starts this hand with 2.7 combinations of flushes. As we are 200bb deep, BB can bet large on every street, quickly narrowing UTG's range towards only the strongest hands.

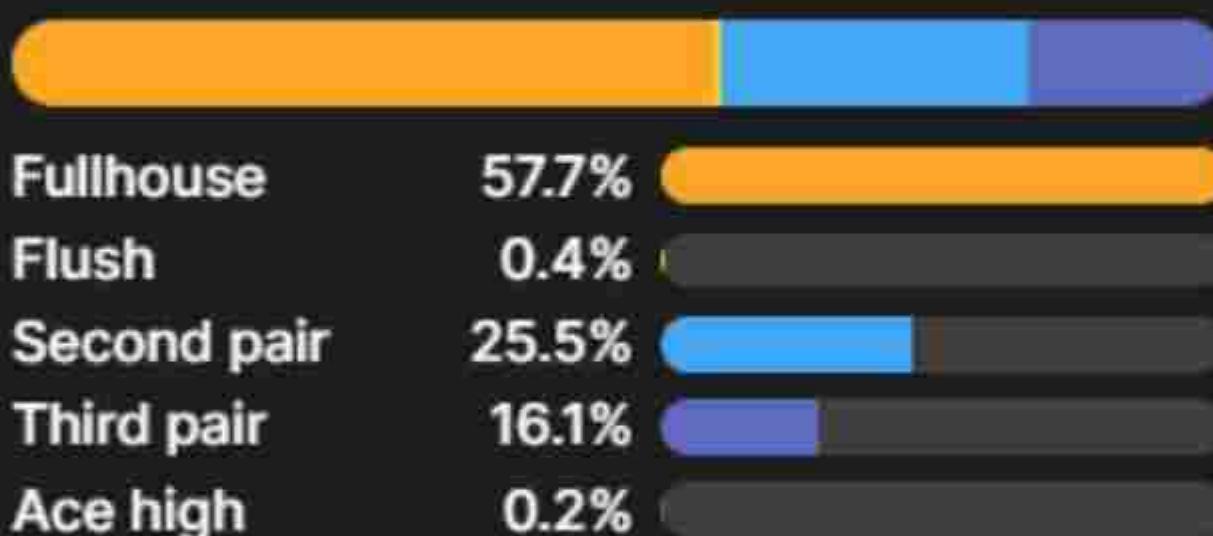
This is why nut advantage becomes more important deepstacked.



[NL500 6-Max Cash, 200bb] CO vs BB SRP. Flop is Q 7 6 , CO c-bets flop 33%, BB XR 50% CO call. BB barrels 130% on the turned 4 , then shoves 256% on the 4 river. What hand class comprises the majority of BBs river shove?

- A: Straight flushes
- B: Full houses
- C: Flushes
- D: Straights

HANDS



BB river shove construction

Correct answer:

B: Full houses



As you play deeper, stack-off ranges become tighter and tighter. Due to these huge sizes, CO's call-down range is incredibly tight.

BB's shove targets CO's flushes for indifference, so they need to polarize with hands stronger than flushes.



CO needs 42% equity to call the river shove, which means 42% of BB's shoving range should be bluffs.

They bluff with pairs that block boats, such as 6x/7x.

We've explored the effects of stack depth throughout this month. When stacks are shallow, vulnerable made hands often fast-play, and call down ranges are wide.

As stacks get deeper, nut advantage plays a bigger role. Polarizing strategies with huge sizes come into play, which can quickly narrow the ranges. Draws and implied odds play a much bigger role.

You need to be cognizant of the relationship between nut advantage and stack depth, and how that influences your range construction and hand incentives.

	Pot	Stack	SPR	Stackoff Range
SRP 200bb	5.50	197.50	35.9	3-6%
SRP UTG	4.50	98.00	21.8	4-9%
SRP BTN	5.50	97.50	17.7	5-10%
SRP BvB	6.00	97.00	16.2	6-11%
3bp small	15.50	92.50	6.0	14-21%
3bp medium	20.50	90.00	4.4	18-25%
3bp large	27.50	87.00	3.2	24-31%
4bp small	37.00	82.00	2.2	31-38%
4bp medium	45.00	78.00	1.7	36-43%
4bp large	55.00	73.00	1.3	44-50%

Stack off range by depth

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TACTICS

TACTICS



What's the difference between strategy and tactics? Strategy refers to a long-term plan, while tactics are moves made to achieve an immediate goal.

In this chapter, we'll be focusing on tactics! We'll cover common poker betting lines and useful ideas, focusing on thresholds and range construction.

CO	BTN	SB	BB	FLOP	5.1	BB	CO
FOLD	FOLD	FOLD	FOLD			CHECK	CHECK
RAISE 2.3	CALL	CALL	CALL			BET 1.7 (33%)	BET 1.7 (33%)
ALLIN 100	RAISE 7.5	RAISE 11.5	RAISE 13.5			BET 2.55 (50%)	BET 2.55 (50%)
	ALLIN 100	ALLIN 100	ALLIN 100			BET 3.8 (75%)	BET 3.8 (75%)
						BET 6.4 (125%)	BET 6.4 (125%)

[NL50 6-Max Cash, 100bb] CO opens 2.3, BB calls. Which of these flops is NOT a range-bet spot for CO?

- A: Q♦ J♥ T♥
- B: 6♥ 6♦ 6♣
- C: A♦ A♣ 7♥
- D: A♥ Q♦ 2♣

STRATEGY	RANGES	BREAKDOWN		REPORTS		
		Check	Bet 33%	Bet 50%	Bet 75%	Bet 125%
Flops	Strategy					
Q♦ J♥ T♥		2.7	25.2	44.1	25.3	2.7
6♥ 6♦ 6♣		0.1	17.4	64.4	17	1.1
A♦ A♣ 7♥		0.8	95.7	2.6	0.7	0.1
A♥ Q♦ 2♣		60.7	5	1.8	2.6	29.9

Correct answer:

D: A♥ Q♦ 2♣



Many players prefer to range-bet these type of boards (Ace-Broadway-Brick).
But the solver has shown that an overbet strategy generates more value with the top of your range on boards like this.



While range-betting certainly isn't terrible, it's not the highest EV strategy on a board like AQ2. The relative value of fold equity is quite low - meaning you dominate most of the hands that fold against a small bet.

So the best strategy is to maximize value at the top of its range with an overbet.

When you put most of your value into an overbet line, you're forced to check a lot more.

Medium strength hands can't go into a small bet without the protection of stronger hands.

Flops	+	Strategy	Check	Bet Small	Bet Medium	Bet Large	Overbet
C CO vs BB			45.5	26.8	14.9	7.5	5
T Filtered 2%			45.1	11	7.4	5.8	31
A♥K♦7♣			34.5	8.3	11.3	8.8	37.3
A♥K♦6♣			37.4	8.9	7.6	6.7	39.4
A♥K♦5♣			40.1	4.5	5.4	6.8	43.2
A♥K♦4♣			48.1	2.8	2.1	2.8	46.2
A♥K♦3♣			52.8	2.5	1.5	2.1	41.2
A♥K♦2♣			56.2	1.7	1.2	1.7	40.2
A♥Q♦7♣			36.6	16	14	11.2	22.1
A♥Q♦8♣			37.3	17.8	9.4	8.4	27.1
A♥Q♦5♣			42.6	12.1	8.8	7.2	29.3
A♥Q♦4♣			51	6.9	3.2	4.3	34.5
A♥Q♦3♣			51.1	7.1	2.2	2.8	29.8
A♥Q♦2♣			50.7	5	1.8	2.0	29.9
A♥J♦7♣			40.5	6.8	14.7	10.2	27.8
A♥J♦6♣			37.1	22.9	14.4	4.9	20.8
A♥J♦5♣			37.3	21.9	14.1	6.2	20.4
A♥J♦4♣			42.7	16	8	5.9	25.4
A♥J♦3♣			48.6	18.9	7.1	5.4	19.9
A♥J♦2♣			52.5	15.2	6.4	3.2	22.7

CO vs BB report - filtered for (A)(K-J)(7-2)r

Here we see aggregate reports that show this overbet trend extends further.

CO	BTN	SB	BB	FLOP	5:1	BB	CO	BB
FOLD	FOLD	FOLD	FOLD			CHECK	CHECK	FOLD
RAISE 2.3	CALL	CALL	CALL			BET 1.7 (33%)	BET 1.7 (33%)	CALL
ALLIN 100	RAISE 7.5	RAISE 11.5	RAISE 13.5			ALLIN 92.7 (191%)	BET 2.55 (50%)	RAISE 5.95 (50%)
	ALLIN 100	ALLIN 100	ALLIN 100				BET 3.8 (75%)	RAISE 10.2 (100%)
							BET 6.4 (125%)	ALLIN 97.7 (1129%)

[NL500 6-Max Cash, 100bb] CO open 2.3, BB calls. Flop is Q♦ Q♦ 2♣ and CO range-bets for 33% pot. BB is supposed to check-raise more than 28% of their range here. Why does BB raise so aggressively?

- A: BB has a nut advantage in Qx trips
- B: BB check-raises more often to make up for overfolding
- C: BB wants to put CO's unmade high cards in a tough spot
- D: BB doesn't have many hands worth calling, so they don't need to protect their calling range



Correct answer:

B: BB check-raises more often to make up for overfolding



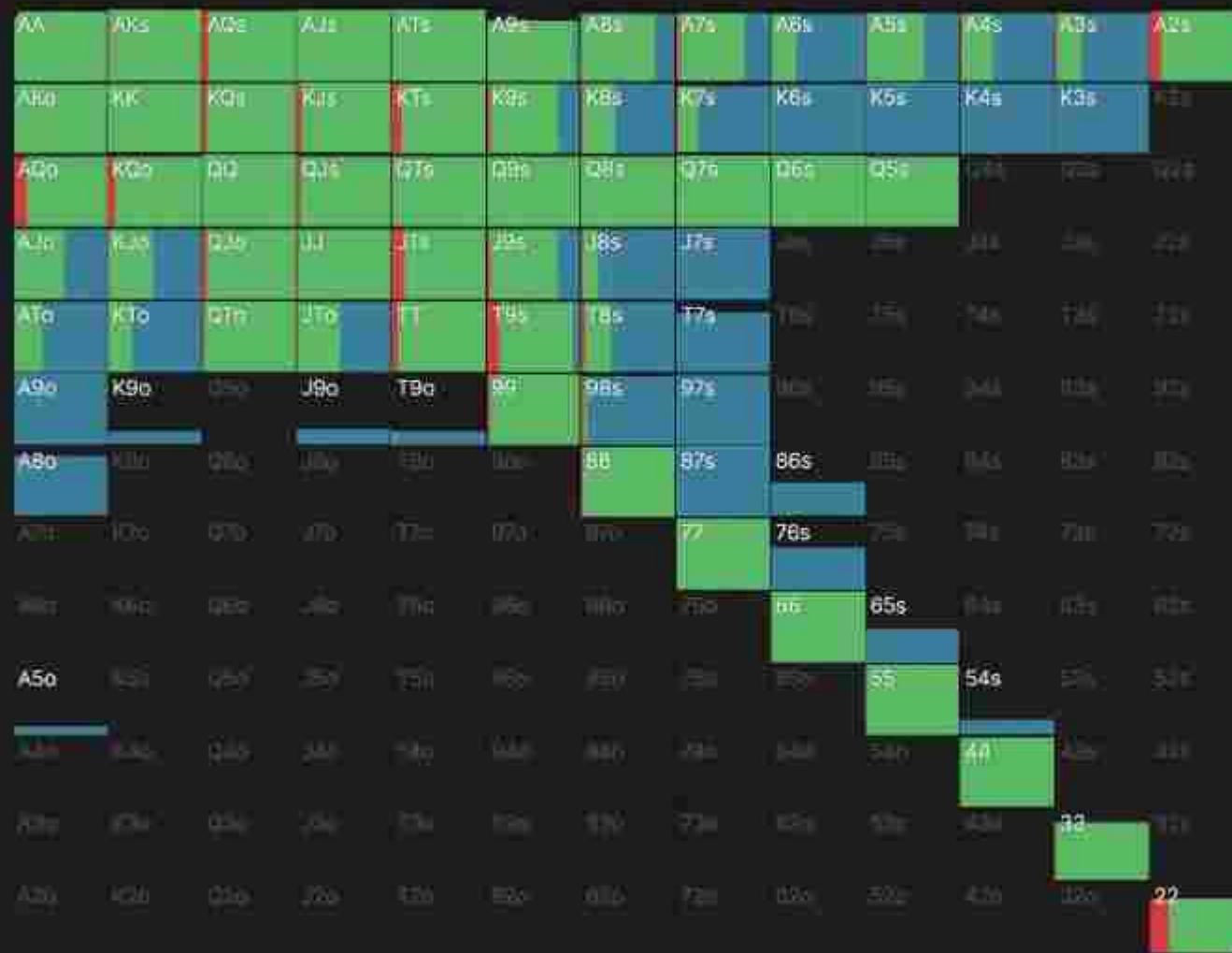
The reason CO range-bets in the first place is because BB is forced to overfold.

If you run a simple MDF calculation, BB would fold no more than 25% of their range.
But they're forced to fold twice as much as that due to their lack of connectivity with this board.

Check-raising "*counts more*" towards defense than calling, as it denies equity from the aggressor. This is an attempt to disincentivize CO from betting too many hands that would otherwise fold to a raise.

D: BB doesn't have many hands worth calling - is also partially correct.
BB is under-realizing their equity and doesn't have many hands that can profitably call the flop.

You can delegate more value to a check-raise line when you have fewer hands in need of protection in your calling line.



CO facing BB 50% check-raise

HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.5	RAISE 7.5	CALL	CALL	CALL
ALLIN 100	ALLIN 100	RAISE 7.5	RAISE 12	RAISE 12
		ALLIN 100	ALLIN 100	ALLIN 100

FLOP	5.5	BB	HJ	TURN	5.5	BB
A	8	6	CHECK	CHECK		CHECK
			BET 33%	BET 33%		BET 33%
			ALLIN 1773%	BET 50%		BET 50%
				BET 75%		BET 75%
				BET 125%		BET 125%
				ALLIN 1773%		BET 175%

[6-Max Cash, 50NL, 100bb] HJ opens 2.5, BB calls. Flop is A♠ 8♥ 6♦, checks through. Across all possible turn cards, what is BB's most used probe sizing?

- A: Small (below 36%)
- B: Medium (36% - 67%)
- C: Large (67% - 100%)
- D: Overbet (101%+)



Correct answer:

D: Overbet (101%+)



On boards like this, BB can't really value bet top pair or medium-strength hands.

BB's best strategy is to create huge overbets with strong value like two pair+.

Overbets are the most common turn probe sizing on many dry boards after flop checks through (100bb deep).



Here we see BB's strategy across all turn cards:



[NL500 6-Max Cash, 200bb] CO opens 2.5, BB calls. Flop is K♠ 7♠ 4♦. CO c-bets 33%, BB calls. Turn is J♦. How should CO construct their turn c-bet?

- A: Medium bet, pushing middle pairs and vulnerable made hands
- B: Larger bet, pushing top and medium pairs to deny equity
- C: Overbet with mostly nutted hands for value, and mostly check back most one pair hands
- D: Mostly check back, or bet small with a merged range



Correct answer:

C: Overbet with mostly two pair+ for value, and mostly check back one pair hands.



Turn overbets are very common after betting small on the flop. This is especially true 200bb deep.

CO has a big nut advantage and wants to polarize and play for stacks.



Turn overbets are most common when the turn card connects with the aggressor and doesn't complete draws.

The jack gives CO plenty of extra nutted hands without completing many draws.

CO should bet huge and play for stacks with strong value.

HJ	CO	BTN	SB	BB	FLOP	5.5	HJ
FOLD	FOLD	FOLD	FOLD	FOLD			CHECK
RAISE 2	CALL	CALL	CALL	CALL			BET 1.8 (33%)
ALLIN 100	RAISE 6.5	RAISE 7.5	RAISE 13	RAISE 13.5			BET 2.75 (50%)
	ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100			BET 4.1 (75%)
							BET 6.9 (125%)
							ALLIN 98 (1782%)

[NL500 6-Max Cash, 100bb] HJ opens 2bb, BTN calls. Flop is 7♦ 5♦ 4♦. How should HJ construct their flop value c-betting range?

- A: Check your entire range
- B: Bet small with a wide range to deny equity to overcards
- C: Bet medium-large with vulnerable overpairs and draws
- D: Overbet your strongest value and good combo draws, check the rest



Correct answer:

A: Check your entire range



BTN's cold-calling range is condensed, meaning they have many medium-made hands, without much air.

BTN flats pocket pairs, suited connectors, and suited Ace-x hands, all of which crush this flop. Here we can see a hand comparison, and it's clear that BTN has the advantage.



Meanwhile, HJ's range is so top-heavy that 72% of their range is just high card air in this spot.

HJ has a range and positional disadvantage, so despite being the preflop aggressor they need to play defensively!



[8-Max MTT, 30bb] HJ opens, CO calls. Flop and turn check through, the board is T ♦ T ♦ 9 ♦ 2 ♣ 9 ♥. How should HJ construct their river value betting range?

- A: Check your entire range
- B: Block-bet small with Ace high and some nuts/bluffs to put IP's high cards in a tough spot
- C: Bet a medium size with overpairs to extract thin value from Ace high calls
- D: Overbet with boats and overpairs



Correct answer:

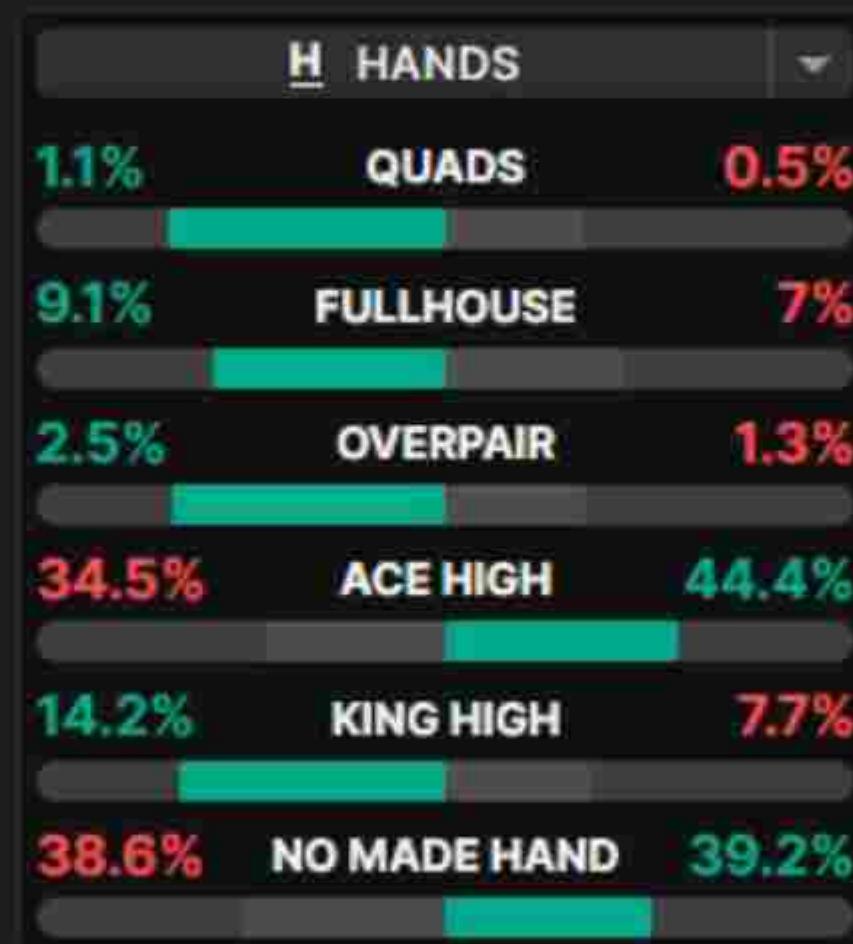
D: Overbet with boats and overpairs

Balance with 0-equity bluffs.

Construct your betting strategy around your value hands.

On many double-paired runouts a small block bet can be justified with Ace high (for value). However, that heuristic applies to wide formations. In this scenario, CO cold-called a HJ open, so their range is already very condensed towards pocket pairs and Ace high.

When your opponent's range is condensed towards medium hands, you need to shift your value target appropriately. Instead of targeting air with a block-bet, CO attacks using a polarized overbet representing boats or nothing!



← HJ left, CO right →



HJ strategy



[HUMTT, 50bb] SB (IP) opens, BB calls. Flop is K♦ Q♦ 6♥. SB c-bet 25%, BB calls. Turn is 2♣. SB c-bets 150%. What hand is indifferent between calling and folding?

- A: K♦ 3♦
- B: Q♠ 9♥
- C: 9♥ 4♥
- D: J♠ T♥



Correct answer:

B: Q ♠ 9 ♥

Remember, turn overbets are common after small flop bets, especially on turns that **DO NOT** complete draws.

- A: K♦3♦ is a pure call. Top pair is simply far too strong to fold at this point heads up.
- B: Q♠9♥ is indifferent between calling and folding. That means the EV of a call is the same as a fold - 0bb.
- C: 9♥4♥ This flush draw is actually a pure fold! While most flush draws call, this one in particular blocks too many bluffs, and doesn't block enough value.
- D: J♠T♥ This straight draw is a pure call. JT blocks a good portion of BTN's value range such as KJ and KT.

Heads up poker involves playing a very wide range of hands. You need to find enough calls to avoid getting exploited by bluffs.

BB needs to call about 40% of their range (MDF) to remain unexploitable.

Here we can see a breakdown of BB's hands on the turn.

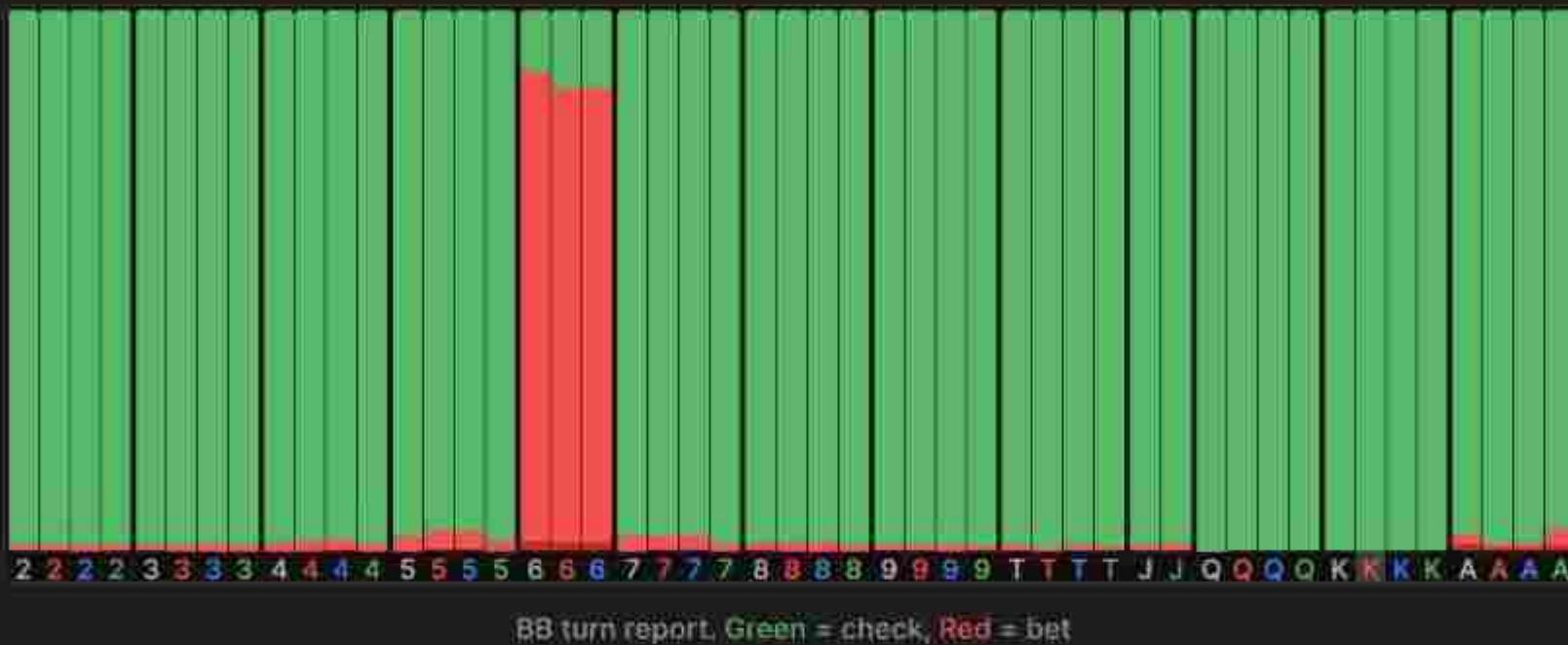
The continuation threshold for made hands is roughly bad 2nd pair.

Category	Range %	Combos	
Set	0.7	2.9	
Two pair	4.2	18.1	
Top pair	12	51.9	
Second pair	17.7	76.8	
Third pair	19.3	83.7	
Low pair	6.5	28.3	
Ace high	15.5	67.1	
No made hand	24.1	104.7	
Combo draw	0.6	2.6	
Flush draw nuts	1.2	5.3	
Flush draw	4.2	18.4	
OESD	2.1	8.9	
Gutshot	6	25.9	
No draw	85.9	372.3	



[NL50 9-Max Cash, 100bb] UTG opens 2, BB calls. Flop is J♥ J♦ 6♣, UTG c-bets 33% and BB calls. What turn card should BB consider donking?

- A: A ♥
- B: 6 ♠
- C: J ♣
- D: 2 ♦



Correct answer:

B: 6 ♠

Consider the range asymmetries

UTG has plenty of Ace high, Jack-x, and overpairs. BB has an advantage in 6x. UTG's tight opening range has almost no 6x. BB's range is further narrowed towards 2nd pair after calling the flop bet.

So when the 6 pairs on the turn, BB will have a significant number of boats.

On this next slide, I compare the ranges on the flop after filtering for BB's call.



SB	BB	FLOP	6	SB	BB	TURN	10	SB
FOLD	FOLD			CHECK	FOLD			CHECK
CALL	CALL			BET 2	CALL			BET 3.3
RAISE 3	RAISE 10			BET 3	RAISE 7			BET 5
ALLIN 100	ALLIN 100	A	9	BET 4.5	RAISE 12			BET 7.5
			3	BET 7.5				BET 12.5
								BET 17.5

[NL50 6-Max Cash, 100bb] SB opens, BB calls. Flop is A♠ 9♥ 3♥, SB bets 2 and BB calls. What kind of turn cards should SB c-bet using smaller bet sizes?

- A: Offsuit bricks
- B: Flush-completing turns
- C: Board pairing turns
- D: Jack, Queen, or King (not ♥)



Correct answer

- B: Flush-completing turns**
- C: Board pairing turns**

Both **B:** and **C:** are correct!

Consider the range asymmetries.

BB raises many strong hands on the flop. So they should be relatively capped on brick turns when they elect to call the flop bet instead.

Turns that add many nutted hands to villain's range force SB to size down:

Draw-completing turns, or paired turns, both add a significant number of nutted hands to the ranges, which prevents SB from using large sizes.



SB 33% turn c-bet on A♦ 9♥ 3♥ Q♥

When SB is forced to use smaller bet sizes, they should construct their c-bet using a "depolarized" range that contains more medium-strength hands.

"Medium" strength is relative in this context. For example, top pair only has about 65% equity on a flush-completed turn board.



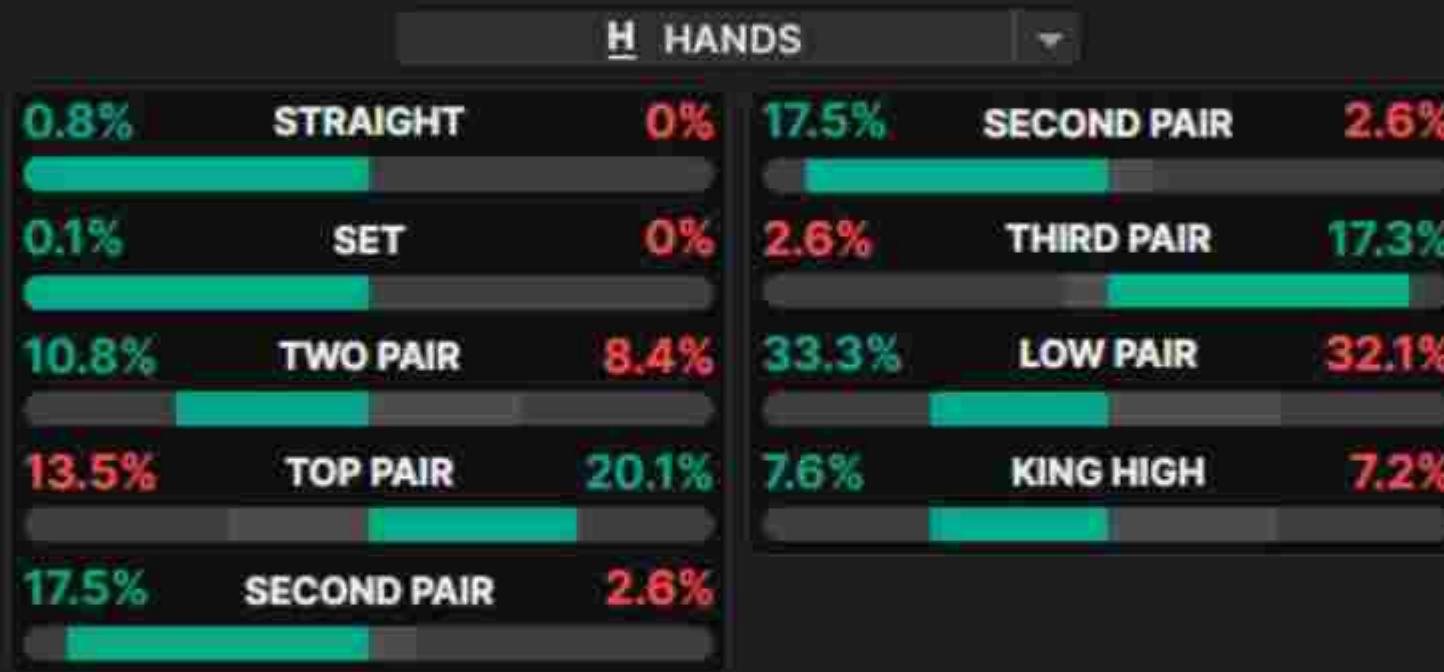
[8-Max MTT, 30bb] CO opens, BB calls. CO c-bets 33% flop, turn checks through, action on BB on the river, Q ♦ 5 ♦ 4 ♦ 9 ♦ A ♣. What's the weakest hand BB can bet for value?

- A: Any made hand
- B: Second/Third pair
- C: Top pair
- D: Two pair+



Correct answer:

B: Second/Third pair



When CO checked the turn, they capped their range. BB would prefer to bet larger on most brick rivers. But the A♣ connects well with CO's range, turning a lot of their air into top pair, and equalizing the equity distributions somewhat.



BB's 2nd pair is still strong enough to bet for value as Queen-x still has over 65% equity. Their best strategy here is a block-bet, maximizing their equity realization with medium-strength hands.

CO	BTN	SB	B8	BTN	FLOP	20.4	SB	BTN
FOLD	FOLD	FOLD	FOLD	FOLD	5	3	CHECK	FOLD
RAISE 2.3	RAISE 2.3	CALL	CALL	CALL			BET 10%	CALL
ALLIN 50	ALLIN 50	RAISE 9.2	RAISE 17	RAISE 17			BET 25%	RAISE 33%
		ALLIN 50	ALLIN 50	ALLIN 50			BET 50%	RAISE 55%
							BET 75%	ALLIN 117%
							BET 100%	

[8-Max MTT, 50bb] BTN vs SB 3-bet pot. SB c-bets 25% on the **5♥ 3♦ 3♣** flop. Why does BTN want to raise 23% of their range?

- A: To deny equity
- B: BTN wants to push their equity advantage
- C: BTN lacks medium hands that want to call
- D: This play helps over-realize equity with vulnerable made hands



Correct answer

D: This play helps over-realize equity with vulnerable made hands

A: Denying equity is also a good answer!

Medium made hands often fast play in low SPR spots!

Most hands in BTN's range will struggle to realize their equity in this spot. SB has all the overpairs, and 80% of BTN's range missed this flop.

Fast-playing medium hands helps over-realize your equity with vulnerable made hands and strong ace high.

This strategy is common on low dry flops, especially when the SPR is short.



BTN flop equity realization

UTG	HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.5	RAISE 2.5	CALL	CALL	CALL	CALL
ALLIN 150	ALLIN 150	RAISE 8	RAISE 10	RAISE 12	RAISE 14
		ALLIN 150	ALLIN 150	ALLIN 150	ALLIN 150

[NL500 6-Max Cash, 150bb] HJ open 2.5, BTN calls, folds to BB.

How should BB construct their squeezing range?

- A: Polarized
- B: Linear
- C: Merged
- D: Condensed



Correct answer:

B: Linear

As a general rule, the polarity of your raise is dictated by the proportion of calls to raises in your opponent's continuation ranges.

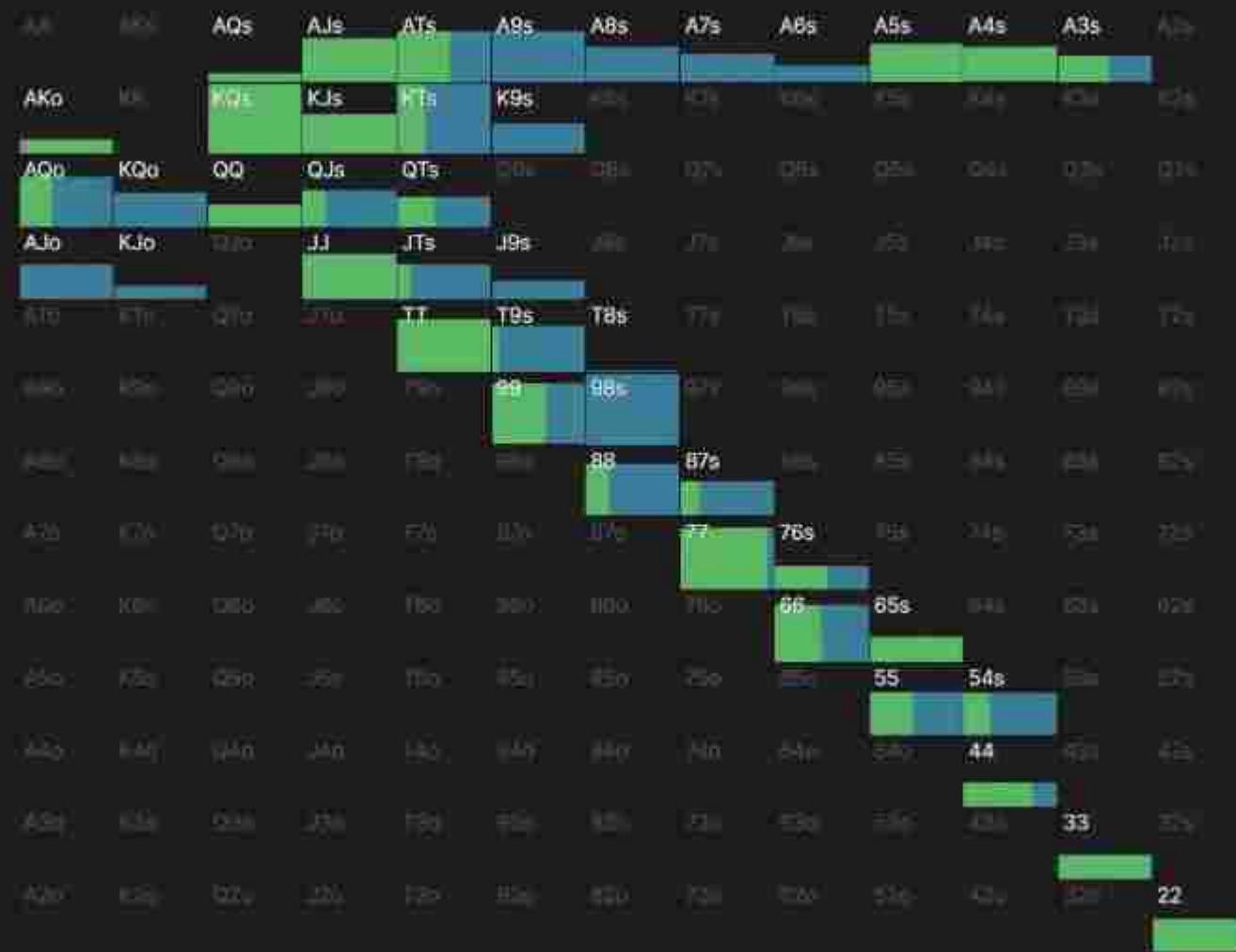
When we squeeze, we expect to face a call much more often than a 4-bet. This is because BTN's cold-call range is too capped to 4-bet properly.

When you expect to face calls more often than raises, you should construct a linear (top-down) range that does well against calls.

Furthermore, BB is not as concerned with protecting their over-calling range as they would be in a HU pot. HJ cannot bully BB with impunity in a 3-way pot. This means BB can delegate more value hands to raises instead of calls!



HJ vs BB squeeze

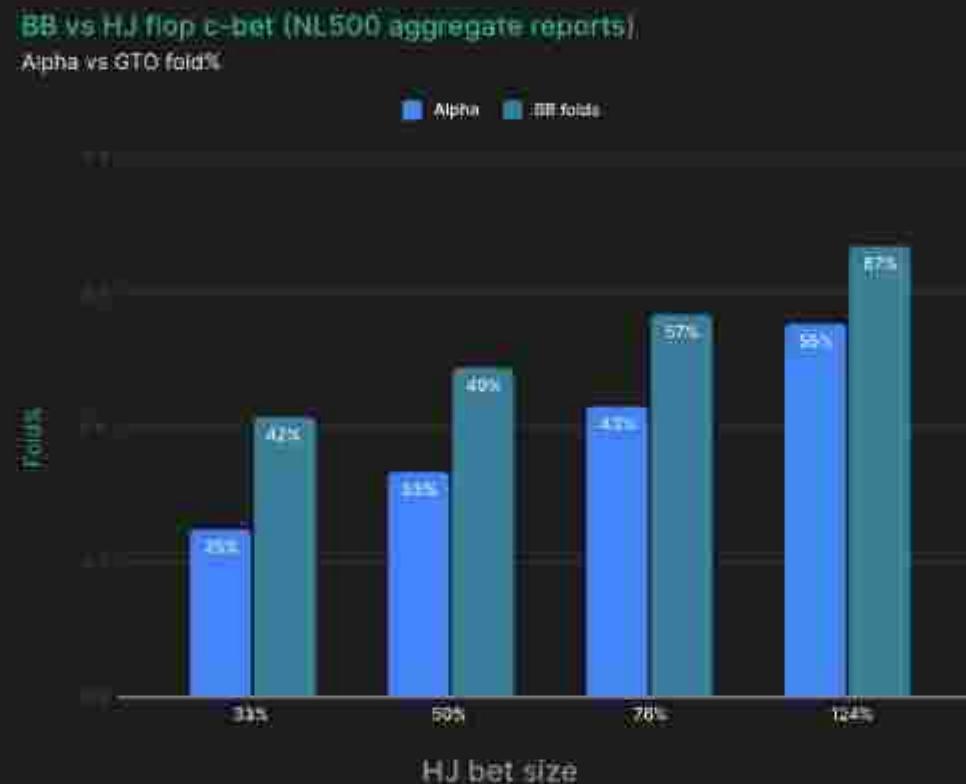


BTN vs BB squeeze



[NL500 6-Max Cash, 100bb] HJ opens 2bb, BB calls. On the flop, when HJ c-bets 33% pot, BB folds 42% of their range on average. Why does BB overfold postflop so much? Isn't this exploitable?

- A: BB has a big discount to enter the pot preflop, so they can afford to overfold the flop
- B: HJ's range is so strong compared to BB on the flop, that BB has to fold more
- C: BB calls wide preflop to take advantage of implied odds, getting a great price to see 3 cards



Correct answer

C: BB calls wide preflop to take advantage of implied odds, getting a great price to see 3 cards

The MDF facing a 33% pot-sized bet is to defend 75% of range, and fold 25% (alpha).

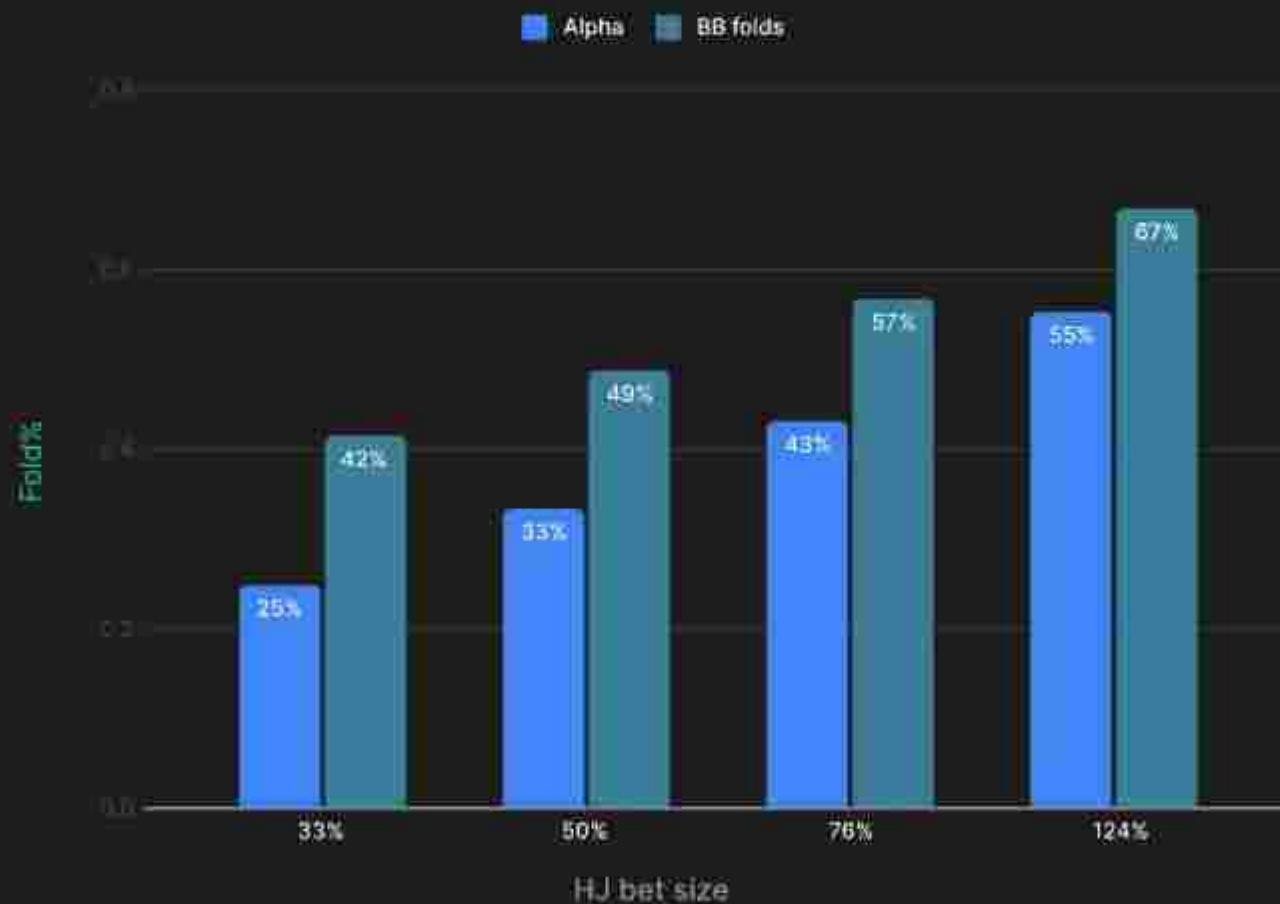
A: and **B:** are common explanations for why BB overfolds on the flop, but they create more questions than they answer.

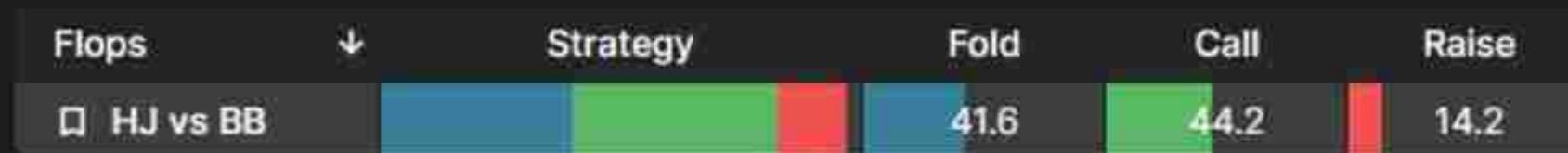
A: BB still has a discount to continue on the flop facing a 1/3 pot bet, getting 4 to 1 on a call. Getting a great price preflop doesn't explain why you overfold postflop.

B: HJ's range is certainly stronger on most flops, forcing BB to overfold, but then why does BB call so wide preflop in the first place? Why not just defend tighter pre?

BB vs HJ flop c-bet (NL500 aggregate reports)

Alpha vs GTO fold%





The answer is implied odds. The value of seeing 3 board cards for 1bb and outdrawing HJ

for a big payoff is significant enough to justify over-calling preflop and over-folding postflop. BB only needs to capture 18% of the pot to justify calling pre.

This plan of over-defending pre, and over-folding post is a common strategy when facing small preflop raises from strong ranges.

[Learn more](#)

See the end of the [Preflop Mechanics video](#) for more!



[NL500 6-Max Cash, 100bb] SB is often played as a raise/fold vs an IP open. GTO actually calls in the SB sometimes though. Which of these spots should SB call the widest?

- A: vs UTG opens 2 bb
- B: vs HJ opens 2 bb
- C: vs CO opens 2.3 bb
- D: vs BTN opens 2.5 bb

Opener	SB call%
UTG opens 2 bb	6.2%
HJ opens 2 bb	6.4%
CO opens 2.3 bb	2.3%
BTN opens 2.5 bb	0.5%

Correct answer:

B: HJ opens 2 bb



The biggest factors to consider when calling SB vs IP open are:

- 1: How likely is BB to squeeze behind?
- 2: What price am I getting on a call?
- 3: How much rake do I pay when calling?



SB facing HJ 2bb open

BB is less likely to squeeze vs an EP open, which makes it safer to for SB to call. SB gets a better price against EP than they do against LP due to the opening sizes, and SB is less incentivized to 3-bet the EP open due to their stronger ranges.

HJ's range is slightly wider than UTG, so SB can call a bit more.

Factors like rake, opener's range, and antes should also be considered. For example, MTTs have SB calling much wider!

CO FOLD RAISE 2.3 ALLIN 50	BTN FOLD CALL RAISE 6.9 ALLIN 50	SB FOLD CALL RAISE 9.2 ALLIN 50	BB FOLD CALL RAISE 9.8 ALLIN 50	FLOP A 9 4 6.1	BB CHECK BET 33% ALLIN 782%	CO CHECK BET 20% BET 33% BET 55% BET 83% BET 125%	BB FOLD CALL RAISE 33% RAISE 55% RAISE 83% RAISE 125%
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[8-Max MTT, 50bb] CO opens 2.3, BB calls. Flop is A♠ 9♥ 4♦, CO c-bets 33% pot. Which of these hands are a good candidate for bluff check-raising?

- A: K ♠ Q ♠
- B: 4 ♠ 3 ♠
- C: 6 ♠ 5 ♠
- D: 5 ♠ 3 ♠



BB facing CO c-bet

Correct answer:

- A: K♠ Q♠ Incorrect. This hand prefers to call.
- B: 4♠ 3♠ Correct!
- C: 6♠ 5♠ Correct!
- D: 5♠ 3♠ Correct!



CO has a significant range advantage and should be range-betting this flop.

On dry ace flops, the BB needs to find some unnatural check-raises, so they turn hands like bottom pair or 6 high with double backdoor draws into a bluff.



KQs actually has reasonable equity through a call, and doesn't fold out many worse hands as a bluff.

Identifying which hands prefer to call, and which have incentive to raise, is important when you need to find counterintuitive check-raises on these kinds of flops.

UTG	UTG1	LJ	HJ	CO
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.1	CALL	CALL	CALL	CALL
ALLIN 30	RAISE 6.3	RAISE 6.3	RAISE 6.3	RAISE 6.3
	ALLIN 30	ALLIN 30	ALLIN 30	ALLIN 30
BTN	SB	BB	FLOP	6:2
FOLD	FOLD	FOLD		
CALL	CALL	CALL		
RAISE 6.3	RAISE 7.5	RAISE 8.4		
ALLIN 30	ALLIN 30	ALLIN 30		

[8-Max MTT, 30bb] UTG opens 2.1, SB calls. Which of these flops should SB range-check?

- A: 5♦ 4♦ 3♦
- B: A♥ J♥ 2♥
- C: 7♦ 5♥ 4♥
- D: 6♥ 5♦ 5♣

STRATEGY	Flops	Strategy	RANGES		BREAKDOWN	
			Check	Bet 2.05	Check	Bet 2.05
□ UTG vs SB	5♥4♥3♦		98.3	1.7		
	A♥J♥2♥		48.6	51.4		
	7♦5♥4♥		80.2	19.8		
	6♥5♦5♣		75.1	24.9		
			100	0		

Correct answer:

D: 6♥5♦5♣



You need a nut advantage to justify donk betting. Compare the proportion of nutted hands in both ranges on different flops.

On boards like $7\spades 5\hearts 4\hearts$ or $5\hearts 4\hearts 3\clubs$, SB has more sets, straights, and two pair than UTG, so they can justify leading.

$A\hearts J\hearts 2\hearts$ removes most flushes from UTG's range, so SB ends up with proportionally twice as many made flushes on the flop, so again they can lead.

On $6\hearts 5\clubs 5\clubs$ the trips and boats account for such a small part of the SB's range that they don't have enough nutted hands to justify leading.

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD RAISE 23 ALLIN 100	BTN FOLD CALL RAISE 26 ALLIN 100	FLOP 25 A 9 2	SB CHECK BET 5 (20%) BET 9.25 (33%) BET 12.5 (39%) BET 16.75 (50%) BET 31.25 (145%)
BTN FOLD CALL RAISE 17.25 (55%) RAISE 24.25 (95%) RAISE 34.05 (185%) RAISE 47 (125%)	TURN 35 T	SB CHECK BET 7 (20%) BET 11.55 (33%) BET 17.5 (50%) BET 26.25 (75%) BET 43.75 (125%)	BTN FOLD CALL RAISE 24.15 (55%) RAISE 33.95 (95%) RAISE 47.65 (185%) ALLIN 63 (155%)	RIVER 49 W	SB CHECK BET 5 (10%) BET 17.5 (39%) BET 30 (61%) BET 42.5 (87%) ALLIN 76 (155%)

[NL500 6-Max Cash, 100bb] BTN vs SB 3BP. SB block-bets 20% pot on flop, turn on A ♠ 9 ♥ 2 ♣ T ♦ rainbow. What river card should SB shove on most often?

- A: A ♦
- B: K ♦
- C: Q ♦
- D: J ♦

UTG 500	HJ 500	C0 100	BTN 76	SB 76	B0 90	49 BB 49 BB	A	9	2	T	K
Allin 76 155% 20.5%	5.89 combos		Bet 42.5 87% 0.2%		0.05 combos	Bet 30 61% 0.5%		0.15 combos			
Bet 17.5 38% 19.5%	5.61 combos		Bet 5 10% 19.5%		5.6 combos	Check 39.7%		11.4 combos			

Correct answer:

B: K♦

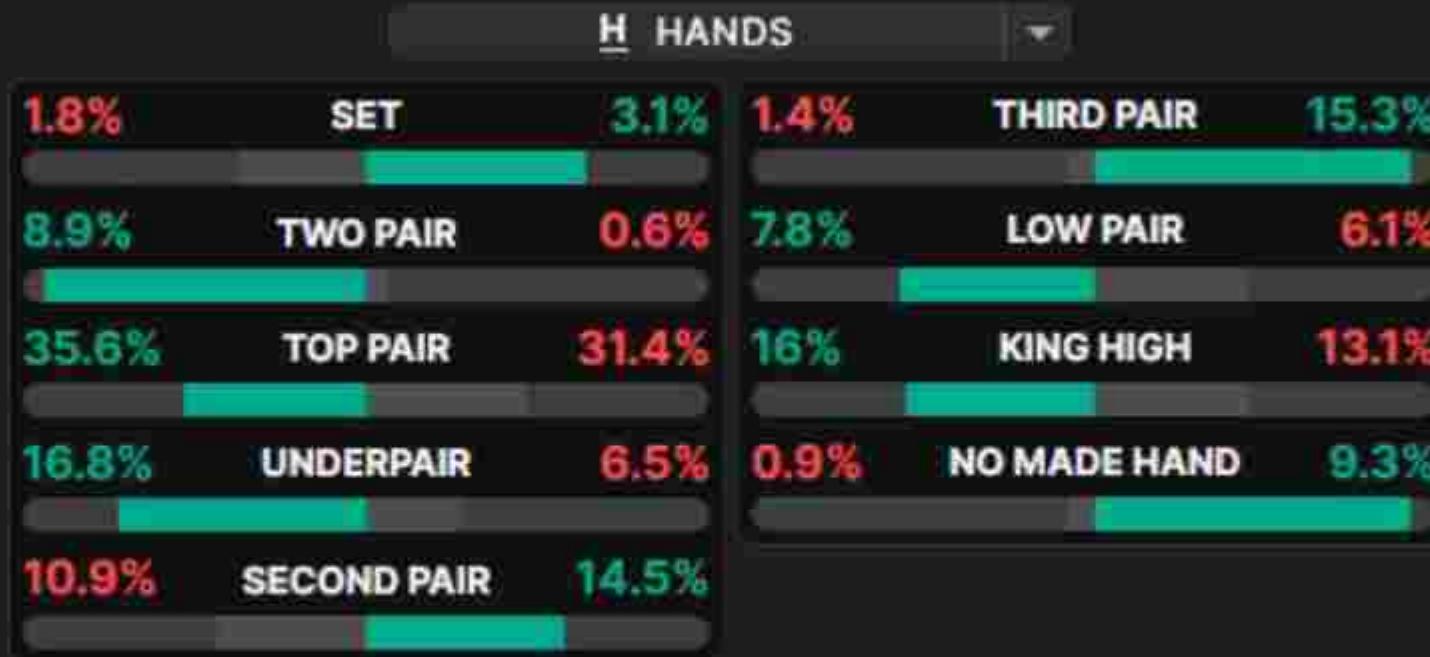
AA	AAs	AQs	AJs	AKs	KQs	KJs	KTs	K9s	K8s	K7s	K6s	55s	45s	35s	25s	As	Ad	Ac	Ad
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
99s	88s	77s	66s	55s	44s	33s	22s	11s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
88	77	66	55	44	33	22	11		55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
77	66	55	44	33	22	11			55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
66	55	44	33	22	11				55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
55	44	33	22	11					55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
44	33	22	11						55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
33	22	11							55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
22	11								55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac

SB

AA	AAs	AQs	AJs	AKs	KQs	KJs	KTs	K9s	K8s	K7s	K6s	55s	45s	35s	25s	As	Ad	Ac	Ad
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
99s	88s	77s	66s	55s	44s	33s	22s	11s	55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
88	77	66	55	44	33	22	11		55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
77	66	55	44	33	22	11			55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
66	55	44	33	22	11				55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
55	44	33	22	11					55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
44	33	22	11						55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
33	22	11							55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac
22	11								55s	45s	35s	25s	As	Ad	Ac	Ad	As	Ad	Ac

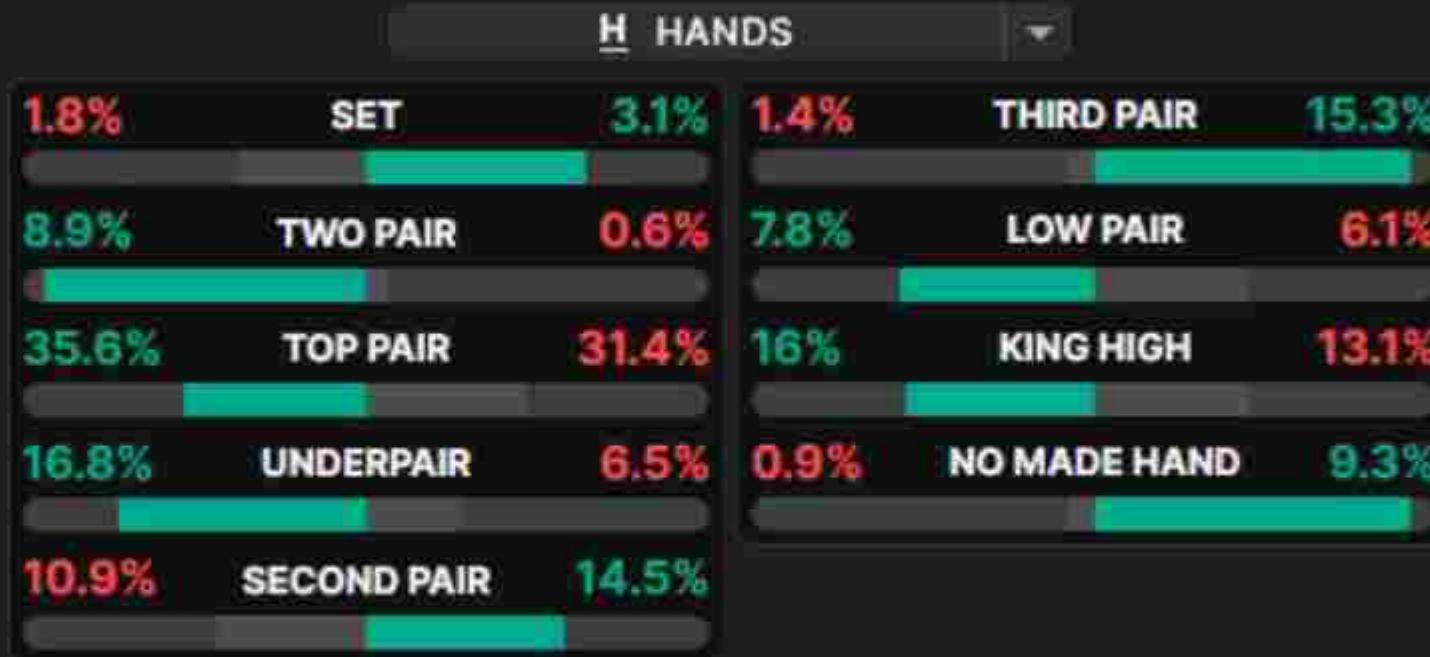
BTN

Compare the range asymmetries to figure out what rivers would give SB a big enough nut advantage to overbet.



Both players have a similar amount of top pair, so an ace river doesn't generate a huge nut advantage.

A Queen or Jack complete too many straights and two pair in BTN's range.



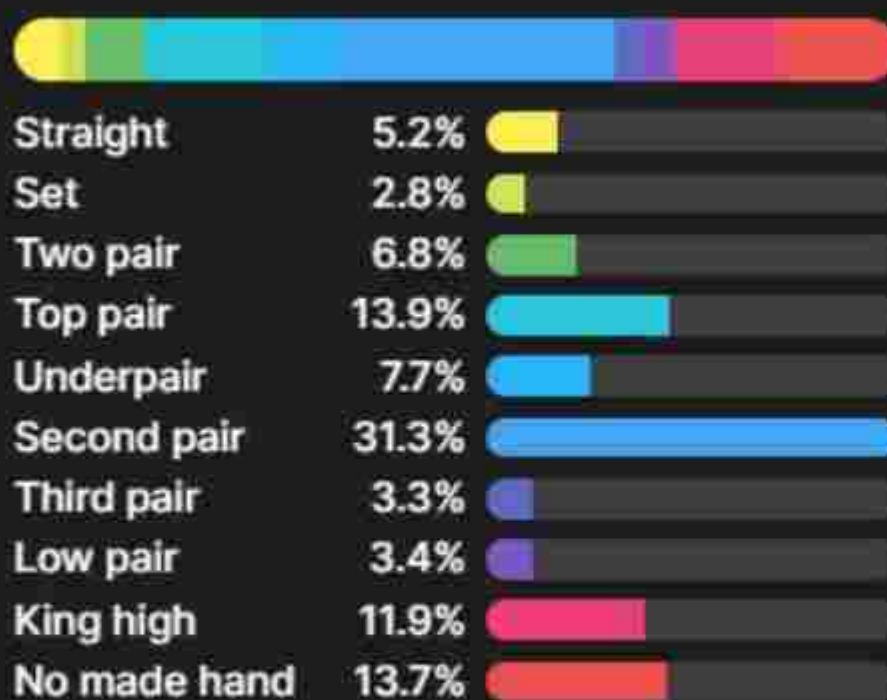
A King turns many of SB's pairs into two pair (AK), without completing many draws.

This gives SB enough of an advantage to shove the river at a reasonable frequency.

SB FOLD RAISE 3 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	FLOP 6 J 8 7	SB CHECK BET 2 (33%) BET 3.95 (66%) BET 7.8 (130%) ALLIN 97 (1617%)	BB FOLD CALL RAISE 7 (50%) RAISE 12 (100%) ALLIN 97 (950%)	TURN 10 A	SB CHECK BET 3.3 (33%) BET 6.6 (66%) BET 13 (130%) ALLIN 95 (950%)
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[NL500 6-Max Cash, 100bb] Blind vs Blind. SB c-bets 33% on J♦ 8♦ 7♦, BB calls. Turn is the A♣. SB splits between a 33% block, 66% bet, and 130% overbet. **What hand classes comprise the majority of your value bets in the block bet line?**

- A: Second pair
- B: Top pair
- C: Two pair
- D: Sets

HANDS

Correct answer:

A: Second pair



SB should barrel this turn card at a high frequency. Splitting between a small and larger bet helps extract more value.

SB should keep barreling small with hands like 2nd pair, and go for a larger more polarizing bet with two pair+

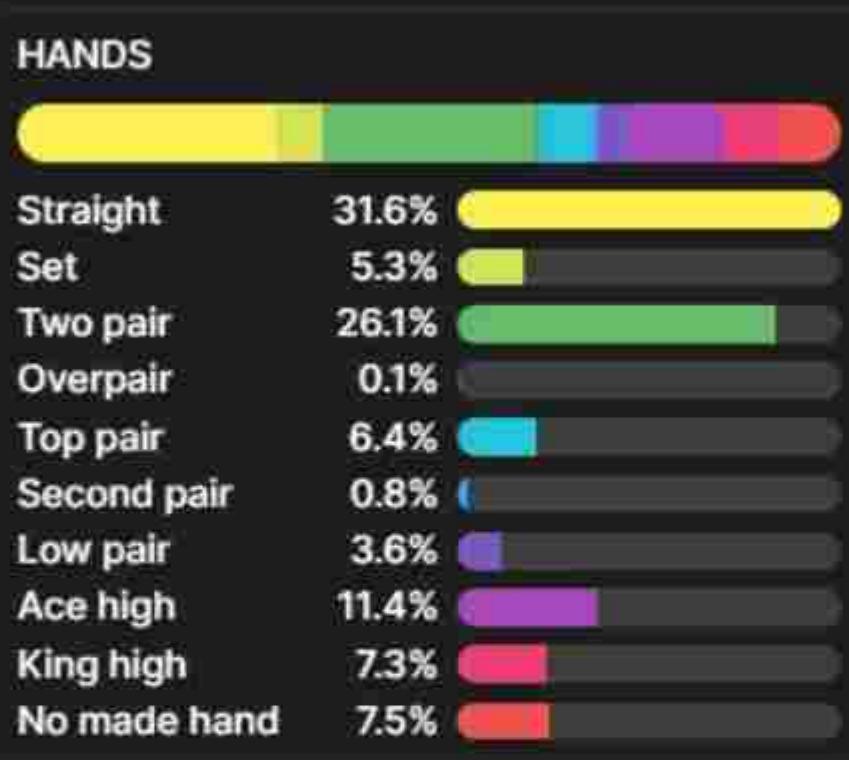


SB turn strategy



[Spin & Go, 25bb] BTN opens, BB calls. BTN c-bets 33% on the flop, checks back the turn, and is checked to on the river. The board runs out **T♦ 9♦ 8♦ Q♠ 3♣**. What hand class comprises the majority of BTN's value bet range on the river?

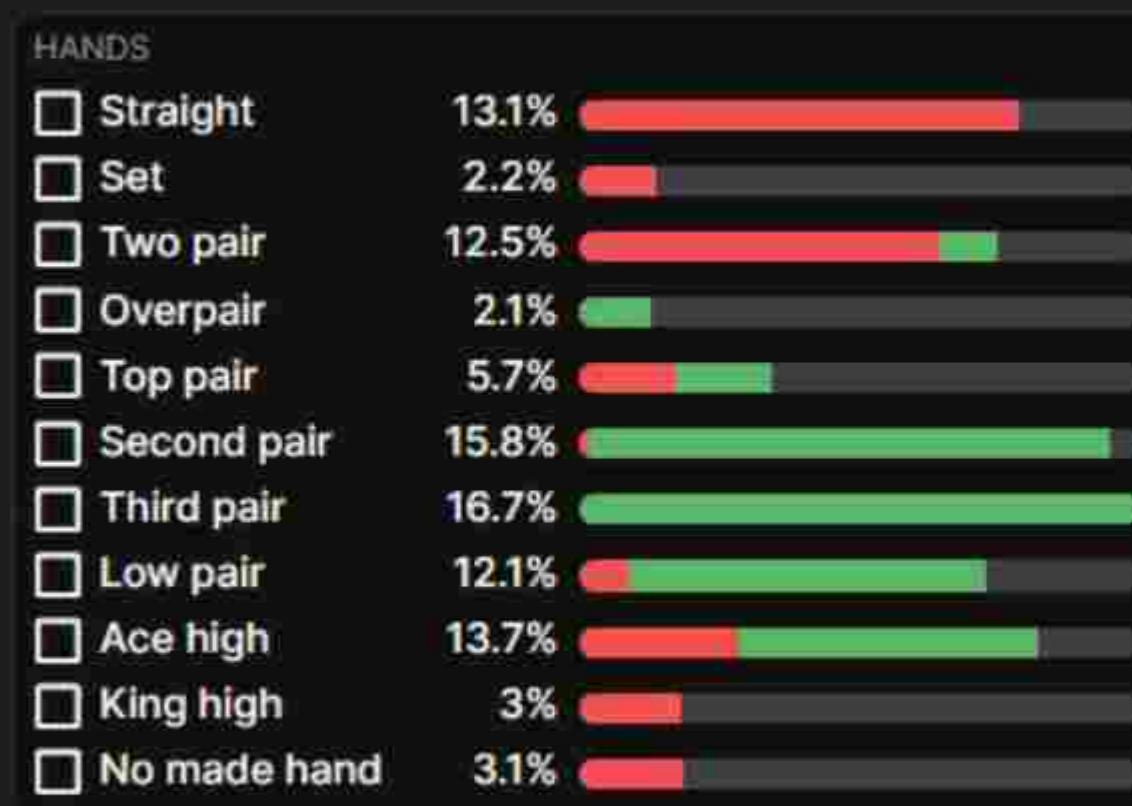
- A: Second pair
- B: Top pair
- C: Two pair
- D: Straights



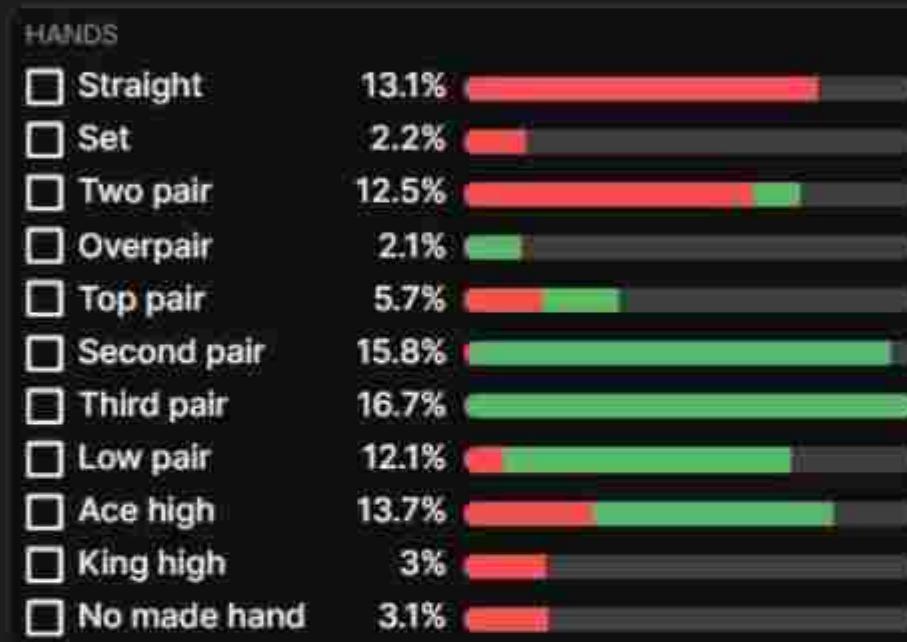
BTN river bet composition (all sizes grouped)

Correct answer:

D: Straights



This is something of a trick question. Most two pair and top pair are strong enough to value bet. But any jack is a straight, so BTN's betting range contains more straights overall.



It's important to identify value thresholds in different lines. In this line, most two pair+ can bet for value.

However, it's important that you slow play enough straights, otherwise your thin value becomes exploitable to raises.



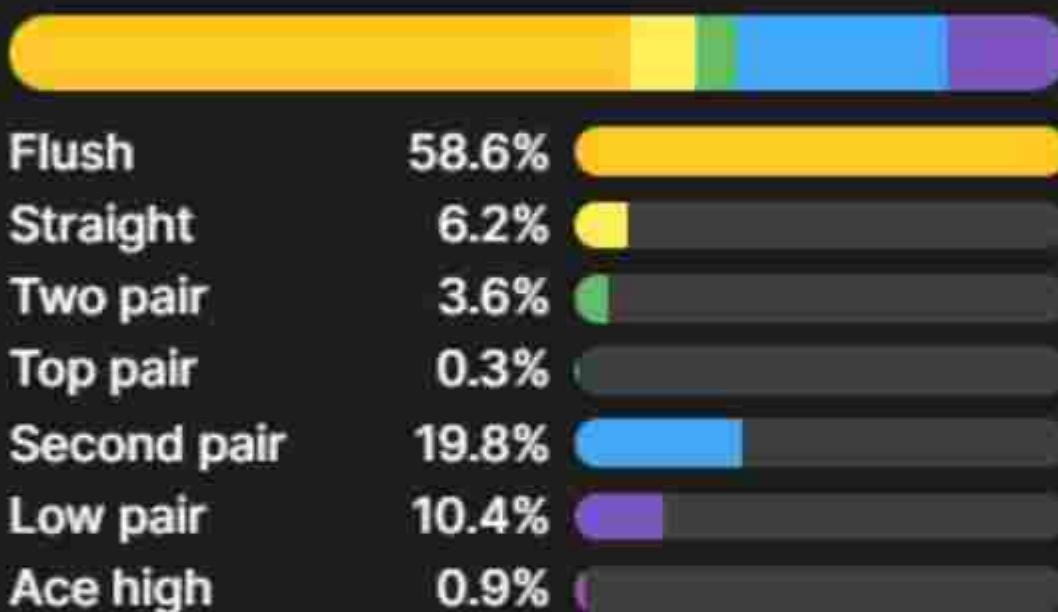
[Heads Up Cash, 100bb] Single-raised pot. SB (IP) triple barrels then folds to the river check-raise shove. The board is Q ♦ J ♠ 7 ♠ 2 ♥ 9 ♥. What hand class is appropriate to triple barrel and fold to a shove?

- A: Flushes
- B: Straights
- C: Sets
- D: Two Pair

Correct answer:

- A: Flushes - Incorrect. Flushes should almost always call.
- B: Straights - Correct. Most straights are indifferent between calling and folding.
- C: Sets - Correct. Most sets are indifferent between calling and folding.
- D: Two Pair - Correct. Most two pair are indifferent between calling and folding.

HANDS

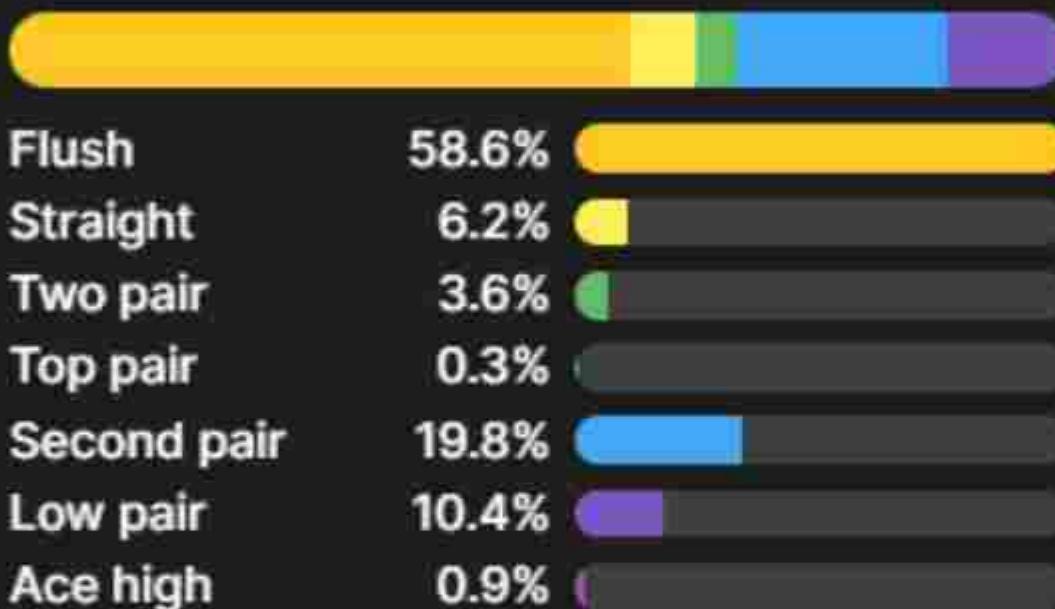


BB XR Compostion

BB's river check-raise consists of flushes for value, and 2nd pair or worse as bluffs.

Therefore, any hand between 2nd pair and a flush in SB's range is a bluff catcher with EV close to 0.

HANDS



BB XR Composition

To put this another way, a set has about the same equity as top pair facing this shove.

All of these hands mix folds and calls. The only hand class that cannot justify folding is a flush, as flushes beat some value bets.



If you suspect your opponent is under-bluffing, then most of these bluff catchers become -EV calls and should be folded. In that case you'd only want to call with medium-strong made flushes.

If you suspect your opponent is bluffing too much, then most bluff catchers become a +EV call.



[8-Max MTT, 100bb] HJ vs BB SRP. HJ bets 33% on the flop, turn checks through, action on BB on the river. The board runs out K ♠ 8 ♥ 2 ♦ 3 ♣ Q ♦. How should BB construct their river probe strategy?

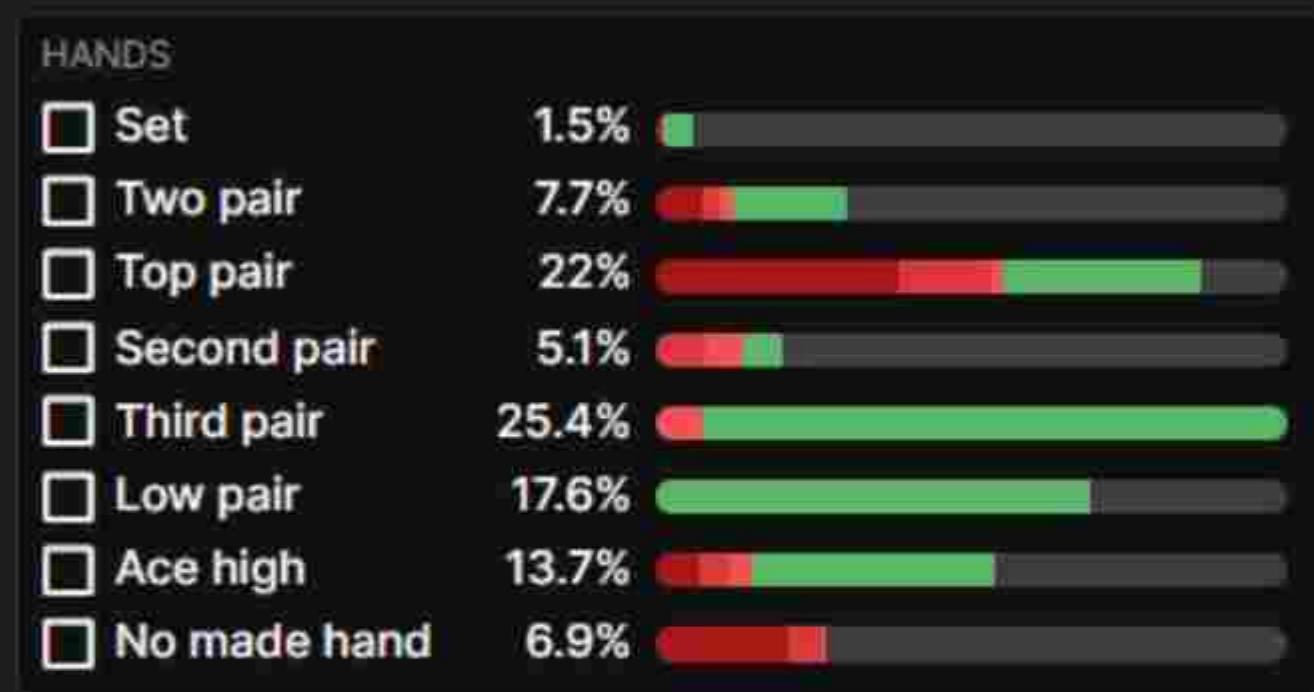
- A: Overbet with top pair+
- B: Overbet with two pair+
- C: Block-bet with 2nd pair+
- D: Mostly check



Correct answer

- A: Overbet with top pair+**
- C: Block-bet with 2nd pair+**

Both **A:** and **C:** are correct!



BB splits their strategy between a block-bet and overbet.

The block-bet extracts thin value with medium-strength hands, while top pair good kicker and better can mostly overbet for value.



The strength of your hand is always relative to your opponent's range.

Pay attention to their line.



HJ capped their range when they checked back the turn.

Additionally, no draws completed and ranges are still wide, so BB's top pair has over 90% equity on the river and plays like the nuts.

If HJ had instead overbet the turn, BB's top pair would have closer to 50% equity and play as a marginal bluff catcher.



[3-Handed MTT, (ICM) 50-30-5] BTN opens 2bb, SB folds, action on the shortstack BB who has 5bb. How should BB construct their strategy?

- A: Shove hands they want to continue, fold the rest
- B: Shove a polarized range, call everything in between
- C: Shove linearly, call wide
- D: Shove linearly, call tight

AA	AKs	AQs	AJs	ATs	AdS	AbS	A7s	AdS	ASs	AdS	A5s	A3s	A2s
AA	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
AQs	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AQs	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AJs	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ATs	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AdS	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AbS	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A7s	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AdS	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ASs	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AdS	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A5s	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A3s	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A2s	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Correct answer:

C: Shove linearly, call wide



When we shove, BTN is priced in and should call their entire opening range.

Therefore, we should shove linearly for value.



BTN strategy+EV facing BB 5bb shove

BB gets to call wide as stacks are so short they realize most of their postflop equity.

Furthermore, they only need to capture 20% of the pot to justify calling. Calling tight would be a mistake - most hands have a +EV call.

CO	RAISE 2.3	BTN	FOLD	SB	RAISE 11.5	BB	FOLD	CO	CALL	FLOP 24	9 5 5	SB	BET 12 (50%)	
CO	CALL	TURN 48	2	SB	BET 24 (50%)	CO	CALL	RIVER 96	K	SB	ALLIN 52.5 (55%)	CO	CALL	GG

[NL500 6-Max Cash, 100bb] CO vs SB 3BP. SB triples barrels half-pot on flop/turn/river, the board runs out 9♥ 5♥ 5♦ 2♣ K♣. SB shoves the river with KQs which only has 45% equity when called. Why does the solver value bet hands that are behind when called?

- A: Fold equity makes up for being behind when called
- B: The value of checking is lower out of position
- C: To prevent IP from bluffing
- D: To over-realize equity



Correct answer:

B: The value of checking is lower out of position

All answers are somewhat correct, but **B:** is the most precise answer.

	EV
All-in 52.5 (55%)	58.13
Bet 33.5 (35%)	58.15
Bet 9.5 (10%)	58.03
Check	55.86

SB river KQs EV by action

If positions were reversed, hands like KQs would simply check behind and realize their equity. However, OOP is at a disadvantage since IP might bet if you check and put you in a bad spot.

AA	AKs	AQs	AJs	ATs	A9s
67.33	55.59	0.42	0	0	21.03
AKo	KK	KQs	KJs	KTs	K9s
58.88	98.91	46.67	45.20	41.59	71.19
AQo	KQo	QQ	QJs	QTs	
0.58	46.04	33.64	0	0	
AJo	KJo		JJ	JTs	J9s
0	44.40		27.91	0	16.53
				TT	
				21.33	

SB equity when called

Betting is always relative to checking. If you decrease the incentive to check, you naturally increase the incentive to bet.

At low SPRs like this river, OOP can shove thin value that's behind when called, because the value of checking is lower.



[NL500 6-Max Cash, 100bb] SB vs BB SRP. SB c-bets 33% on the flop and barrels 175% on the turn on a board of A ♠ J ♥ 4 ♦ 2 ♣ with 5 ♥ 4 ♥. On which river card(s) should SB shove this hand?

- A: 6 ♥
- B: 9 ♥
- C: Q ♥
- D: A ♥



SB river strategy with 54s

Correct answer:

C: Q ♦



Facing the 175% turn overbet, the BB continues some combos of KQ, KT and QT. On a Q river these hands beat 5♦4♥ which eliminates all of its showdown value.

Board	EV of Checking $5\heartsuit 4\heartsuit$	EV of Shoving $5\heartsuit 4\heartsuit$
A♠ J♥ 4♦ 2♣ 6♥	1.33 BB	0.89 BB
A♠ J♥ 4♦ 2♣ 9♥	1.33 BB	0.89 BB
A♠ J♥ 4♦ 2♣ 0♥	0 BB	0.41 BB
A♠ J♥ 4♦ 2♣ A♥	4.1 BB	1.93 BB

$5\heartsuit 4\heartsuit$ shoving and checking EVs by runout

Despite $5\heartsuit 4\heartsuit$ having the lowest shoving EV on the $Q\heartsuit$, due to having no checking EV, the EV differential between check and shove requires a shove.



[NL500 6-Max Cash, 100bb] HJ vs BB SRP. The flop checks through, HJ delay c-bets 33% on the turn and barrels 153% on the river on a board of K♠ T♠ 2♥ 6♠ 8♠. Which hand is the BB's primary bluff raise candidate?

- A: K♣ 8♣
- B: T♦ T♣
- C: 6♣ 5♠
- D: J♠ 2♠

T♦ T♥

T♦ T♣

T♥ T♦ ♦3

All-in 96.5 (279%)	0
Raise 37.5 (85%)	85.7
Raise 27 (51%)	0
Call	14.3
Check	0

T♦ T♣

T♥ T♣ ♦3

T♦ T♣ ♦3

All-in 96.5 (279%)	0
Raise 37.5 (85%)	85.7
Raise 27 (51%)	0
Call	14.3
Fold	0

BB river strategy with TT

Correct answer:

B: T♦ T♣

When choosing river bluff raise combos, 2 of the most important concepts to keep in mind are blocking villain's continues and unblocking their folds.

Despite being difficult to perceive on a monotone board, TT achieves this masterfully by unblocking all of villain's bluffs since IP never bluffs Tx and blocking their most frequently appearing nut flush in this line in A♠Tx.

Using pairs, 2 pair or even sets as bluffs is a recurring theme on many monotone boards in river raise lines for their excellent blocker properties.



HJ river strategy

CO	BTN	SB	BB	FLOP	
FOLD	FOLD	FOLD	FOLD	J 9 4	5.1
RAISE 2.3 ALL-IN 100	CALL RAISE 7.5 ALL-IN 100	CALL RAISE 11.5 ALL-IN 100	CALL RAISE 13.5 ALL-IN 100		
BB	CO	BB	CO		
CHECK BET 1.2 (6%) ALL-IN 97.7 (181%)	CHECK BET 1.7 (6%) BET 2.55 (15%) BET 3.8 (75%) BET 6.4 (12%) ALL-IN 97.7 (191%)	FOLD CALL RAISE 10.15 (50%) RAISE 16.5 (100%) ALL-IN 97.7 (238%)	FOLD CALL RAISE 35.55 (50%) RAISE 54.6 (100%) ALL-IN 97.7 (213%)		

[NL500 6-Max Cash, 100bb] CO vs BB SRP. CO c-bets 75% on the flop and BB raises pot on a board of J ♣ 9 ♠ 4 ♥. Which hand does CO 3-bet the flop with most often?

- A: A ♦ J ♣
- B: T ♠ T ♦
- C: Q ♦ 9 ♦
- D: K ♠ Q ♠



CO flop strategy with Q9s vs check-raise

Correct answer:

C: Q♦9♦

In [Daily Dose of GTO #190](#), we examined 3-betting flops at short stack depths where 3-bet shoves were constructed around vulnerable medium hands.

At deep stack depths where stack off ranges tighten, blocking nutted hands becomes much more valuable.

CO's 3-bet range is primarily built around their nutted hands (JJ and 99) and blockers to BB's nutted hands such as 99 and 44.



CO flop strategy vs check-raise

CASH	UTG	HJ	CO	BTN
• 6Max	FOLD	FOLD	FOLD	FOLD
• NL500	RAISE 2	RAISE 6.5	CALL	CALL
• General	ALLIN 100	ALLIN 100	RAISE 8.5	RAISE 7.5
• 100bb			ALLIN 100	ALLIN 100

SB	BB	FLOP	5	SB	UTG
FOLD	FOLD			CHECK	CHECK
CALL	CALL			BET 1.65 (33%)	BET 1.65 (33%)
RAISE 10	RAISE 11			ALLIN 98 (1960%)	BET 2.5 (50%)
ALLIN 100	ALLIN 100				BET 3.75 (75%)

[NL500 6-Max Cash, 100bb] UTG vs SB SRP.

On which of these flops does UTG play primarily an overbet c-bet size?

A: A ♠ K ♥ 5 ♦

B: J ♠ T ♥ 5 ♥

C: 6 ♠ 5 ♥ 2 ♦

D: 4 ♠ 3 ♠ 3 ♥

UTG	HJ	C0	BTN	SB	BB	5 BB	4	3	3
98	100	100	100	98	99	5 BB			
Allin 98		Bet 6.25		Bet 3.75					
19.60%	0	12.5%		75.99%					
0%	combos	33.4%		5.4%					
Bet 2.5		Bet 1.65		Check					
50%	2.21	33%		1.72					
1%	combos	0.8%		59.5%					

UTG c-betting frequency by size

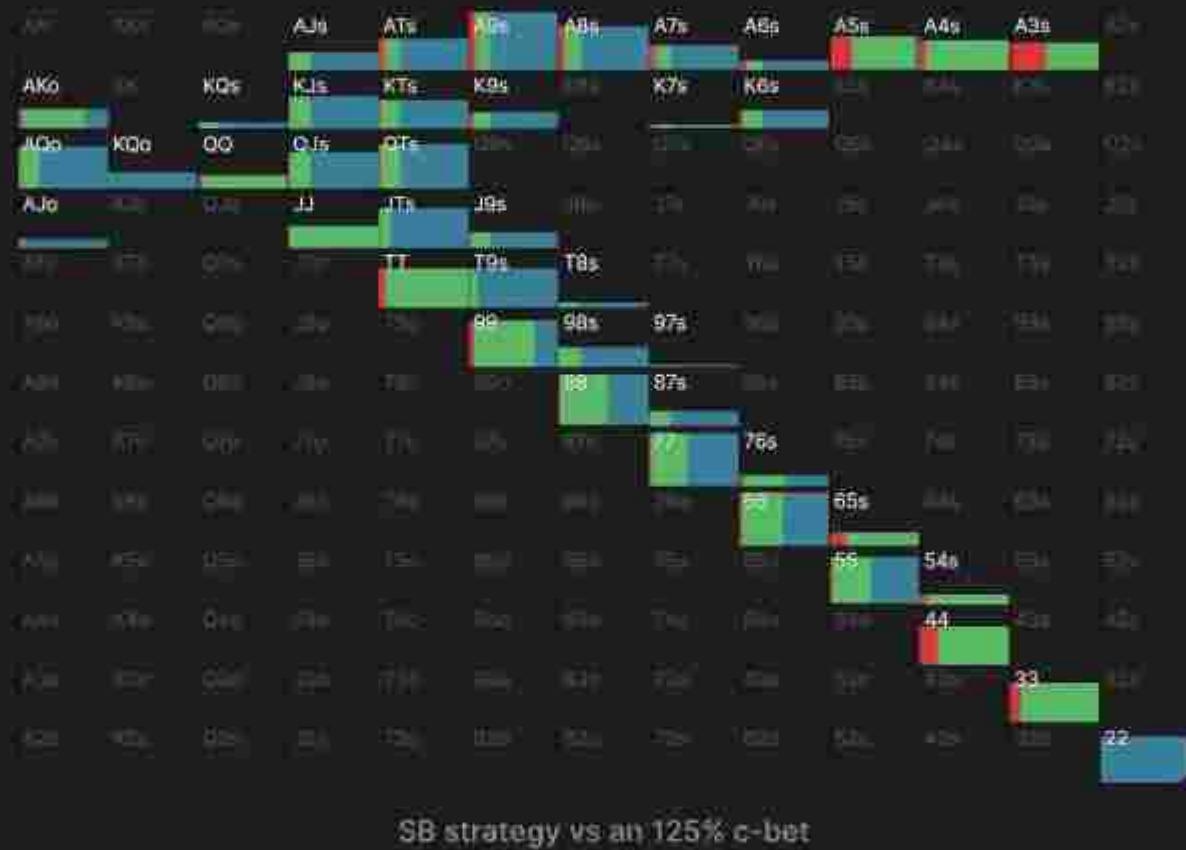
Correct answer

D: 4♠ 3♠ 3♥



This board powers up UTG's overpair advantage, allowing them to leverage their range to deny equity to overcards.

SB's condensed flatting range contains less than 3.5% trips+, so they don't have many nutted hands to counter with.



This strategy makes SB's medium pairs indifferent between folding and calling (0EV). If this were a BB call instead, BB would have the nut advantage as their wider range would have more trips. But SB's range is much more condensed, and tends to miss these low paired boards.



[NL500 6-Max Cash, 100bb] HJ vs UTG 3BP. HJ c-bets 50% on the flop and UTG calls. The board on the turn is 9♠ 6♥ 3♠ 3♦. Which of these hands continue(s) barreling on the turn?

- A: K♠ J♠
- B: J♠ T♠
- C: A♣ Q♠
- D: K♣ Q♦

A ♣ Q ♠	6	K ♣ Q ♦	3
Bet 36.25 (125%)	0.1	Bet 36.25 (125%)	0.1
Bet 21.75 (75%)	99.5	Bet 21.75 (75%)	99.2
Bet 14.5 (50%)	0.2	Bet 14.5 (50%)	0.3
Bet 9.55 (33%)	0	Bet 9.55 (33%)	0
Bet 5.8 (20%)	0	Bet 5.8 (20%)	0
Check	0.2	Check	0.4

HJ turn strategy with A ♣ Q ♠ and K ♣ Q ♦

Correct answer:

C: A ♣ Q ♠

D: K ♣ Q ♦



KJs folds facing turn XR shove

Middling, naked flush draws such as K♠J♠ and J♠T♠ do not make good barrels in this node as they run the risk of getting jammed on by UTG.

Should this happen, they would be forced to fold which is a disastrous result with such a valuable hand. These flush draws retain their implied odds by checking back.



This concept can be generalized to many spots where we expect to face frequent raises.

We should construct our betting range to contain hands that can comfortably bet and call a raise as well as those that don't lose much by betting and folding to one.

Middling hands that dread facing a raise should instead check.



[NL500 6-Max Cash, 100bb] SB vs BTN 3-bet pot. SB checks, BTN bets 20% and SB calls. BTN barrels turn for 50% and SB calls again. Action is on the BTN on the river on a board of 8♠ 5♠ 2♥ 6♦ 2♦. What is the weakest hand that the BTN can shove for value?

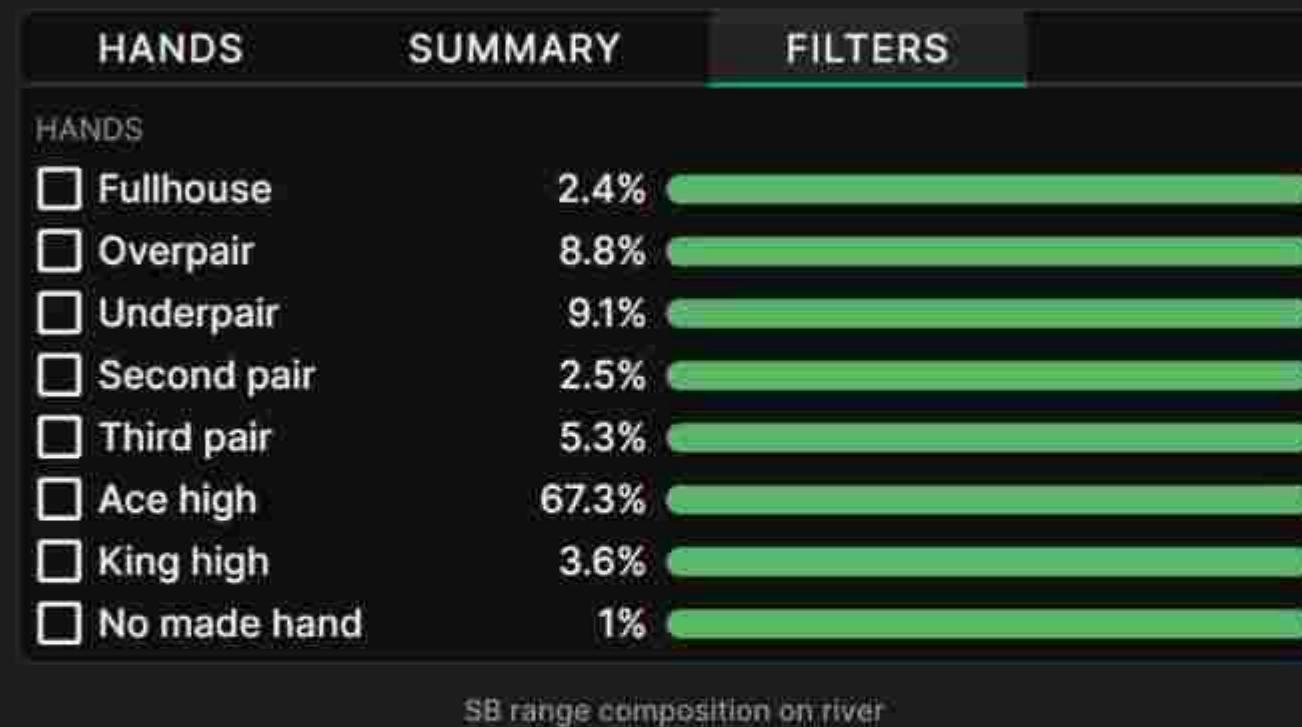
- A: 4♥ 4♦
- B: 7♥ 6♥
- C: K♥ 8♥
- D: J♥ J♦



BU river strategy and action EV with 76s

Correct answer:

B: 7 ♥ 6 ♥



On low boards, the OOP 3-bettor is generally incentivized to fast-play the vast majority of their overpairs and strong top pairs on the flop.

When the SB takes this passive of a line, they severely condense their range towards Ace high. This allows the BU to value jam very thinly.



BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	FLOP 5.5 
BB CHECK BET 1.8 (33%)	BTN CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (125%)	TURN 5.5 	BB CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (125%) BET 9.6 (175%)

[NL500 6-Max Cash, 100bb] BU vs BB single-raised pot. After the flop checks through on a board of $T\spades 6\hearts 2\clubs Q\spades$. Which of the following hands does BB check most often on the turn?

- A: $6\spades 6\clubs$
- B: $Q\clubs T\clubs$
- C: $J\spades 9\spades$
- D: $5\clubs 4\clubs$



Correct answer:

A: 6♠ 6♦



The BB needs to trap some nutted hands to protect their checking range. 66 is a good candidate to slowplay as it blocks BTN's 3rd pair check-backs.

BB expects to face aggression more often when they check their set of 66's on the turn, compared to hands like QT.

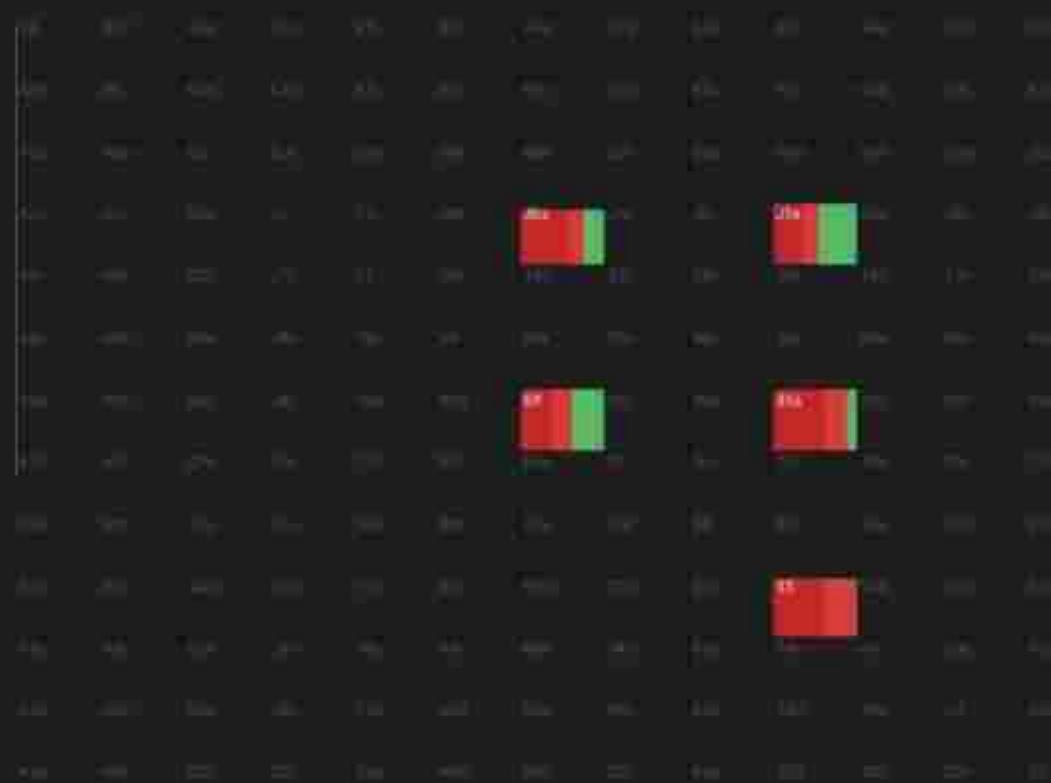


BB strategy vs delayed BTN overbet

CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 2.5 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100	BB FOLD CALL RAISE 13.5 ALLIN 100
FLOP 5.1 	BB CHECK BET 1.7 (33%) ALLIN 97.7 (99.6%)	CO CHECK BET 1.7 (33%) BET 2.55 (50%) BET 3.8 (75%) BET 6.4 (125%) ALLIN 97.7 (99.6%)	BB FOLD CALL RAISE 7.65 (50%) RAISE 12.75 (100%) ALLIN 97.7 (99.6%)

[NL500 6-Max Cash, 100bb] CO vs BB single-raised pot. BB faces a 50% c-bet on a board of $J\spades 8\hearts 5\clubs$. Which strong made hand plays the lowest frequency raise?

- A: $8\clubs 5\clubs$
- B: $J\clubs 5\clubs$
- C: $J\clubs 8\clubs$
- D: $5\hearts 5\clubs$



BB flop strategy with sets and two pair

Correct answer:

B: J ♣ 5 ♣



Both $8\spades 5\spades$ and $5\hearts 5\clubsuit$ unblock CO's most frequent continue in top pair.

$J\clubsuit 8\clubsuit$ somewhat retains its strength on board pairing turns: it remains ahead of AJ-J9 on a turned 5 while $J\clubsuit 5\clubsuit$ does not on a turned 8.

$J\clubsuit 5\clubsuit$ is the strong made hand with the least incentive to check-raise.

OFFENSE vs DEFENSE

OFFENSE vs DEFENSE



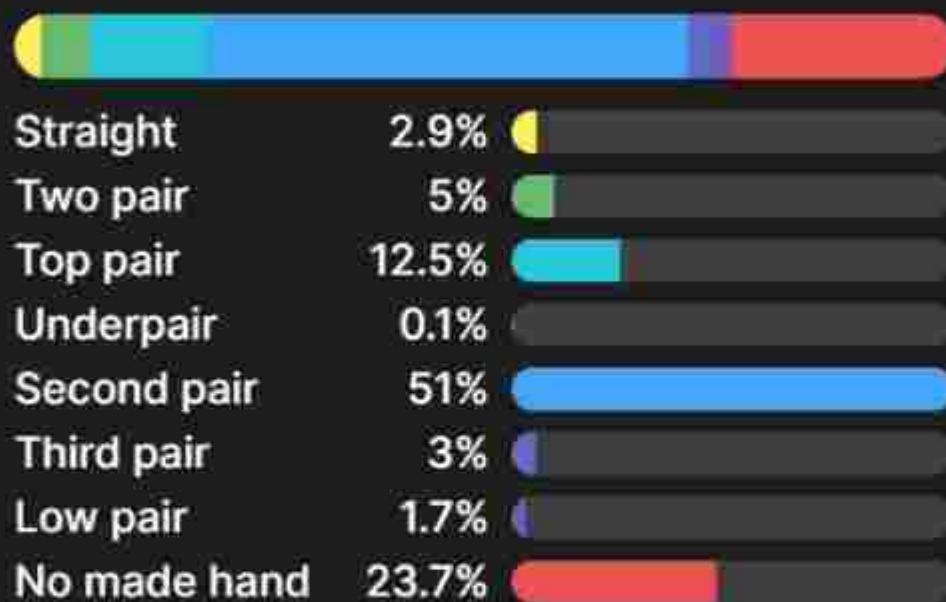
In poker, offense and defense are intertwined. To become a skilled offensive player, you also need to comprehend defense.

This chapter's theme is 'Offense vs Defense', where we'll explore both aspects. It will cover aggressive plays and the defensive strategies required to counter them.



[8-Max MTT, 15bb] SB vs BB limped pot. SB bets 33% and barrels for pot on the turn. The board runs out A♠ Q♥ 4♥ 8♦ 2♦. Action is on the SB, what is the weakest hand class that shoves for value?

- A: Two pair
- B: Top pair
- C: Second pair
- D: Bottom pair

HANDS

SB river shoving range composition

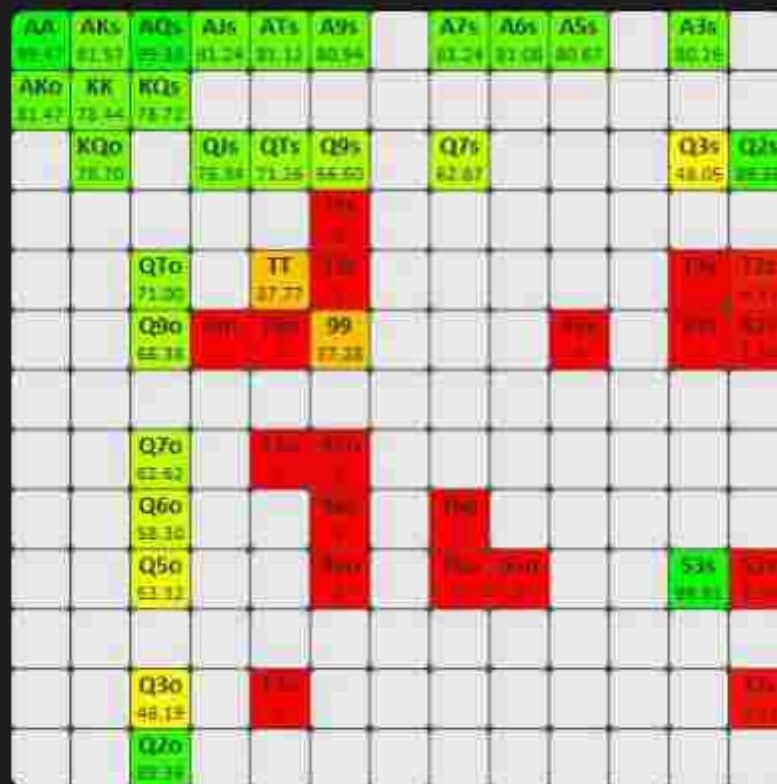
Correct answer:

C: Second pair



Because SB limping range is so wide, BB is heavily incentivized to raise most of their Ace-x preflop.

Due to BB's lack of Ace-x, SB's Queen-x is good enough to value shove on the river.



SB equity when called

Here we can see SB's equity at showdown.

Even hands as weak as Q3s have about 50% when called.

UTG	HJ	CO	BTN	SB
FOLD RAISE 2 ALLIN 50	FOLD CALL RAISE 6 ALLIN 50	FOLD CALL RAISE 6 ALLIN 50	FOLD CALL RAISE 6 ALLIN 50	FOLD CALL RAISE 8 ALLIN 50
BB FOLD CALL RAISE 8 ALLIN 50	FLOP 4.5 	BB CHECK BET 1.5 (133%) ALLIN 48 (1067%)	UTG CHECK BET 1 (22%) BET 1.5 (133%) BET 2.25 (199%) BET 3.4 (176%) BET 5.6 (124%)	BB FOLD CALL RAISE 4.25 (50%) RAISE 7.5 (100%) ALLIN 48 (723%)

[NL500 6-Max Cash, 50bb] UTG vs BB SRP. UTG c-bets min on a board of . Which of the following hands can check-raise?

- A: 4♠ 4♦
- B: A♥ 3♥
- C: K♥ 2♥
- D: 6♥ 5♥



BB facing UTG flop bet

Correct answer:

- B: A ♥ 3 ♥
- C: K ♥ 2 ♥
- D: 6 ♥ 5 ♥

B, C, and D: all check-raise!



A♥3♥, K♥2♥ and 6♥5♥ all have a combination of backdoor flush and straight draws, or overcard draws.

On dry paired boards you need to get creative with bluffs and look for hands that can outdraw villain's value on later streets!

	EV
All-in 48 (723%)	14.02
Raise 7.5 (100%)	16.32
Raise 4.25 (50%)	16.66
Call	16.79
Fold	0

$4\spadesuit 4\clubsuit$ will face more aggression on later streets because it unblocks UTG's top pair.

Invulnerable nutted hands like quads slow-play more often when short-stacked, as it's easier to get the money in later.

CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 7.5 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100	BB FOLD CALL RAISE 25 ALLIN 100	CO FOLD CALL RAISE 25 ALLIN 100
FLOP 24	SB CHECK BET 4.8 (20%) BET 7.9 (33%) BET 12 (50%) BET 18 (75%) BET 30 (125%)	CO CHECK BET 4.8 (20%) BET 7.9 (33%) BET 12 (50%) BET 18 (75%) BET 30 (125%)	TURN 24	SB CHECK BET 4.8 (20%) BET 7.9 (33%) BET 12 (50%) BET 18 (75%) BET 30 (125%)

[NL500 6-Max Cash, 100bb] SB vs CO 3-bet pot. The flop checks through and action is on the SB on a board of 6 ♣ 3 ♥ 2 ♦ 8 ♣. Which is the SB's preferred delayed c-bet size?

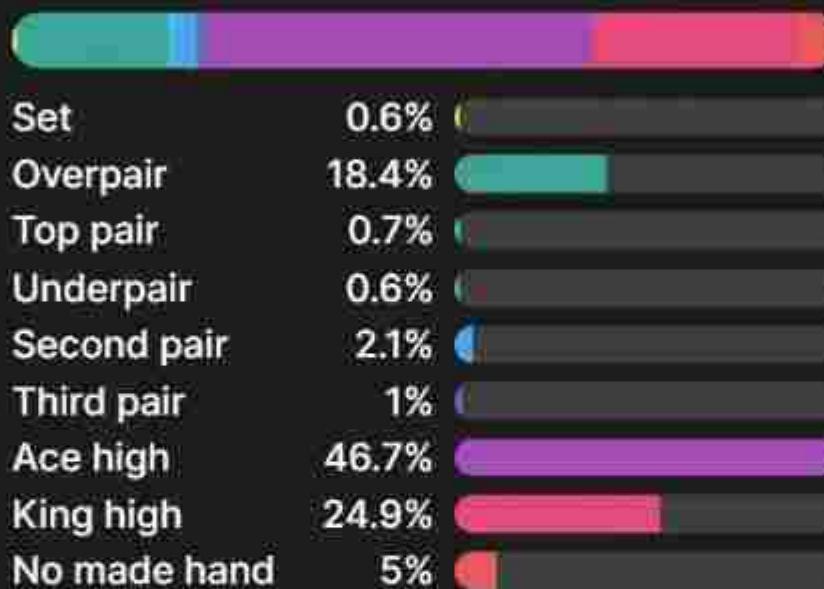
- A: Small (below 36%)
- B: Medium (36% - 67%)
- C: Large (67% - 100%)
- D: Overbet (101%+)



Correct answer:

D: Overbet (101%+)

HANDS



SB flop checking range

As the OOP player, SB traps many overpairs on the flop which now want to get all in.

On this board where SB's unpaired 3-bets miss completely, their range is comprised of overpairs and high card air. They therefore construct a polarized betting strategy and adopt an overbet or check approach.



SB turn strategy

SB	14.5
Fold	
Call	
Raise 2	
Allin 15	
BB	14
Check	
Raise 3	
Raise 4.5	
Raise 6	
Allin 15	

[HU SnG, 15bb] SB (IP) limps and BB isolates to 6bb with 72o 69% of the time.
Why does the BB want to raise such a weak hand?

- A: To prevent the SB's limps from realizing equity efficiently
- B: To capitalize on preflop fold equity
- C: BB polarizes to counter SB's jam/fold strategy against a raise
- D: 72o has low equity and facing a jam doesn't cost it much EV

Correct answer

C: BB polarizes to counter SB's jam/fold strategy against a raise

All answers are somewhat correct but C: is the most precise.



SB strategy vs 6bb Iso raise.

BB expects to face a shove or fold, so they use bluffs that can snap fold against a raise.

72o is your lowest EV hand so it becomes the primary bluff.

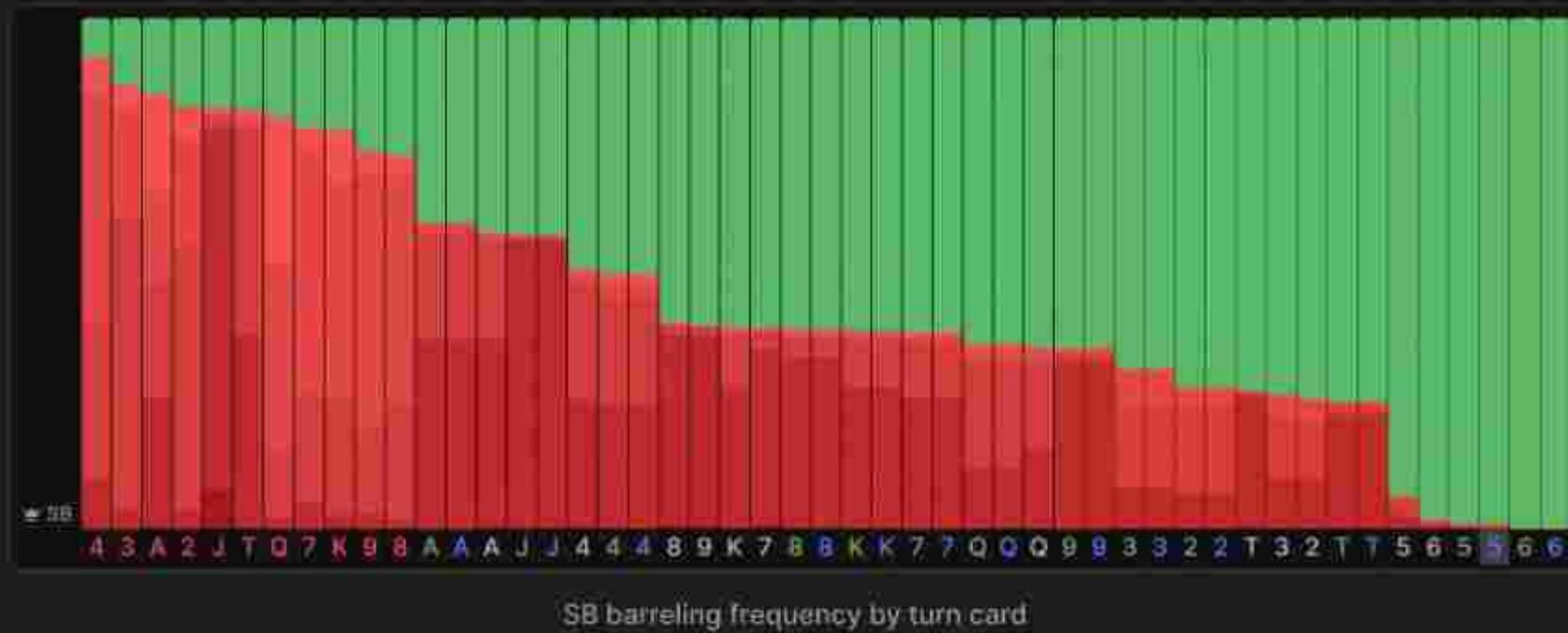
SB FOLD RAISE 3 ALLIN 200	BB FOLD CALL RAISE 10	SB FOLD CALL RAISE 35 ALLIN 200	FLOP J 6 5	20	SB CHECK BET 6.6 (33%) ALLIN 190 (95%)
BB CHECK BET 4 (20%) BET 6.6 (33%) BET 10 (50%) BET 15 (75%) BET 25 (125%)	SB FOLD CALL RAISE 24 (35%) RAISE 34 (50%) RAISE 50 (100%) RAISE 70 (150%)	BB FOLD CALL RAISE 47.8 (33%) RAISE 64.8 (60%) RAISE 92 (100%) ALLIN 190 (144%)	TURN	68	SB CHECK BET 13.6 (20%) BET 22.45 (33%) BET 34 (50%) BET 51 (75%) BET 85 (125%)

[NL500 6-Max Cash, 200bb] SB vs BB 3-bet pot.

The BB c-bets 50% and calls a 35% check-raise on a board of J♠ 6♥ 5♥.

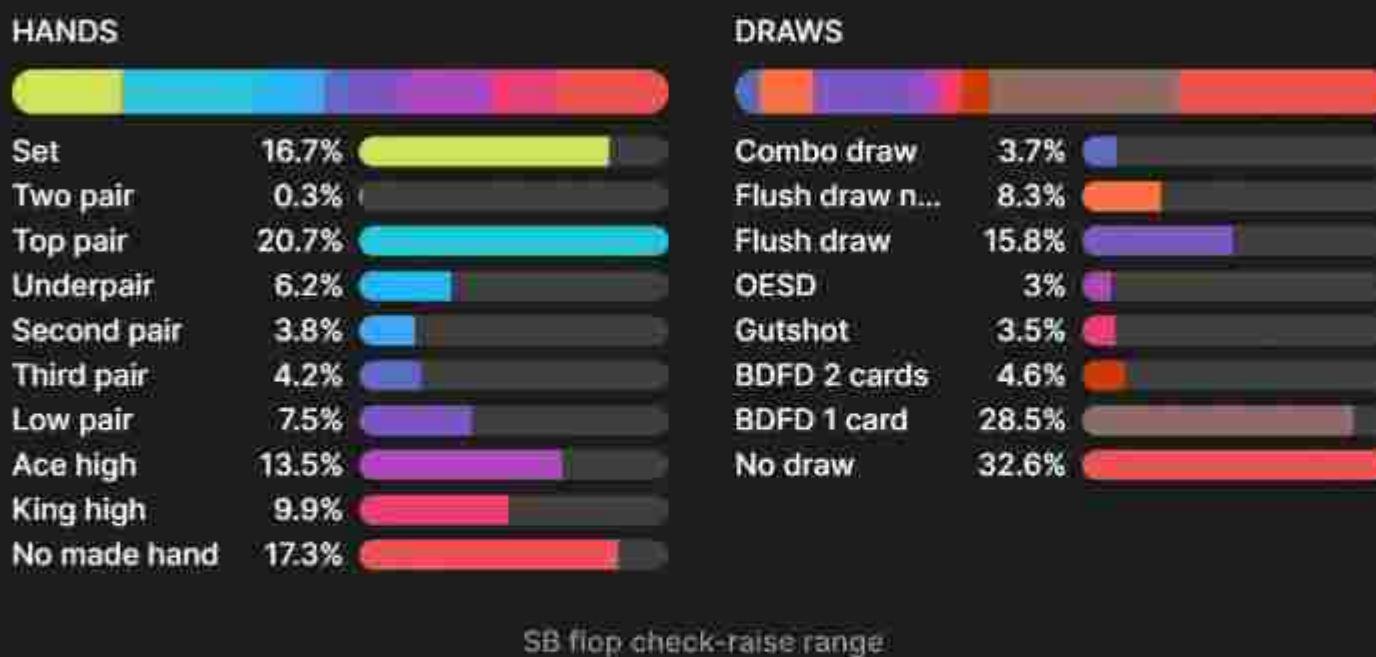
On which turn card does the SB have the lowest barreling frequency?

- A: 4♦
- B: 5♦
- C: J♦
- D: K♥



Correct answer:

B: 5 ♦



The 5♦ turn removes combos of 55 from SB's range while doing nothing to improve SB's drawing hands. This drastically decreases the equity of the SB's range.

SB's barreling frequency is heavily impacted by their equity: the stronger their range, the higher their barreling frequency.



SB FOLD RAISE 3 ALLIN 150	BB FOLD CALL RAISE 12 ALLIN 150	SB FOLD CALL RAISE 28 ALLIN 150	FLOP 24 J 7 4	SB CHECK BET 7.9 (33%) ALLIN 138 (57.5%)
BB CHECK BET 4.8 (20%) BET 7.9 (33%) BET 12 (50%) BET 18 (75%) BET 30 (125%)	SB FOLD CALL RAISE 38 (35%) RAISE 54 (60%) RAISE 78 (90%) ALLIN 138 (200%)	TURN 60 3	SB CHECK BET 19.8 (33%) BET 45 (75%) ALLIN 120 (200%)	BB CHECK BET 12 (20%) BET 45 (75%) ALLIN 120 (200%)

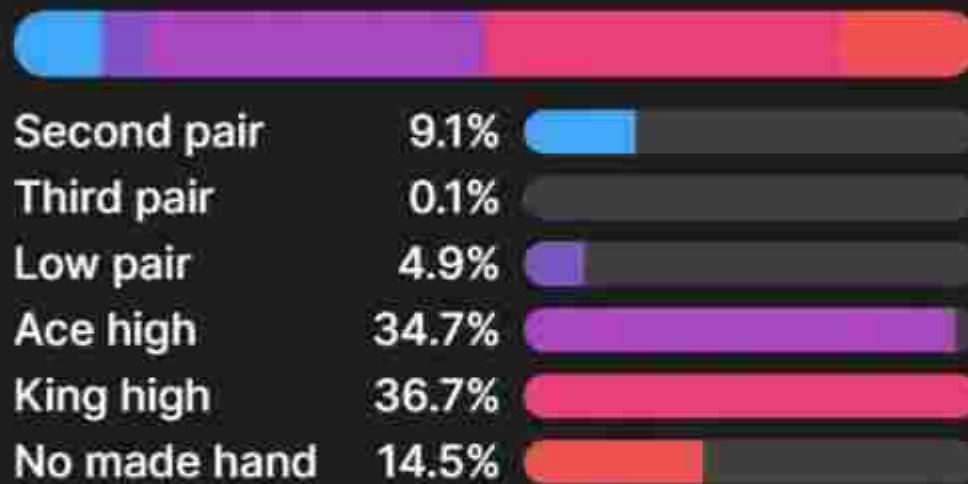
[NL50 6-Max Cash, 150bb] SB vs BB 3-bet pot. SB check-calls a 75% c-bet and faces a 75% barrel on the turn. The board is J♠ 7♥ 4♦ 3♣. Which hands shove vs the bet?

- A: J♣ T♣
- B: Q♣ J♣
- C: K♣ J♣
- D: 7♠ 7♣



Correct answer:

A: J ♣ T ♣

HANDS

BB folding range vs turn shove

Vulnerable made hands often shove in low SPR spots to realize equity. J♣ T♣ unblocks bluffs and folds BB's overcard bluffs.

K♣ J♣ and Q♣ J♣ have enough equity to stack off, but they do not benefit as much from the fold equity generated by the shove as fold out fewer overcards.



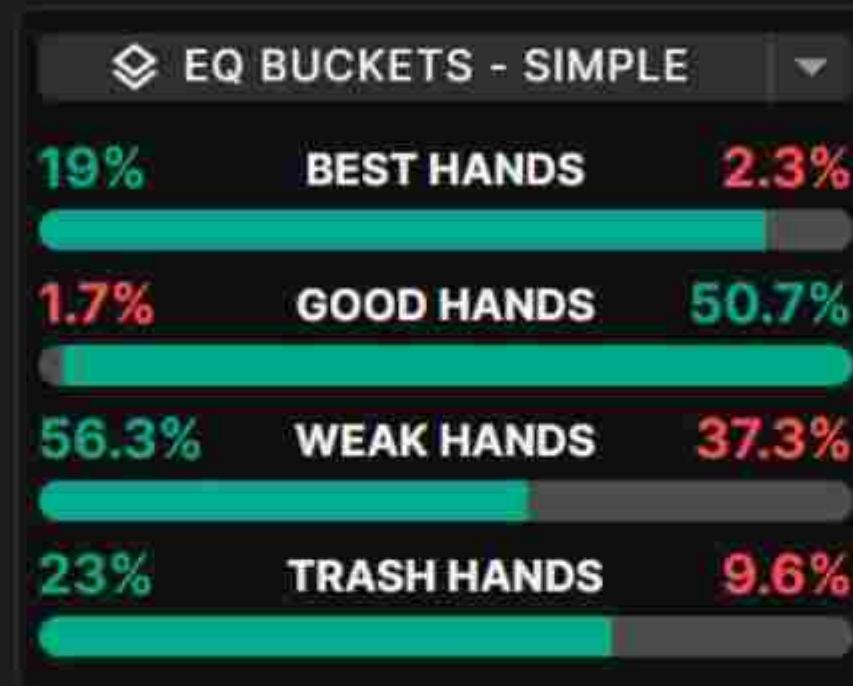
At low SPRs, invulnerable made hands like 7♦7♣ tend to slowplay as they can easily get the money in later.



[NL500 6-Max Cash, 100bb] BTN vs SB 4-bet pot on a flop of T♠ 9♥ 8♦.

This is a board where SB can donk shove with half their range, but they elect to check instead. How does SB construct their CHECKING range?

- A: Condensed
- B: Linear
- C: Merged
- D: Polarized



Correct answer:

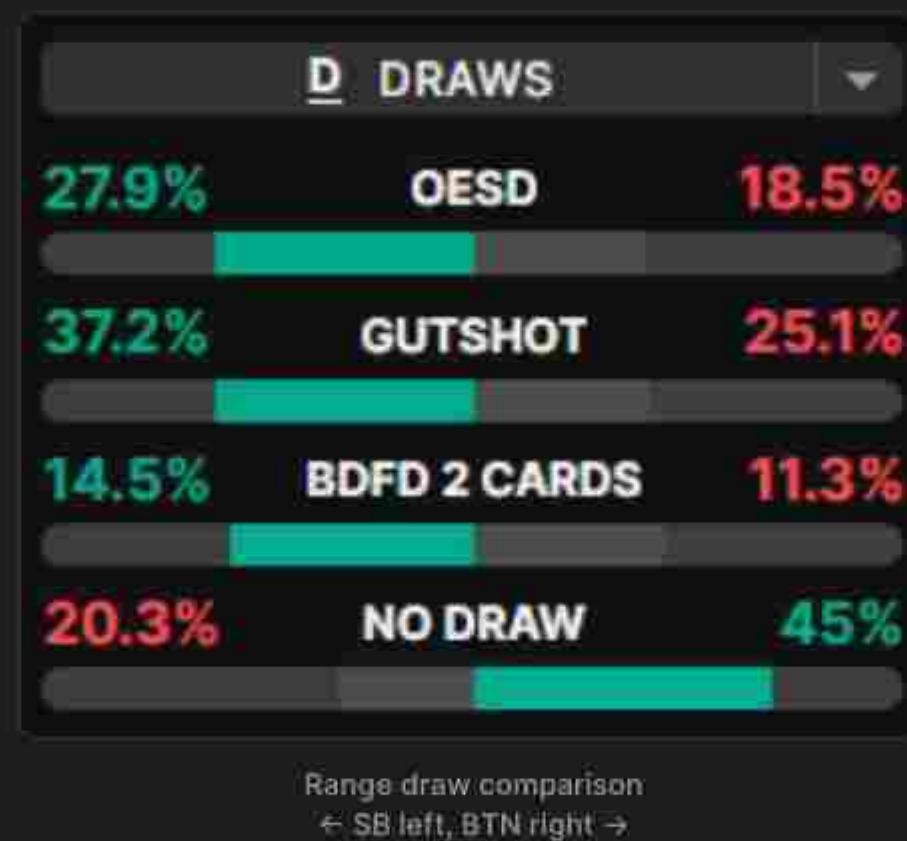
D: Polarized



On draw-heavy boards in low SPR spots, vulnerable medium-strength hands are incentivized to fast-play in order to realize their equity.

The SB shoves most of their "Good Hands" (50 - 75% equity) and is left with a polar range when they check.





SB has a nut advantage and over 2/3 of their range contains a straight draw. BTN has to call 68% of their range facing this overbet due to the abundance of draws.

UTG	HJ	CO	BTN	SB	BB	FLOP	4.5
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD	4	
RAISE 2	RAISE 2	CALL	CALL	CALL	CALL	4	
ALLIN 100	ALLIN 100	RAISE 8.5	RAISE 7.5	RAISE 11	RAISE 12.3		3
		ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100		
BB	HJ	BB		TURN	7.5	BB	
CHECK	CHECK	FOLD				CHECK	
BET 1.5 (33%)	BET 1.5 (33%)	CALL				BET 1.5 (33%)	
ALLIN 98 (217%)		RAISE 5.25 (50%)				BET 2.5 (50%)	
		BET 2.25 (50%)				BET 3.75 (50%)	
		BET 3.4 (75%)				BET 5.6 (75%)	
		BET 5.6 (125%)				BET 9.4 (125%)	
		ALLIN 98 (217%)				BET 13.1 (175%)	

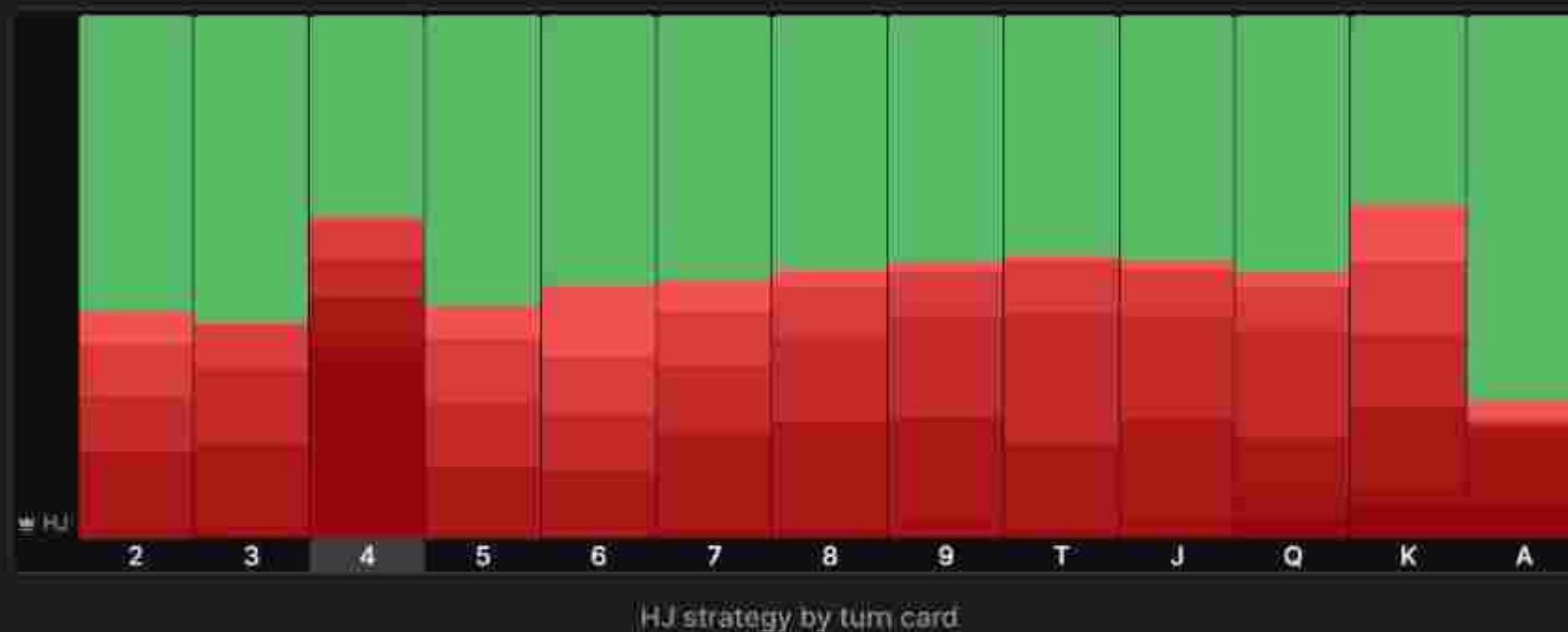
[NL500 6-Max Cash, 100bb] HJ vs BB single-raised pot. HJ c-bets 33% on **4♥ 4♣ 3♦** and gets called. On which turn does the HJ barrel most aggressively?

A: 2♥

B: 4♠

C: 5♦

D: K♣



Correct answer:

B: 4 ♠

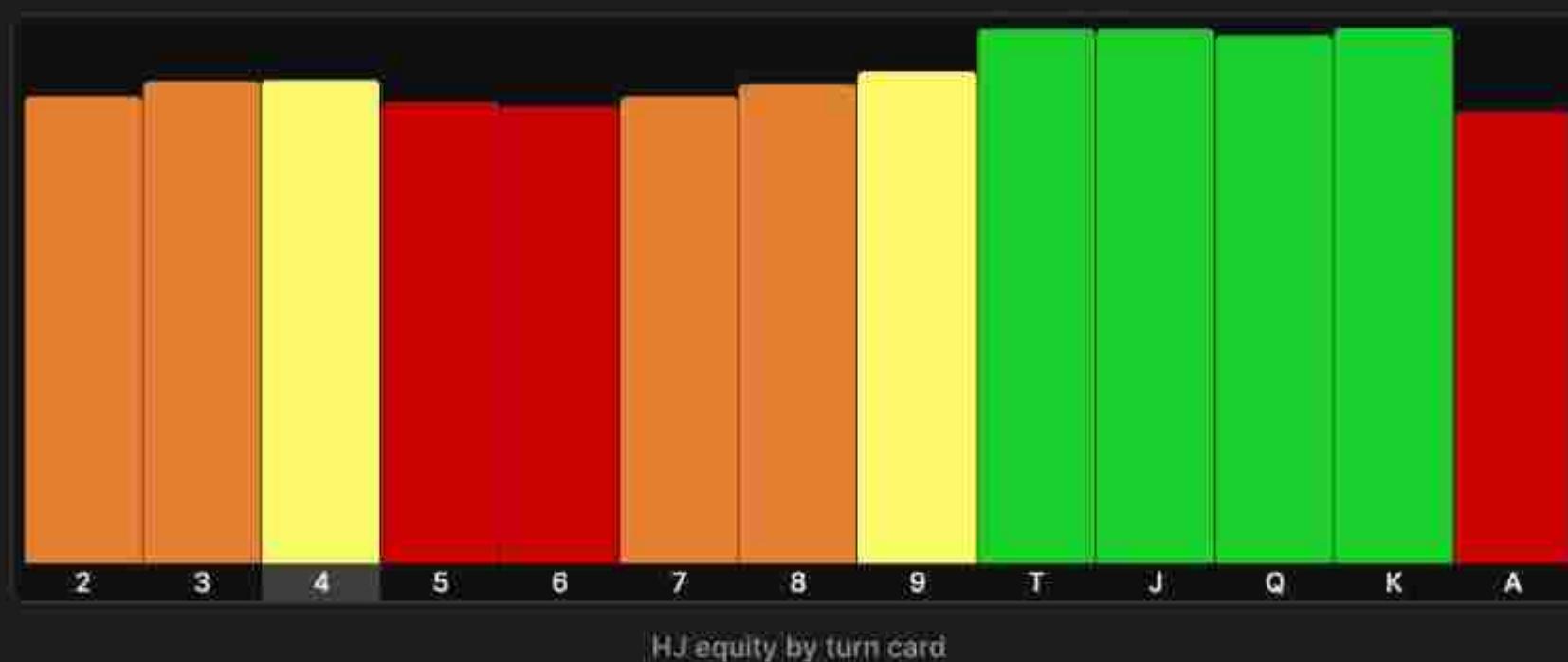


The 4♠ turn greatly empowers HJ's overpairs.



HJ equity vs BB folding range

The HJ leverages their overpair advantage to fold out overcard hands with substantial equity against the betting range.



The turned 4 actually isn't the highest equity turn for HJ, but it creates the most incentive to generate fold equity.

SB FOLD RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	SB FOLD CALL RAISE 24 ALLIN 100	FLOP 20 
BB CHECK BET 4 (20%) BET 6.6 (33%) BET 10 (50%) BET 15 (75%) BET 20 (100%)	SB FOLD CALL RAISE 23.2 (50%) RAISE 39.8 (100%) ALLIN 90 (25%)	TURN 33.2 	BB CHECK BET 6.65 (20%) BET 10.95 (33%) BET 16.6 (50%) BET 24.9 (75%) BET 33.2 (100%)

[HU Cash, 100bb] SB (IP) opens, BB 3-bets and SB calls. BB c-bets 33% on a flop of K ♠ 8 ♠ 6 ♥ and SB calls. What turn card(s) should BB barrel using a small size?

- A: Q ♥
- B: J ♣
- C: 8 ♦
- D: 5 ♠

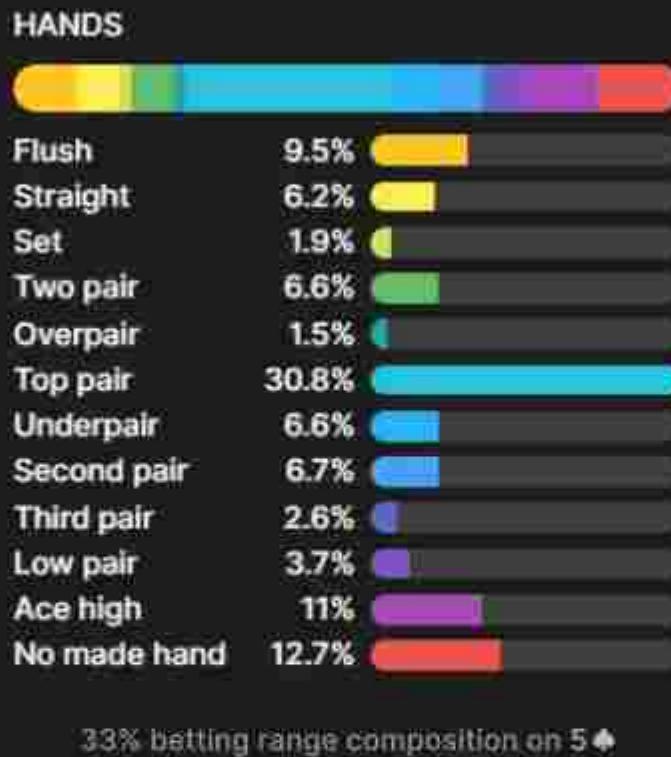


Correct answer:

D: 5 ♠



The flush completing turn introduces a new hand class (flushes) to both players ranges, decreasing the power level of previously strong hands.



BB's most common made-hand class on the turn is top pair. With the introduction of flushes, top pair's equity plummets to 60% - 70%.

33% is an appropriate bet size for this hand class to seek value while retaining reasonable equity when called.



[NL500 6-Max Cash, 100bb] SB vs BB single-raised pot. BB calls a 33% flop c-bet and faces a 66% turn barrel on Q ♠ Q ♥ 5 ♥ J ♠. Which hand(s) can raise?

- A: 4 ♠ 3 ♠
- B: J ♥ T ♥
- C: K ♠ 9 ♠
- D: A ♥ T ♥



BB turn strategy

Correct answer:

A: 4 ♠ 3 ♠



SB response to raise with spade flush draws

By raising, $4\spades 3\spades$ folds out dominating flush draws cleaning up its outs.

	EV
Bet 35 (151%)	5.42
Bet 20.5 (88%)	5.58
Bet 14.5 (62%)	5.63
Bet 8.5 (37%)	5.72
Bet 2.5 (11%)	6
Check	6.44

K♦ 9♦ action EV on a 2♦ river after calling turn

J♥ T♥, K♦ 9♦ and A♥ T♥ all play better as calls.

Their EVs suffer greatly when they face a turn 3-bet and they all have significant showdown value when checked to on a brick river after calling turn.

UTG	CO	BTN	SB	BB	
FOLD RAISE 4 ALLIN 99.9	FOLD CALL RAISE 12 ALLIN 99.9	FOLD CALL RAISE 13 ALLIN 99.9	FOLD CALL RAISE 16 ALLIN 99.9	FOLD CALL RAISE 20 ALLIN 99.9	
STR	FLOP	10:1	STR	UTG	STR
FOLD CALL RAISE 22 ALLIN 99.9	9 6 5		CHECK BET 3.35 (33%) BET 7.6 (75%) ALLIN 95.9 (950%)	CHECK BET 2 (20%) BET 3.35 (33%) BET 5.05 (50%) BET 7.6 (75%) BET 10.1 (100%)	FOLD CALL RAISE 20.25 (50%) RAISE 32.9 (100%) RAISE 45.55 (150%) ALLIN 95.9 (349%)

[6-Max Straddle+Ante Cash, 100bb] UTG opens and STR defends. The flop comes 9 ♠ 6 ♥ 5 ♥ and UTG c-bets 75%. Which combo(s) of 94s can STR raise?

- A: 9 ♥ 4 ♥
- B: 9 ♦ 4 ♦
- C: 9 ♣ 4 ♣



STR flop strategy with 94s

Correct answer:

B: 9 ♦ 4 ♦

C: 9 ♣ 4 ♣



Despite being top pair, $9\spades 4\spades$ and $9\clubsuit 4\clubsuit$ are very low EV hands vs a 75% c-bet and don't perform well as calls.

They opt to raise and turn themselves into bluffs on a variety of runouts.

Comparatively, $9\hearts 4\hearts$ has very high EV as a call and does not turn itself into a bluff by raising.



	%
All-in 95.9 (349%)	12.1
Raise 45.55 (150%)	12.47
Raise 32.9 (100%)	12.27
Raise 20.25 (50%)	13.64
Call	13.77
Fold	0

	%
All-in 95.9 (349%)	-4.5
Raise 45.55 (150%)	-1.92
Raise 32.9 (100%)	0.18
Raise 20.25 (50%)	1.05
Call	1.07
Fold	0

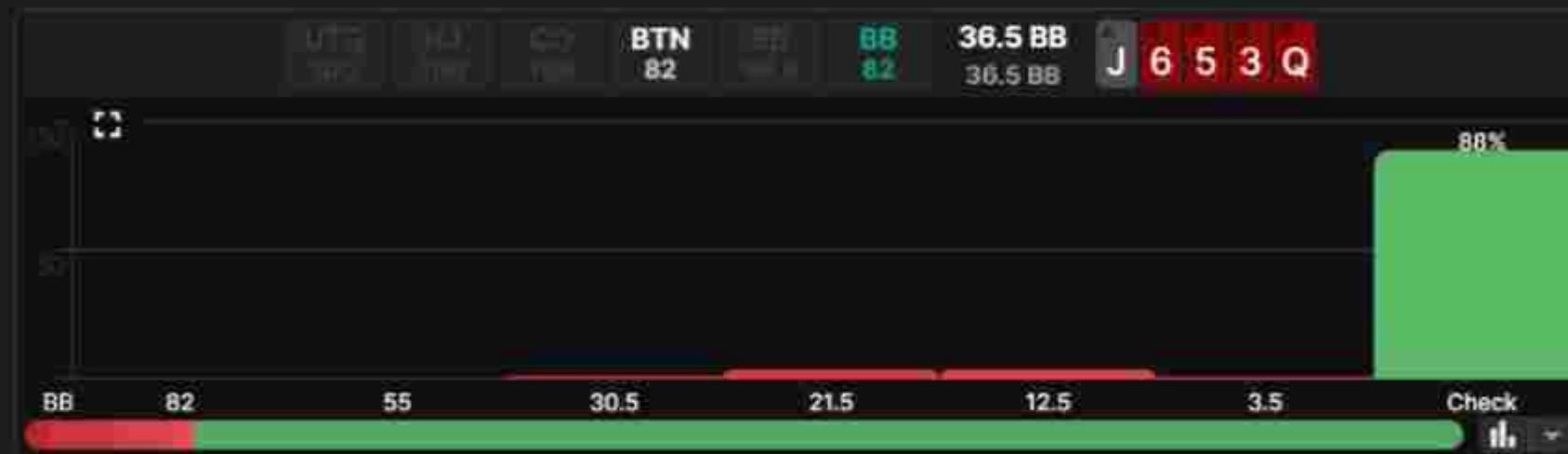
	%
All-in 95.9 (349%)	-4.5
Raise 45.55 (150%)	-1.92
Raise 32.9 (100%)	0.18
Raise 20.25 (50%)	1.05
Call	1.07
Fold	0

EV of 94s vs c-bet in a 10/lbb pot



[NL500 6-Max Cash, 100bb] BTN vs BB single-raised pot. BB check-raises 50% vs a 50% c-bet and barrels 33% on the turn on a board of J♠ 6♥ 5♥ 3♦.
On which river card does BB barrel least often?

- A: 4♣
- B: T♠
- C: Q♥
- D: A♦



BB river strategy on a Q♥

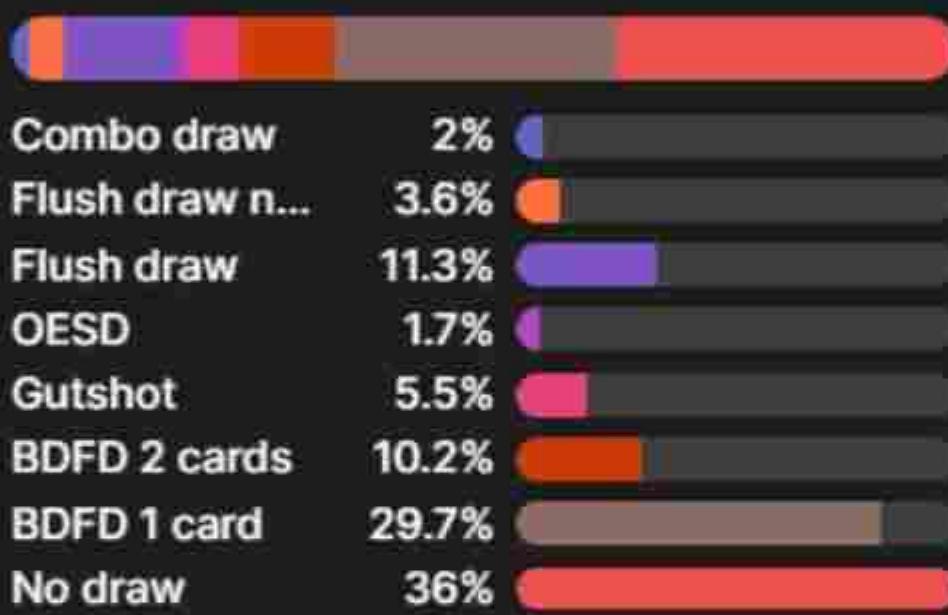
Correct answer:

C: Q ♥



SB mainly check raises flop with sets, two pair, suited board pairs and draws. Few of these hands improve on this river.

In contrast, BTN's range greatly improves on this river and it is made up of 60% flushes (40% of which are J-high or better).

DRAWS

BTN flop call vs check-raise range

BTN's continue range vs the flop check-raise is defined by overpairs and board pairs, many of which contain a single heart and become flushes on this river.

These hands are classified in the picture as "BDFD 1 card".



[NL500 6-Max Cash, 100bb] BTN vs BB single-raised pot. BTN double-barrels for 125% on flop and 75% on turn. The board runs out A ♠ K ♥ 5 ♦ 9 ♣ 7 ♠. Which hand(s) are good candidates to shove river?

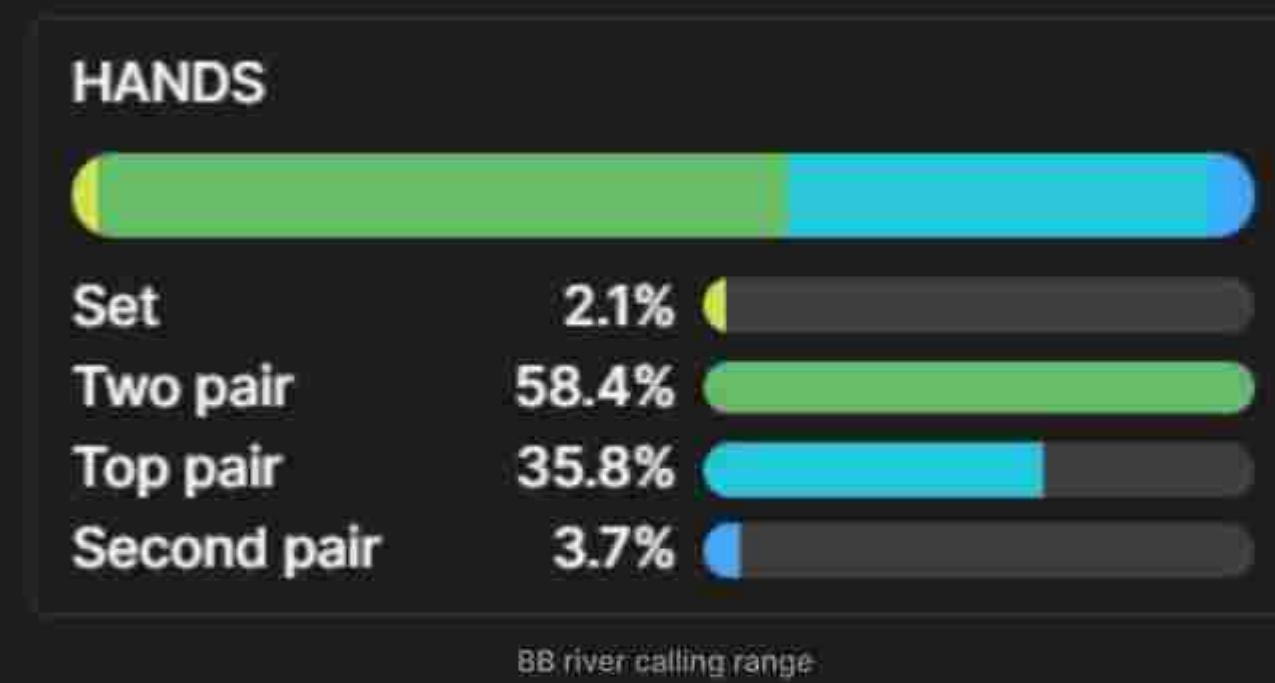
- A: Q ♣ J ♣
- B: J ♠ T ♠
- C: J ♦ 6 ♦
- D: J ♥ 9 ♥



BTN river strategy

Correct answer:

D: J ♦ 9 ♦



58% of BB's river calls are two pair hands, many of which are blocked by a 9.

Despite having some showdown value, J9 generates more EV by using its excellent blocker to shove river.



BB river strategy vs shove

BB folds the majority of their top pair to the river shove.

Blocking folds like AJ and AT make QJ, JT and J6 unprofitable bluffs. They instead check back and lose 100% of the time.

	UTG1	RAISE 2.3	LJ	FOLD	HJ	FOLD	CO	FOLD
	BTN	RAISE 7.5	SB	FOLD	BB	FOLD	UTG1	RAISE 16.9
	BTN	CALL	BB	UTG1	RAISE 16.9	BTN	CALL	

FLOP 36.3 J 8 4 UTG1 BET 9.1 (25%) BTN CALL TURN 54.5 3 UTG1 Take action

[8-Max MTT, 60bb] UTG1 vs BTN 4-bet pot. UTG1 c-bets flop for 25% and is called. With which hand(s) should UTG1 shove turn on J ♠ 8 ♥ 4 ♠ 3 ♦ ?

- A: A ♣ 4 ♣
- B: A ♦ 8 ♦
- C: A ♠ A ♣
- D: J ♥ J ♣



UTG1 turn strategy

Correct answer:

A: A ♣ 4 ♣

B: A ♦ 8 ♦



UTG1 shoving range equity when called

At low SPRs, vulnerable made hands like $A\clubsuit A\clubsuit$ and $A\spades A\spades$ shove to better realize their equity.

Despite only having 20% - 30% equity when called, these hands perform best as shoves.

A♠ A♣	10
	EV
All-in 34 (62%)	61.9
Bet 13.6 (25%)	62.17
Bet 5.45 (10%)	62.05
Check	62.26
A♠ A♣ EV by action	

A♠ A♣ and J♥ J♣ are less vulnerable and can easily get the rest of the money in later.

BTN	SB	BB	SB	FLOP	6	SB
FOLD	FOLD	CHECK	FOLD			CHECK
RAISE 2	CALL	RAISE 3	CALL			BET 1.5 (25%)
ALLIN 22	RAISE 2.5	ALLIN 22	RAISE 8			BET 2.65 (44%)
	ALLIN 22		ALLIN 22			BET 4.15 (69%)
						BET 6 (100%)
						BET 9 (150%)

[Spin & Go, 22bb] SB limp calls a 3bb ISO. On which flop(s) does the SB play a donking range?

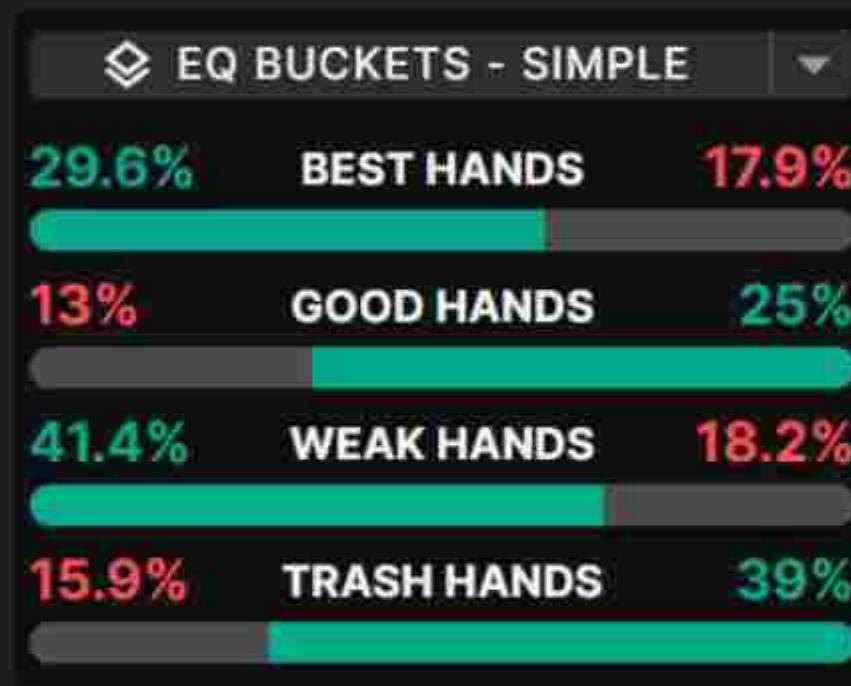
- A: 5♦ 5♣ 4♥
- B: 6♦ 4♥ 3♥
- C: K♥ 8♥ 8♦
- D: A♥ 7♥ 3♥

Flops	Strategy	Check	Bet 1.5	Bet 2.65	Bet 4.15
5♦ 5♣ 4♥		100	0	0	0
6♦ 4♥ 3♥		100	0	0	0
K♥ 8♥ 8♦		36.1	59.7	3.8	0.3
A♥ 7♥ 3♥		99	0.9	0	0

SB flop strategies

Correct answer:

C: K♥ 8♥ 8♦



SB limp-calls many Kx and 8x hands ("Best Hands"). They take other lines with all pocket pairs and most Ax ("Good Hands") which leaves them a polarized distribution of hands.

Comparatively, BB's range contains many underpairs and A-highs against which SB seeks value.

SB

AA	99s	88s	77s	66s	55s	44s	33s	22s	A6s	A5s	A4s	A3s	A2s
AKs	KKs	KKs	KKs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s	
Ad	KQo	QJo	QTo	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s		
Jd	KJc	QJc	JTc	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s		
Td	KTo	QTo	ITo	TTs	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s	
A9s	K9o	Q9o	J9o	T9o	98s	97s	96s	95s	94s	93s	92s		
A8s	K8o	Q8o	J8o	T8o	98o	87s	86s	85s	84s	83s	82s		
7d	K7o	Q7o	J7o	T7o	97o	87o	76s	75s	74s	73s	72s		
A6s	K6s	Q6s	J6s	T6s	96s	85s	75s	65s	64s	63s	62s		
A5s	K5s	Q5s	J5s	T5s	95s	85s	75s	54s	53s	52s			
A4s	K4s	Q4s	J4s	T4s	94s	84s	74s	44s	43s	42s			
A3s	K3s	Q3s	J3s	T3s	93s	83s	73s	33s	32s				
A2s	K2s	Q2s	J2s	T2s	92s	82s	72s	42s	32s				

BB

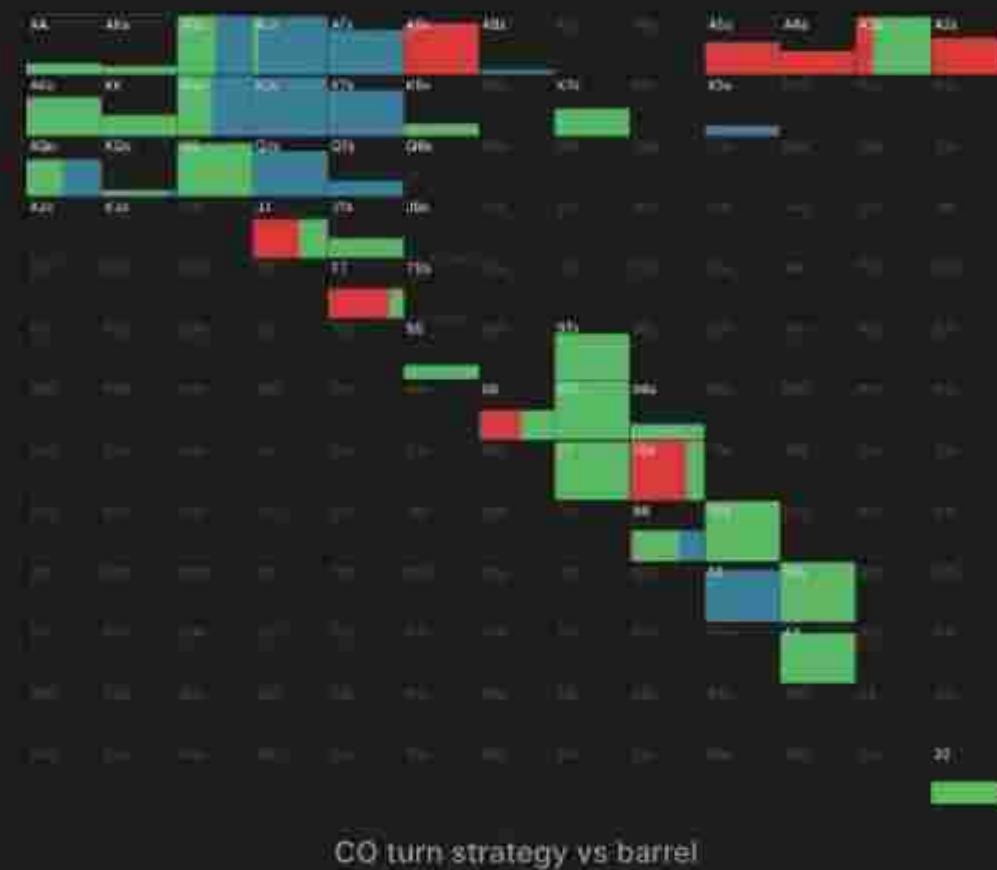
AA	AKs	AKs	AKs	ATs	ATs	ATs	ATs	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KK	KK	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s	
Ad	K9o	Q9o	Q9o	Q7s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s			
Jd	KJc	QJc	QJc	JTc	JTc	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
Td	KTo	QTo	ITo	TTs	TTs	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9s	K9o	Q9o	J9o	T9o	99s	98s	97s	96s	95s	94s	93s	92s	
A8s	K8o	Q8o	J8o	T8o	98o	88s	87s	86s	85s	84s	83s	82s	
7d	K7o	Q7o	J7o	T7o	97o	87o	77s	76s	75s	74s	73s	72s	
A6s	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	65s	64s	63s	62s	
A5s	K5s	Q5s	J5s	T5s	95s	85s	75s	55s	54s	53s	52s		
A4s	K4o	Q4o	J4o	T4o	94s	84s	74s	44s	43s	42s			
A3s	K3o	Q3o	J3o	T3o	93s	83s	73s	33s	32s				
A2s	K2o	Q2o	J2o	T2o	92s	82s	72s	42s	32s				

Range comparison, SB call BB ISO

CO	BTN	SB	BB	CO	FLOP
FOLD	FOLD	FOLD	FOLD	FOLD	23
RAISE 2.3	CALL	CALL	CALL	CALL	
ALLIN 100	RAISE 8	RAISE 10.5	RAISE 23.3	RAISE 23.1	
	ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100	
SB	CO	TURN	SB	CO	
CHECK	FOLD	57.5	CHECK	FOLD	
BET 2.3 (10%)	CALL	9	BET 5.75 (10%)	CALL	
BET 5.75 (25%)	RAISE 36.25 (33%)		BET 14.4 (25%)	ALLIN 72.25 (38%)	
BET 11.5 (50%)	RAISE 48.85 (55%)		BET 28.75 (50%)		
BET 17.25 (75%)	ALLIN 89.5 (128%)		BET 43.1 (75%)		
BET 23 (100%)			ALLIN 72.25 (128%)		

[8-Max MTT, 100bb] SB vs CO 3-bet pot. SB c-bets 75% and barrels 50% on a board of 7♠ 4♥ 2♦ 9♣. Which hand(s) should fold to the turn bet?

- A: A♠ K♥
- B: J♦ T♦
- C: 5♣ 4♣
- D: 5♥ 5♣



Correct answer:

D: 5 ♣ 4 ♣

HANDS



55 is dominated by SB's overpair and top pair barrels and has only 2 outs to improve.

CO instead continues with hands that have more equity to outdraw SB's value: any draw and even AK.

AK also benefits from dominating many of the SB's overcard bluffs.





[HU Cash, 200bb] SB (IP) vs BB single-raised pot. The board is J ♦ T ♥ 5 ♦ 4 ♦ 6 ♣ and SB triple-barrels for 33% on the flop, 150% on the turn and 75% on the river. Which hand(s) are best suited to call down?

- A: J ♦ 9 ♦
- B: J ♣ 8 ♣
- C: Q ♠ T ♠
- D: A ♠ 4 ♠



BB river strategy vs 75% bet

Correct answer:

D: A ♠ 4 ♠



When facing polarized ranges, the value of good blockers skyrockets.

Seeing as SB never bluffs A-high, A♦4♦ unblocks all bluffs. It also blocks many two pair hands and sets with the 4.



J9, J8 and QT all block bluff combos.

UTG	HJ	CO	BTN	SB	BB	UTG
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2 ALLIN 100	RAISE 6.5 ALLIN 100	RAISE 14 ALLIN 100	RAISE 14 ALLIN 100	RAISE 20 ALLIN 100	RAISE 19 ALLIN 100	CALL RAISE 19 ALLIN 100
FLOP 14.5	UTG	HJ	TURN 14.5	UTG	HJ	
5 ♣ 4 ♥ 3 ♦	CHECK	CHECK	2	CHECK	FOLD CALL RAISE 36.2 (36%) RAISE 46 (55%) RAISE 60.2 (63%) ALLIN 93.5 (149%)	
	BET 4.8 (33%) ALLIN 93.5 (149%)	BET 2.9 (20%) BET 4.8 (33%) BET 7.25 (50%) BET 10.9 (77%) BET 18.1 (125%)		BET 2.9 (20%) BET 4.8 (33%) BET 7.25 (50%) BET 10.9 (77%) BET 18.1 (125%)		

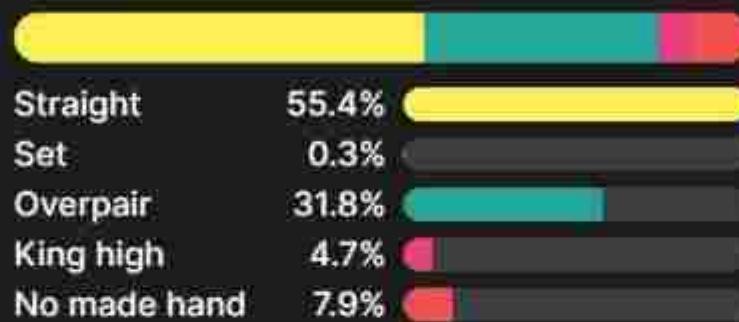
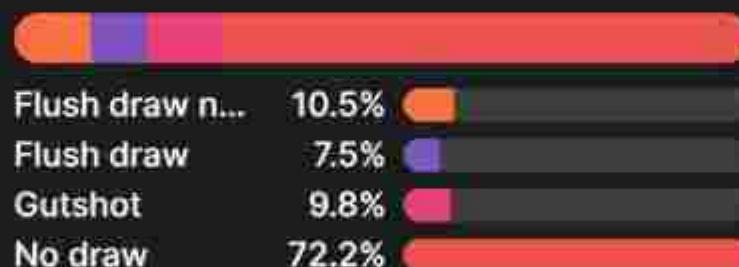
[NL50 6-Max Cash, 100bb] HJ vs UTG 3-bet pot. The flop checks through and UTG probes the turn for 125% on a board of **5 ♠ 4 ♥ 3 ♥ 2 ♦**. Which hand(s) can HJ fold?

- A: Q ♠ Q ♦
- B: 5 ♣ 4 ♣
- C: A ♦ J ♦
- D: A ♥ Q ♥



Correct answer:

- A: Q ♠ Q ♦
- C: A ♦ J ♦

HANDS**DRAWS**

UTG turn probe range

UTG exploits their 6x advantage to force HJ off a chop.

They construct their betting range with a ratio of 6x, Ax and bluffs that makes HJ's naked Ax indifferent between calling and folding (excluding those with certain blockers).



BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	STN FOLD CALL RAISE 27 ALLIN 100	FLOP 28.5 	BB CHECK BET 5.3 (20%) BET 8.75 (33%) BET 13.25 (50%) BET 19.9 (75%) BET 33.1 (125%)	BTN FOLD CALL RAISE 24.15 (85%) RAISE 32.95 (95%) RAISE 45.25 (83%) ALLIN 87 (175%)
TURN 44 	BB CHECK BET 8.8 (20%) BET 14.5 (33%) BET 22 (50%) BET 33 (75%) ALLIN 78.25 (175%)	BB FOLD CALL ALLIN 78.25 (175%)	RIVER 88 	BB CHECK BET 9 (9%) BET 31 (36%) ALLIN 56.25 (64%)	BB CHECK BET 9 (9%) BET 31 (36%) ALLIN 56.25 (64%)	BB FOLD CALL

[NL500 6-Max Cash, 100bb] BB vs BTN 3-bet pot. BB double-barrels for 33% on the flop and 50% on the turn. They check river on a board of K♠ K♥ Q♦ J♦ 3♠ and face a shove. What is the BB's calling frequency?

- A: 0%
- B: 24.5%
- C: 61%
- D: 91.5%



Correct answer

B: 24.5%



MDF applies when bluffs have 0% equity.

BTN doesn't have any 0% equity bluffs after calling two streets. They bluff with hands that have up to 50% equity (TT).



BTN EV and strategy on river

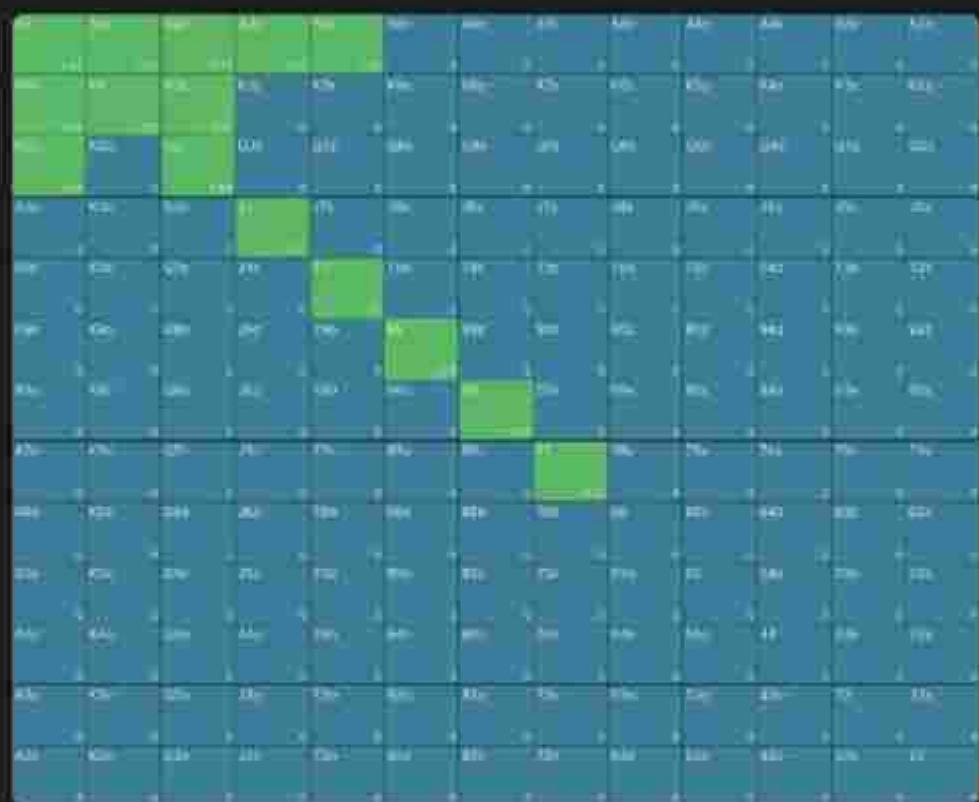
BB calls down with 61% (MDF) of hands that beat BTN's bluffs.

Remember that MDF only applies to the range of hands that can beat a bluff!

BTN	SB	BB
FOLD	FOLD	FOLD
RAISE 3	CALL	CALL
ALLIN 5	RAISE 3.5	RAISE 20

[3-Max MTT (ICM), 5-40-20] BTN folds and SB shoves for 20bb effective.
How much equity does BB need to call?

- A: 47%
- B: 65%
- C: 80%
- D: 100%



BB strategy and EV vs shove

Correct answer

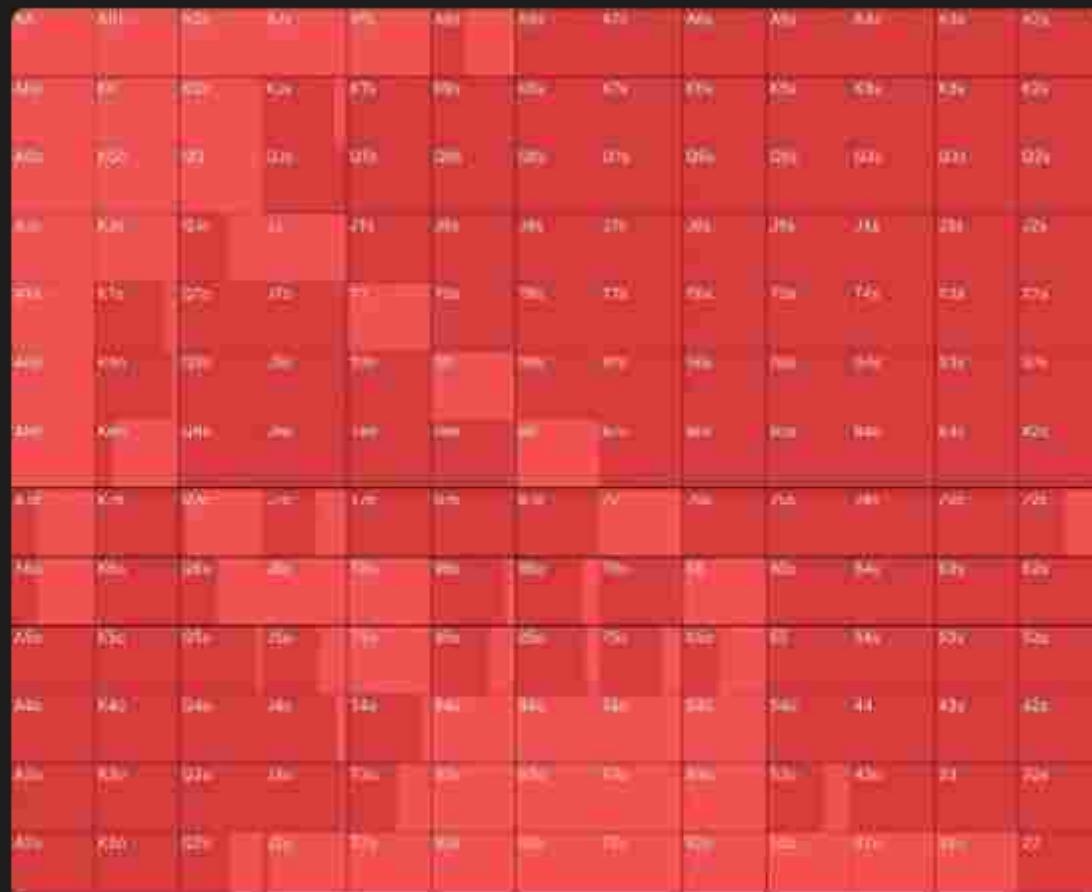
B: 65%

AA	AKs	AQs	ATs	ASs	ABs	A7s	A6s	ASs	A4s	A3s	A2s	
36.42	57.25	59.35	60.37	60.14	54.31	61.88	62.29	61.34	61.73	60.39	59.67	58.42
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
15.52	22.18	25.42	24.33	24.16	22.15	20.30	22.21	20.96	21.21	23.28	24.95	21.75
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
12.01	23.58	28.11	21.59	20.34	20.30	20.46	24.70	23.35	22.91	21.18	20.79	21.70
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
11.14	22.91	21.66	11.79	21.71	20.88	21.81	21.98	20.14	20.41	21.27	21.29	21.38
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
62.39	62.23	58.48	55.44	70.07	52.37	51.71	49.88	48.77	48.34	45.35	44.84	43.73
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
10.84	20.07	26.22	31.19	31.03	72.05	50.11	48.29	46.71	44.72	42.18	41.05	41.35
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
11.97	28.31	34.74	31.24	49.04	47.38	99.77	47.19	45.81	43.95	41.69	39.83	35.50
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
61.07	56.93	52.56	49.29	47.09	45.43	44.16	65.90	44.97	42.94	41.15	39.33	33.74
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
12.48	22.37	31.23	47.37	41.35	49.77	52.82	31.91	66.21	42.88	41.12	39.55	27.31
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
18.63	24.67	30.76	46.53	49.41	41.00	40.42	29.79	30.71	61.24	41.17	39.42	32.91
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
18.34	23.35	48.96	45.26	42.14	39.31	38.86	37.61	37.00	32.09	57.16	38.28	36.34
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
17.44	22.34	47.46	44.25	41.22	38.63	36.47	35.85	35.48	35.01	34.81	33.72	32.58
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22
16.00	21.05	46.18	41.37	39.47	37.93	36.01	34.78	34.31	34.37	33.62	32.41	30.69

BB equity when shoved on:

Due to the uneven stacks, BTN is likely to bust before BB. The risk of busting outweighs the gain from doubling up.

Despite pot odds only requiring 47% equity, more is needed to make up for the non-linear value of chips.

[Learn more](#)

SB opening range

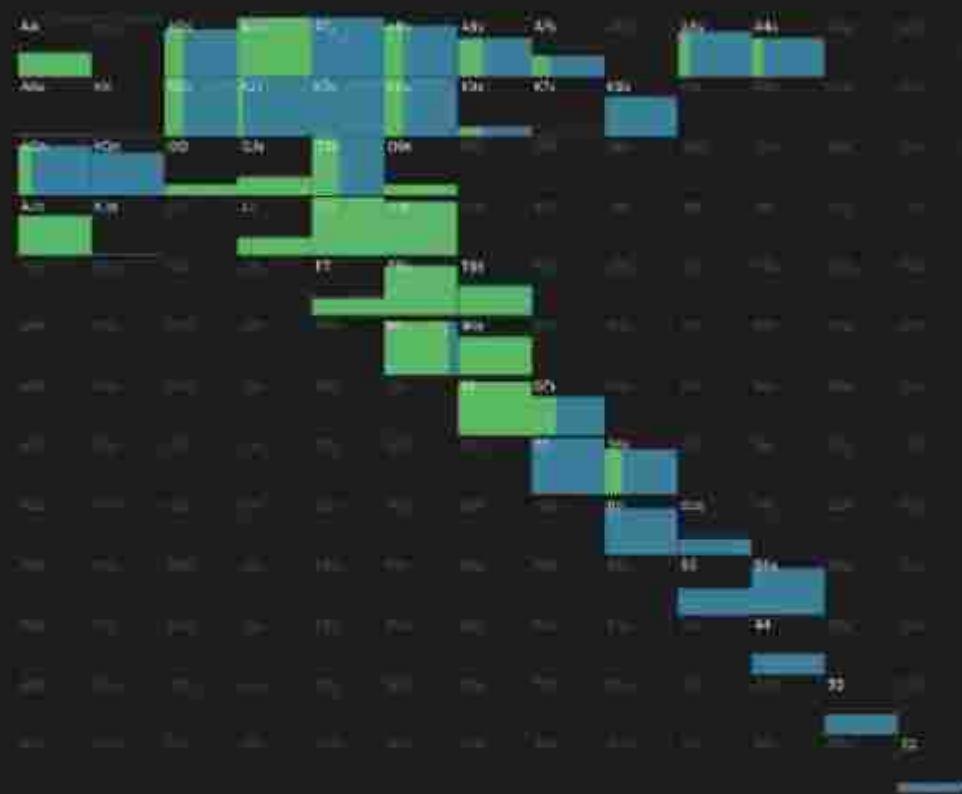
SB takes advantage of the BB's tightness by opening 100% of hands.



BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD RAISE 23 ALLIN 100	BTN FOLD CALL RAISE 26 ALLIN 100	FLOP 25  8	SB CHECK BET 5 (20%) BET 8.25 (33%) BET 12.5 (50%) BET 18.75 (75%) ALLIN 88 (352%)	BTN FOLD CALL
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[NL500 6-Max Cash, 100bb] SB vs BTN 3-bet pot. SB shoves 352% on a flop of J♠ T♠ 8♥. Which hand(s) can BTN call?

- A: A♠ Q♦
- B: K♠ Q♦
- C: K♦ J♦
- D: T♦ 9♦

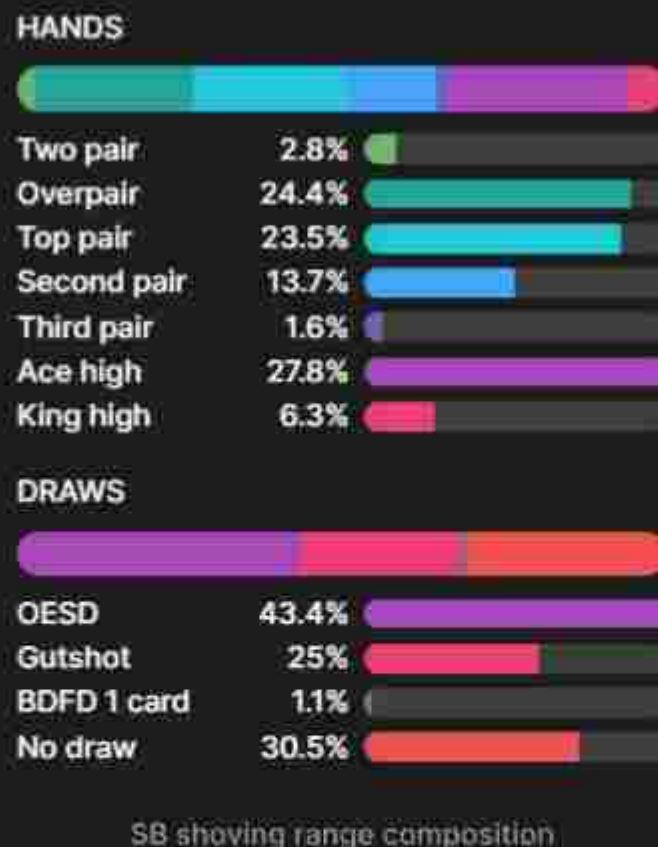


BTN strategy vs SB shove

Correct answer

A: A ♠ Q ♦

D:T♦9♦



When facing an all-in, raw equity is all that matters. Vs the SB's shoving range, A♦Q♦ and T♦9♦ have more equity.

SB shoves a range of vulnerable made hands (mainly overpairs and top pair) and AQ.



Finding themselves frequently dominated by this range, K♦J♦ and K♠Q♦ do not have the equity to call off.

BTN FOLD RAISE 2 ALLIN 25	SB FOLD CALL RAISE 6 ALLIN 25	BB FOLD CALL RAISE 6 ALLIN 25	FLOP K 7 3	4.5 BB CHECK BET 1.5 (33%) ALLIN 23 (51%)
BTN CHECK BET 1 (22%) BET 1.5 (33%) BET 2.5 (50%) BET 3.4 (76%) BET 4.5 (100%)	BB FOLD CALL RAISE 5.25 (50%) RAISE 8.5 (93%) ALLIN 23 (287%)	TURN 7.5 2	BB CHECK BET 1.5 (20%) BET 3.75 (50%) ALLIN 21.5 (287%)	BTN CHECK BET 1.5 (20%) BET 2.5 (33%) BET 3.75 (50%) BET 5.8 (75%) BET 7.5 (100%)

[Spin & Go, 25bb] BTN vs BB single-raised pot. BB check-calls a 33% flop c-bet and faces a 50% turn barrel on K ♠ 7 ♠ 3 ♠ 2 ♥. What is the strongest flush draw that starts to fold?

- A: Q ♠
- B: J ♠
- C: T ♠
- D: 8 ♠



Correct answer:

B: J ♠



Weak flushes have poor implied odds on 4-flush rivers with BTN never value betting worse than a T-high flush.

This accompanied with their reverse implied odds vs. better flushes makes them good candidates to fold turn OOP.



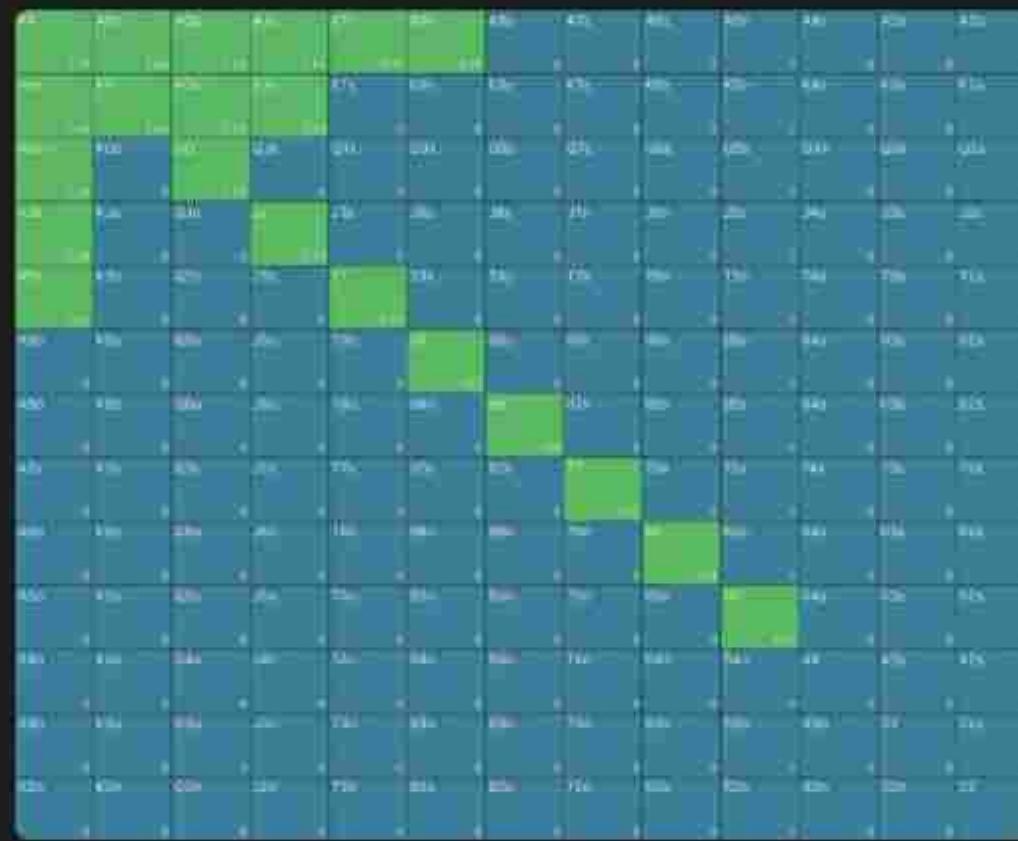
BTN turn barrel strategy with flush draws

Learning thresholds is important because they aid you in associating hand classes with their highest EV lines in any given spot.



[8-Max MTT, 7bb] Facing a UTG shove, what is the weakest pocket pair UTG1 can call?

- A: 22
- B: 55
- C: 77
- D: TT



UTG1 strategy and EV vs UTG shove

Correct answer

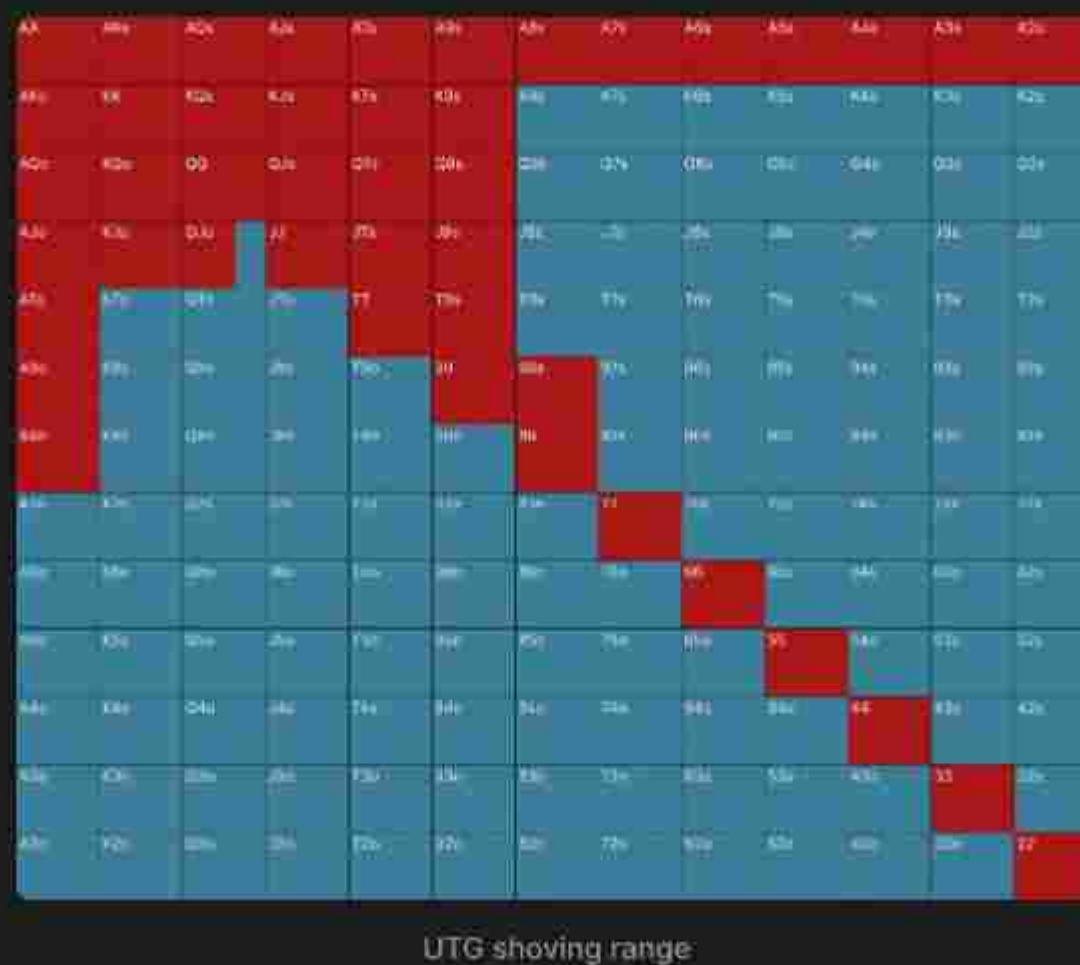
B: 55

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
61.45	62.13	58.32	55.83	52.54	49.54	45.76	44.23	43.73	43.59	43.31	42.13	41.47
AKo	KX	KQs	KJt	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
60.23	54.91	47.89	43.17	43.34	40.98	39.15	38.30	38.97	38.43	37.77	37.12	36.45
AQo	KQo	QQ	QJt	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
56.90	45.09	38.36	42.96	41.95	39.58	37.26	37.01	36.56	36.45	35.78	35.12	34.42
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
53.50	42.12	35.87	41.79	41.62	39.05	37.00	36.08	35.81	35.19	34.48	33.86	33.24
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
49.77	40.18	34.76	38.71	41.05	39.46	38.18	37.21	35.87	34.44	33.94	33.37	32.68
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
45.72	37.67	36.21	36.69	36.12	37.79	38.30	37.24	35.98	34.48	32.98	31.48	31.34
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
42.70	33.72	34.50	34.29	34.03	34.31	34.51	32.89	36.74	35.27	33.80	31.33	31.33
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
41.03	35.36	31.52	31.33	31.85	33.81	34.81	32.19	37.07	36.27	34.88	31.96	31.27
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
39.93	35.12	33.41	31.88	32.42	32.48	33.36	34.35	34.82	37.00	35.38	33.78	32.04
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
39.33	34.38	32.58	31.52	30.25	30.91	31.36	32.08	33.63	48.99	38.18	34.57	32.64
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
39.49	34.28	32.18	30.85	30.42	29.15	30.02	31.18	31.95	32.10	46.20	33.81	33.18
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
38.78	32.58	31.49	30.33	29.71	28.72	28.28	28.29	30.29	33.09	30.28	44.02	31.40
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22
38.01	27.82	35.77	29.38	28.97	27.91	27.54	28.21	29.28	33.11	27.78	41.89	

UTG1 equity facing UTG's shove

Facing the 7bb jam, UTG1 calls 7bb to win a pot of 16.5bb: pot odds of 42.4%.

UTG1 needs more equity to account for the possibility of another player waking up with a strong hand behind.



55 has 48.4% equity which is sufficient to make this a slightly +EV call (+0.13bb)

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	FLOP A 8 2	5.5	BB CHECK BET 1.8 (33%)	BTN CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (125%)
BB FOLD CALL RAISE 6.35 (50%) RAISE 10.9 (100%)	TURN 9:1 6	BB CHECK BET 1.8 (20%) BET 4.55 (50%)	BTN CHECK BET 3 (33%) BET 4.55 (50%) BET 6.8 (75%) BET 11.4 (125%) BET 15.9 (175%)	RIVER 9:1 J	BB CHECK BET 2.5 (27%) BET 5.5 (60%) BET 12 (132%) BET 27.5 (322%) ALLIN 95.7 (1057%)	BTN FOLD CALL RAISE 8.5 (43%) RAISE 14 (82%) RAISE 20 (124%) ALLIN 95.7 (1057%)

[NL500 6-Max Cash, 100bb] BTN vs BB single-raised pot. BTN c-bets 33% and the turn checks through. What is the weakest hand BTN calls vs a 27% river probe on A ♠ 8 ♠ 2 ♥ 6 ♠ J ♠?

- A: A ♠ 4 ♠ 3 ♥
- B: A ♦ 8 ♦
- C: J ♣ 7 ♣
- D: 7 ♦ 6 ♦



BTN river strategy

Correct answer:

D: 7♦ 6♦



BTN's range contains only 21% flushes. Presented with great pot odds vs a 27% probe, they defend 67% of their range.

All the listed hands call despite seeming weak on the 4-flush texture.

SB FOLD CALL RAISE 2 ALLIN 25	BB FOLD CALL RAISE 5 RAISE 7.5 ALLIN 25	FLOP 4 A 9 2	BB CHECK BET 1.3 (32%) BET 2.4 (60%) ALLIN 23 (575%)	SB CHECK BET 1 (25%) BET 1.75 (44%) BET 2.75 (69%) BET 4 (100%) BET 6 (150%)
BB FOLD CALL RAISE 4 (50%) RAISE 7 (100%) ALLIN 23 (100%)	TURN 6 J	BB CHECK BET 1.2 (22%) BET 3 (50%) ALLIN 22 (367%)	SB CHECK BET 1.5 (25%) BET 2.85 (44%) BET 4.15 (69%) BET 6 (100%) BET 9 (150%)	RIVER 6 6 BB CHECK BET 1 (17%) BET 2.5 (42%) BET 4 (67%) BET 5.5 (92%) BET 9 (150%)

[HU SnG, 25bb] SB (IP) vs BB single raised pot. BB check-calls a 25% c-bet and the turn checks through. The board is A ♠ 9 ♥ 2 ♦ J ♠ 6 ♣.
 Which two pair combo(s) check(s) river?

- A: A ♥ 6 ♥
- B: J ♦ 9 ♦
- C: 9 ♠ 6 ♠
- D: J ♥ 2 ♠



Correct answer:

A: A♥ 6♥



A6, A2 and 62 all block SB's check backs which are primarily centered around 6x and 2x.

This increases the likelihood that they face a bet and have an opportunity to check-shove.

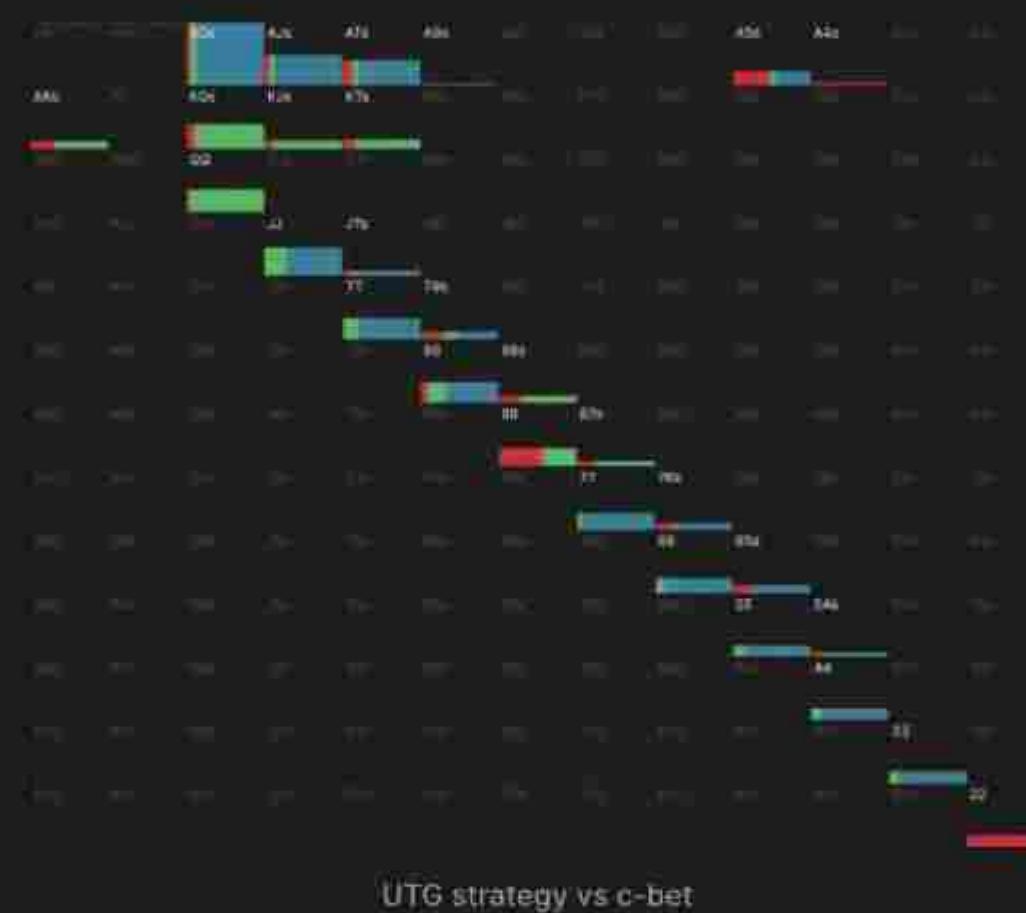


$J\spadesuit 9\spadesuit$, $9\spadesuit 6\spadesuit$ and $J\heartsuit 2\spadesuit$ all block SB's value bets which consist mainly of Jx and $9x$ and prefer to seek value themselves.

UTG	HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 6.5	CALL	RAISE 7.5	RAISE 20	RAISE 20
ALLIN 100	ALLIN 100	RAISE 6.5 ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100
UTG	FLOP 16.5	UTG	BTN	UTG	
FOLD		CHECK	CHECK	FOLD	
CALL		BET 5.45 (33%)	BET 3.3 (20%)	CALL	
RAISE 20	K 8 2	ALLIN 92.5 (561%)	BET 5.45 (33%)	RAISE 15.05 (35%)	
ALLIN 100			BET 8.25 (50%)	RAISE 20.5 (55%)	
			BET 12.4 (75%)	RAISE 28.2 (83%)	
			BET 20.6 (125%)	RAISE 38.35 (120%)	

[NL50 6-Max Cash, 100bb] BTN vs UTG 3-bet pot. BTN c-bets 33% on a board of K♠ 8♥ 2♦. What is the strongest hand UTG starts to fold?

- A: K♣ T♣
- B: A♦ Q♦
- C: J♠ J♣
- D: J♦ T♦



Correct answer:

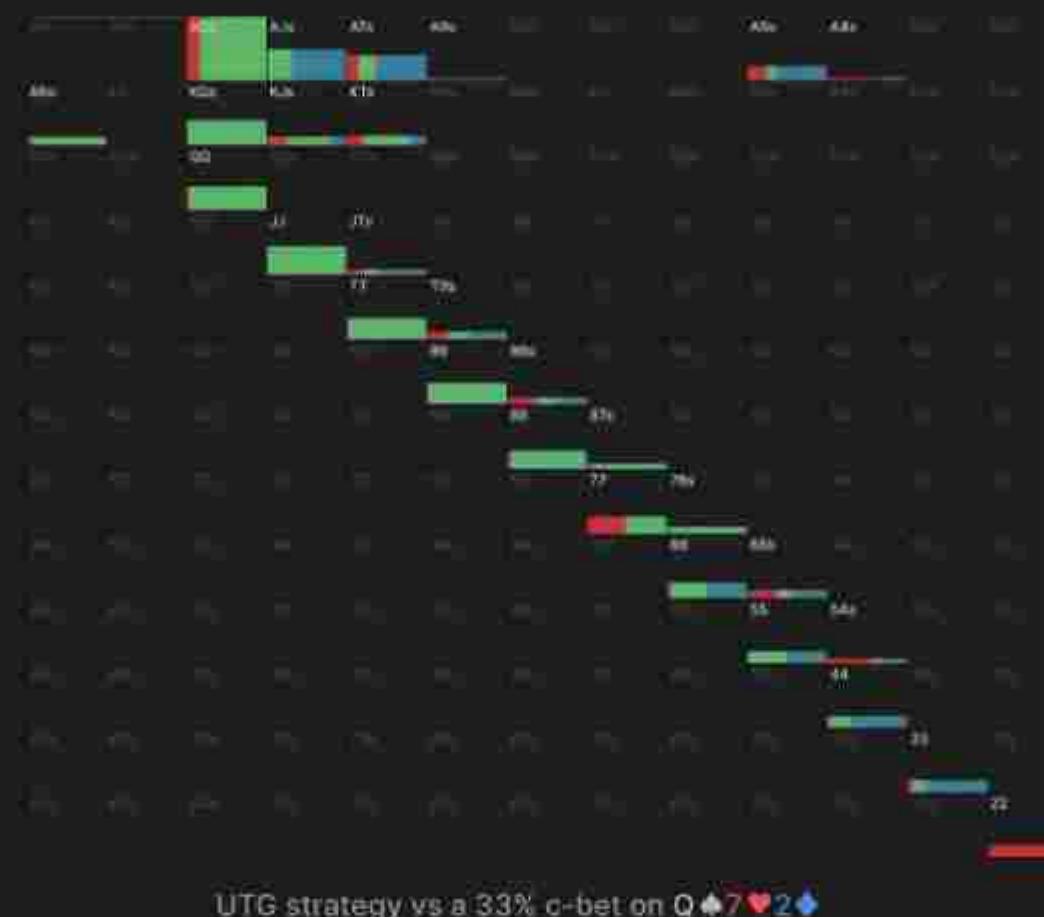
C: J ♠ J ♣



J♦ J♣ facing a 33% c-bet

On boards that favour the 3-bettor, UTG is forced to overfold a large chunk of their range. Despite getting fantastic pot odds vs this bet size, UTG folds 61% of their range.

Having 45% equity and very poor equity realization, JJ can fold the flop.



UTG strategy vs a 33% c-bet on Q♦7♥2♦

Examining Q♦7♥2♦: a similar flop that doesn't favor the BTN as much, we see UTG's fold frequency decrease from 61% to 24%.



[NL500 6-Max Cash, 200bb] HJ vs BB single-raised pot. BB check-calls a 130% c-bet, the turn checks though and BB check-shoves vs a 61% river bet on a board of Q♦ J♦ 4♥ 7♦ 2♠. Why does HJ defend 19% of their range when MDF is only 14%?

- A: They don't. The frequencies displayed by the solver don't reflect reality
- B: HJ's range contains 19% nut flushes which always call
- C: BB is over-bluffing
- D: HJ over-calls to prevent BB from having a +EV shove with bluffs with good blockers



Correct answer:

B: HJ's range contains 19% nut flushes which always call



BB's shoving range

BB's shoving range is made up of exclusively nut flushes and hands containing the nut flush blocker.

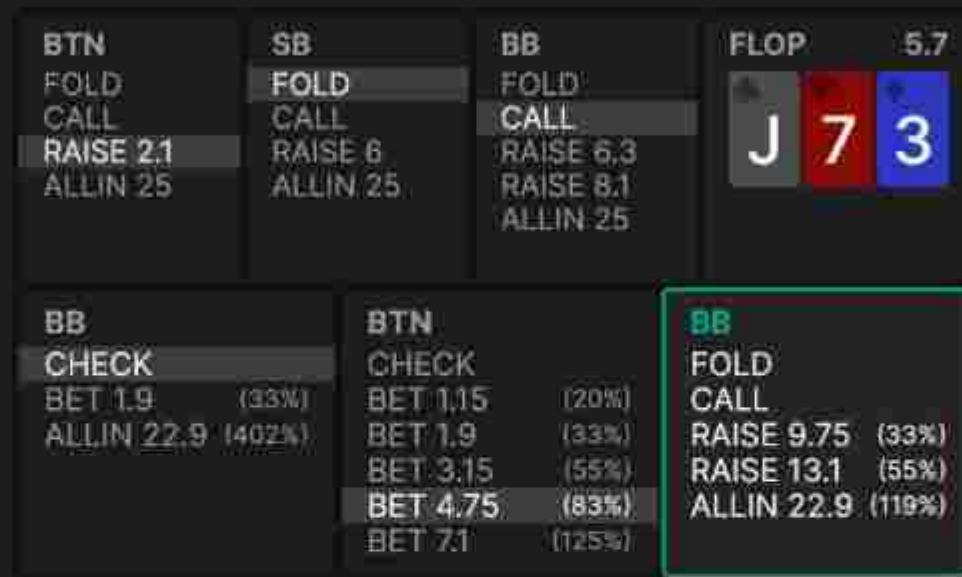
This enables them to jam a perfectly polarized range by neutralizing HJ's own nut flush combos. They are never in range due to being blocked by BB's entire shoving range.



The solver does not display the effect of blockers on calling frequencies.

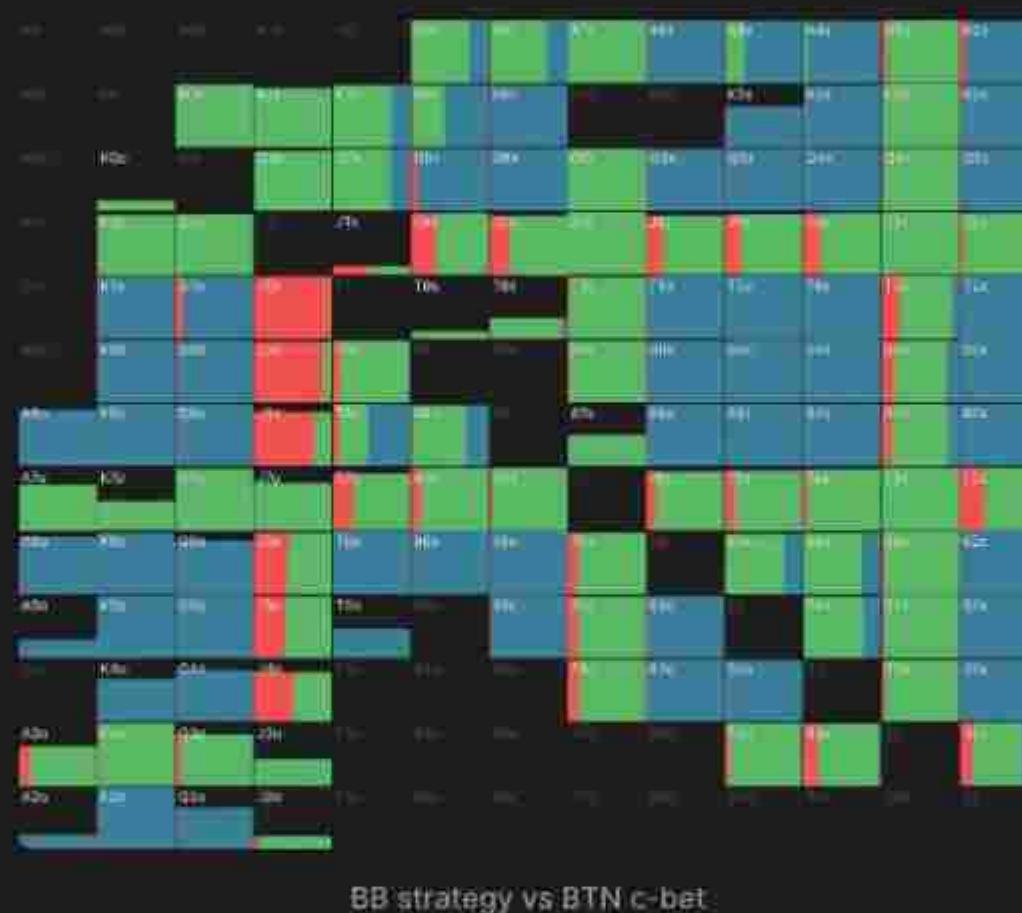
"*Ghost combos*" or hands that HJ can never hold due to blocker effects account for part of the 19% calling range.

HJ actually defends at MDF (14%) when accounting for this effect.



[8-Max MTT, 25bb] BTN vs BB single-raised pot. Which hand(s) can BB fold vs an 83% c-bet on J♦ 7♥ 3♦?

- A: 6♥ 5♦
- B: K♣ Q♣
- C: 7♦ 4♠
- D: K♠ 3♠



Correct answer:

A: 6♥ 5♦



At short stack depths, implied odds are minimal with so little money behind.

The power of gutshots come from their ability to make nutted hands and cooler other very strong hands for heaps of chips. This is not possible at low SPRs.

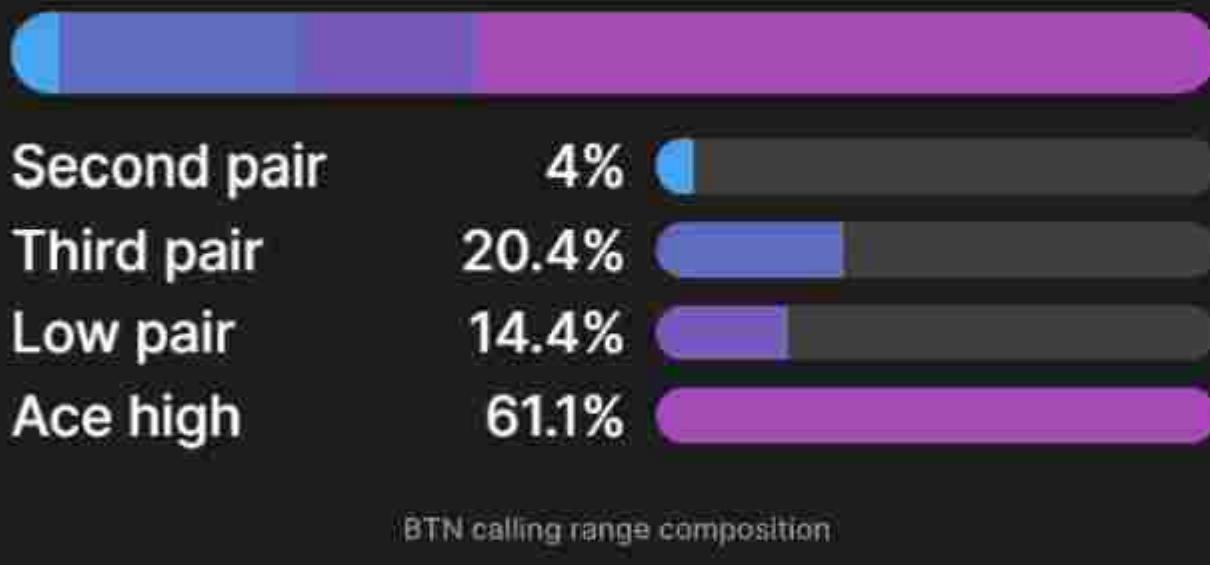
K♣ Q♣ is already ahead of bluffs (unlike 65o), and can easily stack off if it hits a pair.

BTN FOLD RAISE 2 ALLIN 25	SB FOLD CALL RAISE 6 ALLIN 25	BB FOLD CALL RAISE 6 ALLIN 25	FLOP Q 8 2	4.5	BB CHECK BET 1.5 (33%) ALLIN 23 (91%)	BTN CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (78%) BET 4.5 (100%)
BB FOLD CALL RAISE 4.25 (50%) RAISE 7.5 (100%) ALLIN 23 (33%)	TURN 6.5 6	BB CHECK BET 1.3 (20%) BET 3.25 (50%) ALLIN 22 (33%)	BTN CHECK BET 1.3 (20%) BET 2.15 (33%) BET 3.25 (50%) BET 4.9 (75%) BET 6.5 (100%)	RIVER 6.5 4	BB CHECK BET 1 (15%) BET 2.5 (38%) BET 4 (62%) BET 5.5 (85%) BET 10 (154%)	BTN FOLD CALL RAISE 4 (35%) RAISE 5.5 (53%) RAISE 11.5 (124%) ALLIN 22 (242%)

[Spin & Go, 25bb] BTN vs BB single-raised pot. BB check-calls a min flop c-bet and the turn checks through. The board is Q ♠ 8 ♥ 2 ♦ 6 ♣ 4 ♣. Facing a block bet on the river, which hand class makes up the biggest part of BTN's calling range?

- A: Top pair
- B: Second pair
- C: Third pair
- D: Ace high

HANDS



Correct answer:

D: Ace high



BTN river strategy

Getting great pot odds vs this min-bet, BTN defends 82% of their range.



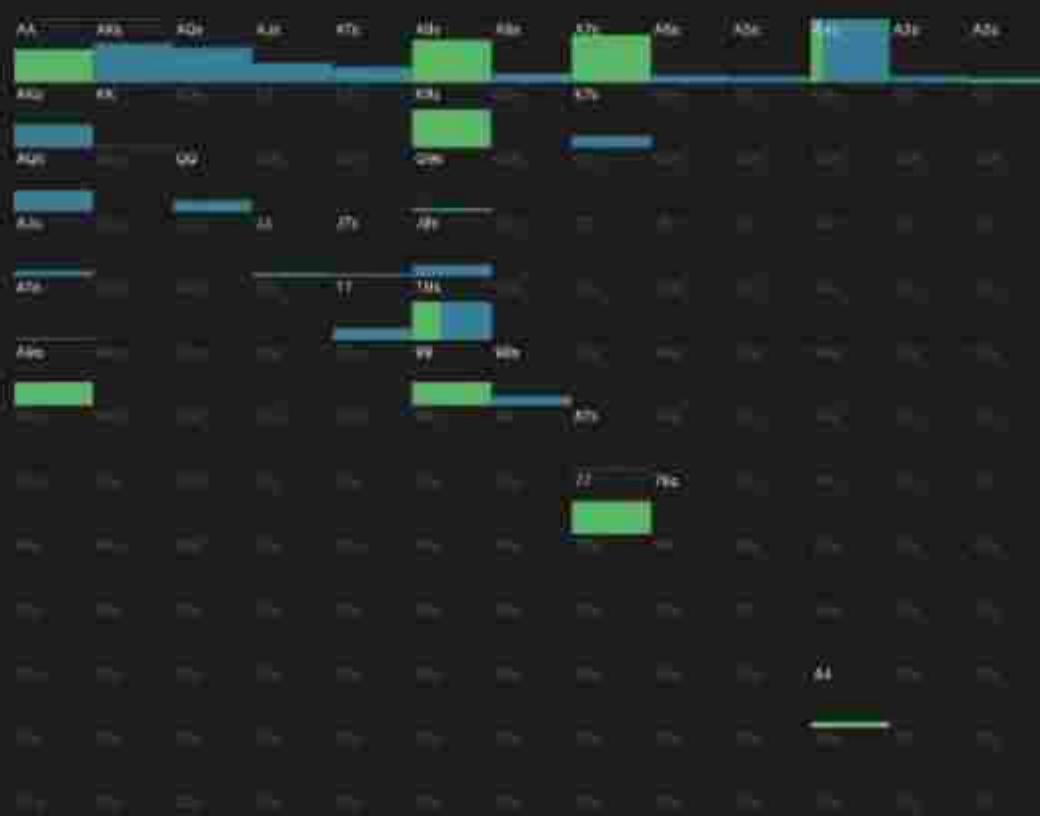
BTN barrels the vast majority of their top pair on the turn and arrives with very little on the river. Top pair raises for value vs this size.

Despite calling all board pairs, BTN's range contains much more Ace high than these hands.

	HJ	RAISE 2.5	CO	FOLD	BTN	CALL	SB	FOLD	BB	FOLD
FLOP 6.5	9♦ 7♦ 4♦	HJ	CHECK	BTN	BET 2.15 (33%)	HJ	CALL	TURN 10.8	A♦	HJ
BTN	BET 18.9 (175%)	HJ	CALL	RIVER 48.6	2♦	HJ	CHECK	BTN	ALLIN 76.45 (157%)	HJ Take action

[NL50 6-Max Cash, 100bb] HJ vs BTN single-raised pot. HJ check-calls a 33% flop bet and a 175% turn bet. Facing a river shove on 9♠ 7♥ 4♠ A♦ 2♦, which of these hands call(s)?

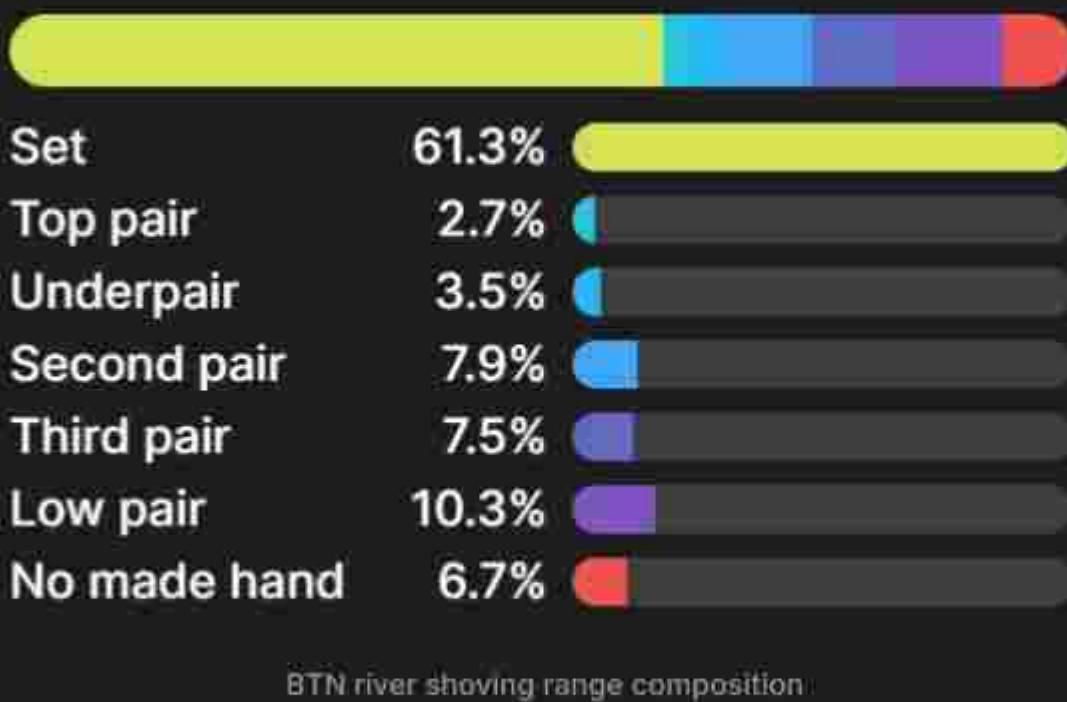
- A: A♥ K♥
- B: Q♠ Q♥
- C: A♣ 4♣
- D: K♦ 9♦



Correct answer

D: K♦ 9♦

HANDS



BTN is polarized to sets and bluffs.

K♦9♦ is an excellent call vs this range blocking BTN's highest frequency set (99).



BTN river strategy

A♥K♥, Q♠Q♥ and A♣4♣ all lack sufficient blocker properties to be able to call down vs such a strong line.

BTN FOLD CALL RAISE 2 ALLIN 25	SB FOLD CALL RAISE 5 ALLIN 25	BB FOLD CALL ALLIN 12	FLOP 4.5 6 5 3	BB CHECK BET 1.5 (32%) ALLIN 10 (22%)	BTN CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (76%) BET 4.5 (100%)
TURN 4.5 4	BB CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (76%) BET 4.5 (100%)	BTN FOLD CALL RAISE 5.2 (33%) ALLIN 10 (86%)	RIVER 9 2	BB CHECK BET 1 (31%) BET 3.5 (39%) ALLIN 7.75 (86%)	BTN FOLD CALL

[Spin & Go, 25bb] BTN vs BB single-raised pot. The flop checks through and BTN calls a 50% probe on the turn. What is BTN's calling frequency vs a river shove on 6♦ 5♦ 3♣ 4♠ 2♣?

- A: 0%
- B: 28%
- C: 46.9%
- D: 100%



BTN strategy vs BB shove

Correct answer

D: 100%



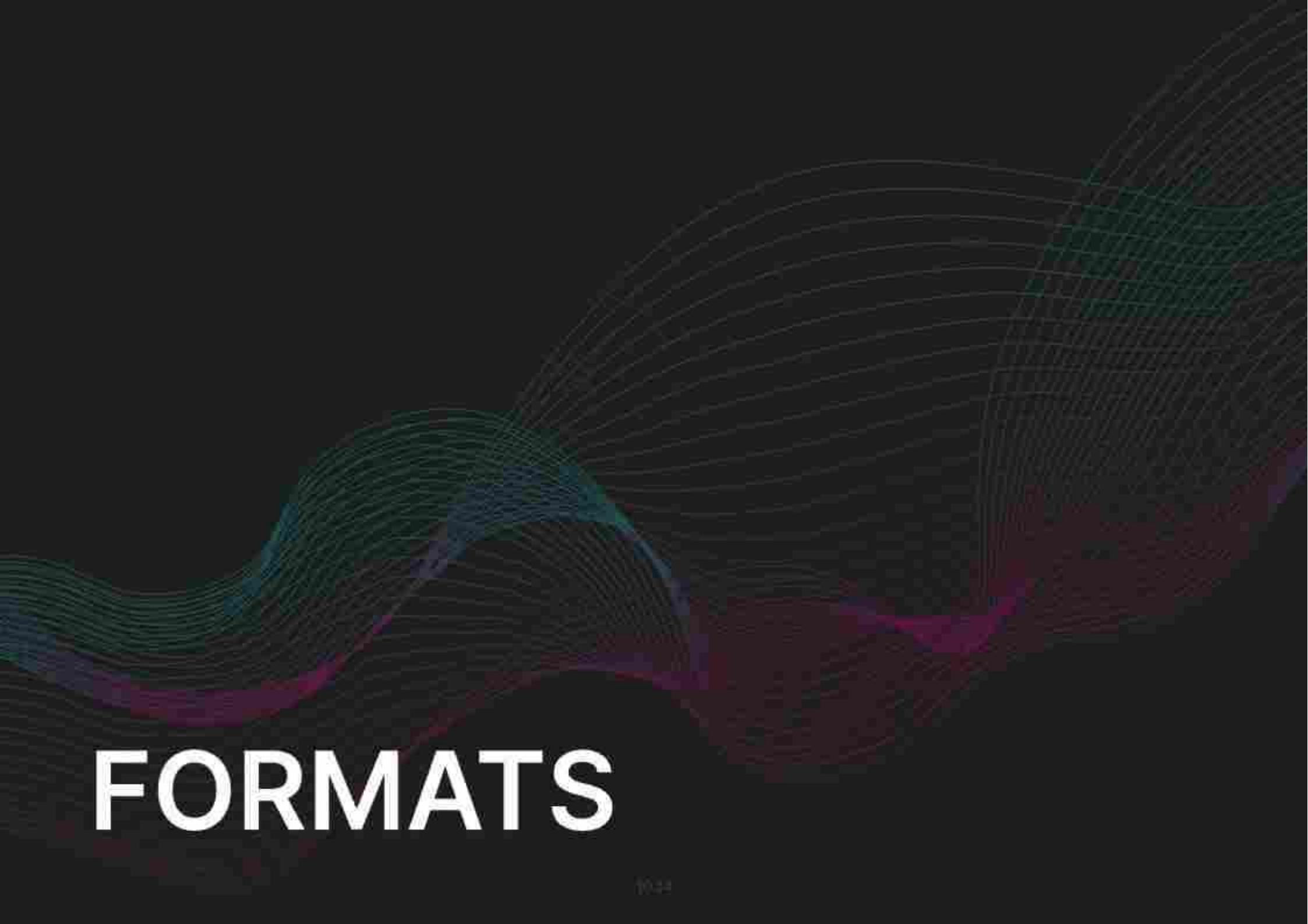
BB river strategy

BB shoves nearly their entire range.



Neither player has enough straights to make the opposing player consider folding.

Therefore, the best strategy is to shove and try and induce a mistake from your opponent!



FORMATS

FORMATS



Poker has various formats, including Cash games, MTTs, Spins, and HUSnG. However, the fundamental principles of poker strategy remain consistent across all formats.

Exploring different formats can introduce new and valuable ideas that can improve your gameplay. This chapter is divided into four subchapters and focuses on specific spots relating to each format.

SB FOLD CALL RAISE 3 ALLIN 100	BB CHECK RAISE 3 RAISE 5 ALLIN 100	FLOP: 2 	SB CHECK BET 1.5 (75%) BET 3 (150%) ALLIN 99 (4950%)	BB CHECK BET 1.5 (75%) BET 3 (150%) ALLIN 99 (4950%)
TURN 2 	SB CHECK BET 1.5 (75%) BET 3 (150%) ALLIN 99 (4950%)	BB CHECK BET 1.5 (75%) BET 3 (150%) ALLIN 99 (4950%)	RIVER 2 	SB CHECK BET 1 (50%) BET 1.5 (75%) BET 3 (150%) ALLIN 99 (4950%)
				BB FOLD CALL

[NL50 6-Max Cash, 100bb] SB vs BB limped pot. The pot is checked to the river on a board of A♠ K♥ Q♦ J♣ T♠. What is SB's river strategy?

- A: Check 100% of their range
- B: The EVs of checking and shoving are the same
- C: Shove 100% of their range



Correct answer:

C: Shove 100% of their range

Player	EV	Equity	EQR	Combos
SB ♚	▲ 1.9	▼ 50 %	▲ 190 %	▼ 69.3
BB	▼ 0	▲ 50 %	▼ 0 %	▲ 483.3

EV, equity and EQR comparison

The 50NL sims use a rake structure of 5% with a 4bb cap. By shoving, SB forces BB off the chop. If BB calls, the pot is split (each player receives 1bb) and both pay half the rake (2bb each). This results in an EV of -1bb for both players.

BB never takes a -EV action and therefore folds 100% of hands, resulting in an EV of 0bb for the BB and 1.9bb (pot after rake) for the SB.



Different rake structures have different strategies. At NL500 (5% 0.6bb cap), both players check 100% of hands (*answer A:*) as they cannot increase the rake past the size of the pot (2bb). This is the minimum requirement to force the other player off the chop.

Betting would simply decrease both players' EVs. In an unraked or time raked game, the EVs of checking and shoving are the same (*answer B:*).

UTG FOLD RAISE 2.5 ALLIN 200	HJ FOLD CALL RAISE 8.5 ALLIN 200	CO FOLD CALL RAISE 8.5 ALLIN 200	BTN FOLD CALL RAISE 8.5 ALLIN 200
SB FOLD CALL RAISE 12 ALLIN 200	BB FOLD CALL RAISE 14 ALLIN 200	FLOP 6.5 	UTG CHECK BET 2.15 (33%) BET 3.25 (50%) BET 4.9 (75%) BET 8.1 (125%) ALLIN 197.5 (3038%)
			BTN CHECK BET 2.15 (33%) BET 3.25 (50%) BET 4.9 (75%) BET 8.1 (125%) ALLIN 197.5 (3038%)

[NL500 6-Max Cash, 200bb] UTG vs BTN single-raised pot. UTG checks a flop of Q ♠ T ♠ T ♥. Which combo of 22 does the BTN bet most frequently?

- A: 2 ♠ 2 ♥
- B: 2 ♠ 2 ♦
- C: 2 ♥ 2 ♦
- D: 2 ♦ 2 ♣

2♦ 2♥ 01		2♦ 2♦ 01		2♥ 2♦ 01	
All-in 197.5 (3038%)	0	All-in 197.5 (3038%)	0	All-in 197.5 (3038%)	0
Bet 8.1 (125%)	2	Bet 8.1 (125%)	2	Bet 8.1 (125%)	2
Bet 4.9 (75%)	43.3	Bet 4.9 (75%)	43.3	Bet 4.9 (75%)	43.3
Bet 3.25 (50%)	38.8	Bet 3.25 (50%)	38.8	Bet 3.25 (50%)	38.8
Bet 2.15 (33%)	3.6	Bet 2.15 (33%)	3.6	Bet 2.15 (33%)	3.6
Check	12.3	Check	12.3	Check	12.3
2♦ 2♣ 01		2♥ 2♣ 01		2♦ 2♣ 01	
All-in 197.5 (3038%)	0	All-in 197.5 (3038%)	0	All-in 197.5 (3038%)	0
Bet 8.1 (125%)	2	Bet 8.1 (125%)	2	Bet 8.1 (125%)	2
Bet 4.9 (75%)	43.3	Bet 4.9 (75%)	43.3	Bet 4.9 (75%)	43.3
Bet 3.25 (50%)	38.8	Bet 3.25 (50%)	38.8	Bet 3.25 (50%)	38.8
Bet 2.15 (33%)	3.6	Bet 2.15 (33%)	3.6	Bet 2.15 (33%)	3.6
Check	12.3	Check	12.3	Check	12.3

BTN strategy with 22.

Correct answer:

C: 2♥ 2♦



It's normally desirable to hold flush draw blockers when bluffing, but consider your outs.

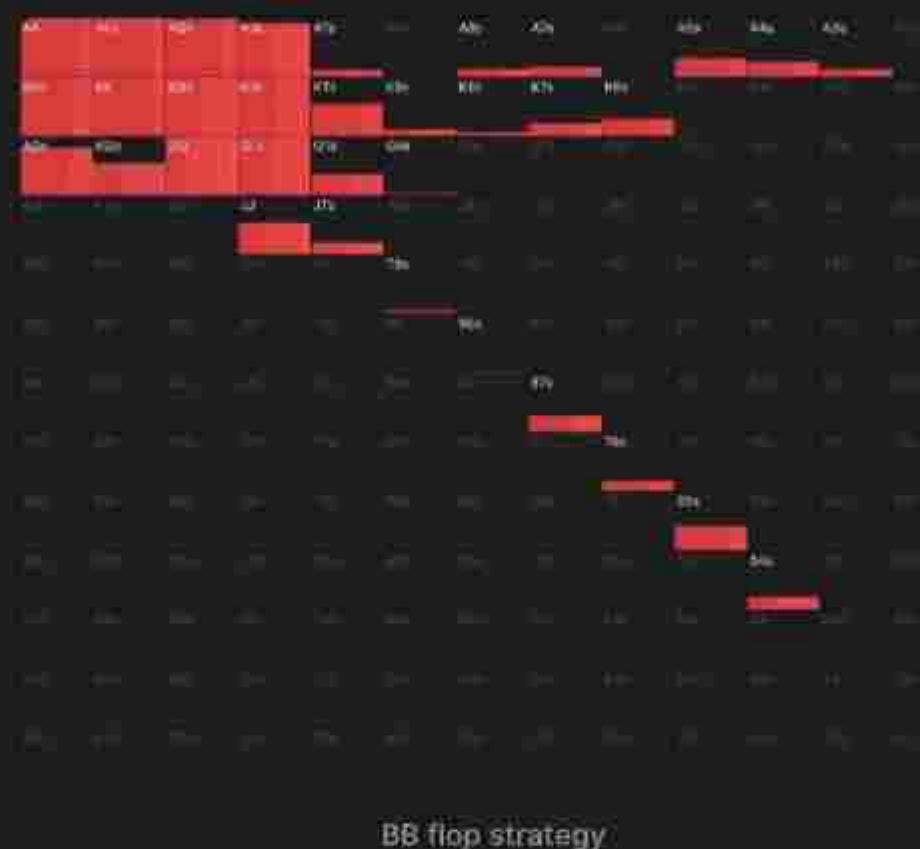
On a paired board, 22 prefers betting without a flush blocker because you can make a boat on the 2♠ and cooler flushes.

On unpaired boards, flushes improve to beat 22 on a 2♠ making it a more valuable card to hold.

UTG	H.J	CO	BTN	SB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 6.5	CALL	CALL	CALL
ALLIN 100	ALLIN 100	RAISE 6.5	RAISE 7.5	RAISE 13
		ALLIN 100	ALLIN 100	ALLIN 100
BB	UTG	BTN	FLOP	BB
FOLD	FOLD	FOLD	30.5	CHECK
CALL	CALL	CALL		BET 6.1 (20%)
RAISE 14	RAISE 28	RAISE 27		BET 10.05 (33%)
ALLIN 100	ALLIN 100	ALLIN 100		BET 15.25 (50%)
				BET 22.9 (75%)
				BET 38.1 (125%)

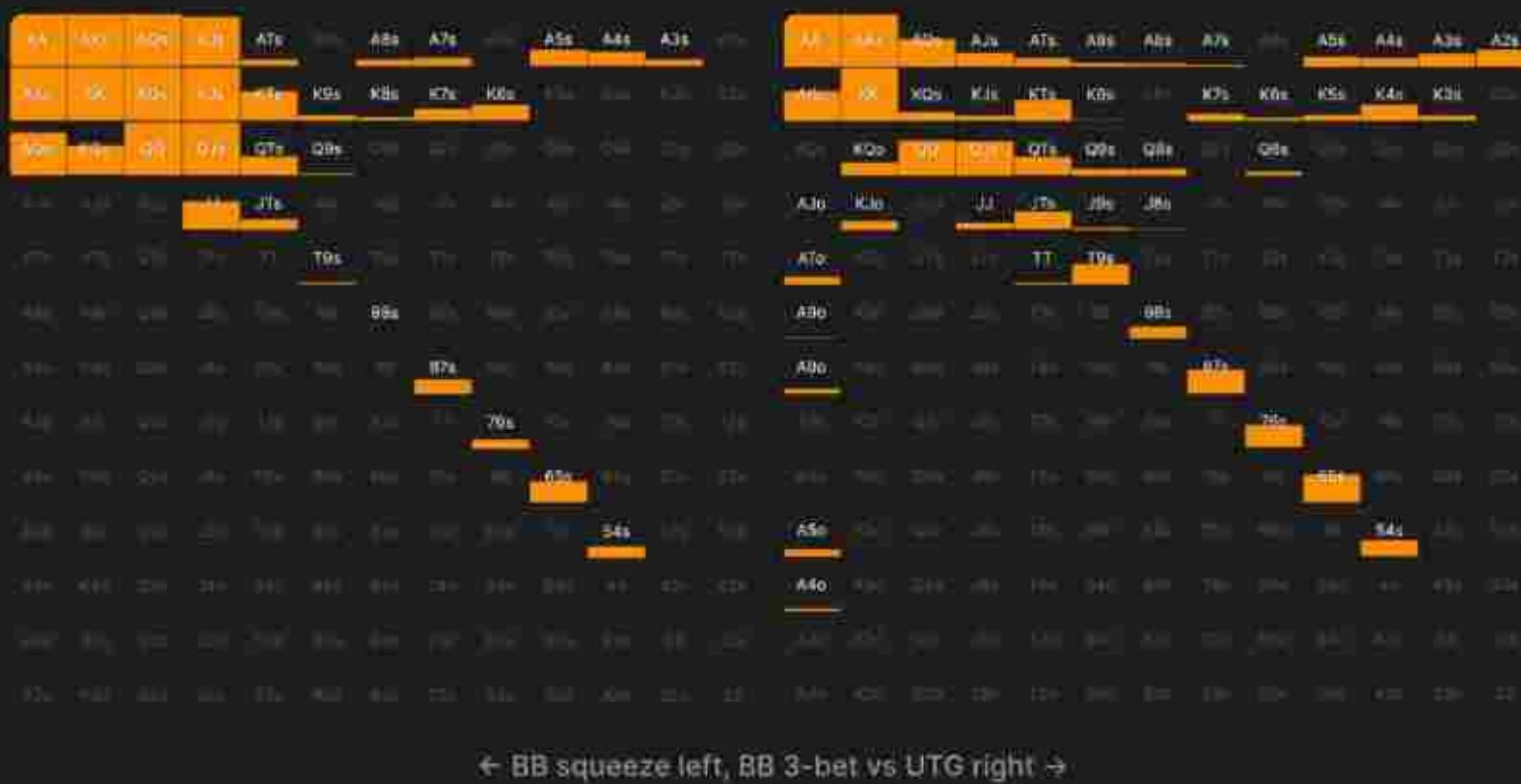
[NL500 6-Max Cash, 100bb] UTG opens, BTN calls, BB squeezes, UTG folds and BTN calls again. The flop comes Q ♠ 9 ♥ 6 ♠.
 Which best describes BB's strategy?

- A: C-bet 100% of their range for a small size (*50% and below*)
- B: Check 100% of their range
- C: Bet 65% of their range for a small size (*50% and below*)
- D: Bet 35% of their range for a big size (*above 50%*)



Correct answer:

- A: C-bet 100% of their range for a small size
(50% and below)



With 2 players to act, BB's squeeze is called more often than a 3-bet.

BB therefore squeezes a more linear range.



BB's linear range interacts much more favorably with this board than a polar one.

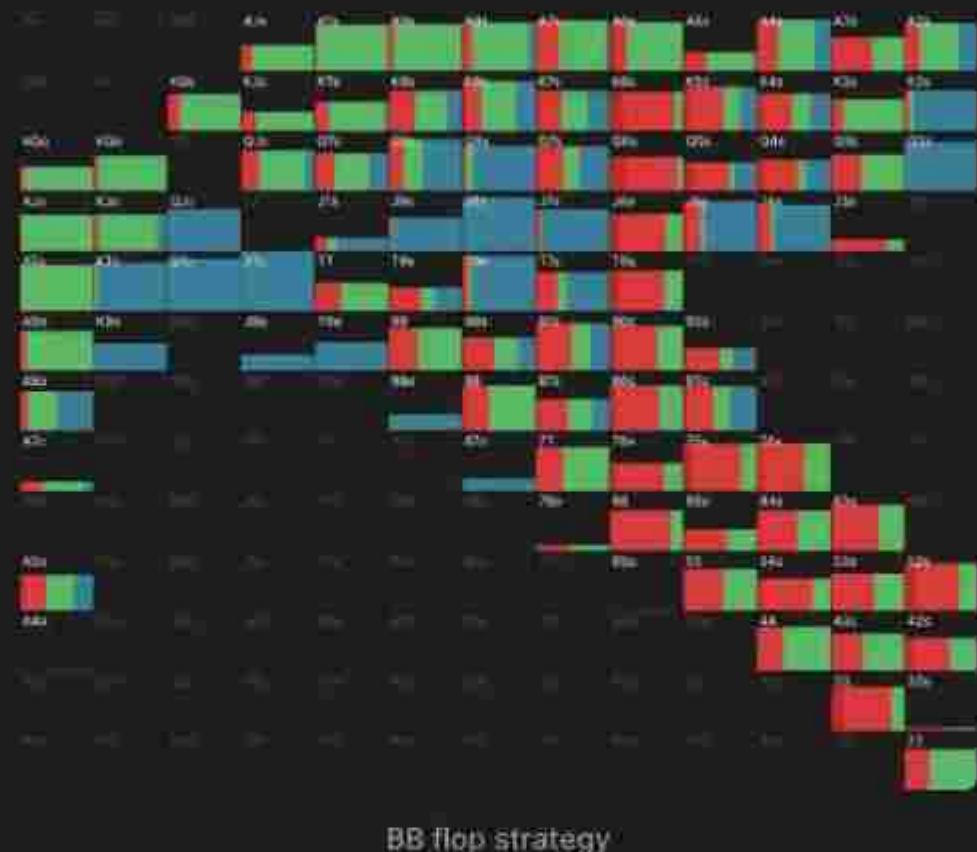
BB increases their c-bet frequency accordingly.

UTG FOLD RAISE 2 ALLIN 100	HJ FOLD RAISE 2 ALLIN 100	CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 7.5 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100
BB FOLD CALL RAISE 13.5 ALLIN 100	FLOP 5.1 	BB CHECK BET 1.7 (33%) ALLIN 97.7 (1916%)	CO CHECK BET 1.7 (33%) BET 2.55 (50%) BET 3.8 (75%) BET 6.4 (125%) ALLIN 97.7 (1916%)	BB FOLD CALL RAISE 5.95 (50%) RAISE 10.2 (100%) ALLIN 97.7 (1129%)

[NL500 6-Max Cash, 100bb] CO vs BB single-raised pot.

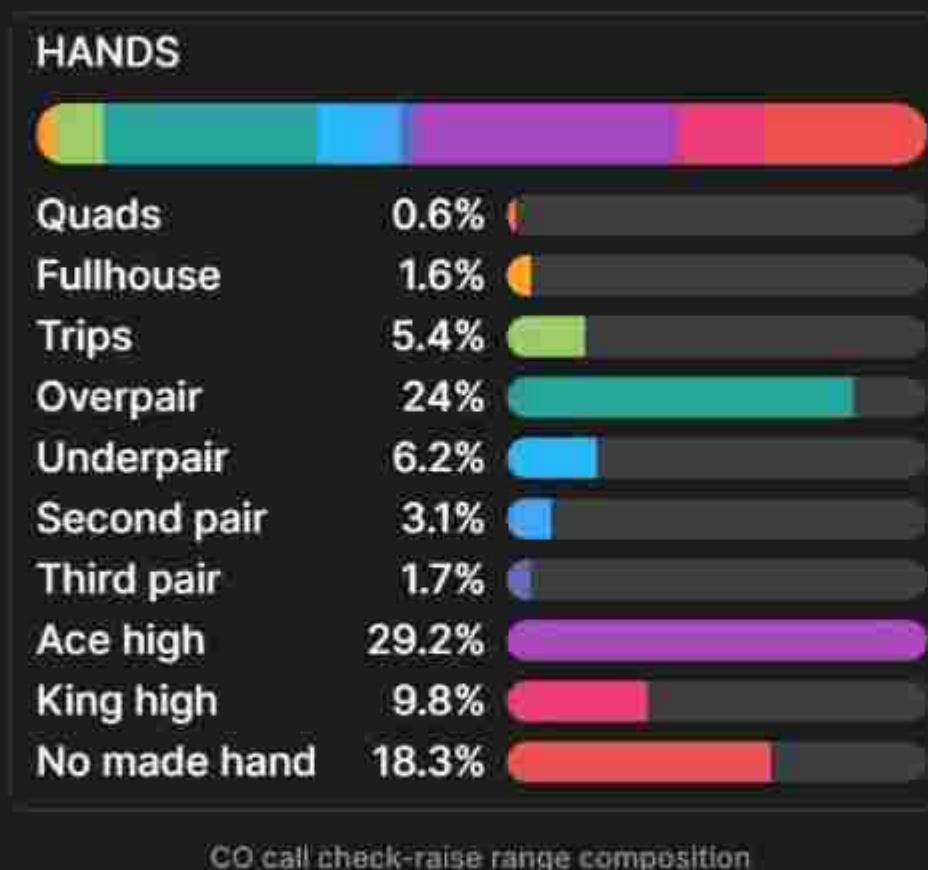
Facing a 33% c-bet on , which rank of trips raises least often?

- A: A6
- B: Q6
- C: 96
- D: 65



Correct answer:

A: A6



CO has very few made hands on 6♥ 6♦ 3♠. The majority of their continue range vs check-raise is comprised of strong overcards and backdoor hands.



A6 often delays its check-raise until the turn or river because it blocks the majority of CO's calls on the flop.

UTG	HJ	CO	BTN
FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 6.5	CALL	CALL
ALLIN 100	ALLIN 100	RAISE 6.5	RAISE 7.5
		ALLIN 100	ALLIN 100
SB	BB	FLOP 4.5	
FOLD	FOLD	W W W	BB
CALL	CALL		CHECK
RAISE 10	RAISE 12		BET 1.5 (33%)
ALLIN 100	ALLIN 100		ALLIN 98 (2178%)

[NL500 6-Max Cash, 100bb] UTG vs BB single-raised pot.

On which board does the BB donk?

- A: A♥ K♥ T♥
- B: A♦ 5♥ 2♥
- C: 8♥ 6♦ 3♥
- D: 5♥ 3♥ 3♦

Flops	Strategy	Check	Bet 1.5 (33%)	Allin 98 (2178%)
A♥K♥T♥		73.4	26.6	0
A♦5♥2♥		99.4	0.6	0
8♥6♦3♥		99.6	0.4	0
5♥3♥3♦		99.8	0.2	0

BB flop strategies

Correct answer:

A: A♥K♥T♥

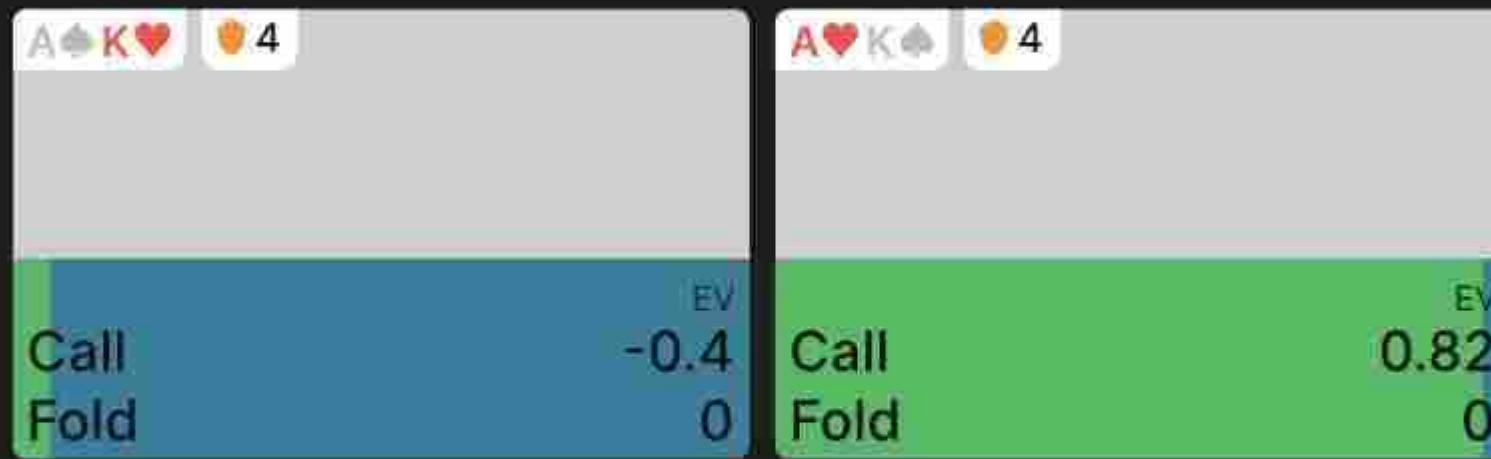


BB needs a nut advantage to justify donking. A♥K♥T♥ blocks many of UTG's flushes and creates this effect. This is not the case on the other 3 boards.

CO FOLD RAISE 2.3 ALLIN 100	BTN FOLD CALL RAISE 7.5 ALLIN 100	SB FOLD CALL RAISE 21 ALLIN 100	BB FOLD CALL RAISE 20 ALLIN 100	CO FOLD CALL RAISE 21 ALLIN 100
BTN FOLD CALL ALLIN 100	FLOP 43.5 	CO CHECK BET 4.35 (10%) BET 10.9 (25%) BET 21.75 (50%) BET 32.6 (75%) BET 43.5 (100%)	BTN FOLD CALL RAISE 33.75 (35%) RAISE 46.8 (55%) ALLIN 79 (104%)	CO FOLD CALL

[NL500 6-Max Cash, 100bb] CO vs BTN 4-bet pot. CO c-bets 25% and faces a shove on T ♠ 9 ♠ 2 ♥. Which hand(s) call?

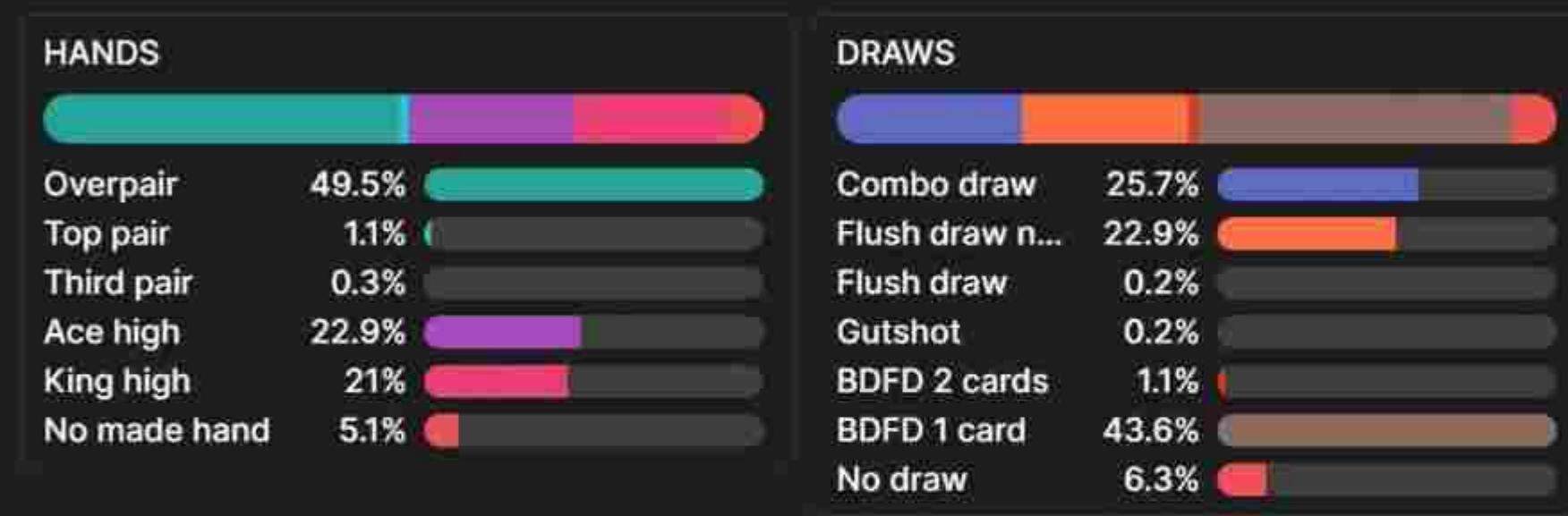
- A: A ♠ K ♥
- B: A ♥ K ♠
- C: Q ♥ J ♥
- D: 8 ♦ 8 ♣



CO strategy and EV vs shove with A♦K♥ and A♥K♠

Correct answer:

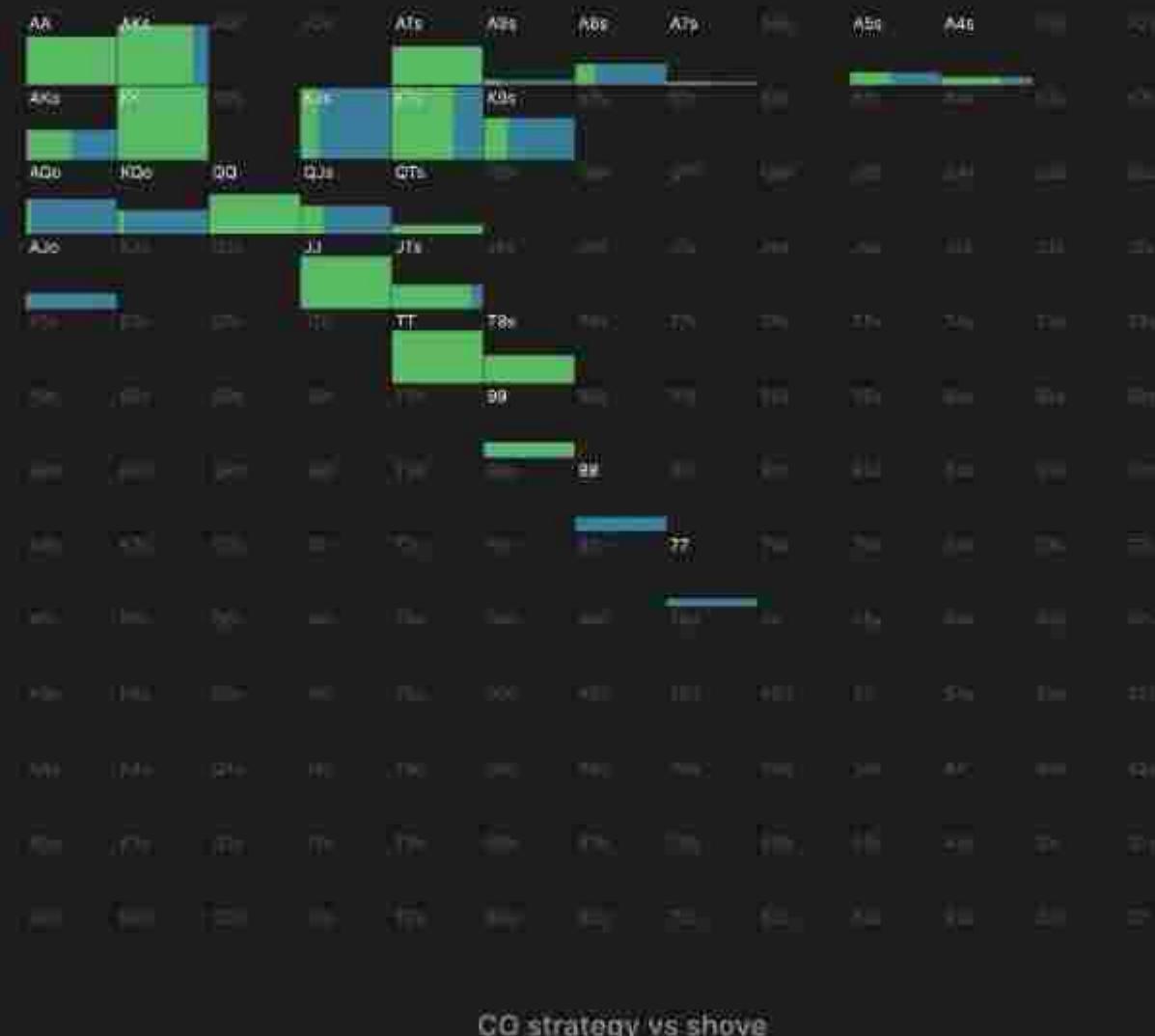
B: A♥ K♠



BTN shoving range

A♥K♠ unblocks and dominates CO's nut flush draw shoves. A♠K♥ blocks these hands and makes it a worse call.

Q♥J♥ and 8♦8♣ are dominated by QQ and JJ (CO's primary made hand shoves).



CG strategy vs shove

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 100	RAISE 7.5	RAISE 21	RAISE 20
	ALLIN 100	ALLIN 100	ALLIN 100

CO	FLOP	16.5	CO	BTN	CO
FOLD			CHECK	CHECK	FOLD
CALL			BET 5.45 (33%)	BET 3.3 (20%)	CALL
RAISE 21	K 9 5	16.5	ALLIN 92.5 (561%)	BET 5.45 (33%)	RAISE 15.05 (35%)
ALLIN 100				BET 8.25 (50%)	RAISE 20.5 (55%)

[NL500 6-Max Cash, 100bb] BTN vs CO 3-bet pot.
 How often should CO raise vs a 33% c-bet on K♠ 9♥ 5♦ ?

- A: 2.2%
- B: 7.2%
- C: 12.2%
- D: 17.2%



Correct answer:

D: 17.2%



CO strategy and EV vs c-bet with 55

It is a common misconception that unfavorable boards are raised infrequently.

A robust check-raise range is required to maximize value with strong hands OOP.

If CO fails to implement this, BTN can exploit them by playing more passively on future streets.



BTN FOLD RAISE 2.5 ALLIN 100	SB FOLD RAISE 12	BB FOLD RAISE 23	BTN FOLD CALL RAISE 26	FLOP 25 Q ♠ 9 ♥ 4 ♥	SB CHECK BET 8.25 (33%) BET 16.5 (66%) BET 32.5 (130%) ALLIN 88 (352%)
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[NL500 6-Max Cash, 100bb] SB vs BTN 3-bet pot. SB splits their c-betting range between 33% and 66% on Q ♠ 9 ♥ 4 ♥.

Which option best describes the 2 ranges?

- A: 66%: two pair and sets, 33%: overpairs and top pair
- B: 66%: strong top pair and overpairs, 33%: sets and weak top pair
- C: 66%: weak top pair, 33%: strong top pair +
- D: Made hands mix freely between both sizes



Correct answer:

B: 66%: strong top pair and overpairs, 33%: sets and weak top pair



Overpairs and AQ are ahead of 91% of BTN's range but have less than 80% equity.

Their vulnerability incentivizes them to bet big and rush in money.

Sets are less vulnerable and block the calling range.

Weak top pair is not strong enough to bet 66%. These hands form the core of the 33% betting range.



SB c-bet strategy

BTN	SB	BB	FLOP	5.5	BB
FOLD	FOLD	FOLD			CHECK
RAISE 2.5	CALL	CALL			BET 1.8 (33%)
	RAISE 12	RAISE 13			
	ALLIN 100	ALLIN 100			
			A Q 9		
BTN	BB	TURN	19.3	BB	BB
CHECK	FOLD			CHECK	
BET 1.8 (33%)	CALL			BET 3.85 (20%)	
BET 2.75 (50%)	RAISE 16.55 (60%)			BET 6.35 (33%)	
BET 4.1 (75%)	RAISE 26.2 (100%)			BET 9.65 (50%)	
BET 6.9 (125%)	ALLIN 97.5 (468%)			ALLIN 90.6 (469%)	
		4			
BTN				BTN	
				CHECK	
				BET 6.35 (33%)	
				BET 9.65 (50%)	
				BET 14.5 (75%)	
				BET 24.1 (125%)	
				BET 33.8 (175%)	

[NL500 6-Max Cash, 100bb] BTN vs BB single-raised pot. BTN c-bets and barrels flop and turn for 125% on A ♠ Q ♠ 9 ♥ 4 ♥. With which hand(s) can BB call turn?

- A: A ♦ 6 ♠
- B: A ♦ 6 ♥
- C: A ♦ 6 ♣
- D: A ♦ 6 ♦



BB turn strategy with A♦6x

Correct answer:

A: A♦ 6♠

B: A♦ 6♥



A♦ 6♠ and A♦ 6♥ have better outs to two pair; fewer of their outs complete a flush.

A♦ 6♣ and A♦ 6♦ have poor reverse implied odds. They frequently improve to the second best hand on a 6♠ or 6♥ river.

	 5		 5
All-in 66.5 (99%)	32.61	All-in 66.5 (99%)	52.08
Bet 41 (61%)	33.8	Bet 41 (61%)	55.21
Bet 24 (36%)	35.49	Bet 24 (36%)	55.64
Bet 7 (10%)	35.66	Bet 7 (10%)	56.15
Check	33.66	Check	56.88
 5		 5	
All-in 66.5 (99%)	33.87	All-in 66.5 (99%)	53.27
Bet 41 (61%)	35.03	Bet 41 (61%)	56.51
Bet 24 (36%)	36.9	Bet 24 (36%)	56.99
Bet 7 (10%)	37.56	Bet 7 (10%)	57.48
Check	37.53	Check	58.09

River EV of A6s

← 6♣ river left, 6♦ river right →



[HU Cash, 100bb] SB (IP) opens, BB 3-bets and SB calls. Why does BB barrel 3-flush turns more often after c-betting 20% on the flop than after c-betting 100% on Q♦ J♠ 7♦?

- A: BB c-bets flush draws for 20% more often than 100%
- B: SB has a higher density of flushes after calling 100%
- C: BB's 100% c-bet range is centered around overpairs which don't improve
- D: We generally give up more often after c-betting bigger



Correct answer:

B: SB has a higher density of flushes after calling 100%



← 20% left; 100% right →

SB never folds flush draws to a c-bet. Vs a 100% c-bet SB calls a much narrower range.

This increases the density of flush draws in SB's range after calling a 100% c-bet.



Equity graph on Q♦ J♦ 7♦ 2♦ after SB calls a 100% flop c-bet

Polar betting strategies rely on leveraging a nut advantage.

On 3-flush turns the nut advantage shifts to the SB and causes the BB to frequently check.

BTN FOLD RAISE 4.5 ALL-IN 99.9	SB FOLD CALL RAISE 16 ALL-IN 99.9	BB FOLD CALL RAISE 17 ALL-IN 99.9	STR FOLD CALL RAISE 20 ALL-IN 99.9	FLOP 11.1 A K 2	STR CHECK BET 3.65 (10%) BET 8.3 (17%) ALL-IN 95.4 (95%)
BTN CHECK BET 2.2 (20%) BET 3.65 (33%) BET 5.55 (50%) BET 8.3 (75%) BET 16.65 (150%)	STR FOLD CALL RAISE 38.85 (100%) RAISE 61.05 (100%) ALL-IN 95.4 (17%)	TURN 44.4 6	STR CHECK BET 14.65 (10%) ALL-IN 78.75 (17%)	RIVER 44.4 J	STR CHECK BET 4.5 (10%) BET 15.5 (33%) BET 26.5 (60%) BET 37.5 (84%) ALL-IN 78.75 (17%)

[6-Max Straddle+Ante Cash, 100bb] BTN opens, STR calls. STR check-calls a 150% flop c-bet and the turn checks through. What is the strongest hand class they bluff on the river on A ♠ K ♥ 2 ♦ 6 ♣ J ♦?

- A: No made hand
- B: Bottom pair
- C: Third pair
- D: Second pair



Correct answer:

B: Bottom pair



STR's range was significantly condensed after calling the flop overbet. 97% of their range consists of made hands by the river.

Bottom pair has almost no EV when checking, so they opt to bluff instead.



STR river strategy after 20% flop c-bet

Learning how strategies adjust after different c-bet sizes is vital to navigating river play correctly.

If BTN instead c-bets 20% on the flop, STR never bluffs bottom pair on the river.

SB FOLD CALL RAISE 2.5 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	FLOP 9 6 5	BB CHECK BET 1.65 (33%) ALLIN 97.5 (89.5%)	SB CHECK BET 1.65 (33%) BET 3.35 (67%) BET 5.5 (100%) BET 7.5 (150%) ALLIN 97.5 (189.5%)	BB FOLD CALL RAISE 9.2 (50%) RAISE 15.05 (100%) RAISE 20.9 (150%) ALLIN 97.5 (189.5%)
SB FOLD CALL RAISE 20.9 (50%) RAISE 32.6 (100%) RAISE 44.3 (150%) ALLIN 97.5 (97.5%)	TURN 23.4 	BB CHECK BET 7.7 (33%) BET 15.7 (67%) BET 23.4 (100%) BET 35.1 (150%) BET 58.5 (250%)	SB FOLD CALL RAISE 58.5 (50%) ALLIN 88.3 (92%)	RIVER 70.2 	BB CHECK BET 7 (10%) BET 24.5 (35%) BET 42 (60%) ALLIN 64.9 (92%)

[HU Cash, 100bb] SB (IP) opens and BB calls. BB check-raises 50% vs a 67% flop c-bet, barrels 100% on turn and arrives at the river on 9♠ 6♥ 5♦ 2♣ 2♠. Which hand(s) give up?

- A: 8♠ 4♠
- B: 8♦ 4♦
- C: J♥ 8♥
- D: Q♦ 8♦



BB river strategy

Correct answer:

A: 8 ♠ 4 ♠

B: 8 ♦ 4 ♦

8♦ 4♦	8♦ 4♦	
All-in 64.9 (92%)	-0.16	EV
Raise 42 (60%)	-1.48	
Raise 24.5 (35%)	-0.91	
Raise 7 (10%)	-0.24	
Check	0	
8♥ 4♥	8♥ 4♥	
All-in 64.9 (92%)	-0.15	EV
Raise 42 (60%)	-1.32	
Raise 24.5 (35%)	-0.68	
Raise 7 (10%)	-0.17	
Check	0	
8♦ 4♦	8♦ 4♦	
All-in 64.9 (92%)	-0.09	EV
Raise 42 (60%)	-1.24	
Raise 24.5 (35%)	-0.61	
Raise 7 (10%)	-0.14	
Check	0	

84s EV by action

8♠ 4♠ and 8♦ 4♦ have no showdown value but are unable to profitably bluff.

Allin 64.9	(92%)	EV
Bet 42	(60%)	0.07
Bet 24.5	(35%)	0.57
Bet 7	(10%)	0.57
Check		0.46

Allin 64.9	(92%)	EV
Bet 42	(60%)	-0.2
Bet 24.5	(35%)	0.35
Bet 7	(10%)	0.5
Check		0.45

SB defends near MDF in this node and the 4 blocks folds like 74s.

J♦8♦ and Q♠8♠ block QQ and JJ which make them excellent bluffing candidates!



SB river strategy vs shove

UTG	H.J.	CO	BTN	SB	BB	UTG
FOLD						
RAISE 2	RAISE 6.5	CALL	CALL	RAISE 20	RAISE 20	CALL
ALLIN 100	ALLIN 100	RAISE 6.5	RAISE 7.5	ALLIN 100	ALLIN 100	RAISE 20
		ALLIN 100	ALLIN 100			ALLIN 100

[GG NL50 6-Max Cash, 100bb] UTG opens and BTN 3-bets.

Why does UTG not play a 4-bet shoving range unlike in the Stars 50NL sims?

- A: GG's higher rake disincentivizes building the pot
- B: GG's preflop rake decreases the incentive to take down the pot preflop
- C: GG's higher rake makes BTN's 3-bet more polar and makes UTG's shove less efficient



Correct answer:

- B: GG's preflop rake decreases the incentive to take down the pot preflop



4-bet shoves are prominent in high rake structures that lack preflop rake.

They enable the 4-bettor to generate a lot of fold equity and win the pot very often without paying rake. On GG, this incentive disappears as the 4-bettor will pay rake on the pot regardless of if they get a fold.

SB	BB	SB
FOLD	FOLD	FOLD
CALL	CALL	CALL
RAISE 2.5	RAISE 10	RAISE 24
ALLIN 100	ALLIN 100	ALLIN 100

[HU Cash, 100bb] SB (IP) opens and BB 3-bets.

Which hand(s) 4-bet?

- A: A5s
- B: KQo
- C: KTs
- D: J4s



Correct answer:

D: J4s



SB 4-bets a polarized range.

They prioritize low EV hands like J4s in their 4-bet bluffing range.



IP 4-bets a polarized range and chooses bluffs with good blockers.

OOP frequently shoves vs the 4-bet to mitigate their positional disadvantage which decreases the value of postflop playability in IP's 4-bet range.

OOP 4-bettors prioritize hands with good postflop playability expecting IP to continue more often as a call.

BTN
FOLD
RAISE 2
ALLIN 13

[Spin & Go, 13bb] Which of the following hands does BTN open shove?

- A: 33
- B: ATs
- C: KQo
- D: JJ



BTN strategy

Correct answer:

A: 33

C: KQo



At 13bb, BTN plays both an open shove and a min raise.

When all-in, equity realization does not exist. BTN therefore shoves their hands with good raw equity but poor postflop equity realization: 33 and KQo.

Hands with good postflop playability that retain their equity on a variety of different boards and runouts instead elect to slowplay and min raise: ATs and JJ.

BTN	SB	BB	FLOP	5	SB
FOLD	FOLD	FOLD			
RAISE 2	CALL	CALL			CHECK
ALLIN 25	RAISE 6	RAISE 6			BET 1.65 (33%)
	ALLIN 25	ALLIN 25			ALLIN 23 (460%)

[Spin & Go, 25bb] BTN opens, SB calls and BB folds.

On which flop(s) does SB donk?

- A: A♦ K♥ T♥
- B: Q♥ T♥ 9♦
- C: 7♥ 6♦ 5♣
- D: 4♦ 3♥ 2♥

Flops	Strategy	Check	Bet 1.65	Allin 23	EV IP	EV OOP	EQ IP %	EQ OOP %
4♦ 3♥ 2♥		99.2	0.8	0	2.91	2.09	51.1	48.9
7♥ 6♦ 5♣		100	0	0	3.33	1.67	54.2	45.8
A♦ K♥ T♥		21.4	78.6	0	2.09	2.91	44.3	55.7
Q♥ T♥ 9♦		58.7	41.3	0	2.45	2.55	48.5	51.5

SB flop strategies

Correct answer:

A: A♦ K♥ T♥

B: Q♥ T♥ 9♦



SB preflop range

SB's preflop range is defined around broadway and suited Ax hands.

This connects very well with broadway boards and poorly with low connected boards.



SB's leads out with their abundance of strong hands to deny IP the opportunity to check back.

If SB neglects to play a donking range, BTN can exploit them by checking back 100% of their range and costing SB substantial value with the top of their range.

BTN FOLD RAISE 2 ALLIN 14	SB FOLD CALL RAISE 5 ALLIN 14	BB FOLD CALL RAISE 5 ALLIN 14	FLOP 4.5 	BB CHECK BET 1.5 (33%) ALLIN 12 (66%)	BTN CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (76%) BET 4.5 (100%)	BB FOLD CALL RAISE 3.15 (33%) RAISE 5.5 (69%) ALLIN 12 (169%)
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[Spin & Go, 14bb] BTN vs BB single-raised pot. BTN c-bets min on a flop of Q ♠ 6 ♥ 4 ♠. Which combo(s) of Q3s raise(s) most often?

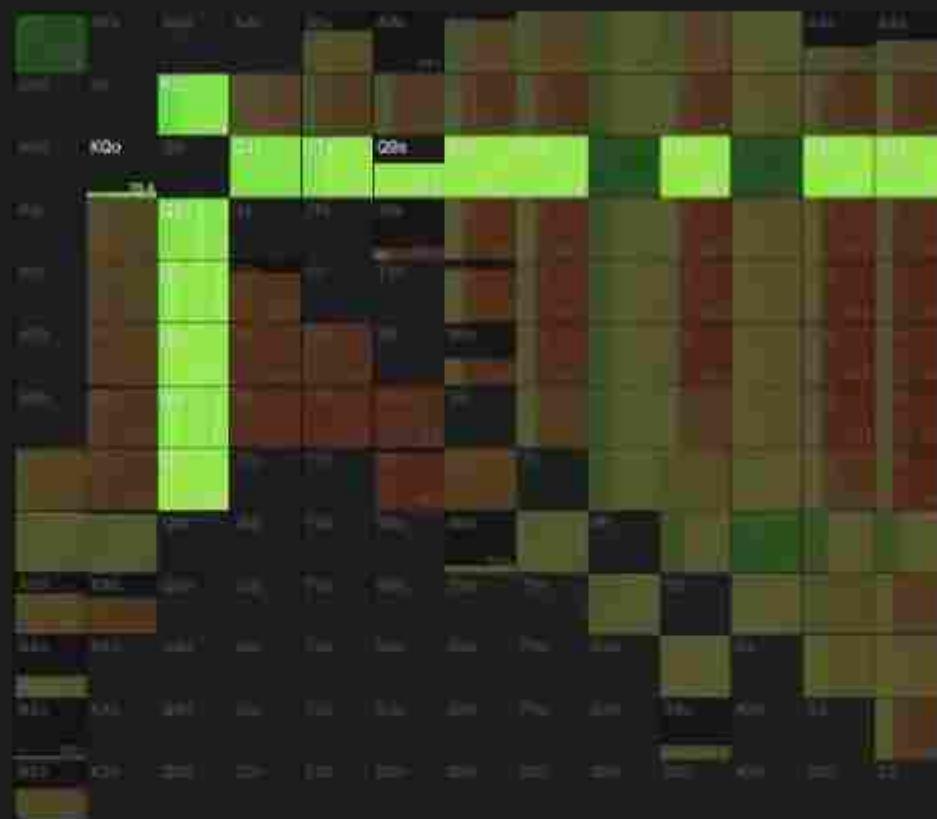
- A: Q ♥ 3 ♥
- B: Q ♦ 3 ♦
- C: Q ♣ 3 ♣



Correct answer:

B: Q ♦ 3 ♦

C: Q ♣ 3 ♣



BB equity vs c-bet

All top pair combos have at least 70% equity and are strong enough to stack off at this SPR.

Q♦3♦'s BDFD provides very little additional equity.



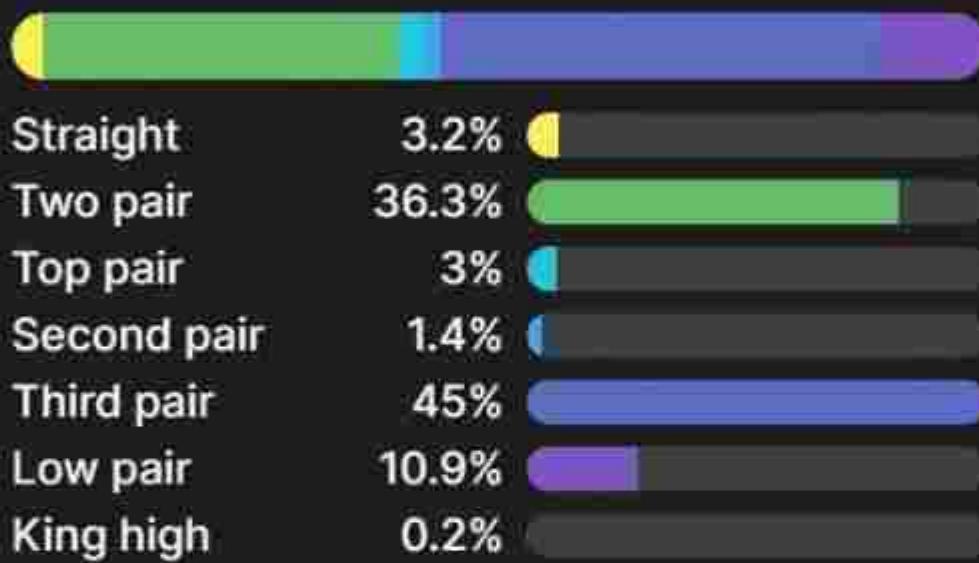
The BDfd increases the equity realization and decreases the vulnerability of Q♥3♥.

Q♥3♥ prefers to smooth-call and retain their implied odds rather than fast-playing.



[Spin & Go, 15bb] BTN vs BB single-raised pot. BB check-calls 50% flop and turn c-bets and faces a river shove. What is BB's river calling range mainly comprised of?

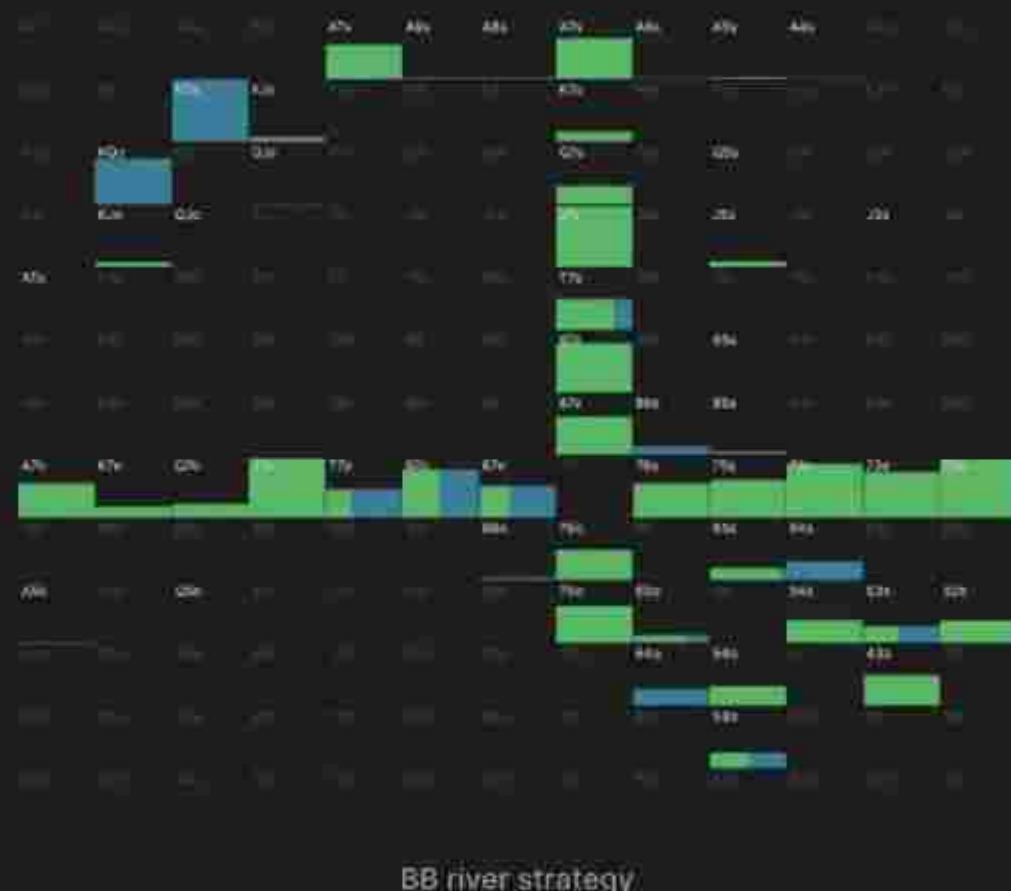
- A: 35% two pair, 45% third pair
- B: 25% two pair, 45% second pair
- C: 40% second pair, 40% third pair
- D: 40% top pair, 40% second pair

HANDS

BB river calling range

Correct answer:

A: 35% two pair, 45% third pair



BB slowplays many of their two pair hands at the low SPR.

Their Jx (second pair) all fast-play flop or turn and their Ax (top pair) folds flop or shoves turn.



This allows BU to shove very thin for value: good 7x and stronger.

BTN FOLD RAISE 2 ALLIN 10	SB FOLD CALL ALLIN 10	BB FOLD CALL ALLIN 10	FLOP 4.5 T 5 4	BB CHECK BET 1.5 (33%) ALLIN 8 (178%)
BTN CHECK BET 1 (22%) BET 1.5 (33%) BET 2.25 (50%) BET 3.4 (75%) ALLIN 8 (178%)	BB FOLD CALL RAISE 2.6 (25%) RAISE 4.25 (50%) ALLIN 8 (108%)	BTN FOLD CALL RAISE 5 (25%) ALLIN 8 (56%)	TURN 9.7 2	BB CHECK BET 1.95 (20%) ALLIN 5.4 (56%)

[Spin & Go, 10bb] BTN vs BB single-raised pot. BB check-raises 25% vs a min c-bet and BTN calls on T ♦ 5 ♥ 4 ♠ 2 ♠. What should the BB do on the turn with T ♦ 7 ♦ ?

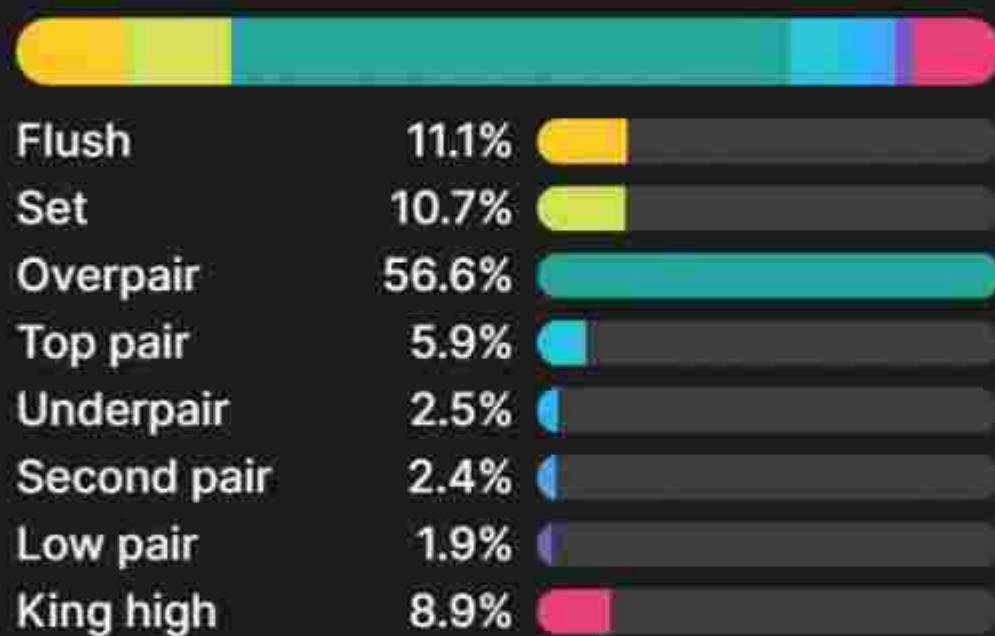
- A: Check
- B: Bet 20%
- C: Shove 56%

Hand	Strategy	Range	EV	Equity	EQR	Blocker
T♣7♣		96.3 %	3.19	45.5 %	72.3 %	2
T♦7♦		96.3 %	3.19	45.5 %	72.3 %	2
T♥7♥		0.6 %	2.91	43.8 %	68.6 %	2

BB turn strategy with T7s

Correct answer:

C: Shove 56%

HANDS

BTN calling range vs shove

This is the highest EV line for the BB even though the BTN calls better hands 80% of the time.

BTN	SB	BB	FLOP	4.5	BB
FOLD	FOLD	FOLD			CHECK
RAISE 2	CALL	CALL			BET 1.5 (33%)
ALLIN 15	RAISE 4	RAISE 4			ALLIN 13 (289%)
	ALLIN 15	ALLIN 15			

[Spin & Go, 15bb] BTN vs BB single-raised pot.

On which flop(s) does BB donk?

A: A: 4♦ 3♦ 3♣

B: K♦ 4♦ 4♦

C: A♦ 3♦ 2♦

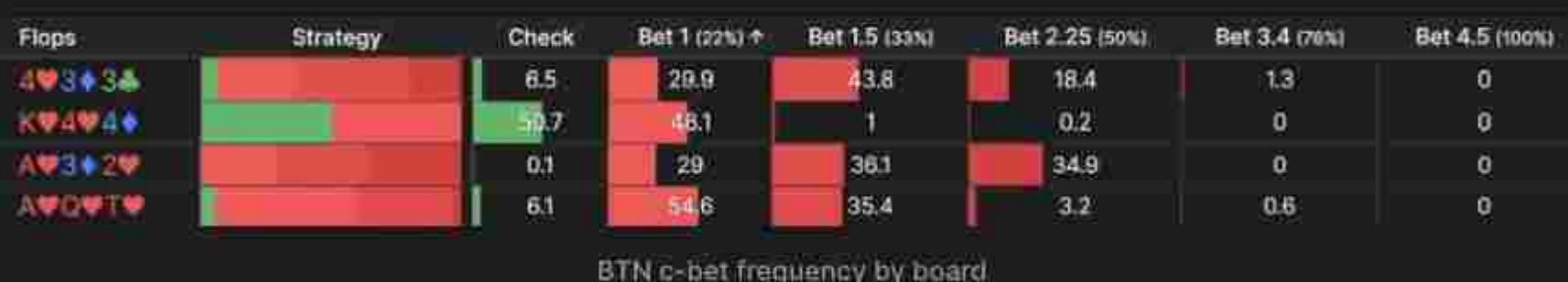
D: A♦ Q♦ T♦

Flops	Strategy	Check	Bet 1.5 (33%) ↑	Allin 13 (289%)
4♥ 3♦ 3♣		99.9	0.1	0
K♥ 4♥ 4♦		86	14	0
A♥ 3♦ 2♥		100	0	0
A♥ Q♥ T♥		100	0	0

BB donk frequency by board

Correct answer:

B: K♥ 4♥ 4♦



The above chart shows BTN's strategy if we instead check.

BTN range bets 4♥3♦3♣, A♥3♦2♥ and A♥Q♥T♦. BB's nuttered hands therefore make more money by check-raising than by donking. On K♥4♥4♦ BTN only c-bets half the time.

BB donks their strong hands to deny them the option of checking back.

SB
FOLD
CALL
RAISE 2
ALLIN 7

[HU SnG, 7bb] SB (IP) plays a mixed strategy of open limping and shoving.
How does SB construct their limping range?

- A: Condensed
- B: Linear
- C: Merged
- D: Polarized

AA	AKs	AKo	AJs	ATs	AKs	ABs	A7s	ABs	A5s	A4s	A3s	A2s
AKs	RK	KQs	XJs	KTs	K9s	K8s	K7s	K8s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	Jx	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	J7	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
A9o	K9o	Q9o	J9s	T9s	99s	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8s	T8s	98s	87s	86s	85s	84s	83s	82s	81s
A7s	K7o	Q7s	J7s	T7s	97s	87s	77	76s	75s	74s	73s	72s
A6s	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	65s	64s	63s	62s
A5s	K5o	Q5o	J5s	T5s	95s	85s	75s	65s	55	54s	53s	52s
A4s	K4o	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44	43s	42s
A3s	K3o	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33	32s
A2s	K2o	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22

SB strategy

Correct answer:

D: Polarized



SB shoves their medium hands with poor equity realization.

They limp both their strongest and weakest hands. BB must attack the limp to deny equity to the weak holdings which increases the EV of the traps.

BB is unable to attack the limp too aggressively however due to the presence of the traps. This allows the SB to profitably limp hands as weak as J4o.



The SB can exploit a passive ISO strategy by limping more weak hands and shifting some of their strong hands into other lines.

HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 5	CALL	RAISE 6	CALL
RAISE 40	RAISE 10	RAISE 6	ALLIN 25	RAISE 10
	ALLIN 20	ALLIN 40		ALLIN 35

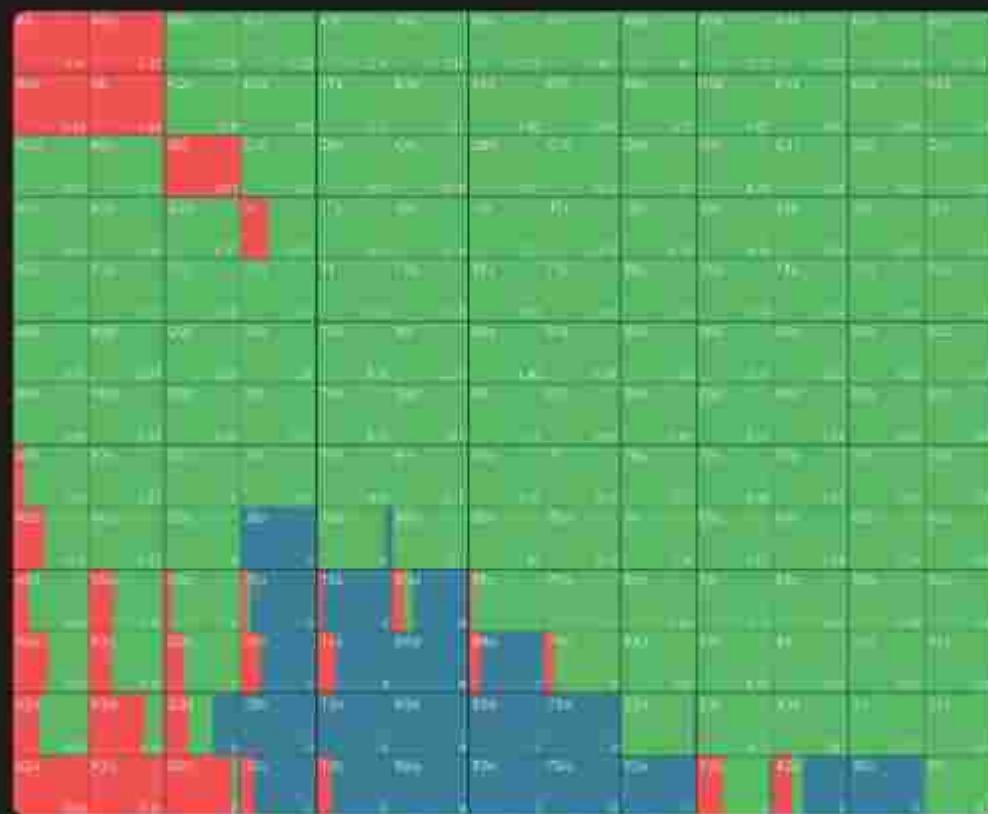
[5-Handed MTT, ICM] HJ min raises and it folds to BB. In which stack distribution does BB defend widest (stacks ordered from HJ to BB)?

- A: 60-20-40-25-35
- B: 35-25-10-20-60
- C: 35-35-35-35-35
- D: They are all the same



Correct answer:

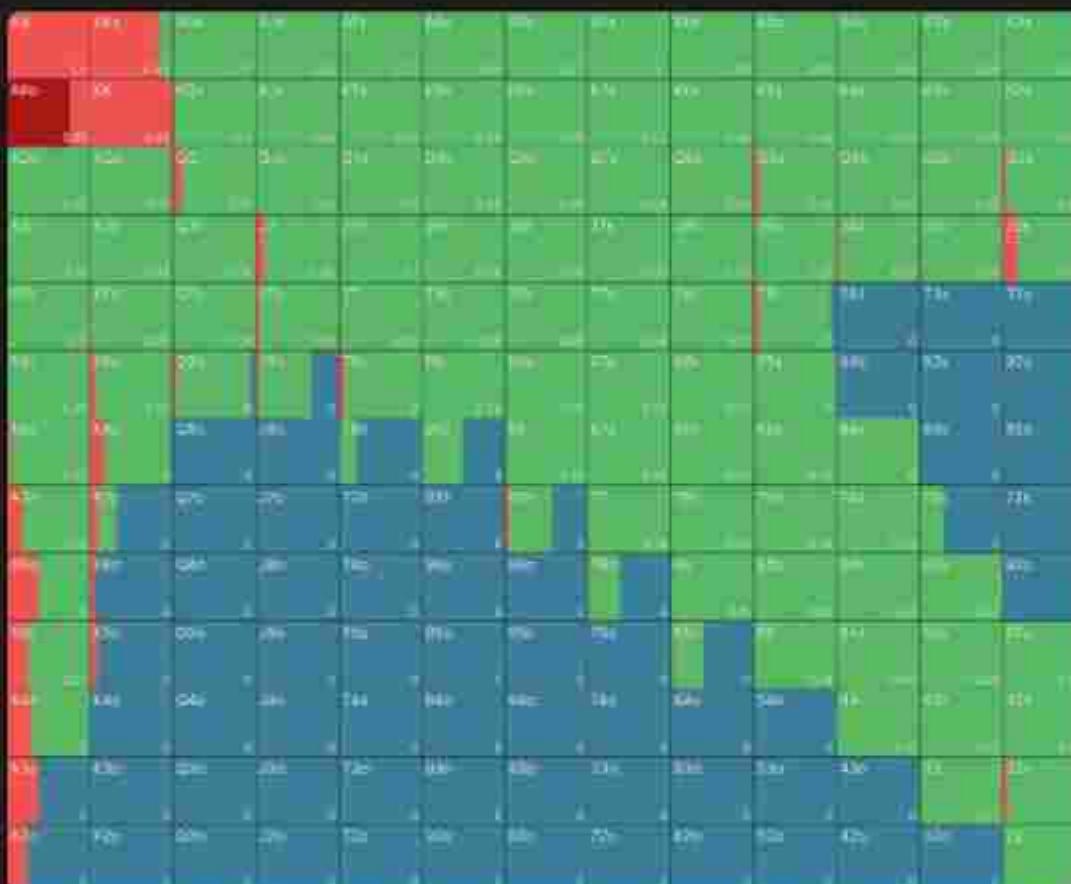
B: 35-25-10-20-60



35-25-10-20-60 BB strategy and EV

Mid-stacks must be wary of going broke before short-stacks.

The BB gets to call wider as the chip leader as they pay a lower risk premium.



60-20-40-25-35 BB strategy and EV

BB must defend tighter when HJ has them covered as the value of survival increases.

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 40	RAISE 6.9	ALLIN 40	ALLIN 40
CO	FLOP 16.3	CO	BTN
FOLD		CHECK	CHECK
CALL	W W W	BET 1.65 (10%)	BET 1.65 (10%)
ALLIN 40		BET 4.1 (25%)	BET 4.1 (25%)
		BET 8.15 (50%)	BET 8.15 (50%)
		BET 12.2 (75%)	BET 12.2 (75%)
		BET 16.3 (100%)	BET 16.3 (100%)

[8-Max MTT, 40bb] BTN vs CO 3-bet pot. On which flop(s) does BTN c-bet 100% of their range?

- A: A♥ K♥ K♦
- B: A♥ 7♦ 3♥
- C: K♥ J♦ 6♥
- D: 8♦ 7♥ 3♥

Flops	Strategy	Check	Bet 1.65	Bet 4.1	Bet 8.15	Bet 12.2	Bet 16.3	Allin 33.1
A♥K♥K♦		48	32.9	17.7	1.4	0.1	0	0
A♥7♦3♥		31.4	51.8	16.8	0	0	0	0
K♥J♦8♥		59.1	1.9	10.6	20.7	7.7	0	0
8♦7♥3♥		1	3.5	93	2.4	0	0	0

BTN c-bet strategies

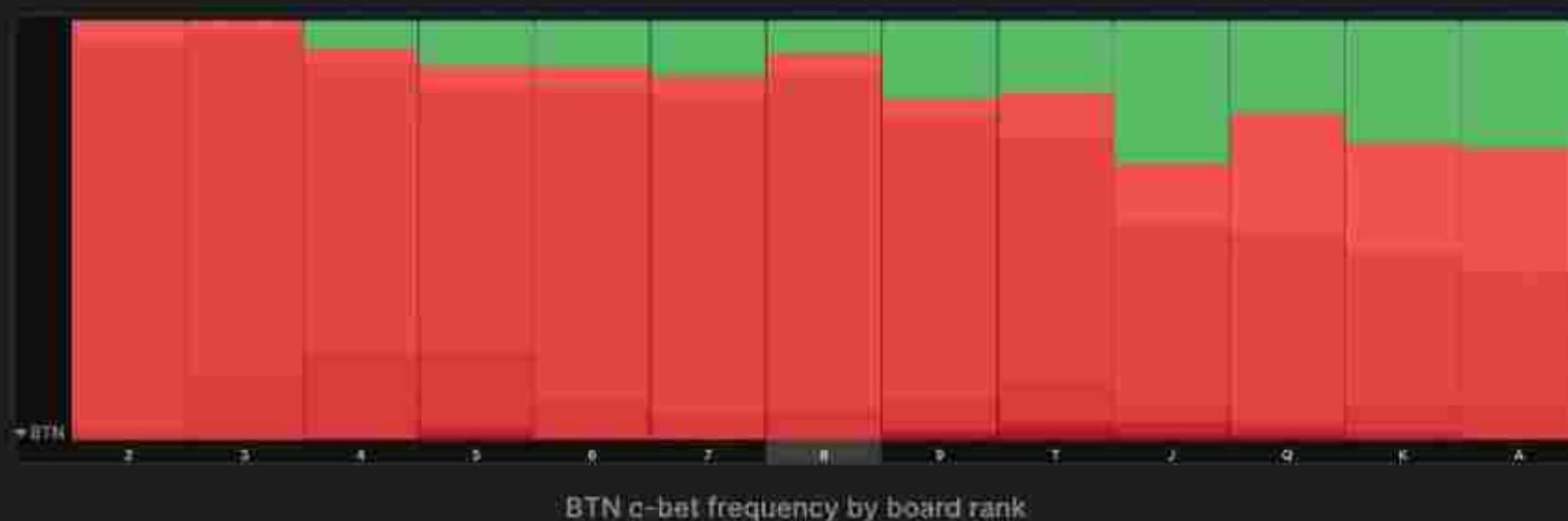
Correct answer:

D: 8♦7♥3♥



CO doesn't have overpairs or sets on $8\spades 7\hearts 3\hearts$ because they 4-bet shoved most of their pocket pairs preflop 40bb deep.

BTN c-bets most frequently on boards where CO's high cards miss. 73% of CO's range is just overcard air on $8\spades 7\hearts 3\hearts$.

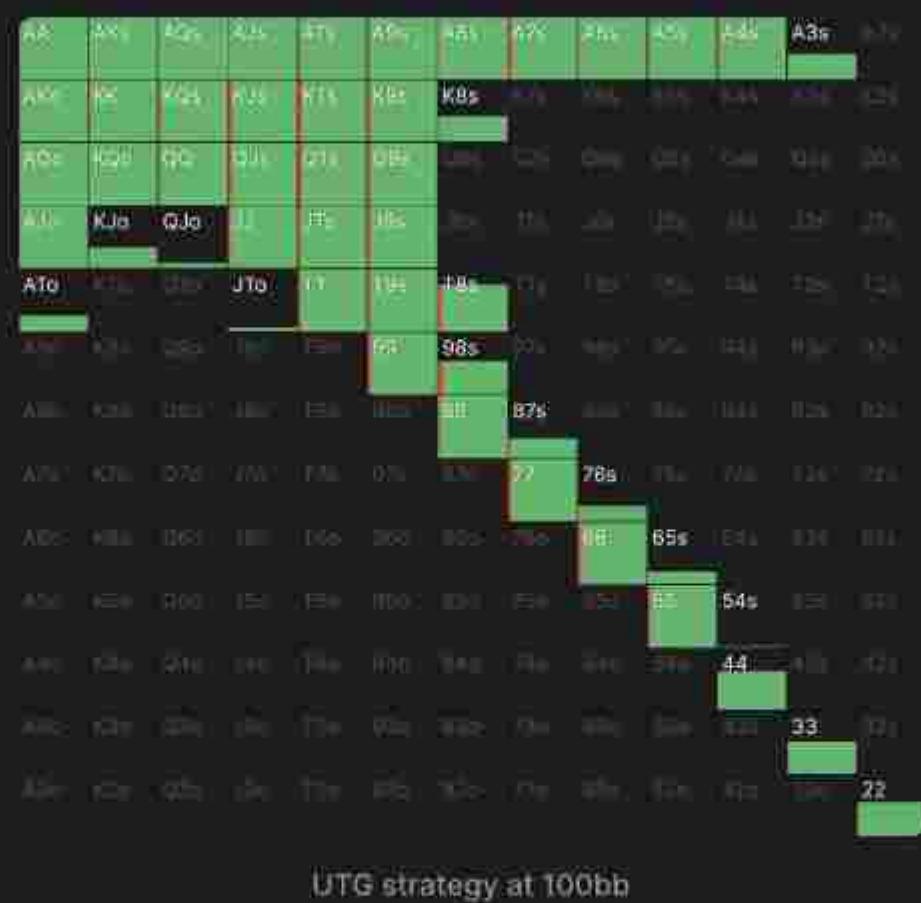


BTN's c-bet frequency increases as the rank of the board decreases.

UTG FOLD RAISE 2.3 ALLIN 100	UTG1 FOLD CALL RAISE 8 ALLIN 100	LJ FOLD CALL RAISE 8 ALLIN 100	HJ FOLD CALL RAISE 8 ALLIN 100	CO FOLD CALL RAISE 8 ALLIN 100
BTN FOLD CALL RAISE 8 ALLIN 100	SB FOLD CALL RAISE 11.5 ALLIN 100	BB FOLD CALL RAISE 11.9 ALLIN 100	FLOP 7.1 	UTG CHECK BET 2.35 (33%) BET 4.7 (66%) BET 7.1 (100%) BET 10.65 (150%) ALLIN 97.7 (1376%)

[8-Max MTT] UTG vs BTN single-raised pot. At which stack depth(s) does UTG check most on ?

- A: 100bb
- B: 80bb
- C: 50bb
- D: 25bb



Correct answer

A: 100bb



OOP usually checks very frequently when HU vs an IP cold caller.

IP players cannot cold call wide given the risk of being squeezed by the blinds.

IP cold calls a strong, condensed range compared to the initial raiser resulting in frequent checks by OOP.



BTN cold-call range



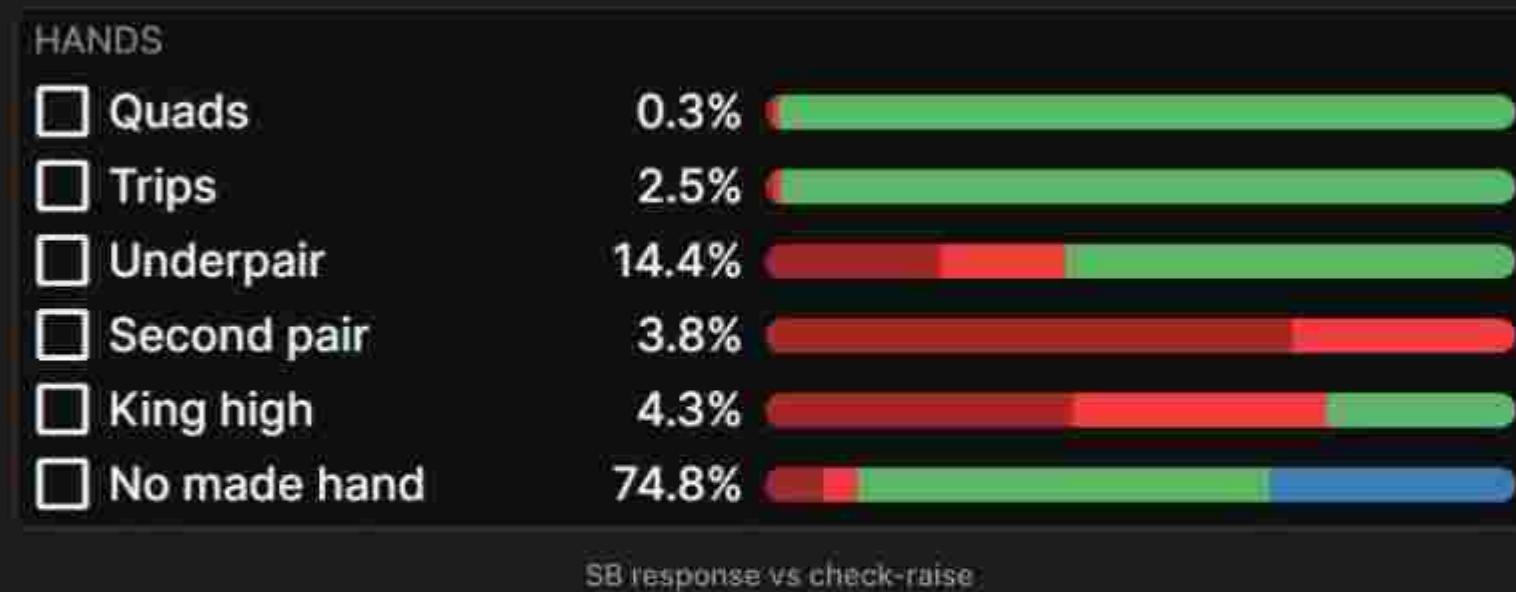
BTN flats many mid and low pocket pairs and has a nut advantage on low flops like 7♦ 6♦ 5♣.

UTG can comfortably stack off their overpairs at a low SPR and c-bets more often. At deeper stack depths, BTN's set advantage becomes problematic, so UTG range-checks instead.

SB	BB	FLOP	3	SB	BB	SB
FOLD	CHECK			CHECK	FOLD	
CALL	RAISE 2.5			BET 1 (33%)	CALL	
RAISE 2	RAISE 4			ALLIN 9 (300%)	RAISE 2.65 (33%)	
ALLIN 10	ALLIN 10	A A 2			RAISE 3.75 (55%)	
					ALLIN 9 (160%)	

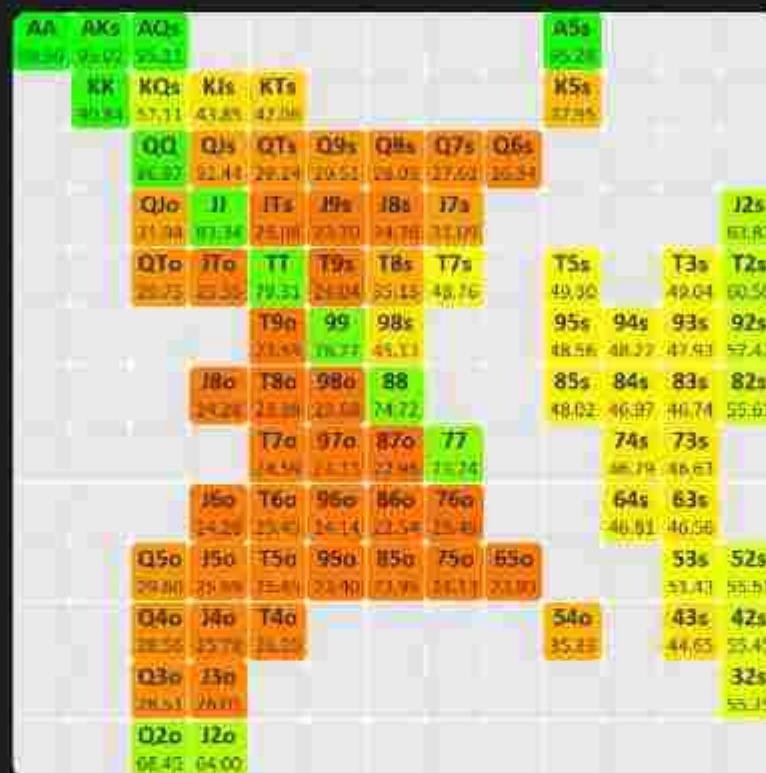
[8-Max MTT, 10bb] SB vs BB limped pot. SB c-bets min and BB raises 33% on A ♠ A ♥ 2 ♠. Which hand class does SB 3-bet most aggressively vs the raise?

- A: Trips
- B: Underpairs
- C: Second pair
- D: King high



Correct answer:

C: Second pair



Equity of SB's 3-bet shoving range when called

SB's vulnerable-strong hands 3-bet to better realize their equity.

Hands as weak as K♦ T♦ 3-bet and stack off with 40% equity when called.

Ranges are very wide and BB must stack off with hands as weak as Qx5♠ or K♦ 4♦.



SB's invulnerable hands like trips and strong underpairs make more money as calls.

They can easily get the money in later at this SPR, even on 3-flush runouts.



[8-Max MTT, 10bb] SB vs BB limped pot. Action checks down to the river on 7♠ 4♥ 4♦ 2♠ 7♥. What is the weakest hand class SB can block for value?

- A: Overpairs
- B: Ace high
- C: King high
- D: Queen high



Correct answer:

D: Queen high



Hand strength is heavily affected by previous actions. BB bets most of their A-high and better before this point.

Queen high has 65-70% equity in this line and is strong enough to seek value.



River ranges - Note that BB needs to call with Jack high!



[8-Max MTT, 17bb] BTN vs BB single-raised pot. BB check-calls a 33% flop c-bet, a 55% turn barrel and faces a 43% river shove on T ♠ 6 ♥ 2 ♠ 4 ♦ 8 ♣.
Which hand does BB begin to fold?

- A: A ♠ 8 ♠
- B: 9 ♠ 6 ♦
- C: A ♥ 4 ♥
- D: K ♣ 2 ♣



Correct answer:

B: 9♠ 6♦



BTN shoving range

BB fast-plays most of their top pair on prior streets.

BTN shoves hands as weak as Q6 for value and BB always calls down Q6 and better.

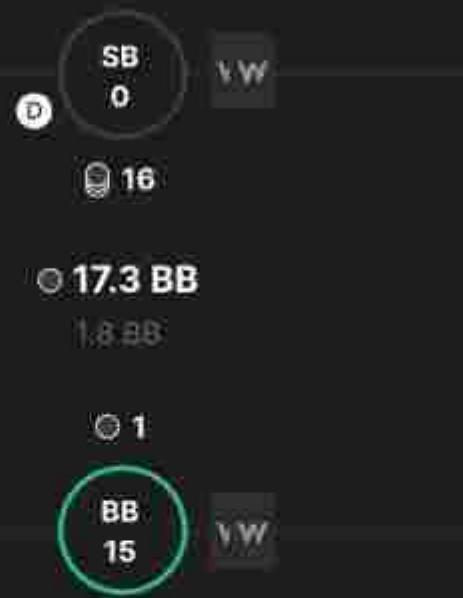


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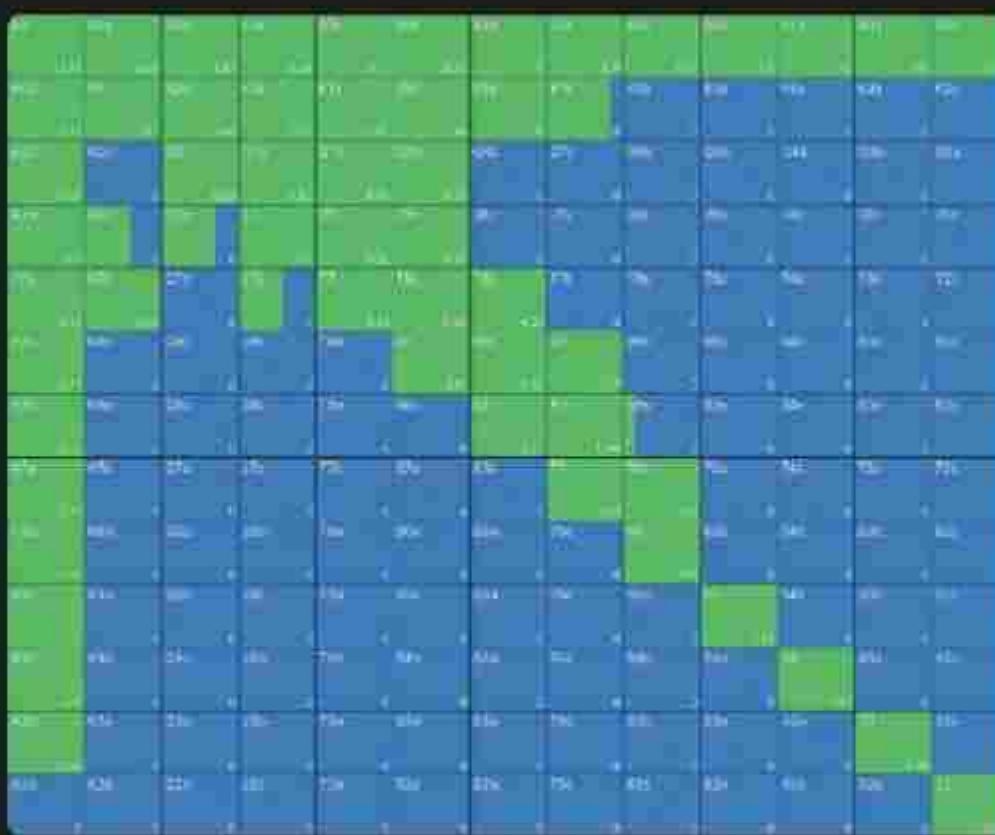
9♠ 6♦, A♥ 4♥ and K♣ 2♣ are all bluff catchers but the 9♠ blocks bluffs like 9♠ 7♠ and is therefore a poor card to hold.

BB calls down nearly all their 6x that doesn't contain a spade.



[HUMTT, 16bb] SB (IP) open shoves. Which hand(s) does BB call?

- A: A2o
- B: KQo
- C: T8s
- D: 76s



BB strategy and EV vs shove

Correct answer:

C: T8s

D: 76s



SB shoves their strong hands with poor equity realization postflop. This mainly includes low pocket pairs and weak offsuit Ax.

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
87.48	67.13	66.97	66.33	65.42	63.09	62.03	59.40	56.49	55.09	53.03	51.31	47.87
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
65.48	74.77	49.32	49.53	49.55	47.98	47.05	46.49	45.98	45.13	42.74	40.66	38.56
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
65.34	46.39	74.28	49.43	49.19	47.65	46.44	44.68	44.50	44.02	41.54	39.36	37.25
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
64.84	46.60	46.55	73.49	49.27	47.54	46.48	45.05	43.72	43.56	41.03	38.80	36.69
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
63.67	46.81	46.27	46.39	72.65	48.63	47.52	46.12	44.82	43.41	41.21	39.06	36.97
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
61.18	44.94	44.93	44.53	45.71	71.71	48.38	47.04	45.72	44.34	40.92	39.04	36.96
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
60.09	43.97	43.31	43.34	44.32	45.44	71.48	47.81	46.47	45.08	41.78	38.48	36.68
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
57.23	43.37	41.47	41.66	43.09	54.03	44.63	70.68	46.90	45.48	42.24	39.06	35.77
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
54.14	42.77	41.24	40.62	41.61	42.58	43.38	43.87	69.67	45.99	42.84	39.73	36.36
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
52.64	41.91	40.76	40.29	40.20	41.12	41.62	42.37	42.91	69.01	43.74	40.73	37.45
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
50.44	39.39	38.15	37.63	37.90	37.50	38.42	38.94	39.58	40.57	67.98	38.26	34.82
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
48.39	37.10	35.75	35.17	35.46	35.43	34.83	35.49	35.18	37.29	34.60	61.34	32.51
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22
44.09	34.83	33.48	32.69	33.21	33.19	32.88	31.93	32.57	33.77	30.98	38.48	40.34

BB equity vs shove.

Suited-connected hands like T8s and 76s have more equity vs this range than offsuit broadways.

UTG FOLD RAISE 2 RAISE 55	UTG1 FOLD CALL RAISE 7 ALLIN 35	LJ FOLD RAISE 14 ALLIN 30	HJ FOLD CALL	CO FOLD ALLIN 10	BTN FOLD RAISE 14 ALLIN 55	SB FOLD ALLIN 25	BB FOLD ALLIN 20	UTG FOLD CALL RAISE 14 RAISE 35
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[8-Max MTT, 35bb] UTG opens and faces a 3-bet from UTG1. Which statement is true when comparing a chip EV sim and an ICM sim with stack sizes of 60-35-30-5-55-25-20 (between UTG and UTG1)?

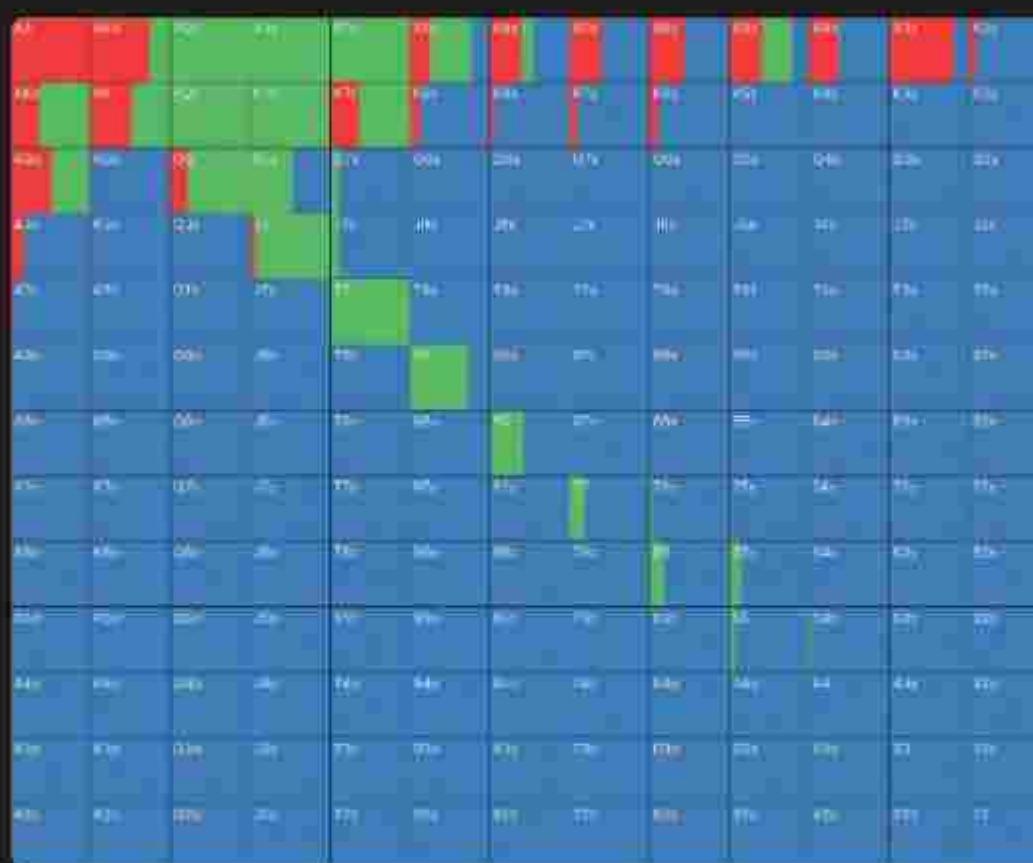
- A: UTG continues wider with ICM and mainly as a raise
- B: UTG continues wider with ICM and mainly as a call
- C: UTG continues tighter with ICM and mainly as a raise
- D: UTG continues tighter with ICM and mainly as a call



UTG strategy with ICM

Correct answer:

C: UTG continues tighter with ICM and mainly as a raise



UTG1 strategy vs UTG RFI

UTG1 is incentivized to play tight because they are likely to outlast the shortstacks and increase their prize by playing passively. Their 3-bet range is very strong and UTG cannot profitably continue very wide.



UTG1 strategy vs UTG 4-bet shove

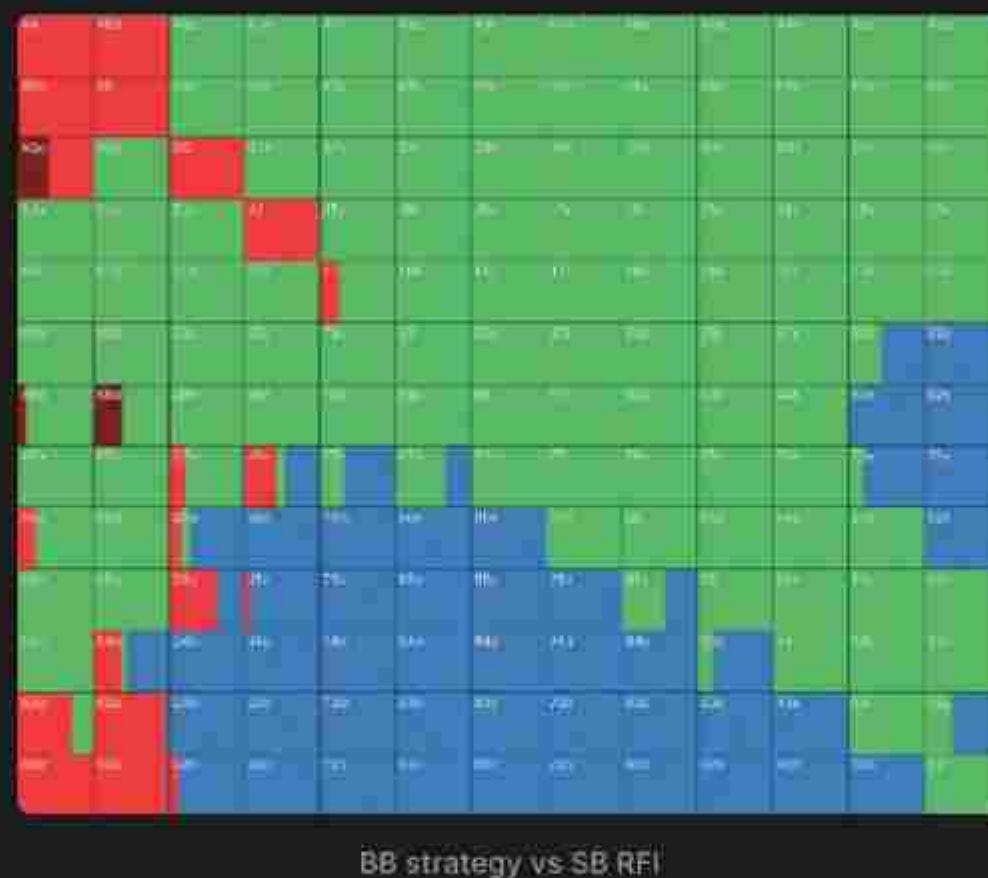
UTG has increased fold equity when 4-betting because UTG1 calls off very tight to preserve their stack. UTG1 mostly folds AKo to a 4-bet shove.

This incentivizes UTG to 4-bet aggressively.

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 2	CALL	CALL
RAISE 6	RAISE 9	RAISE 3	RAISE 12
ALLIN 10	ALLIN 15	RAISE 40	ALLIN 40

[4-Handed MTT, ICM] How does BB construct their 3-betting range vs a SB RFI with stacks of 10-15-60-40 (CO to BB)?

- A: Condensed
- B: Linear
- C: Merged
- D: Polarized



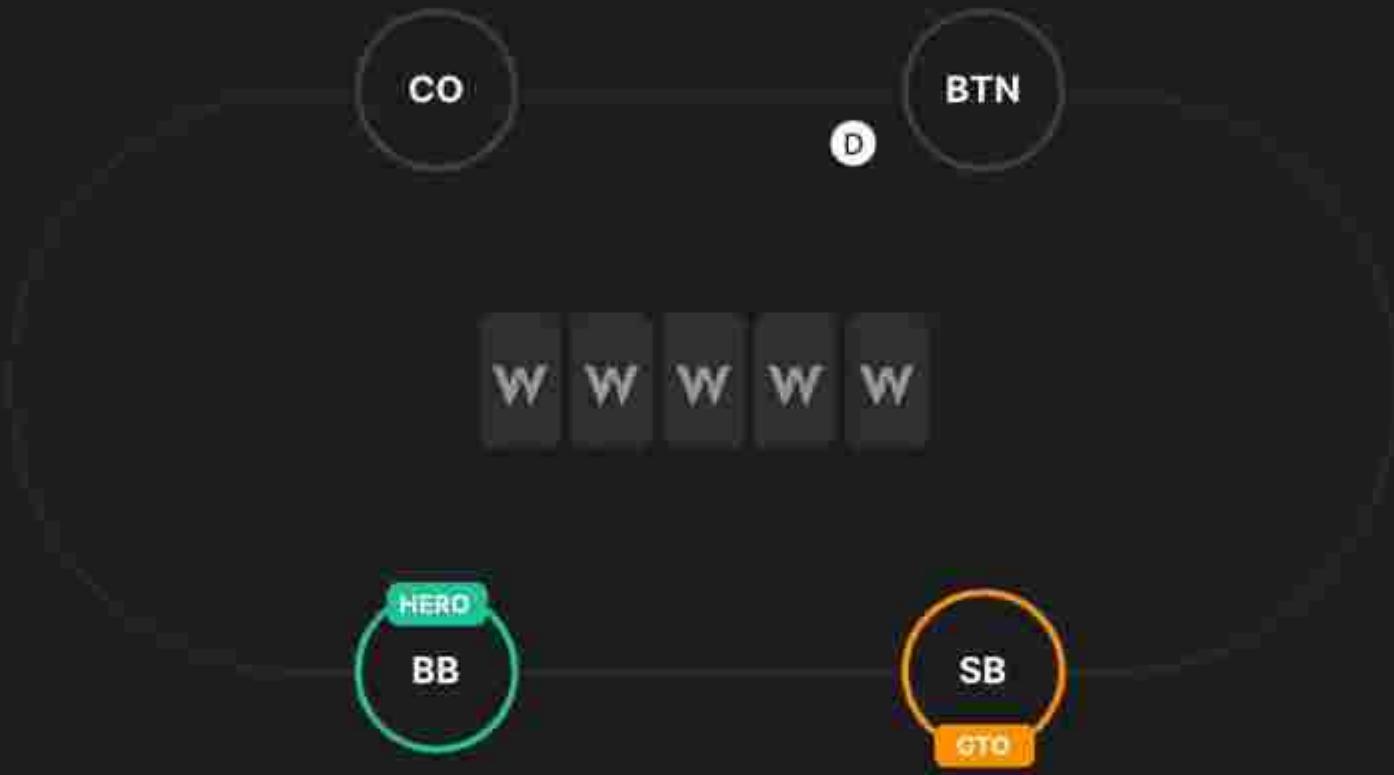
Correct answer:

D: Polarized



SB strategy vs BB 3-bet

BB must call a shove very tight to protect their stack with 2 short stacks remaining.
SB capitalizes on their increased fold equity when 4-betting by never calling.
They only 4-bet or fold.



BB therefore 3-bets a polarized range containing weak bluffs that block 4-bets and very strong hands that can call a shove.

Their middling hands perform better as calls.

THEORY ARTICLES



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Our catalog of [Theory Articles](#) will complement your study by providing expert perspectives on nuanced strategies. Covering topics from preflop exploits to critical bluff catching decisions, they offer insights that are applicable from low to high stakes.

ALL STARS

ALL STARS



The final chapter in the Daily Dose of GTO series is 'All Stars'!

It aims to review the most crucial concepts from the previous chapters and reinforce them to enhance your poker skills.

Throughout the chapter, we'll reference previous Daily Doses to elaborate on these essential ideas.

Player	EV	Equity	EQR
BB 	▼ 2.03	▼ 45.22 %	▼ 81.43 %
BTN	▲ 3.39	▲ 54.78 %	▲ 112.37 %

BTN vs BB SRP on J♦7♥7♦7♣

EV, equity and equity realization are the 3 most vital poker metrics to understand.

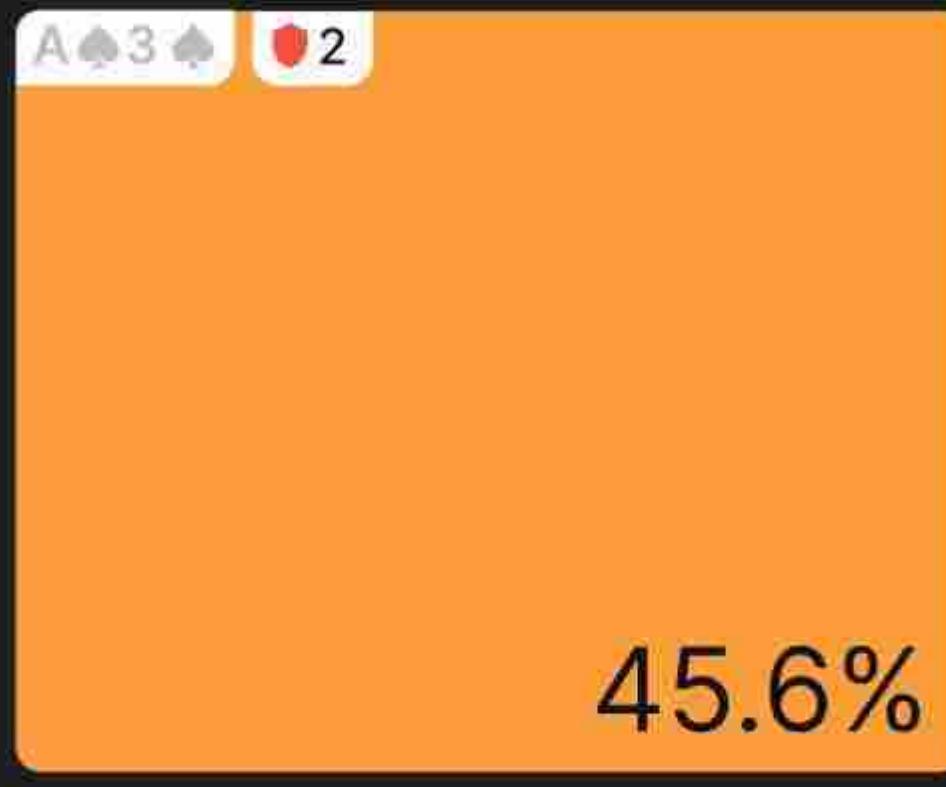
They are used to quantitatively measure how well a hand or range interacts with an opposing range preflop or postflop.



EV stands for Expected Value. It represents how much an action can expect to make in comparison to folding (which always has an EV of 0).

Our goal is to play our hand in the most +EV way possible. We should only fold when we have no +EV actions available to us.

A hand's EV is calculated as the weighted average value of all lines it takes.



Equity is defined as how likely a hand is to win if the pot were to be checked to showdown.

This is how well your hand performs in a vacuum without considering future actions.

Hand	Strategy	Range	EV	Equity	EQR
A♥3♥		100 %	4.78	65.9 %	131.7 %
A♦3♦		100 %	1.71	48.2 %	64.6 %
A♠3♠		100 %	1.39	45.6 %	55.3 %
A♣3♣		100 %	1.39	45.6 %	55.3 %

BTN EV, EQ and EQR with A3s on J♥ 7♥ 2♦

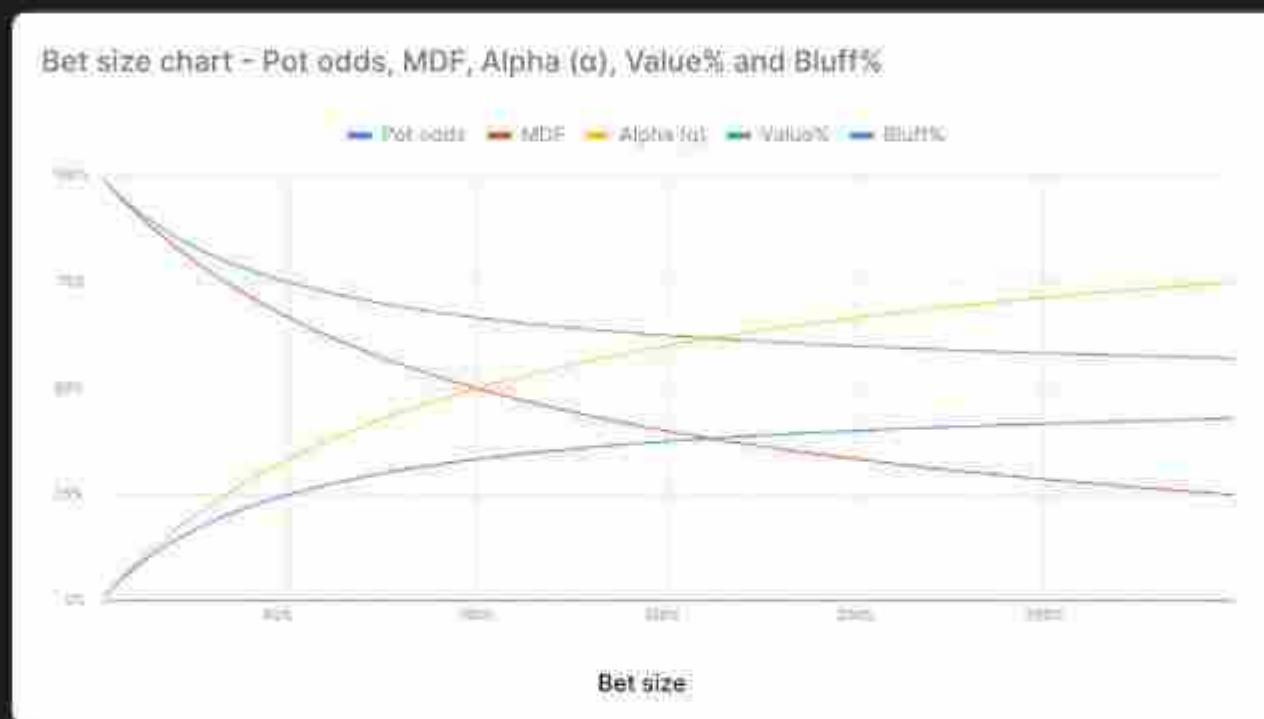
Equity Realization (EQR) = $EV / (EQ * Pot)$. Equity Realization compares how well a hand performs relative to its checked-down equity.

A♠3♠ would win 45.6% of the time if checked down, for a total EV of $45\% * 5.5bb = 2.5bb$. However, its expected value is 1.39bb.

[Learn more](#)



This hand underperforms so it only "realizes" 55% of its equity.



3 of the most important mathematical concepts behind fundamentally sound poker are Pot Odds, Alpha and MDF.

These 3 interlinked concepts are the driving force behind constructing unexploitable ranges.



Pot Odds represents your calling odds. They tell you what percentage of the pot you need to win (on average) to justify calling.

It's calculated as:

$$\text{Pot Odds} = (\text{Amount to call}) / (\text{Pot after you call} - \text{rake})$$



Alpha tells you how often your opponent must fold for your pure bluff to become profitable.

The formula is:

$$\text{Alpha} = \text{risk} / (\text{risk} + \text{reward})$$

Where risk is the size of your bluff, and reward is the amount you'd gain if the bluff succeeds.



Minimum Defense Frequency (MDF) Minimum Defence Frequency tells you how often you need to call to make your opponent's 0% equity bluffs indifferent between betting and giving up.

[Learn more](#)

MDF is simply $1 - \alpha$.

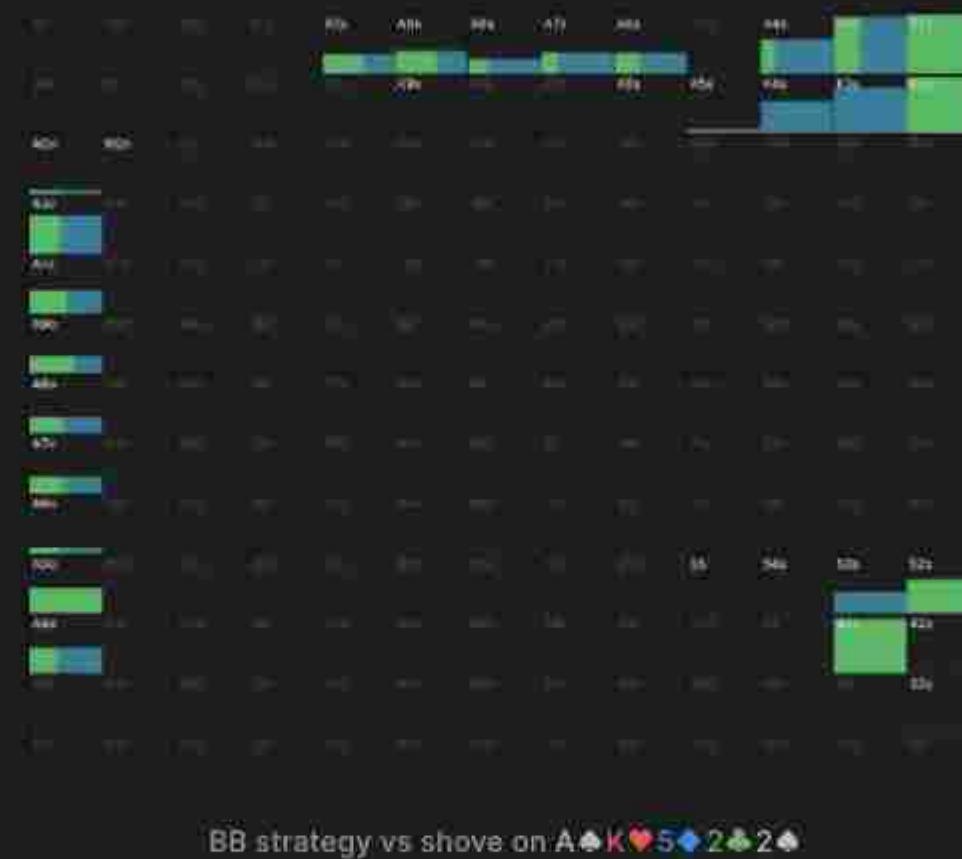
For more information on how these variables are calculated visit our blog!



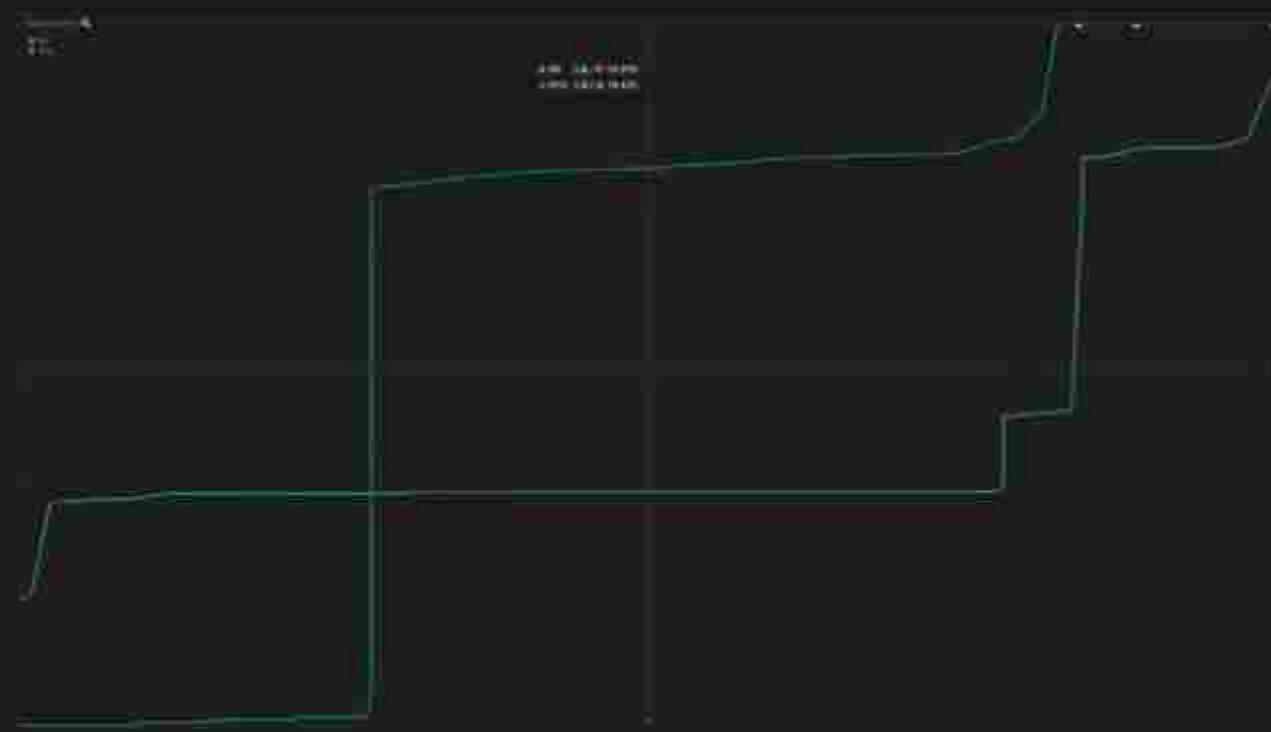


When a hand has the same EV with 2 or more actions, it is "*indifferent*" between those actions. All indifferent actions are equally strong vs a GTO opponent.

A common example is call-fold indifference: a hand has the same EV as a call and as a fold (0 EV).



[6-Max Cash, 500NL, 100bb] BTN vs BB single-raised pot. Facing a 125% flop and turn c-bet and a pot-sized river shove on A♠ K♥ 5♦ 2♣ 2♠, BB is indifferent between call and fold with most of their top pair.



Equity graph vs shove on A♦ K♥ 5♦ 2♣ 2♠

Pot odds dictate that BB needs 33% equity to break even on a call.

BTN constructs their shoving range such that BB's top pair has exactly 33% equity (the flat line on BB's equity graph).



BB can call any assortment of their top pair vs a fixed GTO opponent without sacrificing any EV.

They mix their calling frequencies in order to remain unexploitable. If the BB deviates from the GTO strategy, the BTN can exploit them by overbluffing, underbluffing or even bluffing combos with specific blockers.

UTG	UTG1	LJ	HJ	CO
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.3				
ALLIN 40				
BTN	SB	BB	FLOP 6.6	SB
FOLD	FOLD	FOLD	K 5 4	CHECK
CALL	CALL	CALL		BET 2.2 (33%)
RAISE 6.9	RAISE 8.6	RAISE 9.7		BET 2.2 (33%)
ALLIN 40	ALLIN 40	ALLIN 40		BET 3.65 (55%)
				BET 5.5 (83%)
				BET 8.25 (125%)

[8-max MTT, 40bb] CO opens, SB calls. Flop is K♦ 5♦ 4♦.

What hand has the WORST equity realization (EQR) in CO's range?

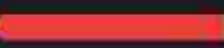
- A: 2♠ 2♥
- B: A♣ Q♣
- C: 8♦ 7♦
- D: A♣ 2♣

Hand	Strategy	Range	EV	Equity	EQR
2♦2♥		48.6 %	2.84	49.1 %	87.5 %
A♣Q♣		100 %	2.32	51.1 %	68.7 %
8♦7♦		100 %	3.33	33.1 %	152.8 %
A♣2♣		100 %	2.9	45.3 %	97 %

CO hand stats on K♥5♥4♦

Correct answer:

B: A♣Q♣

Hand	Strategy	Range	EV	Equity	EQR
2♠ 2♥		48.6 %	2.84	49.1 %	87.5 %
A♣ Q♣		100 %	2.32	51.1 %	68.7 %
8♦ 7♦		100 %	3.33	33.1 %	152.8 %
A♣ 2♣		100 %	2.9	45.3 %	97 %

CO hand stats on K♥ 5♥ 4♦

Remember, Equity realization (EQR) measures how well a hand performs relative to its equity.

A low equity hand that performs well "over-realizes" its equity.

A high equity hand that performs poorly "under-realizes" its equity.



A ♣ Q ♣ has the most equity but the worst realization as it struggles to extract value on later streets and often has to fold before showdown.



$8\spades 7\spades$ and $A\clubsuit 2\clubsuit$ have lower equity but higher realization as they can outdraw hands which call multiple streets. Low-equity hands with draws often overperform relative to their equity!

$2\spades 2\hearts$ is a made hand, but it underperforms with several overcards on the board.

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.3	CALL	CALL	CALL
ALLIN 100	RAISE 7.5 ALLIN 100	RAISE 21 ALLIN 100	RAISE 20 ALLIN 100

CO	FLOP	16.5	CO	BTN
FOLD			CHECK	CHECK
CALL			BET 5.45 (33%)	BET 3.3 (20%)
RAISE 21			ALLIN 92.5 (561%)	BET 5.45 (33%)
ALLIN 100				BET 8.25 (50%)

BTN
CHECK
BET 3.3 (20%)
BET 5.45 (33%)
BET 8.25 (50%)
BET 12.4 (75%)
BET 20.6 (125%)

[6-Max Cash, 500NL, 100bb] BTN vs CO 3-bet pot.

On which board does BTN c-bet for the biggest size?

- A: A♦ K♥ 5♥
- B: J♥ T♦ 6♣
- C: 7♥ 6♦ 2♥
- D: 3♥ 2♦ 2♣



BTN strategy by flop

Correct answer:

D: 3♥2♦2♣



In SRPs, the PFR normally uses small bet sizes on paired flops. The presence of trips limits their nut advantage and they target the PFC's high card air with small bet sizes.

In 3BPs on low paired flops there are very few combos of trips. The BTN leverages their overpair advantage to apply pressure to CO's weak pocket pairs.



BTN flop strategy on 3♥ 2♦ 2♣

BTN c-bets QQ, JJ and TT most frequently.

They benefit the most from folding out overcards and are ahead of almost all of CO's overpairs.



Always consider what hands you're targeting with your bet sizing!

UTG	HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 2	RAISE 2.3	RAISE 2.5	CALL	CALL
ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100	RAISE 12	RAISE 13
				ALLIN 100	ALLIN 100

[6-Max Cash, 500NL, 100bb] BTN opens and the action is on you in the BB. BTN is a passive player and will rarely 4-bet you, mostly calling or folding instead. How should you construct your 3-bet strategy?

- A: 3-bet larger with a polarized range
- B: 3-bet smaller with a polarized range
- C: 3-bet larger with a linear range
- D: 3-bet smaller with a linear range

AA	AKs	AQs	AdJs	ATs	AdKs	AdTs	AdJs	AdTs	AdKs	AdTs	AdJs	AdTs	AdKs	AdTs
AKo	10	KQs	X2s	K7s	K6s	X7s	X7s	K6s	X7s	K9s	X3s	X7s	X7s	X7s
AQs	KQs	QQ	J2s	Q1s	Q2s	Q8s	Q2s	Q6s	Q5s	Q4s	Q3s	Q2s	Q2s	Q2s
AdJs	KQs	QQ	J2s	J7s	J6s	J8s	J7s	J6s	J4s	J3s	J2s	J2s	J2s	J2s
ATs	K7s	Q1s	J1s	T3s	T2s	T8s	T7s	T6s	T6s	T4s	T3s	T2s	T2s	T2s
AdKs	K9s	Q9s	J9s	TKs	99s	98s	97s	96s	95s	94s	93s	92s	92s	92s
AdTs	K8s	Q8s	J8s	T8s	Q8s	88s	83s	86s	85s	84s	83s	82s	82s	82s
ATo	K7s	Q7s	J7s	T7s	97s	87s	77s	76s	78s	76s	73s	72s	72s	72s
Ad6s	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	66s	64s	63s	62s	62s	62s
Ad5s	K5s	Q5s	J5s	T5s	95s	85s	75s	65s	55s	54s	53s	52s	52s	52s
Ad4s	K4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	54s	53s	52s	52s	52s
Ad3s	K3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33s	32s	32s	32s
Ad2s	K2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	32s	32s	32s

Correct answer:

C: 3-bet larger with a linear range



Medium strength hands lose a lot of EV vs a 4-bet.

They can fold and be denied their equity or call and realize their equity poorly OOP as the PFC in a 4BP.

OOP over-realizes their equity by 3-betting when BTN doesn't 4-bet. They simply build the pot with their strongest hands.



Linear ranges perform better when your opponent mostly continues by calling/folding.

Polarized ranges perform better when your opponent mostly continues by raising/folding.

[Watch the preflop morphology video to learn more!](#)

[Learn more](#)





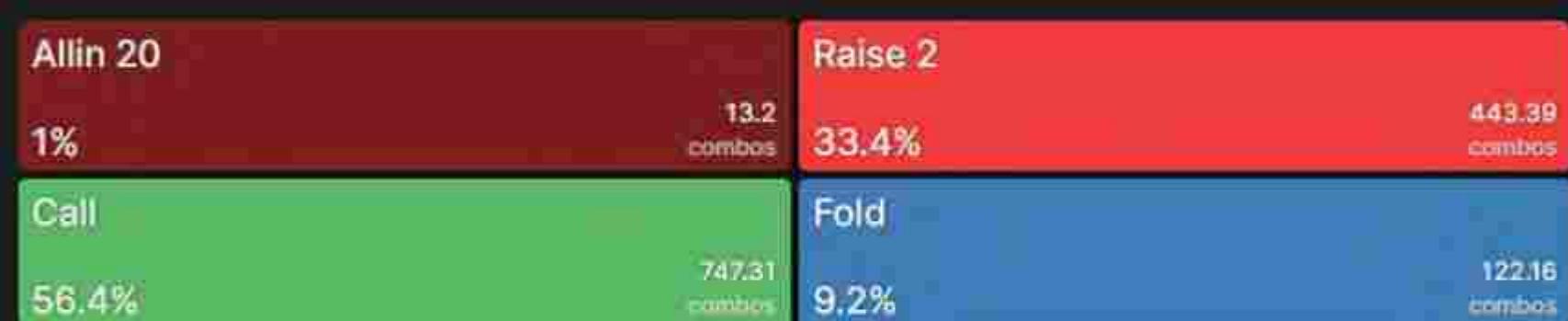
[HU Cash, NL500, 20bb] In a 20bb heads up cash game, SB (IP) open-limps more hands than they open-raise. They play 91% of hands. If SB doesn't limp how much tighter do they have to play?

- A: VPIP 91% of hands (no change)
- B: VPIP 87% of hands
- C: VPIP 82% of hands
- D: VPIP 73% of hands



Correct answer:

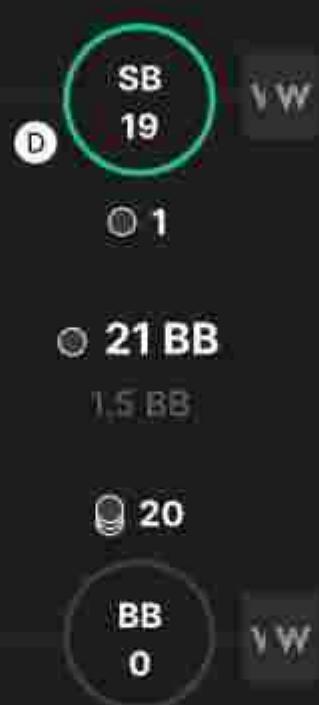
D: VPIP 73% of hands



SB strategy if allowed to limp

Removing the option to limp means SB has to play much tighter! Their VPIP decreases from 91% to 73%.

Limping HU allows you to play a wider range of hands and improve the EV of the bottom of your range. We see GTO limp even in 100bb HU spots.



Limping becomes more important in short stack scenarios as it gives villain a bad price on a shove.

We lose less folding to a raise and don't need to call as wide.

AA	AQs	AQs	AJs	ATh								
AKo	KK	KQs	KJh	KTh	KKh	KKh	KTh	KQs	KTh	KQs	KTh	KTh
AQs	KQs	QQ	QJh	QTh	QKh	QKh	QTh	QKs	QKh	QKs	QKh	QKh
AJs	KJh	QJh	JJ	JTh	JKh	JKh	JTh	JKs	JTh	JKs	JTh	JTh
ATh	KTh	QTh	JTh	TT	TKh	TKh	TKh	TQs	TKh	TQs	TKh	TQs
AKh	KKh	QKh	JKh	TKh	99	99	99	92s	98s	99s	94s	93s
Allin	KKh	QKh	JKh	TKh	99s	88	88	86s	86s	86s	84s	83s
ATs	KT0	QT0	JT0	TT0	99s	82s	77	79s	79s	79s	72s	72s
A5o	K5o	Q5o	J5o	T5o	99o	88o	76o	89	85o	84o	63s	82s
A5s	K5s	Q5s	J5s	T5s	99s	85s	72s	85s	85s	84s	53s	52s
A4s	K4s	Q4s	J4s	T4s	94s	82s	74s	84s	82s	84	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	83o	83o	83	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	82o	82o	82o	42o	32o

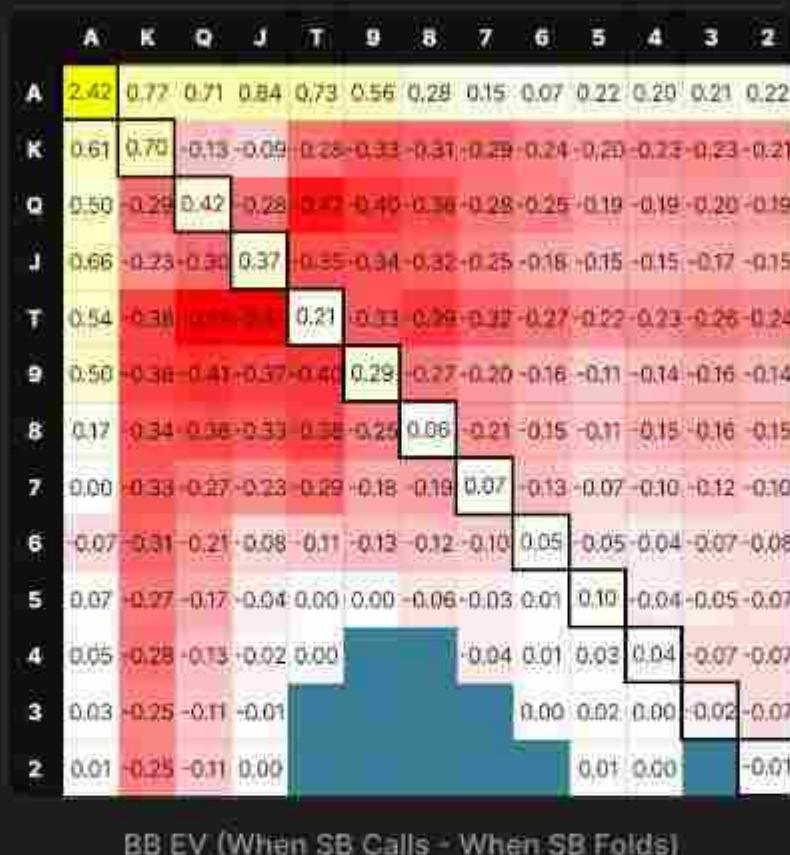
SB 20bb HU Cash - Limps allowed

Here's what SB's strategy looks like when they're allowed to limp.

BTN	SB	BB
FOLD	FOLD	FOLD
CALL	CALL	CALL
RAISE 2	RAISE 5	RAISE 5
ALLIN 20	ALLIN 20	RAISE 7 ALLIN 20

[8-max MTT, 20bb] BTN opens, SB calls, action on BB. Which of BB's hands gain EV when SB calls, compared to if SB had folded?

- A: KQo
- B: 55
- C: 98s
- D: T5s



Correct answer:

B: 55

KQo, 98s, and T5s all lose value going multiway in this spot.

AK	AKo	AQo	AJ	AJc	AJs	AAs	AAs	A7s	A7s	A6s	A5s	A4s	A3s	A2s
10%	6%	5%	4%	3%	3%	2%	2%	1%	1%	1%	1%	1%	1%	1%
AKo	KK	KQo	KQs	KJs	KJs	KAs	KAs	K7s	K7s	K6s	K5s	K4s	K3s	K2s
QJo	QJc	QQ	QJf	QJf	QJf	Q7s								
AJc	AJ	AQ	AQ	AQ	AQ	A7s								
AJs	AJs	AJs	JJ	JJ	JJ	A6s								
AAs	AAs	AAs	TT	TT	TT	A5s								
ATo	ATo	ATO	ATo	ATo	ATo	A4s								
A7s	A7s	A7s	A7s	A7s	A7s	A3s								
A8o	A8o	A8o	A8o	A8o	A8o	A9s								
A8s														
A7o	A7o	A7o	A7o	A7o	A7o	A7s								
A6s														
A7o	A7o	A7o	A7o	A7o	A7o	A7s								
A5s														
A5o	A5o	A5o	A5o	A5o	A5o	A5s								
A5s														
A5o	A5o	A5o	A5o	A5o	A5o	A5s								
A4o	A4o	A4o	A4o	A4o	A4o	A4s								
A3s														
A2o														
A3s														

BB squeeze strategy+EV

Pocket pairs and Ace-x hands can shove, forcing SB off their equity and picking up additional dead money.

BB EV comparison

	Facing BTN open + SB call	Facing BTN open	Difference
A: KQo	1.52	1.81	-0.29
B: 55	1.86	1.76	0.1
C: 98s	0.71	0.98	-0.27
D: T5s	0.26	0.48	-0.22

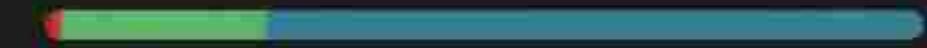
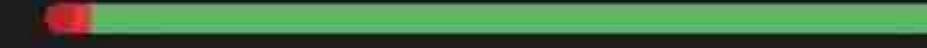
Low pairs and low suited connectors tend to perform better multiway as they have higher implied odds and are less dominated.

Contrary to popular belief, most hands lose value going multiway despite the extra dead money in the pot. Although it depends on the ranges in play.

BTN FOLD RAISE 2.5	SB FOLD CALL RAISE 12 ALLIN 100	BB FOLD CALL RAISE 13 ALLIN 100	FLOP 5.5	BB CHECK BET 1.8 (33%)
BTN CHECK BET 1.8 (33%) BET 2.75 (50%) BET 4.1 (75%) BET 6.9 (100%)	BB FOLD CALL RAISE 8.35 (50%) RAISE 10.9 (100%)	TURN 9.1 2	BB CHECK BET 1.8 (33%) BET 4.55 (50%)	BTN CHECK BET 3 (33%) BET 4.55 (50%) BET 6.8 (75%) BET 11.4 (125%) BET 15.9 (175%)

[6-Max Cash, 500NL, 100bb] BTN vs BB single-raised pot. BB check-calls a 33% flop c-bet and faces a 125% turn barrel on A♠ 8♠ 5♥ 2♦. Which hand is the highest EV call?

- A: A♣ 7♥
- B: T♠ 8♥
- C: K♣ 5♣
- D: 5♦ 3♦

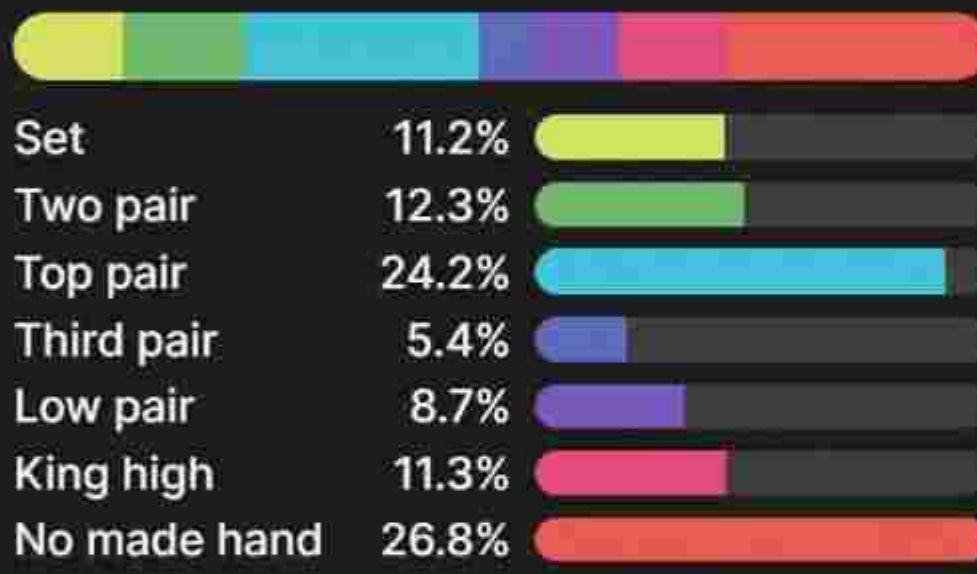
Hand	Strategy	Range	EV
A♣7♥		66.3 %	-0.01
T♠8♥		35.5 %	-0.01
K♣5♣		82.4 %	0
5♦3♦		60.5 %	0.45

BB strategy and EV by hand

Correct answer:

D: 5♦3♦

HANDS



BTN turn barrel range composition

All 4 of these hands are bluff-catchers against the turn barrel.

5♦3♦ has the most EV vs the value portion of villain's polarized range. It is able to outdraw AK and AQ on a 5, 4 or 3.



Remember, when your opponent is polarized, anything between their value and bluffs are potential bluff-catchers.

All your bluff-catchers have close to the same equity. The most valuable bluff-catchers have clear paths to outdraw value and good blockers.

CO

FOLD
RAISE 2.3
ALLIN 100

[6-Max Cash, 100bb] Which statements are true? When rake increases (greater percentage and/or cap)...

- A: ...we should open fewer suited connectors and low pocket pairs
- B: ...we should open more suited connectors and low pocket pairs
- C: ...we should open fewer high card hands
- D: ...we should open more high card hands



Correct answer

- A:** ...we should open fewer suited connectors and low pocket pairs
- D:** ...we should open more high card hands

AA	AAs	AdA	AJs	ATs	AKs	ABs	AJs	AbS	AcS	AcA	AcJ	AcT	AcK
AKs	KK	KQs	KJs	KTs	KQs	KQs	KQs	KQs	K5s	K4s	K3s	K2s	
ABs	KQs	QQs	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	
AcT	KJs	QJs	JJs	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s	
ATs	KTs	QTs	JTs	JJs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s	
ABs	K8s	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	
AcS	K9s	Q6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	
ATs	K7s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	
ABs	K6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	
AcT	K7s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	
ATs	K5s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	
ABs	K6s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	
AcS	K5s	Q5s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	
ATs	K4s	Q4s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	Q6s	
ABs	K3s	Q3s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	
AcT	K2s	Q2s	Q1s	Q0s	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	

CO RFI 500NL

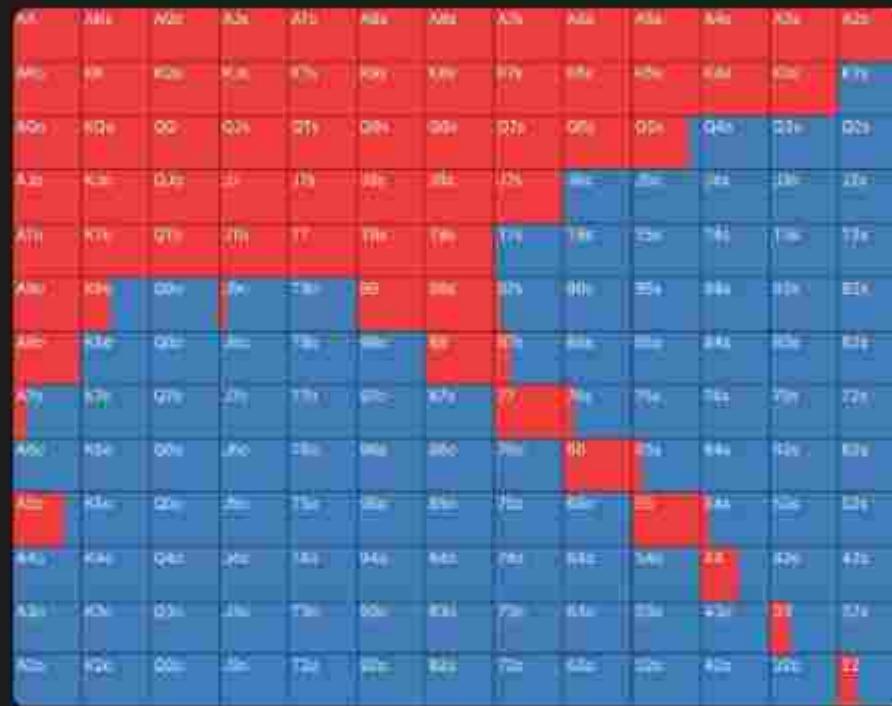
Suited connectors and low pocket pairs generate more of their EV postflop.

Offsuit high card hands with poor postflop playability generate more of their EV by taking down the blinds preflop.

AA	AKs	AQs	AdS	ATs	ASs	ABs	ATs	ASs	ASs	ASs	R3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQs	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	K9s	Q9s	J9s	T9s	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8s	Q8s	J8s	T8s	88s	87s	86s	85s	84s	83s	82s	
A7o	K7s	Q7s	J7s	T7s	97s	87s	77	26s	25s	24s	23s	22s
A6o	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	65s	64s	63s	62s
A5o	K5s	Q5s	J5s	T5s	95s	85s	75s	65s	55s	54s	53s	52s
A4o	K4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44s	43s	42s
A3o	K3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33s	22s
A2o	K2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22s

CO RFI 500NL

You should expect to face a higher proportion of 3-bets and fewer calls in high rake environments.



500NL 2.5x CO open

When the rake is high, more EV comes from stealing the blinds, and less EV comes from drawing postflop.

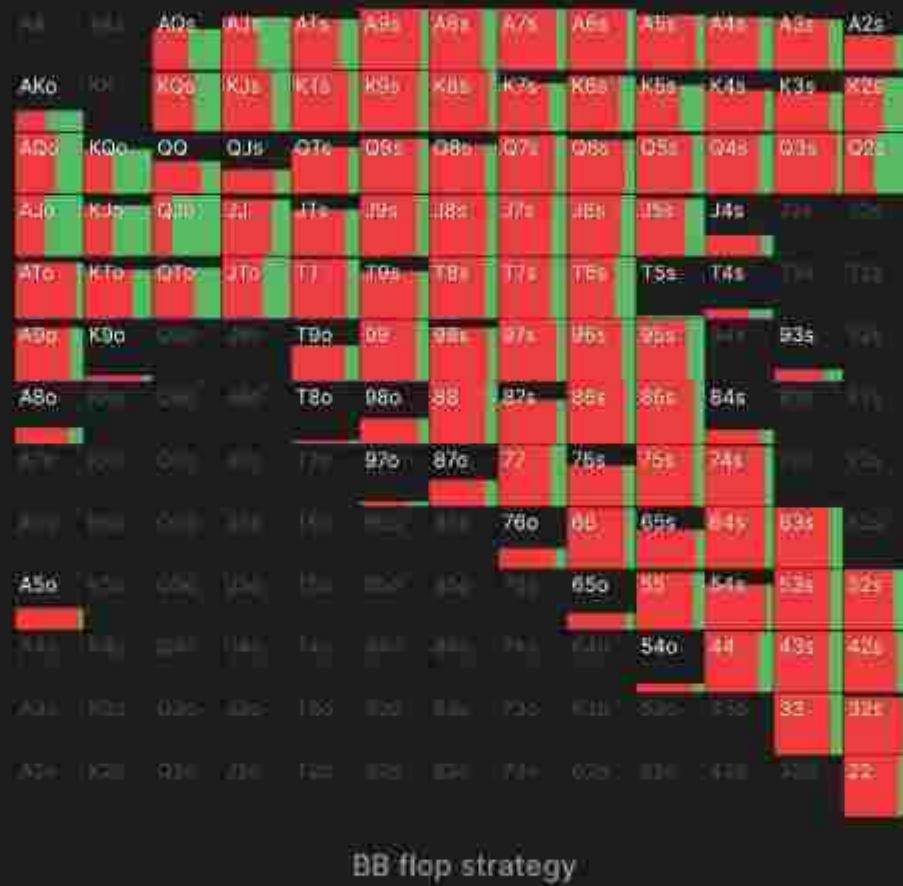
This makes blocking 3-bets and calls slightly more valuable, while decreasing the EV of postflop playability.

UTG	HJ	CO	BTN
FOLD	FOLD	FOLD	FOLD
RAISE 2	RAISE 6.5	RAISE 6.5	RAISE 7.5
ALLIN 100	ALLIN 100	ALLIN 100	ALLIN 100
SB	BB	FLOP	4.5
FOLD	FOLD	7 6 5	
CALL	CALL		
RAISE 10	RAISE 12		
ALLIN 100	ALLIN 100		

[6-Max Cash, 50NL, 100bb] UTG vs BB single-raised pot.

Why does BB donk on 7♠ 6♥ 5♦?

- A: Their entire range gains EV by donking
- B: Their strong hands gain EV by donking
- C: Their weak hands gain EV by donking
- D: To be unexploitable



Correct answer:

D: To be unexploitable



BB doesn't lose EV range-checking this flop against a GTO opponent.

However, UTG should never c-bet if they know that BB doesn't donk. This costs the BB substantial EV by preventing them from building the pot with their strong hands.

BB donks to deny UTG the opportunity to pot control.



UTG GTO c-bet strategy

BB can exploit a negligent opponent who c-bets more often than GTO by check-raising instead of donking.

BB's strong hands will have higher EV in the check line in this scenario.

HJ	CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD	FOLD
RAISE 2.5	CALL	CALL	CALL	CALL
ALLIN 200	RAISE 8.5	RAISE 8.5	RAISE 11	RAISE 12
	ALLIN 200	ALLIN 200	ALLIN 200	ALLIN 200

FLOP	5.5	BB	HJ	TURN	5.5	BB
		CHECK	CHECK			CHECK
		BET 1.8 (33%)	BET 1.8 (33%)			BET 1.8 (33%)
		ALLIN 197.5 (591%)	BET 2.75 (50%)			BET 2.75 (50%)
			BET 4.1 (75%)			BET 4.1 (75%)
			BET 6.9 (125%)			BET 6.9 (125%)
			ALLIN 197.5 (591%)			BET 9.6 (175%)

[6-Max Cash, 500NL, 200bb] HJ vs BB SRP, . The flop checks through. BB probes using a small bet on all of these turns except one:

A:

B:

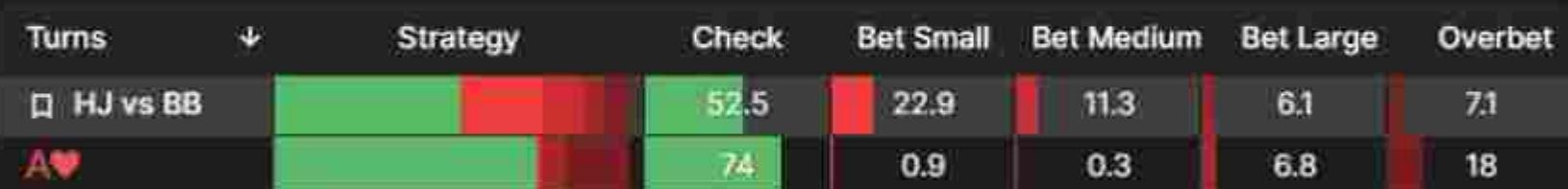
C:

D:



Correct answer:

C: A ♥

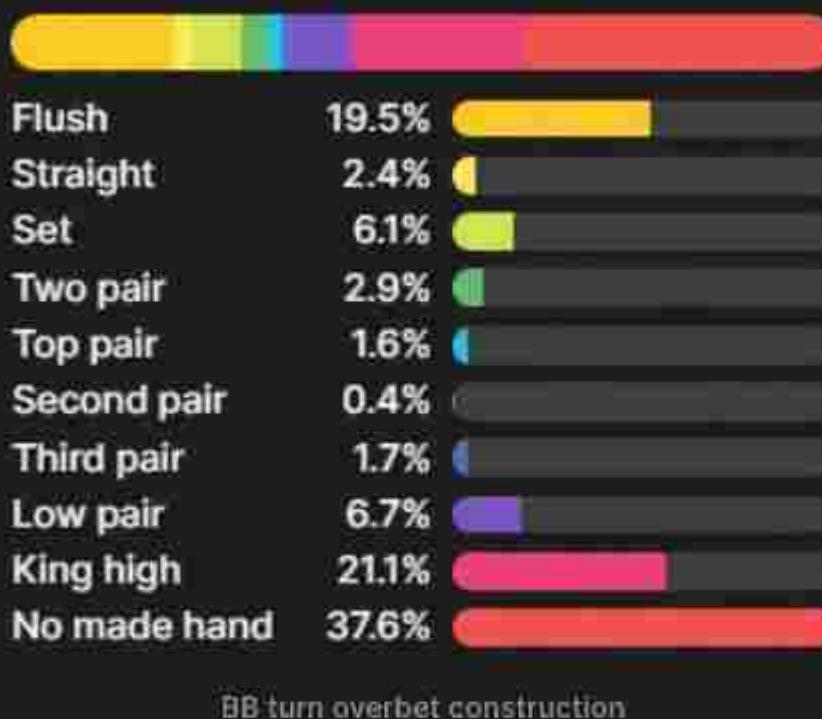


Aggregate probe strategy on 8♦ 7♠ 4♥ A♥

BB normally uses a small bet with a depolarized range, using hands like top pair+ for value.

But on Ace turns, BB prefers an overbet/check strategy instead.

HANDS



The A♥ blocks more flushes in HJ's range than BB's range.

However, the Ace also gives HJ more top pair and other made hands. Therefore, BB's value betting region is mostly flushes.



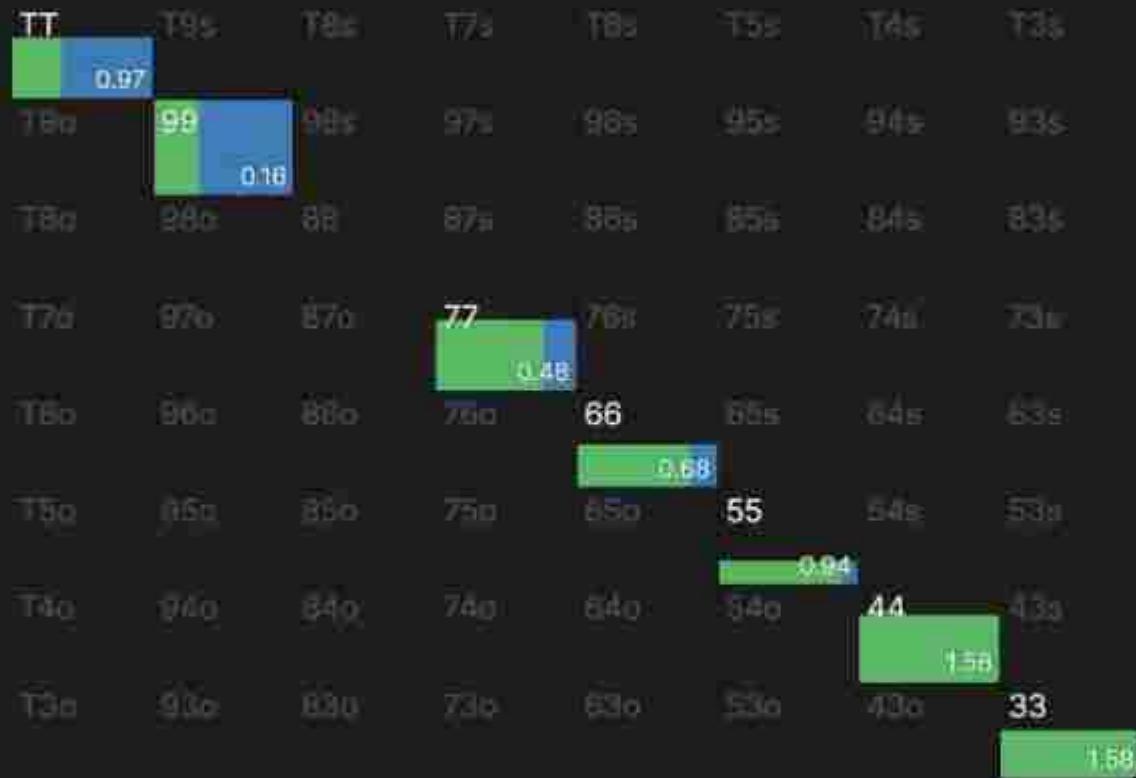
Note that the A♥ is bad for BB's range. This is one of the lowest EV turns.

BB overbets this card not because it's a good turn, but because it's the most efficient size for their value!



[8-max MTT, 60bb] HJ vs SB 3BP. SB triple-barrel shoves 25%, 50%, and 44% on flop turn and river. The board runs out Q ♦ 8 ♦ 8 ♦ 2 ♣ 2 ♦. What pocket pair is the highest EV bluff catcher in HJ's range?

- A: TT
- B: 77
- C: 55
- D: 33



HJ EV facing river shove

Correct answer:

D: 33



SB river shove strategy - Bluffs highlighted

Here we see SB's river shoving strategy with bluffs highlighted.

Note that 33 is the only pair which does not block any bluffs in the SB's range!



All of these pairs are bluff catchers with close to the same equity. They beat SB's bluffs and lose to their value.

The best bluff catchers unblock bluffs and/or block value.



[Spin & Go, 25bb] SB opens with A♥A♦, BB calls. SB flops top set and c-bets 44% pot on A♠8♦5♣, BB calls. Turn is the Q♦. SB should often check their AA on the turn. Why?

- A: AA blocks BB's betting range
- B: SB needs to protect their checking range
- C: AA makes as much money trapping as it does betting
- D: AA blocks BB's calling range



SB turn strategy+EV with AA

Correct answer:

C: AA makes as much money trapping as it does betting

Recall the indifference principle: Mixing between betting and checking only makes sense if those two actions have the same EV!



AA blocker score:

Let's examine the other answers.

Answers **A** and **D** talk about what we block. We want the most action possible. Blocking villains bets makes us want to check less often. Blocking their calls makes us want to check more often.

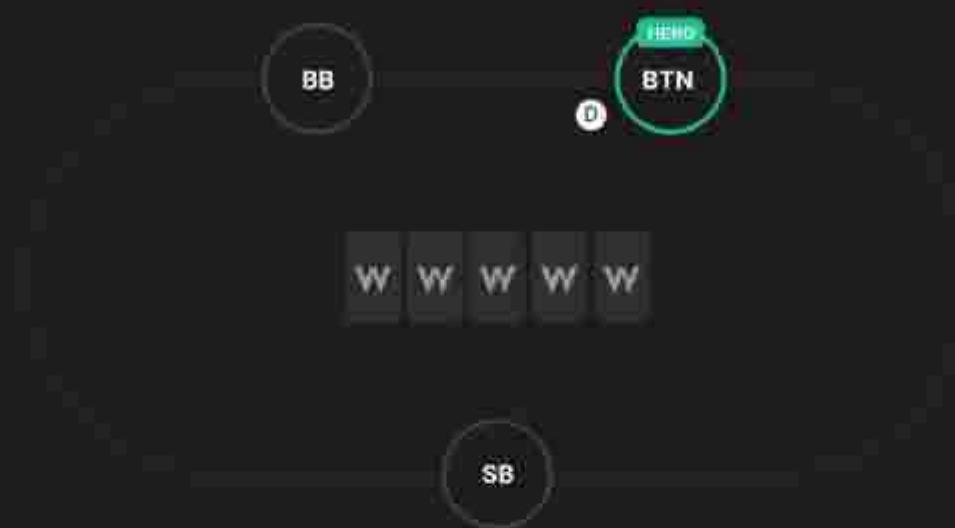
These effects somewhat cancel out.



Answer B: "Protecting your range" can be rephrased as "Villain will bet into my checking line often enough that my nuts want to trap sometimes".

These are two sides of the same coin.

Your weakened checking range is the bait that lures in villain's bets, which incentivizes trapping in the first place.



[3-Max MTT Final Table] What scenario should BTN open tightest? Payout structure: 46.67%, 31.11%, 22.22%

(Stacks: BTN - SB - BB)

- A: 5 - 20 - 40
- B: 10 - 20 - 40
- C: 20 - 40 - 5
- D: 50 - 20 - 30

Stacks (BTN - SB - BB)	BTN Opening %
A: 5 - 20 - 40	34.2%
B: 10 - 20 - 40	30.1%
C: 20 - 40 - 5	18.5%
D: 50 - 20 - 30	44.6%

Correct answer:

C: 20 - 40 - 5

AK	AKs	AdA	AJs	ATs	AdS	AdS	ATs	ATs	AdS	AdS	AAs	A3s	A2s
AKo	KK	KQs	KJ	KTs	KQs	KQs	K7s	K6s	K5s	K4s	K3s	K2s	
AQo	KQs	QQ	QJs	Q7s	Q9s	Q9s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s	
AJo	KQs	QJs	JJ	J7s	J9s	J9s	J7s	J6s	J5s	J4s	J3s	J2s	
ATo	K7s	Q7s	J1s	T1s	T9s	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
Ado	K9s	Q9s	J9s	T9s	99	99s	97s	96s	95s	94s	93s	92s	
ASo	K8s	Q8s	J8s	T8s	88	88	87s	86s	85s	84s	83s	82s	
ATs	K2s	Q7s	J9s	T2s	97s	87s	77	76s	75s	74s	73s	72s	
Ads	K6s	Q6s	J6s	T6s	96s	86s	76s	66s	55s	44s	33s	22s	
Asd	K5s	Q5s	J5s	T5s	95s	85s	75s	65s	55s	44s	33s	22s	
A4d	K4s	Q4s	J4s	T4s	94s	84s	74s	64s	54s	44s	33s	22s	
A3d	K3s	Q3s	J3s	T3s	93s	83s	73s	63s	53s	43s	33s	22s	
A2d	K2s	Q2s	J2s	T2s	92s	82s	72s	62s	52s	42s	32s	22	

Light red = shove, light red = min-raise

Let's examine BTN's tight opening strategy with stacks 20 - 40 - 5:

Current \$EV:	34%
\$EV after doubling:	40% (+6%)
\$EV after busting:	22% (-12%)

Recall the principle of ICM: **Losing your stack costs more than doubling your stack would gain.**

Mid stacks are the most vulnerable to survival pressure. In the 20-40-5 example:

Doubling your stack against the SB only gains 6% tournament equity, whereas busting in 3rd costs 12% of your tournament equity.

The ICM pressure is further compounded by the short-stacked BB who is likely to bust soon!



[6-Max Cash] Billy wins 5bb/100 playing NL100, and 3bb/100 playing NL200. His standard deviation is 100 bb/100 at both stakes. **How big should Billy's bankroll be before they consider taking shots at NL200?**

- A: \$5,000
- B: \$10,000
- C: \$15,000
- D: \$20,000

	bb/100	\$/100
Current stake	\$100	
Win rate (bb/100)	5	\$5
Standard Deviation (bb/100)	100	\$100
Next stake	\$200	
Win rate (bb/100)	3	\$6
Standard Deviation (bb/100)	100	\$200

Move to the next stake when your bankroll is greater than: \$15000

Correct answer:

C: \$15,000

$$\text{Critical Bankroll} \approx \frac{\sigma_2^2 - \sigma_1^2 (\$/100)}{2 \Delta \text{Win rate} (\$/100)}$$

Consider that Billy only wins an additional \$1 per 100 hands at NL200 compared to playing NL100. In exchange for that extra dollar, they're quadrupling their variance (σ^2).

Billy needs a large enough bankroll to justify quadrupling their variance for a measly \$1/100 gain.

A hand holding a shiny gold coin is positioned over a green poker table. The table has several cards visible, including K9s, K8s, Q9s, J9s, 98s, and 77s. The background features a red border and a red banner at the bottom with white text.

**WHY IS
NO ONE
DOING THIS?**

WEEKLY COACHING

[Learn more](#)

Watch [The Ultimate Guide to Bankroll Management](#) on our YouTube channel to learn more!





<< OOP — IP >>

This is an equity bucket distribution on the river (SPR = 4.5).
Without knowing the spot, what bet size should OOP use?

- A: Block-bet small <35% pot
- B: Between 35% and 100% pot
- C: Overbet >100% pot



Correct answer:

A: Block-bet small <35% pot



Consider your target.

IP has a few nutted traps and a ton of trash. Their range is weak but polarized.

We want to extract money from these weak hands without donating too much to their traps.

FLOP	5	BB	S8	BB	TURN	20	BB	S8	RIVER	20
AK 7		CHECK BET 33% ALLIN 1950%	CHECK BET 33% BET 67% BET 100% BET 150% ALLIN 1950%	FOLD CALL RAISE 50% RAISE 100% ALLIN 450%	2		CHECK BET 33% BET 66% ALLIN 450%		9	

This was taken from a HU Cash spot, 100bb deep where SB (IP) c-bet 150% on the flop then gave up on the turn. The overbet-check line IP usually consists of give-ups and very few traps.

The most effective way to attack that range OOP is with small probing bets which force them to separate their traps from their trash.



[6-Max Cash, NL500, 100bb] BTN vs BB SRP. BTN C-bets 33% on 772r.

Match each of these lines to the correct range morphology:

Spot

Morphology

(A) BB calls BTN's flop bet

Linear

(B) BB check-raises flop

Polarized

(C) BB probe bets A♥ turn

Merged

(D) BB calls down BTN's triple-barrel shove

Condensed

**Spot**

- (A) BB calls BTN's flop bet
- (B) BB check-raises flop
- (C) BB probe bets A♥ turn
- (D) BB calls down BTN's triple-barrel shove

Morphology

- (D) Linear
- (C) Polarized
- (B) Merged
- (A) Condensed



BB's flop call is **condensed** because it's mostly medium hands.

They check-fold trash and check-raise most nutted hands.

BB check-raises the flop with a **merged** range containing nuts, bluffs, and some medium hands like middling pairs for balance.



BB's probe bet on the A♥ turn is **polarized** because they overbet with trips+ for value and gutshot bluffs, without any medium hands.

When BB calls down the triple barrel shove their range is **linear**, since they only call the best hands they can and fold the rest.

Hand Strength



Polarized	Linear	Condensed	Merged
1	1	0	1
0.8	1	0.2	0.8
0.7	0.8	0.4	0.7
0.2	0.6	0.8	0
0	0.4	1	0.25
0	0.2	0.8	0.4
0	0	0.4	0.25
0	0	0.2	0
0.2	0	0	0.2
0.7	0	0	0.7
1	0	0	1



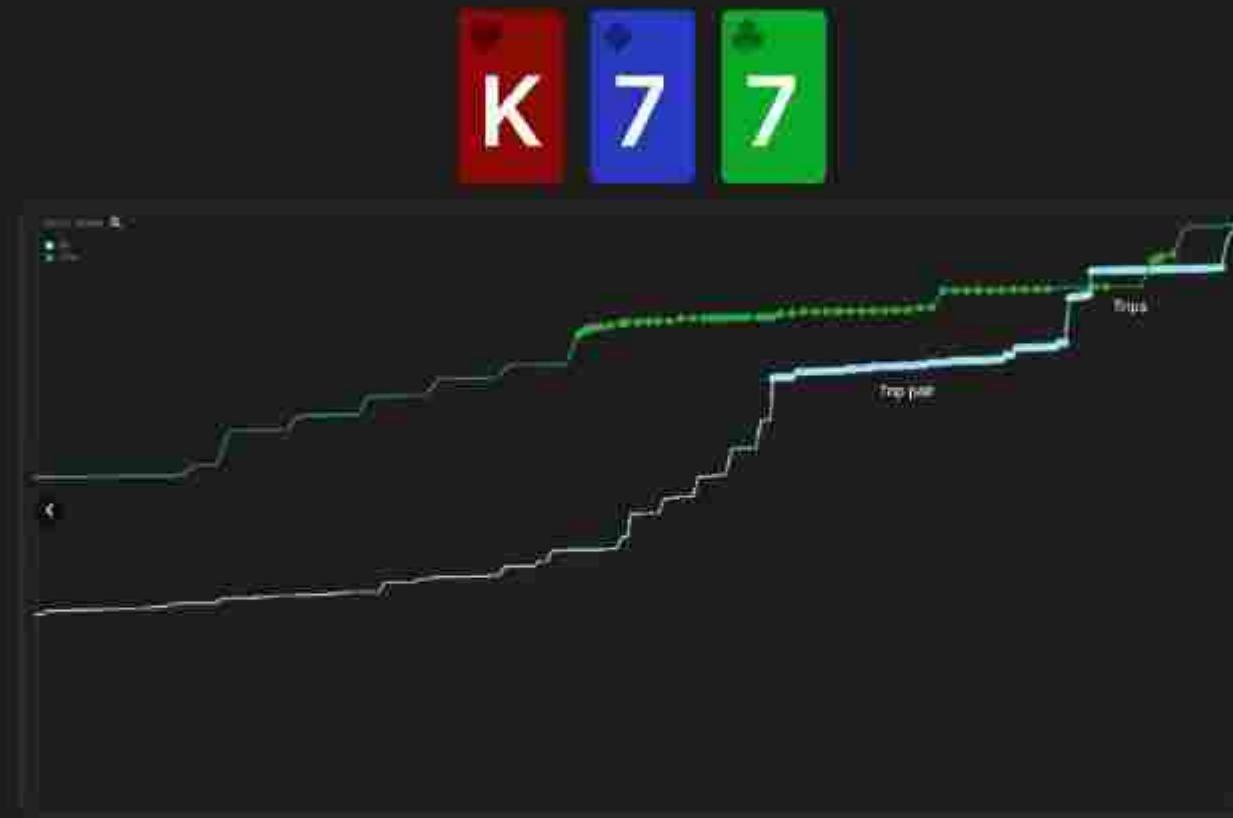
[8-Max MTT, 35bb] LJ opens 2x, BB calls. What flop results in this equity distribution?

- A: A♦ A♣ 7♠
- B: K♦ 7♦ 7♣
- C: 9♦ 9♣ 2♠



Correct answer:

B: K \heartsuit 7 \diamond 7 \clubsuit



The classic double-plateau distribution is common on paired boards with an overcard, representing the top pair hands (lower plateau), and the trips (higher plateau).



Paired boards with a low card tend to have a single plateau representing trips preceded by a staircase representing pocket pairs above the low card.

BTN FOLD RAISE 2.2 ALLIN 40	SB FOLD RAISE 7 ALLIN 40	BB FOLD CALL RAISE 7 ALLIN 40	FLOP 4.9 	BB CHECK	BTN CHECK BET 1.6 (33%) BET 3.25 (66%) BET 6.35 (130%) ALLIN 37.8 (771%)
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[6-Max Cash, NL50, 40bb] BTN vs BB SRP on J♦ J♣ 3♣.

Which of the BTN's hands have the best Equity Realization?

A: A♥ K♥

B: 4♥ 4♦

C: K♥ 6♥

D: 7♥ 6♥



BTN Equity Realization (EQR)

Correct answer:

D: 7 ♥ 6 ♥

Hand	Strategy	Range	EV	Equity	EQR
A♥K♥		100 %	2.5	65.1 %	78.2 %
4♥4♦		100 %	2.82	61.4 %	93.7 %
K♥6♥		100 %	1.74	44.9 %	78.9 %
7♥6♥		100 %	1.72	27.6 %	127.2 %

Equity realization tells you how well a hand performs, relative to its equity.

Low value hands like 76s overperform on this flop because BB is forced to overfold.
The other hands are more valuable but they underperform relative to their equity.

W

THEORY

EQUITY REALIZATION

If BTN had the option to force both players to check down, they would take that option with most Ace and King high hands. AK would win 2/3 of the pot that way instead of 1/2 the pot as it does now.

[Learn more](#)

[Read this article to learn more about equity realization!](#)



CO FOLD RAISE 2.3 ALLIN 60	BTN FOLD CALL RAISE 7.5 ALLIN 60	SB FOLD CALL RAISE 17 ALLIN 80	BB FOLD CALL RAISE 17 ALLIN 80	CO FOLD CALL RAISE 17 ALLIN 60	FLOP 17.5 K 5 4
CO CHECK BET 1.75 (10%) BET 4.4 (25%) BET 8.75 (50%) BET 13.1 (75%) BET 17.5 (100%)	BTN CHECK BET 1.75 (10%) BET 4.4 (25%) BET 8.75 (50%) BET 13.1 (75%) BET 17.5 (100%)	CO FOLD CALL RAISE 13.1 (33%) RAISE 18.85 (66%) RAISE 26.25 (83%) RAISE 35.95 (100%)	TURN 26.3 J	CO CHECK BET 3.95 (15%) BET 10.5 (40%) ALLIN 48.1 (83%)	BTN CHECK BET 2.65 (10%) BET 6.6 (25%) BET 13.15 (50%) BET 19.7 (75%) BET 26.3 (100%)

[8-Max MTT, 60bb] CO vs BTN 3BP. BTN c-bets 25% on **K♥ 5♦ 4♣**, CO calls. Turn is **J♥**. Why does BTN check back two-thirds of their flush draws in this spot?

- A: To retain their implied odds
- B: To avoid getting blasted off their equity if CO XR-shoves
- C: To protect the checking range
- D: The SPR is low enough to get stacks in by the river regardless



BTN turn strategy

Correct answer:

All answers are correct!



Flush draws play closer to medium-strength made hands in low SPR spots.

If BTN bets, CO can shove and blast BTN off their equity with many of these draws.

Bet-folding a high EV hand is a disaster!



Checking back flush draws retains your implied odds because you can win a bigger pot when you hit, and keep the pot smaller when you miss.

The SPR is low enough that flushes can get stacks in on the river without needing to bet the turn.

Many draws in BTN's range have higher EV checking than betting!



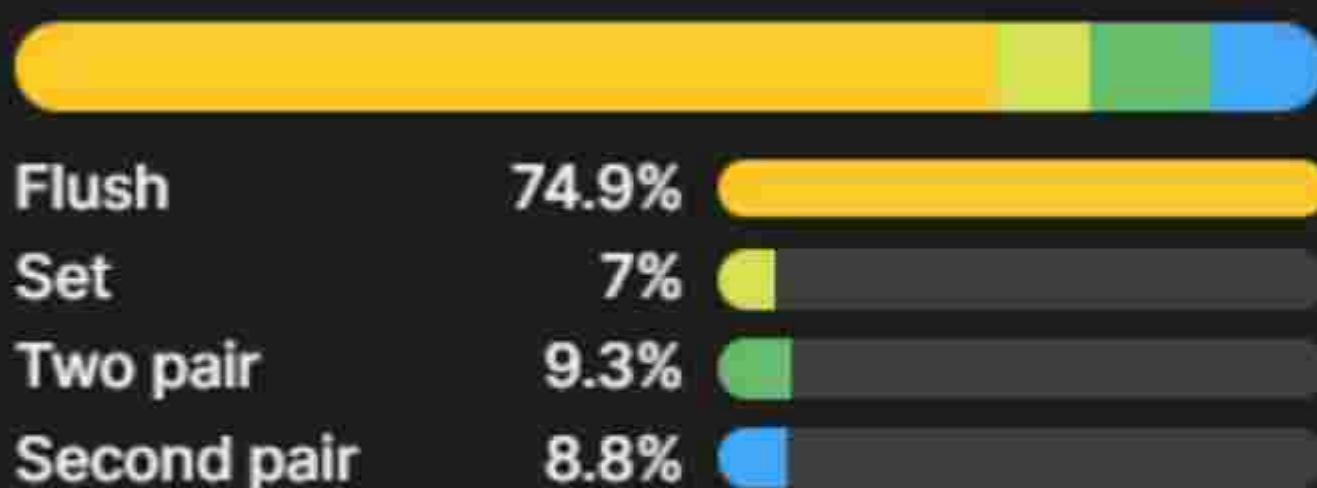
BTN turn strategy+EV with flush draws

BTN FOLD RAISE 2.5 ALLIN 50	SB FOLD CALL RAISE 8.5 ALLIN 50	BB FOLD CALL ALLIN 50	BTN FOLD CALL ALLIN 50	FLOP 18 K 8 4	SB CHECK BET 3.6 (20%) BET 5.95 (33%) BET 9 (52%) BET 13.5 (75%) BET 22.5 (100%)
BTN FOLD CALL RAISE 15.5 (33%) RAISE 20.9 (50%) ALLIN 41.5 (100%)	TURN 29.9 2	SB CHECK BET 6 (20%) BET 9.85 (33%) BET 14.95 (50%) ALLIN 35.55 (100%)	BTN FOLD CALL ALLIN 35.55 (100%)	RIVER 49.0 A	SB CHECK BET 5 (10%) BET 17.5 (35%) ALLIN 25.7 (52%) BTN FOLD CALL

[6-Max Cash, NL500, 50bb] SB vs BTN 3BP. SB triple-barrel shoves 33%, 33%, 52% on **K♥ 8♥ 4♥ 2♥ A♣**. 28% of BTN's flop range contains a ♥ and these hands never fold or raise in this line. What percentage of BTN's showdown range is comprised of flushes?

- A: 43%
- B: 55%
- C: 64%
- D: 75%

HANDS



BTN River Calling Range

Correct answer:

D: 75%

Street	Bet size	MDF
Flop	33%	75%
Turn	33%	75%
River	52%	66%
Call down%		37%

Multiply the Minimum Defense Frequency on each street, starting on the flop, to figure out how wide BTN calls down.

BTN's final calling range is about 37% of their starting range.



Recall that 28% of BTN's flop range contains a . These hands stay in their range.

BTN's showdown range is 37% of their flop range. $28\% \text{ flushes} / 37\% = 75\%$ in their final calling range.

CO	BTN	SB	BB
FOLD	FOLD	FOLD	FOLD
RAISE 2.5	RAISE 8.5	RAISE 11	CALL RAISE 12

[6-Max Cash, NL50] CO opens, BB calls. CO c-bets 33% on the flop.
How should BB adjust their flop calling and raising frequencies deep stacked?

- A: Call more, raise more
- B: Call more, raise less
- C: Call less, raise more
- D: Call less, raise less

BB facing CO 33% flop bet

Correct answer:

B: Call more, raise less

Stack depth	Raise	Call	Fold
200bb	12.2%	55.7%	32.2%
100bb	13.1%	52.5%	34.4%
75bb	14.0%	50.2%	35.8%
50bb	15.5%	48.5%	36.0%

As stacks get deeper BB raises less often, but calls more often.

They tend to continue more often in deeper spots overall.

More continuesLess XR on flop

Deeper SPR

Implied odds

Felting range

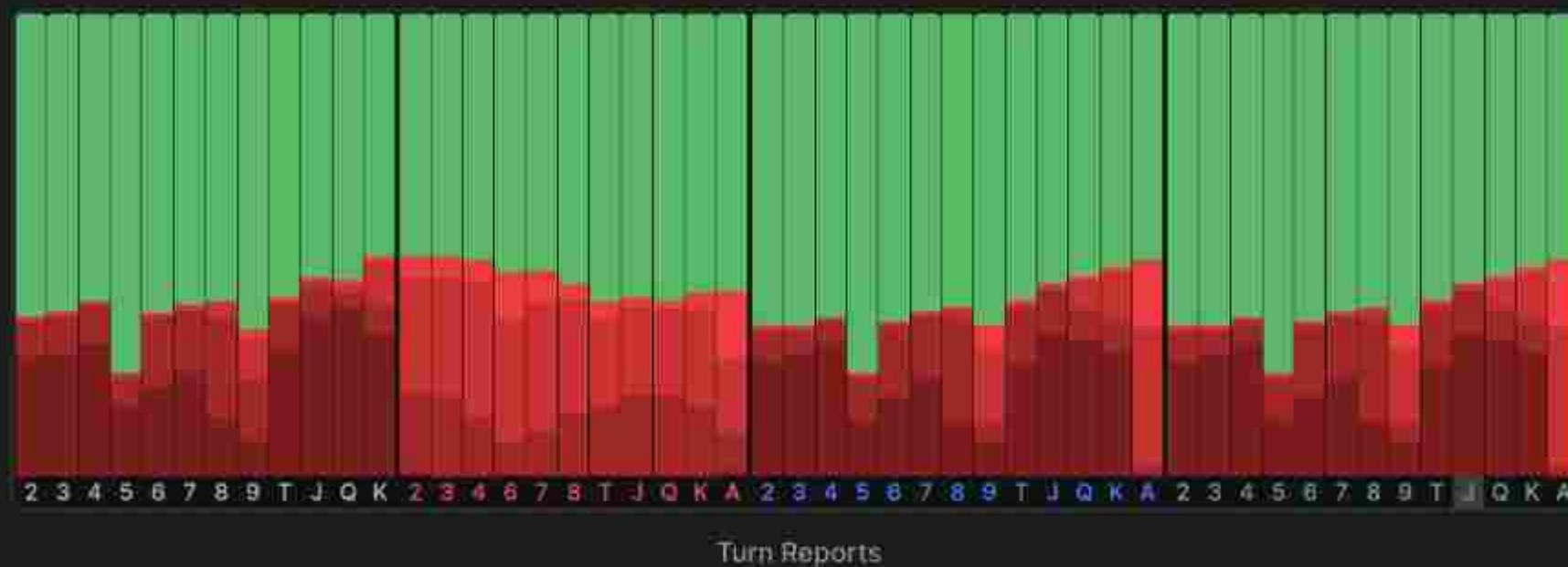
Implied odds increase as stacks get deeper. You can often draw more hands deep stacked as the value of seeing another card increases.

Felting ranges get tighter as stacks get deeper. BB needs stronger nutted hands to check-raise the flop deep stacked compared to short stacked. Therefore, they XR less often overall.

BTN	SB	BB	FLOP	5.5
FOLD	FOLD	FOLD		
RAISE 2.5	CALL	CALL		
	RAISE 11	RAISE 12		
	ALLIN 200	ALLIN 200		
			A 9 5	
BB	BTN	BB	TURN	9.1
CHECK	CHECK	FOLD		
BET 33%	BET 33%	CALL		
ALLIN 3591%	BET 50%	RAISE 50%		
	BET 75%	RAISE 100%		
	BET 125%	ALLIN 2151%		
	ALLIN 3591%			
			W	
			BB	
			CHECK	
			BET 33%	
			BET 50%	
			BET 75%	
			BET 125%	
			BET 175%	

[6-Max Cash, NL500, 200bb] BTN vs BB SRP, deep stacked. Flop is A♠ 9♥ 5♥ and BTN c-bets 33%, BB calls. What turn card should BTN overbet most often?

- A: A♠ 9♥ 5♥ 6♥
- B: A♠ 9♥ 5♥ 9♦
- C: A♠ 9♥ 5♥ J♣
- D: A♠ 9♥ 5♥ 8♠



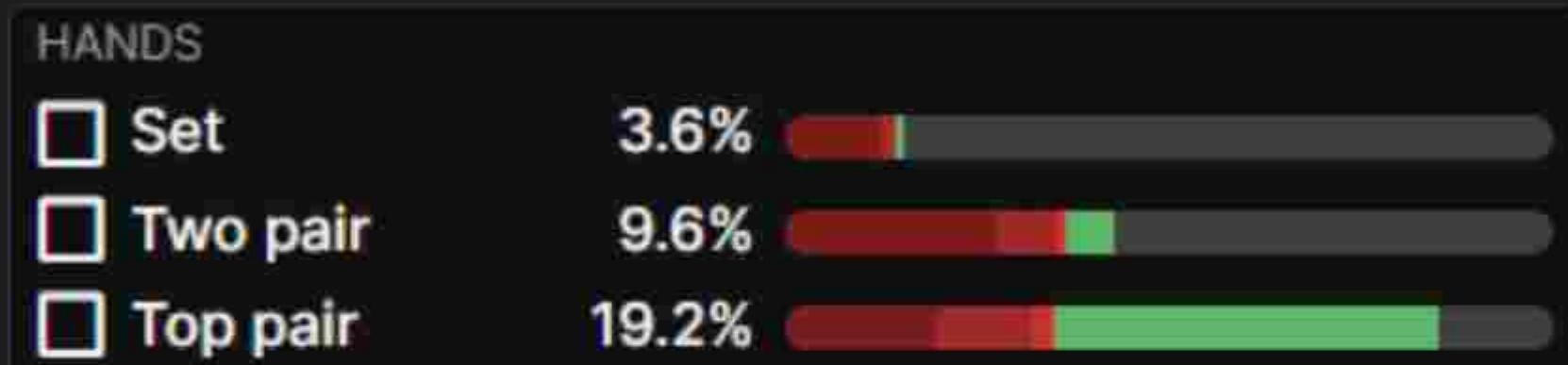
Correct answer:

C: A♠ 9♥ 5♥ J♣



Recall DD #220: Turn cards that pair the board or complete draws often neutralize the aggressor's nut advantage, preventing them from polarizing too hard.

The 6♦, 9♦, and 8♦ turns complete many draws giving BB enough nuted hands to counter overbets. The J♣ retains BTN's nut advantage.



BTN overbets with strong top pair+ for value. You can't overbet with hands like AQ if the turn completes too many of your opponent's draws else you'd risk overplaying your hand and becoming exploitable.

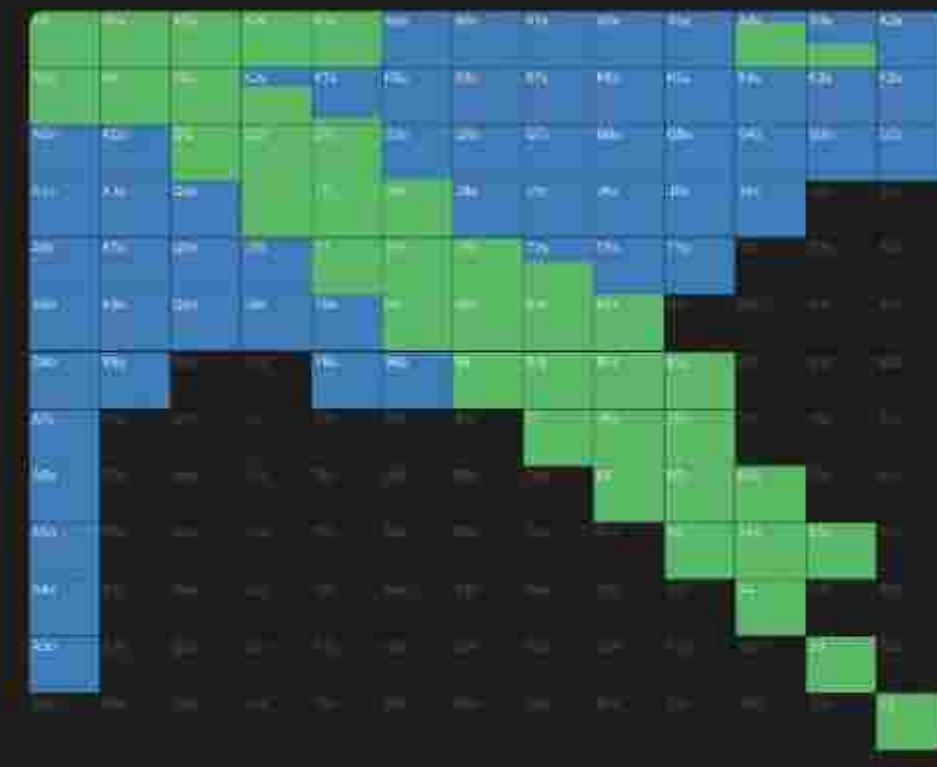
Consider what bet size is appropriate for the hand classes you want to value bet.



BB 3-bets 6.5bb against

[6-Max Cash, NL500, 100bb] BTN opens 2.5x, BB 3-bets to 6.5bb with this nitty range, (JJ+, AKo, AJs+). This 3-bet is too small and too tight.
Which of these hands would BTN prefer to call?

- A: KQs
- B: AJs
- C: 86s
- D: AQo



BTN facing nitty 3-bet preflop

Correct answer:

C: 86s



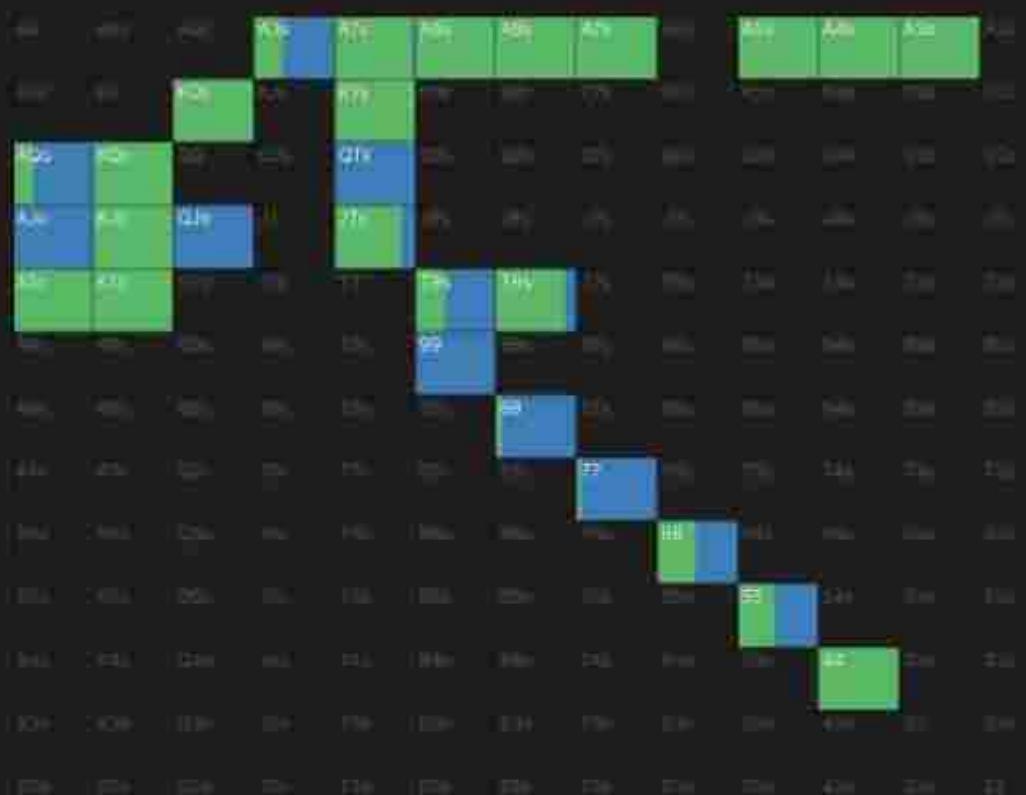
Recall DD #224: The way to exploit small 3-bets is to overdefend preflop and overfold postflop. This play is designed to maximize implied odds.

Hands like AQo, AJo, and KQo are dominated by BB's nitty range. BTN would much rather call with a hand like 86s that doesn't compete for the same board cards and can outdraw this top-heavy range.

FLOP 6.6	SB CHECK BET 33% ALLIN 571%	LJ CHECK BET 20% BET 33% BET 55% BET 83% BET 125%	SB FOLD CALL RAISE 33% RAISE 55% RAISE 83% RAISE 125%	TURN 13.9 K
SB CHECK BET 20% BET 50% ALLIN 245%	LJ CHECK BET 20% BET 33% BET 55% BET 83% BET 125%	SB FOLD CALL RAISE 33% ALLIN 90%	RIVER 29.2 2	SB CHECK BET 10% BET 36% BET 62% ALLIN 90%
				LJ CHECK BET 10% BET 36% BET 62% ALLIN 90%

[8-Max MTT, 40bb] LJ opens 2.3x, SB calls. LJ triple-barrel shoves 55%-55%-90% pot on T♦ 4♠ 4♥ K♦ 2♦. Which of these hands is a pure bluff catcher facing the river shove?

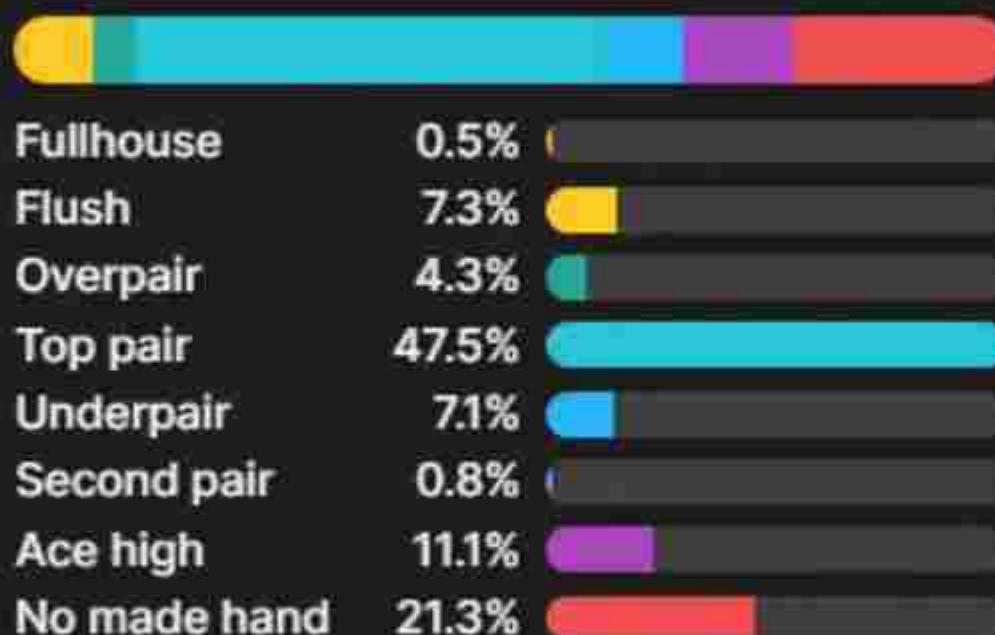
- A: A♣ 4♣
- B: K♣ T♣
- C: 5♠ 5♦
- D: A♠ J♦



SB river strategy

Correct answer:

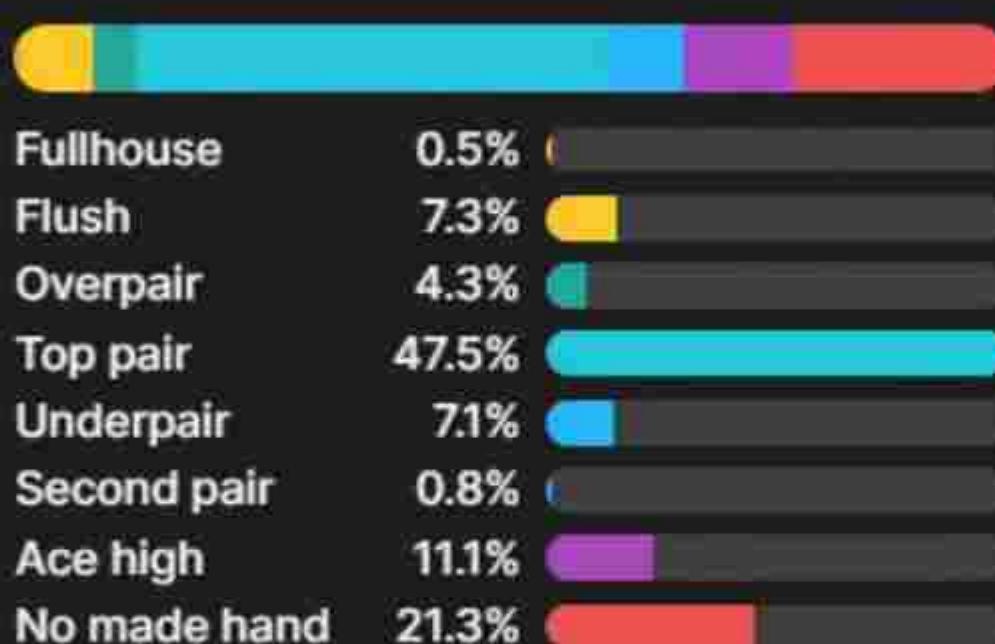
C: 5♠ 5♦

HANDS

LJ river shove construction

Recall DD #231: Every hand between villain's value and bluffs is a potential bluff catcher.

A "pure" bluff catcher cannot beat any value bets in your opponent's range.

HANDS

LJ river shove construction

Due to the low SPR, LJ shoves the river with all their top pair King-x, and even JJ and QQ for value.

Their bluffs are Ace-high and worse.



A♣4♣ and K♣T♣ are not pure bluff-catchers as they actually beat a portion of LJ's shoving range. They are "value-beaters".

5♠5♦ is directly in between the bluffs and value bets, so against a balanced opponent, it's indifferent between calling and folding.



[Spin & Go, 25bb] SB opens 3x, BB calls. Flop is Q♦ 8♠ 5♠, check, BB bets 44%, SB calls. Turn is 2♣. BB c-bets 75%. Facing the turn bet, which hand does SB shove with the most often?

- A: Q♥ 5♥
- B: T♥ T♣
- C: A♠ K♠
- D: 8♥ 8♦

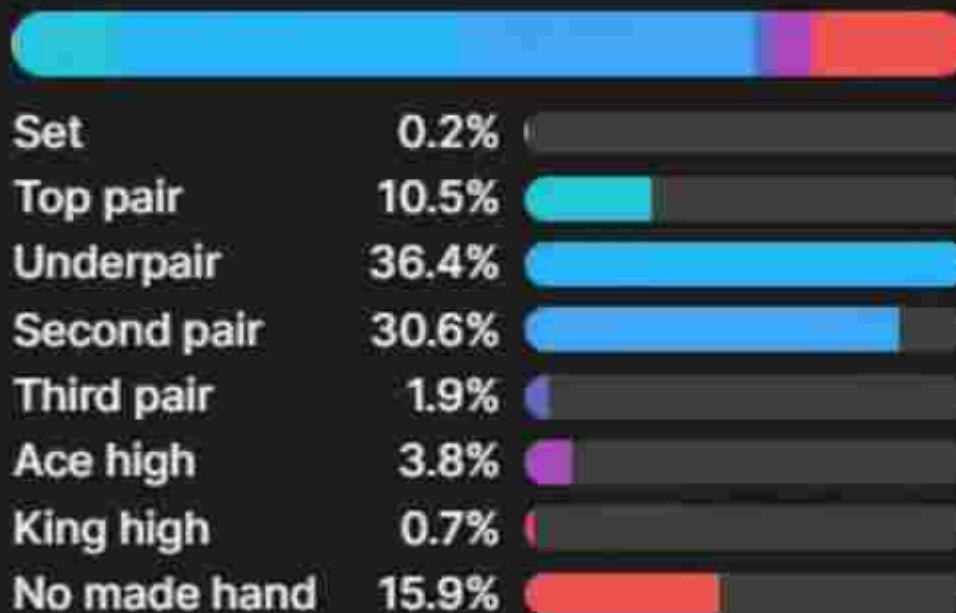


SB river strategy

Correct answer:

B: T T

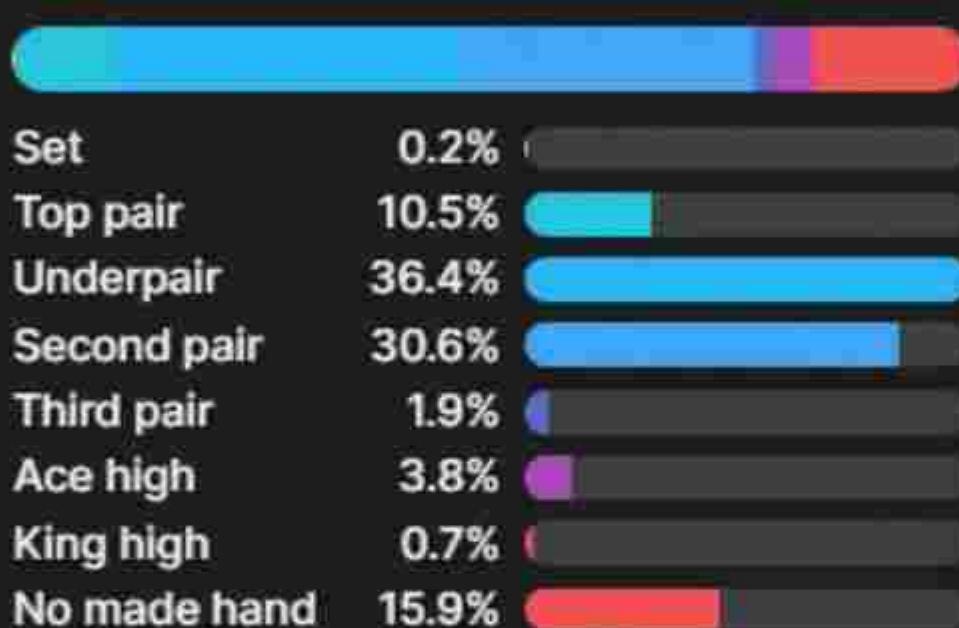
HANDS



SB turn shove construction

Recall DD #248 and the lessons from our Stack Depth theme.

Vulnerable medium made hands often shove in low SPR spots to realize equity.

HANDS

SB turn shove construction

SB's shove mostly consists of underpairs and 2nd pair.

These hands are **NOT** ahead when called, but this is still a higher EV play than calling and folding to a river shove.



Hands like sets and two pair are too strong to fast-play; they make more money trapping.
Flush draws want to retain their implied odds.

Vulnerable made hands like A8, TT, or JJ fast-play to realize as much equity as possible and
capitalize on immediate fold equity.

FLOP 5.5	BB CHECK BET 33%	BTN CHECK BET 33% BET 50% BET 75% BET 125%	BB FOLD CALL RAISE 50% RAISE 100% ALLIN 469%	TURN 19.3 
BB CHECK BET 20% BET 50% ALLIN 469%	BTN CHECK BET 33% BET 50% BET 75% BET 125% BET 175%	BB FOLD CALL RAISE 50% ALLIN 158%	RIVER 48.3 	BB CHECK BET 10% BET 35% BET 60% BET 85% ALLIN 158%

[6-Max Cash, NL500, 100bb] BTN vs BB SRP. BTN barrels 125% on the flop and 75% on the turn. The board runs out A ♠ J ♥ 7 ♣ Q ♦ 2 ♠. Which hand(s) are best for IP to triple barrel bluff?

- A: T ♠ 7 ♠
- B: 9 ♦ 8 ♦
- C: 9 ♣ 6 ♣
- D: K ♥ 2 ♥



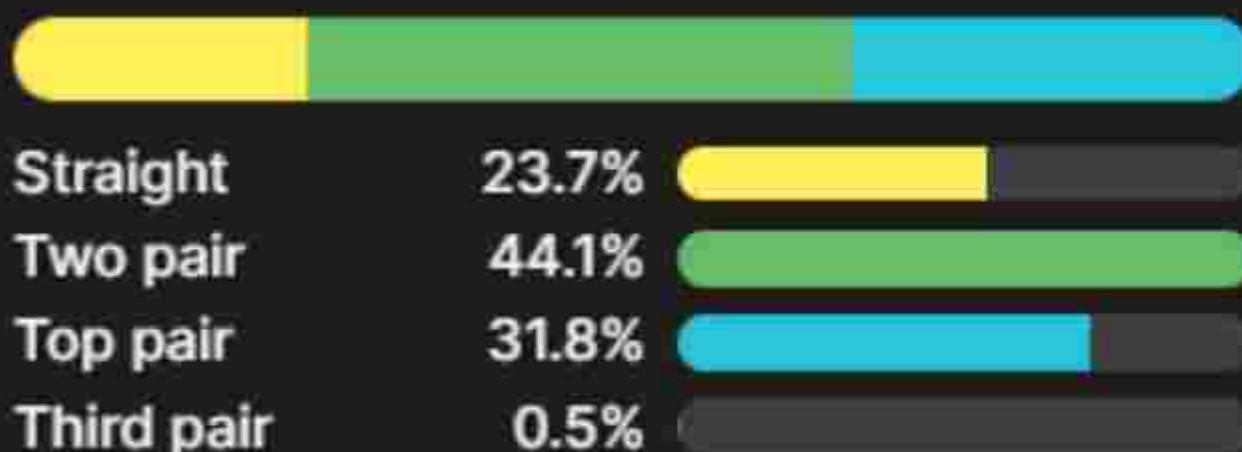
BTN river strategy

Correct answer

A: T ♠ 7 ♠

D: K 2

HANDS



BB river call

Most of BB's calling range consists of straights and two pair. The ideal bluff blocks that calling range.

T7 and K2 block the KT straight as well as two pair hands that call like A7, or A2.



Despite having some showdown value, these low pairs make more EV bluffing than checking back due to their excellent blockers.

$9\spades 8\spades$ and $9\clubs 6\clubs$ block more folds than calls ($A6/A9$), so they simply check the river and always lose.

SB FOLD RAISE 3 ALLIN 100	BB FOLD CALL RAISE 10 ALLIN 100	FLOP 6 	SB CHECK BET 33% BET 66% BET 130% ALLIN 1617%	BB FOLD CALL RAISE 50% RAISE 100% ALLIN 950%	TURN 10 	SB CHECK BET 33% BET 66% BET 130% ALLIN 950%
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[6-Max Cash, NL50, 100bb] SB opens 3x, BB calls. SB c-bets 33% on K♠ 9♣ 2♦, BB calls. Turn is the J♣. Which set(s) want to slow play most often?

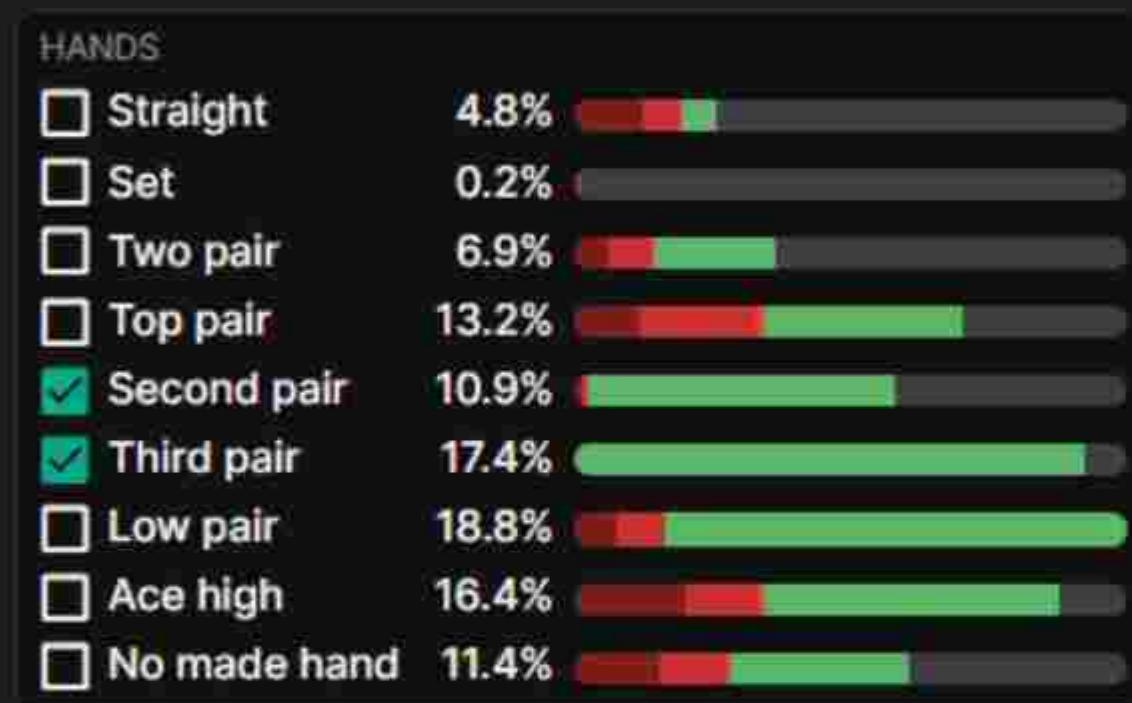
- A: KK
- B: JJ
- C: 99
- D: 22



Correct answer:

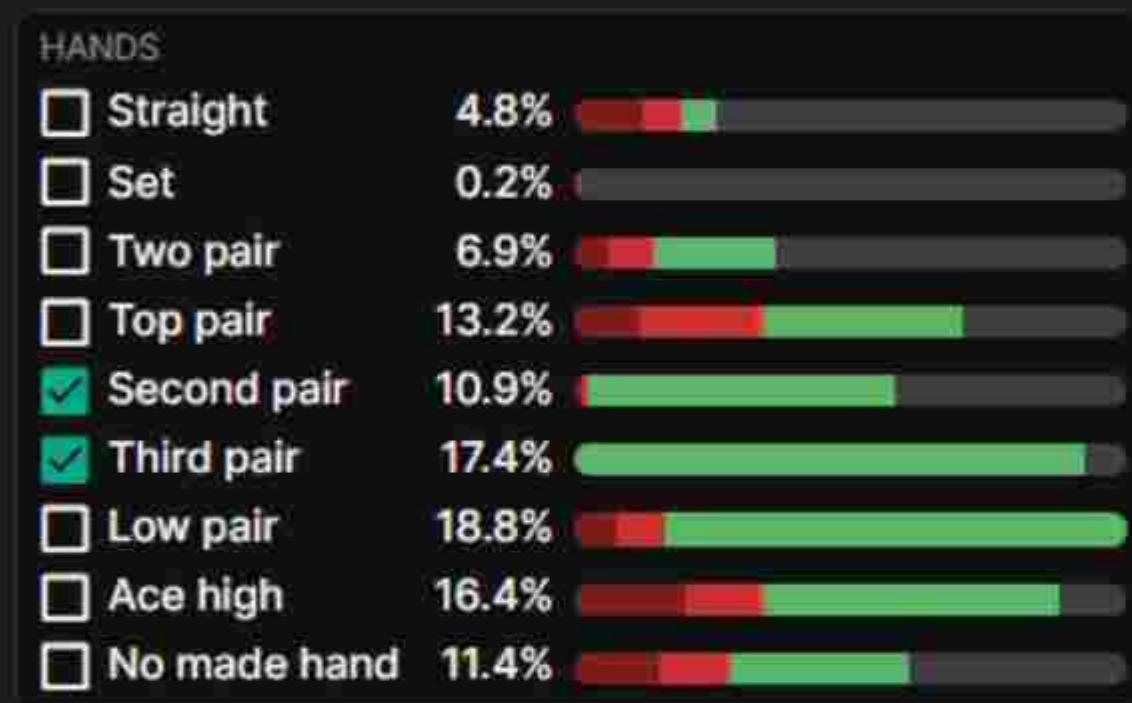
B: JJ

C: 99



The sets want to get the most money in the pot.

So consider how much money goes in when you bet compared to if you check.



BB turn strategy when checked to

JJ and 99 block the hands BB checks back with like 2nd and 3rd pair.

This increases the likelihood that BB bets facing our check.



The best traps OOP block IP's check-backs, making it more likely they'll face aggression when they check.

Though KK blocks the calling range, it also blocks IP's Kx betting range. For this reason there is no significant difference between betting and checking this hand.

Deuces always bets as it is a strong hand with almost no blocking properties to the calling range.



[HU Cash, 500bb] SB (IP) vs BB 3BP. SB opens, BB 3-bets to 12, SB calls.
Checks down to the river on J♦ 9♦ 7♦ 2♦ 7♣. BB block-bets 33%,
SB raises 85%. What hands are pure bluff catchers facing this raise?

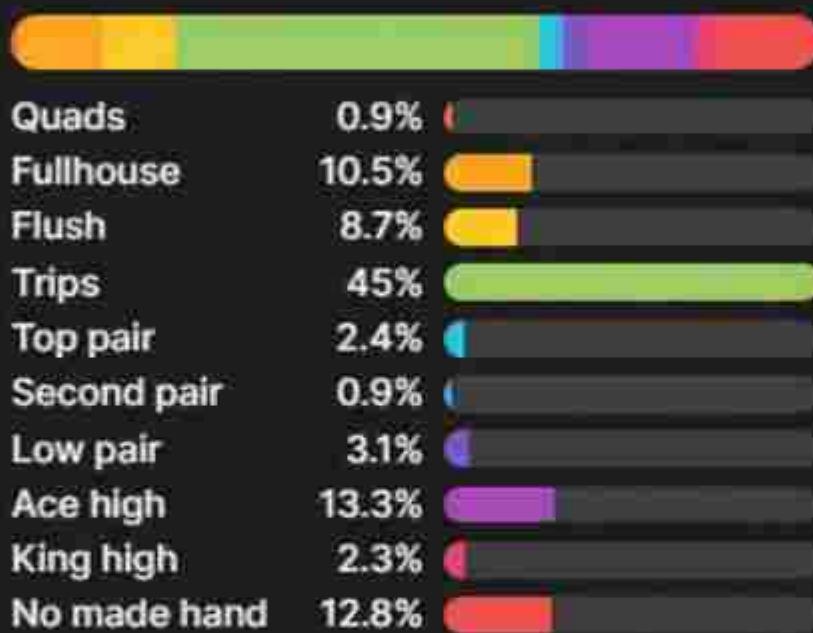
- A: Flush
- B: Straight
- C: Trips
- D: Top pair



Correct answer:

D: Top pair

HANDS



SB river raise construction

This is a HU checked-down pot. Ranges are WIDE.

Straights and flushes mostly bet earlier, so, despite being very deep stacked, SB can confidently raise trips+ for value on the river.



The few trips, straights, and flushes BB has in this line beat or block SB's value range. These hands are not "pure" bluff catchers, they beat value.

Top pair, and indeed most single pairs, are between SB's value and bluffs. Their equity is totally dependent on SB's bluffing frequency.

Identifying value and bluff thresholds are fundamental to the art of bluff catching.



Congratulations on having made it through the Daily Dose of GTO!

We've covered many topics throughout this book.

So how do you take all of that knowledge and craft a path to start crushing?



Fundamentals:

Concepts like ranges, pot odds, equity, sizing, polarity, etc, are the tools we use to craft good strategies!

Your goal isn't to calculate EV at the table but to develop a sense of how these concepts affect your strategy in a broad, abstract sense.

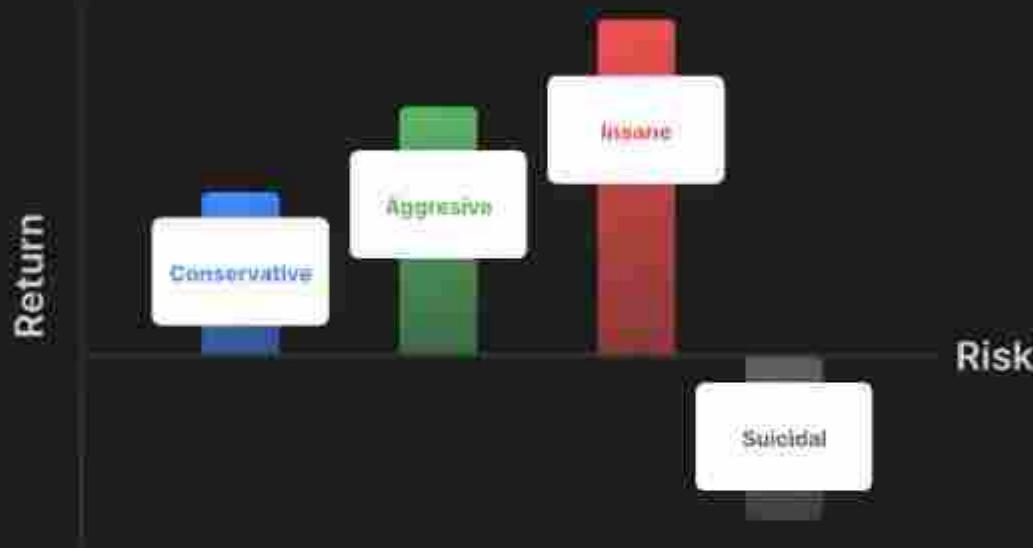
Game Theory Optimal



Technical skills:

Involve using fundamentals and practice to improve your strategy.

Try to understand the motivations behind solver outputs rather than memorizing them. Your goal is to identify the underlying cause → effect relationships that underline good strategy.



Soft skills:

Technical skills will only take you so far. Succeeding at poker also requires:

- Good bankroll management
- Understanding variance
- Solid mental game
- Deliberate practice
- Dedication to the grind



How to become a GTO Wizard?

[Learn more](#)

GTO Wizard has everything you need to fast-track your progress as a player!

Check out our blog to learn more about Fundamentals, Technicals, or Soft skills:



HAND HISTORY ANALYZER



[Learn how to use the Hand History Analyzer!](#)



The [Hand History Analyzer](#) makes it easy to plug the biggest leaks in your game. With just one click, upload your hand history, compare your actions to GTO solutions, and know exactly where you're losing the most EV.

THANK YOU

Thank you for joining me on this comprehensive journey through GTO poker strategy. It's been a privilege to share over 1289 pages of insights and techniques with you.

A heartfelt thanks to our graphic designer and dedicated editors, whose expertise has been instrumental in refining this book. Your hard work and attention to detail have been invaluable.

To the poker enthusiasts, your passion and eagerness to learn have been a constant source of inspiration. I hope this book arms you with the knowledge and skills to excel at the poker table.

As we part ways, remember that the journey of learning and mastering poker is continuous. With the strategies you've learned, I'm confident you're now ready to take on the challenges of the game and start crushing your opponents.

Happy grinding!

-Tombos21

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