

How to evaluate ranges with the **PokerStrategy.com Equilab**

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1. Sample hand

PokerStars - €0.05 NL (6 max) - Holdem - 6 players

CO: €5.64

Hero (BTN): €5.00

SB: €5.00

BB: €9.75

UTG: €5.00

MP: €5.00

SB posts SB €0.02, BB posts BB €0.05

Pre Flop: (€0.07) **Hero** has Q♣ Q♠

fold, fold, fold, Hero raises to €0.20, fold, BB calls €0.15

Flop: (€0.42, 2 players) 6♥ 2♠ 8♦

BB checks, **Hero bets €0.30**, BB calls €0.30

Turn: (€1.02, 2 players) 7♠

BB bets €0.50, fold

2. Hand and range selection preflop

To select our hand we'll have to click the green circled button (see image 1.1). Then before we select our opponents cards, we need to give him a range first: He probably calls hands like pocket pairs (22-TT), some suited connectors and some broadways. So we click the blue circled button (image 1.1) and select the hands as in image 1.2.. The blue marked hands are the ones I selected.

You can also select predefined ranges if you click the green circled dropdown menu and select „Call vs. BU Open Raise“, but in my opinion this range is a bit too loose.

Generally I'd recommend to play around with the ranges a bit, add some hands, take out some others and look at how big this range actually is in % (image 1.2., „selected range contains 162 hands (12.22%)”).

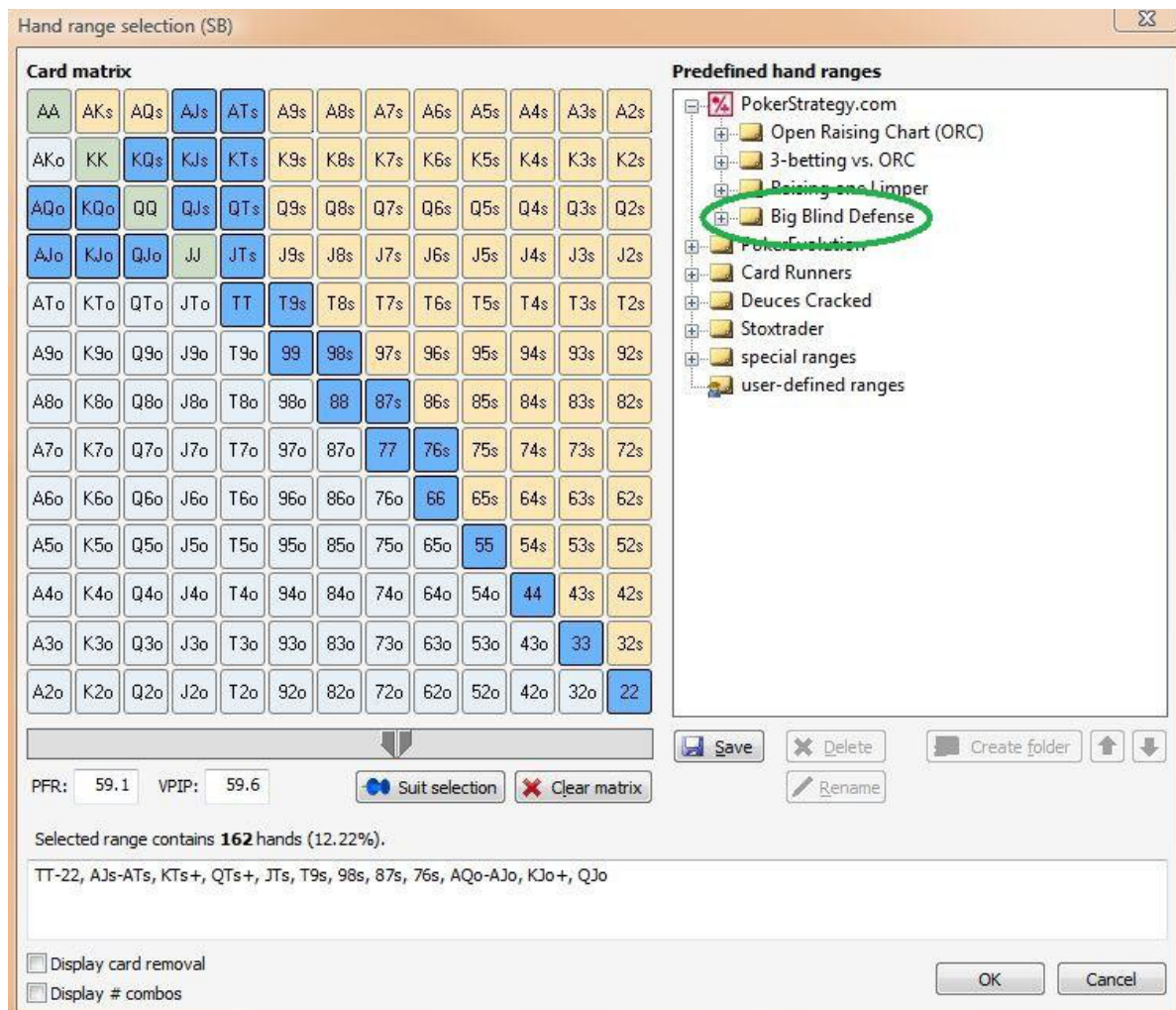
1.1. Selection of players hands and ranges

The screenshot displays the PokerStrategy.com EquiLab application window. The title bar reads "PokerStrategy.com Equilab". The menu bar includes "File", "Options", "Scenario Analyser", "Equity Trainer", and "Help". The main window features the "PokerStrategy.com EquiLab" logo and a table for configuring player hands and ranges.

	Hand range	Equity
MP2	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>
MP3	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>
CO	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>
BU	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>
SB	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>
BB	<input type="text"/> <input type="button" value="v"/> <input type="radio"/>	<input type="text"/>

Below the table, there are input fields for "Flop:", "Turn:", and "River:", each with associated card selection icons. A control panel includes buttons for "Clear all", "Enumerate all" (selected), "Monte Carlo", "Evaluate", and "Results". At the bottom, there are "Copy as text" and "Copy as BB code" buttons.

1.2. Hand selection Window



3. Narrowing down the opponents range

You can already click „equilate“, and the Equilab will show you that you have 81.13% vs his total range.

However, this is not the equity you have once the opponent checks and calls because those actions influence his range:

After his c/c we can assume he folded some overcards without draws as well as hands like 33, 44 and 55.

So we open the selection-window again (1.1, blue circle) and deselect some of his hands.

Your range window should look something like this now (see next page):

1.3. Hand selection window for the check-call range on the flop

The screenshot shows a software interface for selecting a hand range. The main area is a 13x13 grid of cards. The selected cards are: AA, AKs, AQs, AJs, ATs, A9s, A8s, A7s, A6s, A5s, A4s, A3s, A2s; AKo, KK, KQs, KJs, KTs, K9s, K8s, K7s, K6s, K5s, K4s, K3s, K2s; AQo, KQo, QQ, QJs, QTs, Q9s, Q8s, Q7s, Q6s, Q5s, Q4s, Q3s, Q2s; AJo, KJo, QJo, JJ, JT, J9s, J8s, J7s, J6s, J5s, J4s, J3s, J2s; ATo, KTo, QTo, JTo, TT, T9s, T8s, T7s, T6s, T5s, T4s, T3s, T2s; A9o, K9o, Q9o, J9o, T9o, 99, 98s, 97s, 96s, 95s, 94s, 93s, 92s; A8o, K8o, Q8o, J8o, T8o, 98o, 88, 87s, 86s, 85s, 84s, 83s, 82s; A7o, K7o, Q7o, J7o, T7o, 97o, 87o, 77, 76s, 75s, 74s, 73s, 72s; A6o, K6o, Q6o, J6o, T6o, 96o, 86o, 76o, 66, 65s, 64s, 63s, 62s; A5o, K5o, Q5o, J5o, T5o, 95o, 85o, 75o, 65o, 55, 54s, 53s, 52s; A4o, K4o, Q4o, J4o, T4o, 94o, 84o, 74o, 64o, 54o, 44, 43s, 42s; A3o, K3o, Q3o, J3o, T3o, 93o, 83o, 73o, 63o, 53o, 43o, 33, 32s; A2o, K2o, Q2o, J2o, T2o, 92o, 82o, 72o, 62o, 52o, 42o, 32o, 22.

The 'Predefined hand ranges' list includes:

- PokerStrategy.com
 - Open Raising Chart (ORC)
 - 3-betting vs. ORC
 - Raising one Limper
 - Big Blind Defense
 - Call vs. MP2 Open Raise
 - Call vs. MP3 Open Raise
 - Call vs. CO Open Raise
 - Call vs. BU Open Raise
 - Call vs. SB Open Raise
 - 3-bet vs. MP2 Open Raise
 - 3-bet vs. MP3 Open Raise
 - 3-bet vs. CO Open Raise
 - 3-bet vs. BU Open Raise
 - 3-bet vs. SB Open Raise
- PokerEvolution
- Card Runners
- Deuces Cracked
- Stoxtrader
- special ranges
- user-defined ranges

At the bottom, the selected range is summarized as: "Selected range contains 66 hands (4.98%). TT-99, 77, AJs-ATs, T9s, 98s, 87s, 76s, AQo-AJo".

Notice that I also excluded some strong hands like sets, because I expect him to checkraise them on the flop – so once he check-calls they are not in his range anymore.

4. Calculating foldequity

Another thing to keep in mind is, that the selected range now contains 66 combinations of hands, or 4.98% of total hands.

This can be important when we want to see how often he folds on the flop: He had a 12.22% range on the flop and has only 4.98% now. This means he folded $12.22\% - 4.98\% = 7.24\%$. Or, if we express it as a percentage of his floprange: $7.24/12.22 = \sim 59\%$.

What this means is, that if our assumptions hold true, we have about 59% foldequity on the flop. So since we bet €0.30 into €0.42 we could've made a profitable continuationbet with any two cards!

We risk €0.30 to win a total of €0.72, so we need $\frac{€0.3}{€0.72} = 41.6\%$ foldequity – but we just saw that he folds more than that on this board.

5. Guessing game

The next question is: which hands is he donkbetting the turn with?

This is the hardest part when you evaluate hands, because there is no definite answer. From now on it's up to your assumptions on whether you raise, call or fold.

I would assume that his donkbet is rather strong because we raised preflop and cbet on the flop, so we showed some strength and therefore he should not be too likely to be bluffing.

Even more important: When we look at his range there are not many air-hands in there that he could be bluffing with.

6. A common mistake

This might be the most important part of this paper because this is the point at which most people make the mistake of putting hands in the opponents range that he cannot have:

They say „his donkbet doesn't make any sense, he has to be bluffing!“. While this might be correct in a vacuum, once you look at the fact that the opponent check-called a flopbet there aren't many worse hands in his range that he could be playing like this.

I would assume he's not doing this with unimproved overcards, so we can deselect AT, AJ and AQ.

With the rest of his range he might very well bet out, TT and 99 could bet for value as well as straights and 2pairs.

So his range should look something like this: {TT-99,77,T9s,98s,87s,76s}.

When you put in the turncard and click equilate, you'll see that against this range we have 48.69% equity.

We have to call €0.50 and the pot is €1.02, therefore we need $\frac{€0.5}{(€1.02 + €0.5 + €0.5)} = \frac{€0.5}{€2.02} = \sim 24.75\%$ equity, and we even have over 48%.

Therefore we should definitely call one bet.

So the key concept of the last paragraph is, to always only *reduce* the opponents range.

If he folds a hand on the flop, he cannot have it in his range on a later street.

Of course we can go back to the flop and assume he's calling some more hands, but once we assume he folds a hand on one street, we should stick with it.

7. Playing around with the parameters

This is how you can improve your understanding and knowledge of the game most rapidly: Take a hand, evaluate it and then alter the parameters.

It's nice to know we should fold in the sample hand above, but what if next time the board isn't 6♥ 2♠ 8♦ but 6♥ 8♦ J♣? How does it affect his range and our equity against his range?

A few more suggestions for what to look at:

- What if the board is 6♥ 2♠ 8♥?
- How do we do against a checkraise on the flop (i.e. What's his range for checkraising and what's our equity against it).
- What if we have 99 instead of QQ?
- Do we still want to call the turn bet with A8s?
- What if he checks the turn to us, should we bet?
- Let's say we call and the river is a K. Do we want to call another bet? Should we bet ourselves if he checks to us?
- If he check-calls the turn and the river is a 2, should we value bet?
- What about a 3?

8. Final words

As you can see the number of possibilities the PokerStrategy.com Equilab offers you are almost limitless.

On your way to becoming a better poker player it's absolutely crucial to know about ranges, equity and how they affect the way you should play.

In the beginning it might seem like it takes forever to analyze a hand, but once you get used to it you will get quicker.

Also you should realize it's not about being able to play QQ on a lowcard board perfectly – looking thoroughly at a spot will always enhance your general skills. You'll start to „see“ hand ranges wherever you look at a pokertable.

Best regards,
Phil



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