Chapter 7: Starting Hand Charts

Chapters 3 and 4 introduced a scoring system that evaluates the strength of each hand-flop combination in terms of its high-card strength, connectedness, suitedness. We will now use these ratings to generate hand valuation data for 16,107 starting hands.[1] The goal is create data that describes hands both in terms of their raw power and their character. We begin with a **Power Rating** derived from adding together the hand strength scores from each of the 17,296 flops a particular starting hand can flop. The highest scoring hand was AAKK (ab)(ab), with just over 100,000 points (roughly averaging 6 points/flop). That score was converted to 100 and all the other hands were scaled accordingly. The power ratings are presented with subscores for each of their three component parts. Interestingly, the best and average high-card strength scores are each significantly higher than the scores in the other two categories. AAKK has a high-card strength score of 62, QJT9 has a connectedness score of 29, and double-suited aces have a suitedness score of 35. The average component scores are 22/11/10/**43**.[2]

The power rating reflects raw equity,[3] but we also need to measure the playability factors that influence how well and in what situations we can realize that equity. The two **Character Ratings** are **polarity** and **nuttiness.** Chapter 4 introduced polarity the section on flop strength distributions. It is a measure of the proportion of a hand's strength that comes from its top 10% of flops compared with its top 30% of flops. Thus KK72r has a high polarity (93) due to its very strong 90th percentile and its very weak 70th-90th, and QJT9ds has a polarity of 5. Nuttiness is computed as follows: for each of the three postflop streets, calculate the percentage of the time a given hand has the nuts.[4] The nuttiness score is determined by averaging those three and scaling the results to 100. The scale is set by the nuttiest hand, AAKKds. As will be seen throughout the theory discussion and preflop range recommendations in Chapter 9, the polarity and nuttiness ratings influence preflop decisions in several ways.

One application of these numbers is shown in the 3-bet rating. Generally, the three things that make a hand good to three-bet are strong raw equity, a smooth equity distribution, and a lack of nuttiness.[5] The 3-bet rating is determined with a formula[6] based on these three factors which is then scaled to 100. A hand with a high rating is generally good to three-bet. 3-bet % is the percentage of hand combinations with a higher 3-bet rating than the hand in question, so a low percentage means that the hand is good for three-betting. We can use these percentages as a rough guide when building a three-betting range of x%.

There are two very important qualifications. One, a hand being good to three-bet is **not** the same thing as being good to call a 3-bet. Recall that the hand versus range equity calculations in Chapter 4 are based on average single-raised pot hand selection. These calculations in turn helped to generate the starting hand rankings and distribution data. A high

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[1] As we saw in Chapters 1 and 3, there are a total of 16432 distinct starting hands - we are dropping the 312 trips hands and the 13 quads hands. The AAA* hands are occasionally playable, but the technical complications associated with doing an additional set of combinatorics was not worth the effort, so we stick with the unpaired, paired, and double-paired hands.

[2] Both facts make sense on reflection – AAKK flops a set over 20% of the time and always flops an overpair otherwise, which has some value except on monotone boards. QJT9 only flops the nut straight 4% of the time, strong wraps another 15% of the time, and perhaps more importantly, absolutely no straight draw half the time. Similarly, even a double-suited hand receives 0-1 points from its suitedness on a ton of flops. Across the board, pairs are the most common thing of marginal value that we can flop – most hands are disconnected, rainbow hands always flop no flush value, low single-suited hands rarely flop much flush value, but everything unpaired flops one pair 40% of the time and two pair 11% of the time, and so the ability to flop pairs generates a baseline amount of equity that even the ugliest hands have.

[3] Or more precisely, it reflects our average raw flop strength, in the context of equity matchups against other hands in play on each board texture.

[4] In the paired-board case where the nuts is a single two-card combination, such as 44 on Q44, *both* 44 and QQ are called "the nuts." ON AQQ44, AA, QQ, and 44 all count as "the nuts". For simplicity, straight flushes were not accounted for – the difference is negligible.

[5] There are plenty of nutty hands that are good to three-bet (AAKKds for example is extremely powerful and extremely smooth). But if we have two hands of otherwise equal strength, we would prefer three-betting the less nutty hand because three-betting narrows the field. When we three-bet a nutty hand we sacrifice some of its deep-SPR implied odds value; when we three-bet a non-nutty hand, we promote the value of its non-nut components, which are worth more in a shallow-SPR pot. For further discussion, see the section "Interpreting the three-bet rating" in Chapter 9.

[6] PR*3 + (100-P)*2 – N, where PR = power rating, P = polarity, and N = nuttiness