Vertical Spread Trades

A vertical spread trade is a combination of a short position of out-of-money (OTM) option (K1), plus a long position of a further OTM option of the same type (K2). The profit, i.e., the credit received at the time of trade, is made when the stock price stays OTM for K1 at maturity.

For QED vertical spread trade, we first select the short position strike, K1, based on QED probability. The strike of long position, K2, is selected based on the following principles:

1. The spacing between K1 and K2, K1 – K2, provides the protection against large price move in the wrong direction. The larger the spacing, the less effective the protection is against underlying price movement.
2. On the other hand, the larger the spacing, the more credit it receives, i.e., it's more profitable if the underlying price stays OTM at maturity.

Therefore, the optimal value of

$$K2 = \text{argmax } U'(K)$$

Where $U'(K)$ is the first order derivative of option premium U with respect to strike K, and argmax is the strike K at which the $U'(K)$ is maximum.