

LIQUISTAT™

There is no better value-discovery mechanism than secondary market transactions. Investors selling illiquid assets to other investors represent the best indication of the fair market value, and the appropriate valuation discount, for those assets. Traditional discount databases are based on issuers raising capital in private placements. Our proprietary LiquiStat™ database reflect current transactions from the secondary market for restricted stock, warrants, stock options, limited partner interests, private company stock, auction rate securities, and bankruptcy claims, among others.

WARRANTS

The LiquiStat database on illiquidity discounts from Black-Scholes for options and warrants is the largest available anywhere. This vast source of data on the Black-Scholes overvaluation problem allows us to determine more realistic valuations than theoretical models (or a pure intrinsic calculation) alone. More data means better support for valuations that are tailored to each position, rather than an arbitrary average “portfolio haircut” or limiting the volatility input. The data is also highly useful for embedded derivatives in illiquid securities.

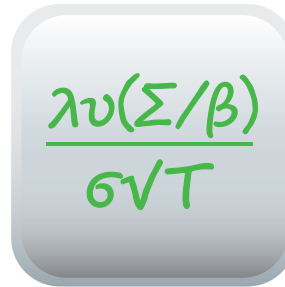
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WHY DOES BLACK-SCHOLES ALWAYS OVERVALUE WARRANTS?

After years of watching the secondary markets for warrants, we have never found a case where an illiquid warrant sold for its full Black-Scholes value. In the worst cases, the model overvalues warrants by multiples over fair value. The reason is relatively straightforward: Black-Scholes is a theoretical model and relies on simplifying assumptions. One of those assumptions is perfect liquidity. For exchange-traded options, this doesn't present too much of a problem. Illiquid securities, on the other hand, are always worth less than otherwise-identical fully-liquid securities. In our data, we see significant overvaluations for illiquid options and warrants, as presented in the picture below.



As shown in the chart, the Black-Scholes overvaluation ranges from a median of 0.18x for the bottom quintile to 2.12x for the top quintile. The chart also gives median characteristics for the issuers and individual warrant positions in each quintile: Black-Scholes generates the worst overvaluations for warrants that are out of the money and issued by smaller, riskier companies. Prior research on the “price of illiquidity” supports these basic relationships. However, the LiquiStat data is the first transaction evidence we have seen on warrants and options.