VOLATILITY

Pathetic Protection: The Elusive Benefits of Protective Puts

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Conventional wisdom is that put options are effective drawdown protection tools. Unfortunately, in the typical use case, put options are quite ineffective at reducing drawdowns versus the simple alternative of statically reducing exposure to the underlying asset. This paper investigates drawdown characteristics of simulated put protected portfolios and the CBOE S&P 500 5% Put Protection Index. Unless your option purchases and their maturities are timed just right around equity drawdowns, they may offer little downside protection. In fact, protective puts could make things worse by increasing rather than decreasing drawdowns and volatility per unit of expected return.

What's Inside?

This article investigates the efficacy of buying protective put options in reducing peak-to-trough drawdowns. I compare the put protection strategy against a “divested” strategy that invests a fixed proportion of assets in equities and the remainder in cash. Historical analysis is conducted on the CBOE S&P 500 5% Put Protection Index as well as on simulated data to evaluate put protection in an idealized setting with no volatility risk premium. I find that:

• Put options are only effective in reducing drawdowns in the unusual circumstance that options are priced with no volatility risk premium and equity drawdowns precisely coincide with the option holding period.

• Put protection can lead to worse drawdown characteristics when options are priced with a volatility risk premium, which is almost always the case with index options.

• Even if options are priced without a volatility risk premium, put protection is only modestly effective in the usual case when equity drawdowns do not align perfectly with option expiration cycles.

• Put options may offer crash protection, but their crash protection is also weakened by path dependence and the volatility risk premium.

Conclusion

Equity investors are appropriately concerned about potential drawdowns and often turn to put options for protection. Because of path dependent outcomes and option expensiveness, put options may do more harm than good. An alternative approach to protection that investors can take is increasing diversification. Reallocating from equities to liquid alternatives may allow investors to reduce volatility while maintaining returns, thereby reducing expected drawdowns.