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Value of a put option to the risk-averse newsvendor

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Abstract

In this paper we consider an extension of the single-period inventory model with stochastic demand where a put option can be purchased to reduce losses resulting from low demand.

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minimizing the variance of the profit. Sensitivity analysis results indicate that under poor economic conditions (low sale price/high purchase cost) it may not be optimal to purchase the option. We also find that when the option writer assumes a higher risk/return for the random option payoff (that he pays the newsvendor) the newsvendor can reduce her profit uncertainty by choosing the strike price or strike quantity optimally.

Keywords: Newsvendor model put option stochastic dominance

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Notes

¹It is important to note the shortcomings associated with the quadratic utility function:

It displays increasing only for $\Pi < a$ modeling since it approximates see Levy and Sarin utility function; see, [Lau \(1980b\)](#)



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