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# Value of a put option to the risk-averse newsvendor

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## Abstract

In this paper, we consider a newsvendor problem with stochastic demand. The newsvendor can choose to order from low cost suppliers or high cost suppliers to determine the expected profit. The newsvendor is a risk-averse buyer of the expected profit. The newsvendor can choose to strike or not to strike. The newsvendor can choose to utility function to profit with risk. The newsvendor can affect the profit. The newsvendor can result: if the newsvendor has a quantity to minimize the expected profit.

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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

<sup>1</sup>It is important to note that the utility function is increasing only for  $\Pi < \pi$  and decreasing for  $\Pi > \pi$ . It displays a risk aversion for  $\Pi < \pi$  and a risk seeking behavior for  $\Pi > \pi$ . This is a typical S-shaped utility function (see Levy and Markowitz, 1979; see also Lau (1980b)).

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