

## A contango-constrained model for storable commodity prices

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### Abstract

This article presents a model of commodity price dynamics under the risk-neutral measure where the spot price switches between two distinct stochastic processes depending on whether or not inventory is being held. Specifically, the drift of the spot price is equal to the cost of carry when the stock is positive. Conversely, whenever the drift of the spot price is less than the cost of carry, no inventory is being held. The properties of the spot price and the forward curves implied by this model are illustrated and analyzed with the use of numerical examples. A comparison with the single-factor model by E. S. Schwartz (1997) is also provided. © 2005 Wiley Periodicals, Inc. *Jrl Fut Mark* 25:1025–1044, 2005

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