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In preparing a review I recently discovered an important reference for a key result in Graves (1999). Wecker (1979) had previously derived the variance for demand over a deterministic lead-time for an IMA (0, 1, 1) demand process. I develop effectively the same result, given as Equation (8) in Graves (1999). I state this as the variance of the inventory random variable for an inventory system that is subject to an IMA (0, 1, 1) demand process, a deterministic replenishment lead-time and an adaptive base-stock control policy given by (7). But given these assumptions, the variance of the inventory is the same as the variance of the demand over the lead-time.

Although the Wecker manuscript has not been published, Eppen and Martin (1988) reference it and use the key result as part of their research.

References

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