

## Discount Cash-Flow Analysis on Inventory Control under Various Supplier's Trade Credits

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**Abstract**—In practices, the supplier may simultaneously offer the customer: (1) a permissible delay in payments to attract new customers and increase sales, and (2) a cash discount to motivate faster payment and reduce credit expenses. Since all cash outflows related to inventory control that occur at different points of time have different values, we use the discount cash-flow (or DCF) approach to establish the models, and obtain the optimal ordering policies to the problem. We find that the DCF approach is not only simple to understand but also easy to identify which alternative is less cost. In addition, we also characterize the optimal solution and provide the closed-form solution to the problem. Furthermore, we also compare the optimal order quantity under supplier credits with the classical economic order quantity.

**Keywords**—Inventory, Decision theory, Cash discount, Delay payment, Trade credit

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