

International Journal of Production Research >

Volume 44, 2006 - [Issue 4](#)

626 | 105 | 0  
Views | CrossRef citations to date | Altmetric

Original Articles

# Another look at the single-vendor single-buyer integrated production-inventory problem

R. M. Hill  & M. Omar

Pages 791-800 | Received 01 Aug 2005, Published online: 22 Feb 2007

 Cite this article  <https://doi.org/10.1080/00207540500334285>

Sample our  
Economics, Finance,  
Business & Industry Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

 Full Article  Figures & data  References  Citations  Metrics

 Reprints & Permissions

[Read this article](#)

[Share](#)

## Abstract

This paper considers a supply chain in which a 'vendor' supplies a product to a 'buyer'. The vendor manufactures the product at a finite rate and periodically ships the output to the buyer. The buyer then consumes the product at a fixed rate. Costs are attached to manufacturing batch set up, the delivery of a shipment and stockholding at the vendor and buyer. The objective is to determine the production and shipment policy which minimizes long-run total average cost—assuming the vendor and buyer collaborate and find a way of sharing the consequent benefits. Most previous work has been based on the assumption that unit stockholding costs increase as stock moves down the supply chain, but recent research has suggested that the opposite may sometimes hold. We show how the optimal batch production and shipment policy may

be derived when unit stockholding costs increase as stock moves down the chain and shipments are not necessarily equal in size.

Keywords:

Production

Inventory

Single-vendor

Single-buyer

#### Related Research Data

[A note on an industrial strategy for stock management in supply chains: modelling and performance evaluation](#)

Source: International Journal of Production Research

[Modelling an industrial strategy for inventory management in supply chains: The 'Consignment Stock' case](#)

Source: International Journal of Production Research

[Determination of Optimum Production Quantity for a Two-Stage Production System](#)

Source: Journal of the Operational Research Society

[A one-vendor multi-buyer integrated inventory model](#)

Source: European Journal of Operational Research

[The consignment stock of inventories: industrial case and performance analysis](#)

Source: International Journal of Production Economics

[The single-vendor single-buyer integrated production-inventory model with a generalised policy](#)

Source: European Journal of Operational Research

#### Related research

People also read

Recommended articles

Cited by  
105

## Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

## Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

## Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

## Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

## Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2026 Informa UK Limited [Privacy policy](#)

[Cookies](#) [Terms & conditions](#) [Accessibility](#)

Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG



**Taylor & Francis**  
by informa