

Portfolio Selection with Transaction Costs

M. H. A. Davis, A. R. Norman

Published Online: 1 Nov 1990 | <https://doi.org/10.1287/moor.15.4.676>

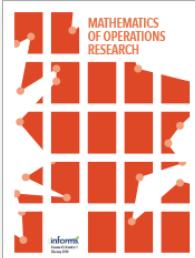
Abstract

In this paper, optimal consumption and investment decisions are studied for an investor who has available a bank account paying a fixed rate of interest and a stock whose price is a log-normal diffusion. This problem was solved by Merton and others when transactions between bank and stock are costless. Here we suppose that there are charges on all transactions equal to a fixed percentage of the amount transacted. It is shown that the optimal buying and selling policies are the local times of the two-dimensional process of bank and stock holdings at the boundaries of a wedge-shaped region which is determined by the solution of a nonlinear free boundary problem. An algorithm for solving the free boundary problem is given.

[< Previous](#)

[Back to Top](#)

[Next >](#)



Volume 15, Issue 4

November 1990

Pages 573-793

Article Information

Metrics

Downloaded 15 times in the past 12 months

Cited 914 times

Information

Cite as

M. H. A. Davis, A. R. Norman, (1990) Portfolio Selection with Transaction Costs. *Mathematics of Operations Research* 15(4):676-713.

<https://doi.org/10.1287/moor.15.4.676>

Keywords

Portfolio selection

transaction costs

stochastic control

reflecting diffusions

free boundary problem

local time

[PDF download](#)



Sign Up for INFORMS Publications Updates and News

[SIGN UP](#)

Partners

Atypon

crossref

PORTICO



Institute for Operations Research and the Management Sciences

5521 Research Park Drive, Suite 200
Catonsville, MD 21228 USA

phone 1 443-757-3500

phone 2 800-4INFORMS (800-446-3676)

fax 443-757-3515

email informs@informs.org

Get the Latest Updates

[Discover INFORMS](#)

[Explore OR & Analytics](#)

[Get Involved](#)

[Impact](#)

[Join Us](#)

[Recognizing Excellence](#)

[Professional Development](#)

[Resource Center](#)

[Meetings & Conferences](#)

[Publications](#)

[About INFORMS](#)

[Communities](#)

[PubsOnLine](#)

[2024 INFORMS/ALIO/ASOCIO International Conference](#)

[Certified Analytics Professional](#)

[Career Center](#)

[INFORMS Connect](#)

Copyright 2026 INFORMS. All Rights Reserved

[INFORMS Code of Conduct](#) | [Terms of Use](#) | [Privacy](#) | [Contact INFORMS](#) | [Sitemap](#)

Follow INFORMS on: Facebook LinkedIn Bluesky