Taylor & Francis
Online

Financial Analysts Journal ›
Volume 43, 1987 - Issue 2

46 Views | 141 CrossRef citations to date | 0 Altmetric

Research Articles

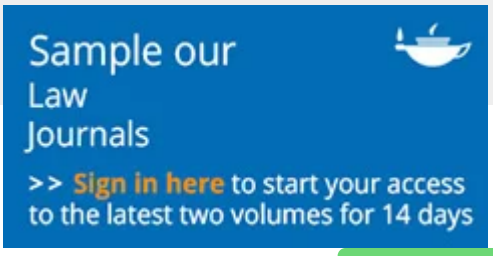
Program Trading and Expiration-Day Effects

Hans R. Stoll & Robert E. Whaley

Pages 16-28 | Published online: 31 Dec 2018

Cite this article https://doi.org/10.2469/faj.v43.n2.16

CFA Institute members: sign in to access the Financial Analysts Journal.



Citations Metrics Reprints & Permissions Read this article Share

Click to increase image size

by Hans R. Stoll and Robert E. Whaley

Program Trading and Expiration-Day Effects

The arbitrage between index futures and the underlying cash index and the cash settlement feature of index futures contracts, which requires arbitrageurs to unwind positions in the stock market, are thought to be at the heart of the abnormal stock price movements during the "triple-witching" hour—the last hour of trading on days on which index futures, index options and options on index futures expire simultaneously. During 1984 and 1985, volume was substantially higher than normal in the last hour of trading on those quarterly Fridays. Open interest in the expiring futures contracts on the expiration day amounted to about 40 per cent of the average month-end open interest. The incremental stock market volume, however, was approximately one-third the volume that would be implied if the entire expiration-day open interest were traded in the stock market.

Analysis of stock market price changes in the last hour of expiration days and the first half-hour of the following day indicates that the volatility of price changes was significantly higher on expiration days, with the stock market tending to fall. Stocks not in the S&P 500, however, exhibited no price effects. Price effects seemed also to be associated only with the S&P 500 futures contract expirations; index option expirations themselves did not lead to abnormal market movements. When the magnitude of price effects was measured by the degree of reversal in prices on the morning after the expiration day, the average magnitude of the price effect in the 10 most recent quarterly futures contract expirations examined was about 0.4 per cent of the closing index value at expiration.

The average expiration-day price effect of 0.4 per cent is not large, considering that a price impact of approximately 0.25 per cent of the value of the transaction can be expected on the basis of the bid-ask spread. Once this market impact cost is drawn out, the average expiration day price impact falls to about 0.15 per cent of the value of the transaction, an amount representing the additional cost of liquidity. Furthermore, price impacts in excess of those found on expiration days are frequently encountered in large block transactions, where the cost of providing liquidity also increases. On expiration days, however, transactions in many stocks occur simultaneously, so the market as a whole is affected.

Hans Stoll is the Anne Marie and Thomas B. Walker Professor of Finance at the Owen Graduate School of Management, Vanderbilt University. Robert Whaley is Associate Professor of Finance at The Fuqua School of Business, Duke University.

This article is based on a larger study, Expiration Day Effects of Index Options and Futures, *Monograph Series in Finance and Economics, Monograph No. 1986-3 (New York: New York University, March 1987). The study was carried out at the request of the major option exchanges.*

The authors thank the Chicago Board Options Exchange, the Chicago Board of Trade and the Chicago Mercantile Exchange for providing the data used in the study, and Paul Laux for his capable research assistance. The authors are grateful for useful comments by and discussions with David Emanuel, Richard J. Rendleman, Jr., and their colleagues at Vanderbilt and Duke Universities. Professor Whaley acknowledges the support of the Futures and Options Research Center at Duke University.

The CFA Institute is collaborating with JSTOR to digitize, preserve, and extend access to *Financial Analysts Journal* www.jstor.org

Previous article

View issue table of contents

Next article

Log in via your institution

Access through your institution

Log in to Taylor & Francis Online

Log in

Restore content access

Restore content access for purchases made as guest

Purchase options *

Save for later

PDF download + Online access

- 48 hours access to article PDF & online version
- Article PDF can be downloaded
- Article PDF can be printed

EUR 48.00

Add to cart

Issue Purchase

- 30 days online access to complete issue
- Article PDFs can be downloaded
- Article PDFs can be printed

EUR 136.00

Add to cart

* Local tax will be added as applicable



Related Research

People also read | Recommended articles | Cited by 141

Expiration-Day Effects: What Has Changed? >

Hans R. Stoll et al.
Financial Analysts Journal
Published online: 31 Dec 2018

Information for

- Authors
- R&D professionals
- Editors
- Librarians
- Societies

Open access

- Overview
- Open journals
- Open Select
- Dove Medical Press
- F1000Research

Opportunities

- Reprints and e-prints
- Advertising solutions
- Accelerated publication
- Corporate access solutions

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