

Abstracts of Three Related Working Papers

Thank you for your interest in the working papers entitled:

- Critique of Asset Pricing Circularity
- The R&D Effect with Static Stock Pricing
- The R&D Effect with Dynamic Stock Pricing

In November 1997 abstracts of these three working papers appeared in the *Journal of Financial Abstracts* of the Financial Economics Network division of the Social Sciences Research Network. For a limited time these papers may be viewed and/or downloaded at the URL address <<http://www.numeraire.com/download.htm>>.

The three closely related financial economics papers are primarily about the topic of capital asset pricing. The theoretical circularity paper has a crucial influence on the hypothesis-testing strategy of the two empirical papers about the newly found R&D effect. While the circularity paper stands alone, reading it before the two R&D papers or any other paper about capital asset pricing may clarify the latter. The three papers are organized as a set, and their abstracts appear below with annotations about the status of the current drafts of the manuscripts.

Of the three papers submitted to the FEN, the circularity paper was submitted first and accepted first, but its FEN reference number is higher than the number for the two R&D papers which were submitted later. The circularity paper apparently got overlooked, but it was subsequently published in the JFA. The three papers appear below in logical, not FEN numerical, order.

The purpose of publicizing these abstracts is to make interesting and important research findings easily accessible in an enduring medium to finance researchers, practitioners, and investors.

<http://www.ssrn.com>
Financial Economics Network
Journal of Financial Abstracts
Working Paper Series-Capital Markets
FEN Reference: JFA:C-WPS98-116

Title: Critique of Asset Pricing Circularity
By: Robert D. Coleman

Date Posted at SSRN-FEN: November 12, 1997.
Date Last Revised at SSRN-FEN: December 4, 1997.
Date First Submitted to a scientific journal: June 13, 1995.

Abstract: This theoretical paper explores the nature of asset pricing models which specify explanatory variables that are not independent of the variable to be explained. Such logically circular asset pricing models reduce to either economically meaningless tautologies and or scientifically invalid market-generated autoregressions, a.k.a. market timing. These tautology and timing implications need to be made explicit. So-called firm “size” or market value of equity and so-called “value” or book-to-market equity ratio are two of the best known logically circular variables. Logically circular models are based on intellectual speculation and not on fact, and they are not scientifically valid. Theoretical, empirical, methodological, and clinical arguments support the main conclusion.

Status: The referee at an academic journal found the content to be “very interesting” and no criticism of the content was sustained after rebuttal by the author. Nevertheless, the criticisms of the style of the paper are useful. Qualified readers are invited to offer detailed comments and suggestions about both content and style.

JEL Classification: G12 — Asset Pricing, C12 – Hypothesis Testing,
C14 – Semi-parametric and Nonparametric Methods

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Financial Economics Network
Journal of Financial Abstracts
Working Paper Series-Capital Markets
FEN Reference: JFA:C-WPS98-107

Title: The R&D Effect with Static Stock Pricing
By: Robert D. Coleman

Date Posted at SSRN-FEN: November 29, 1997.
Date Last Revised at SSRN-FEN: December 5, 1997.
Date First Submitted to a journal: July 6, 1995.

Abstract: This empirical paper presents a static analysis of the impact of corporate research and development (R&D) on the market pricing of common stock. The sample consists of the intersection of companies on the S&P Compustat database and stocks on the CRSP data files that have all of the necessary data. A new original stock pricing anomaly is reported. R&D sales intensity is reflected in the beta coefficients of Sharpe's "diagonal" capital asset pricing model (CAPM). This and eight other measures of corporate R&D activity each alone partly explains the cross-section of expected excess real total returns. Persistent anomalous pricing of risk factors as indicated by significant market premia, all of which are negative, is robust across R&D measures, industry research group code, sales revenue, market data lead times, market proxies, firm R&D disaggregation, the January seasonal, and model estimation methods. For portfolios formed on annual R&D expense, the average returns of firms reporting exclusively proprietary R&D are higher than those of firms reporting R&D that includes contract R&D and or engineering. The exclusion of returns for January augments rather than attenuates the pricing of portfolios formed on R&D expense.

Status: This research meets high research standards. It is thorough, rigorous, systematic, and scientifically valid. This is a panel study with cross-sectional and longitudinal dimensions that maximize the sample size. The R&D effect is not a fallacious risk factor involving logically circular variables. It is not an inexplicable seasonal risk factor. There is no data snooping, data dredging or other unscientific methodology. The referees at an academic journal did not sustain their criticisms of the content after rebuttal by the author. Their points were immaterial, irrelevant, or wrong, as shown by cited publications, usually academic journal articles. Nevertheless, their criticisms of the style and length are useful. Qualified readers are invited to offer detailed comments and suggestions about both content and style.

JEL Classification: G12 — Asset Pricing

<http://www.ssrn.com>
Financial Economics Network
Journal of Financial Abstracts
Working Paper Series-Capital Markets
FEN Reference: JFA:C-WPS98-108

Title: The R&D Effect with Dynamic Stock Pricing
By: Robert D. Coleman

Date Posted at SSRN-FEN: November 29, 1997.
Date Last Revised at SSRN-FEN: December 8, 1997.
Date First Submitted to a journal: August 29, 1995.

Abstract: This empirical paper presents a dynamic analysis of the impact of corporate research and development (R&D) on the market pricing of common stock. It is a sequel to the static analysis of the R&D effect that appears in a separate paper. The multivariate capital asset pricing model (CAPM) includes two risk factors: market beta and R&D group. A *separate* model specifies market beta and firm “size” where size is measured by the natural logarithm of market value of equity. These models result in persistent anomalous pricing as indicated by significant risk premia for R&D group, and *separately* for firm “size”, when portfolios are formed monthly on firm-level R&D expense, or *separately* on firm “size”. All risk premia are negative. Firm “size” is a logically circular explanatory variable when specified in any model designed to explain return, but it here serves merely to provide a benchmark model. Market beta is not priced jointly with either industry research group code or firm “size” in these tests. The univariate Sharpe’s “diagonal” CAPM estimated with seemingly unrelated regression assuming a pure first-order autoregressive return-generative process shows evidence of no martingales with zero drift. Based on the frequency of priced decile-rank portfolios, R&D group dominates firm-level R&D expense which in turn dominates firm “size”.

Status: This research meets high research standards. It is thorough, rigorous, systematic, and scientifically valid. This is a panel study with cross-sectional and longitudinal dimensions that maximize the sample size. There are no fallacious risk factors such as those involving logically circular variables. The results do not depend on inexplicable seasonal risk factors. There is no data snooping, data dredging or other unscientific methodology. The referees at an academic journal did not sustain their criticisms of the content after rebuttal by the author. Their points were immaterial, irrelevant, or wrong, as shown by cited publications, usually academic journal articles. Nevertheless, their criticisms of the style and length are useful. Qualified readers are invited to offer detailed comments and suggestions about both content and style.

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