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journal homepage: www.elsevier.com/locate/jfecAsset pricing: A tale of two days[☆]Pavel Savor^{a,*}, Mungo Wilson^b^a Fox School of Business, Temple University, United States^b Saïd Business School and Oxford-Man Institute, Oxford University, United Kingdom

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ABSTRACT

We show that asset prices behave very differently on days when important macroeconomic news is scheduled for announcement. In addition to significantly higher average returns for risky assets on announcement days, return patterns are much easier to reconcile with standard asset pricing theories, both cross-sectionally and over time. On such days, stock market beta is strongly related to average returns. This positive relation holds for individual stocks, for various test portfolios, and even for bonds and currencies, suggesting that beta is after all an important measure of systematic risk. Furthermore, a robust risk–return trade-off exists on announcement days. Expected variance is positively related to future aggregated quarterly announcement day returns, but not to aggregated non-announcement day returns. We explore the implications of our findings in the context of various asset pricing models.

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1. Introduction

Stock market betas should be important determinants of risk premia. However, most studies find no direct relation between beta and average excess returns across stocks.¹ Over time, expected returns should depend positively on market risk, most often proxied for by some measure of expected market volatility, but such a relation has not yet been conclusively found. In this paper, we show that for an important subset of trading days stock market beta is strongly related to returns, and a robustly positive risk–return trade-off also exists on these same days.

Specifically, on days when news about inflation, unemployment, or Federal Open Markets Committee (FOMC) interest rate decisions is scheduled to be announced (announcement days or a-days), stock market beta is economically and statistically significantly related to returns on

¹ Seminal early studies include Black, Jensen, and Scholes (1972), Black (1972, 1993), and Fama and French (1992). Polk, Thomson, and Vuolteenaho (2006) is a more recent paper.

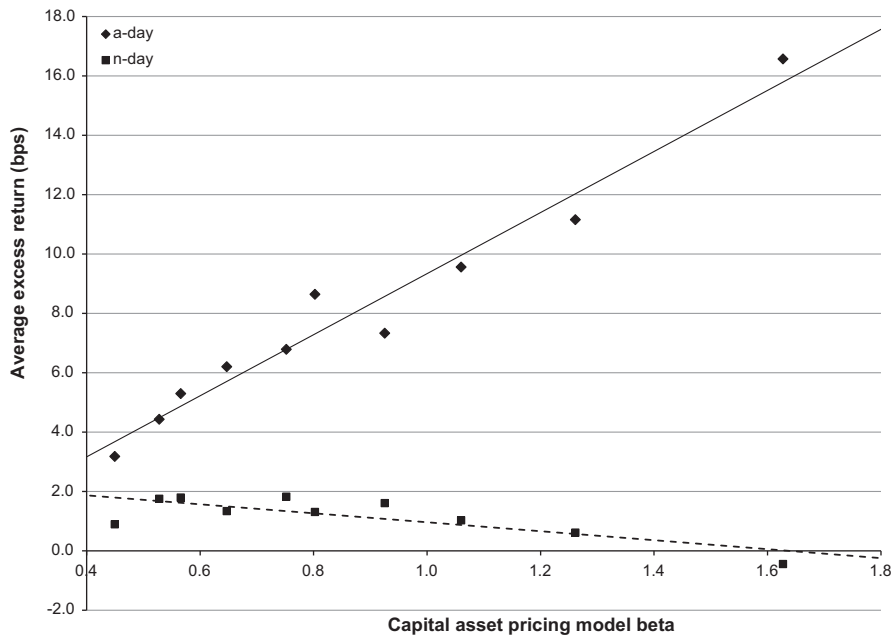


Fig. 1. Average excess returns for ten beta-sorted portfolios. This figure plots average daily excess returns in basis points (bps) against market betas for ten beta-sorted portfolios of all NYSE, Amex, and Nasdaq stocks separately for announcement days or a-days (days on which inflation, employment, or Federal Open Market Committee interest rate decisions are scheduled to be announced) and non-announcement days or n-days (all other days). The implied ordinary least squares estimates of the securities market line for each type of day are also plotted. The sample covers the 1964–2011 period. For each test portfolio, the same estimate of its full-sample beta is used for both types of day.

individual stocks. This relation also holds for portfolios containing stocks sorted by their estimated beta, for the 25 Fama and French size and book-to-market portfolios, for industry portfolios, for portfolios sorted on idiosyncratic risk and downside beta, and even for assets other than equities, such as government bonds and currency carry-trade portfolios. The relation between beta and expected returns is still significant controlling for firm size and book-to-market ratio, as well as controlling for betas with the size, value, and momentum factors. The asset pricing restrictions implied by the mean-variance efficiency of the market portfolio (see, e.g., [Cochrane, 2001](#), Chapter 1.4) appear to be satisfied on announcement days: the intercept of the announcement-day securities market line (SML) for average excess returns is either not significantly different from zero or very low, and its slope is not significantly different from the average announcement-day stock market excess return. By contrast, beta is unrelated to average returns on other days (non-announcement days or n-days), with the implied market risk premium typically being negative.

Our main finding is summarized in [Fig. 1](#). We estimate stock market betas for all stocks using rolling windows of 12 months of daily returns from 1964 to 2011. We then sort stocks into one of ten beta-decile value-weighted portfolios. [Fig. 1](#) plots average realized excess returns for each portfolio against full-sample portfolio betas separately for non-announcement days (square-shaped points and a dotted line) and announcement days (diamond-shaped points and a solid line). The non-announcement-day points show a negative relation between average returns and beta. An increase in beta of one is associated with a reduction in average daily

excess returns of about 1.5 basis points (bps), with a *t*-statistic for the slope coefficient estimate above three.

In contrast, on announcement days the relation between average returns and beta is strongly positive. An increase in beta of one is associated with an increase in average excess returns of 10.3 bps. The relation is also very statistically significant, with a *t*-statistic over 13. Furthermore, the R^2 s of each line are, respectively, 63.1% for non-announcement days and 95.9% for announcement days. For the beta-sorted portfolios, almost all variation in announcement-day average excess returns is explained just by variation in their market betas.

These results suggest that beta is after all an important measure of systematic risk. At times when investors expect to learn important information about the economy, they demand higher returns to hold higher-beta assets. Moreover, earlier research establishes that these announcement days represent periods of much higher average excess returns and Sharpe ratios for the stock market and long-term Treasury bonds. [Savor and Wilson \(2013\)](#) find that in the 1958–2009 period the average excess daily return on a broad index of US stocks is 11.4 bps on announcement days versus 1.1 bps on all other days. The non-announcement-day average excess return is not significantly different from zero, while the announcement-day premium is highly statistically significant and robust. These estimates imply that over 60% of the equity risk premium is earned on announcement days, which constitute just 13% of the sample period.² [Savor and Wilson](#)

² [Lucca and Moench \(2013\)](#) confirm these results in the post-1994 period for pre-scheduled FOMC announcements, with the estimated

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