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Are Friday announcements special? Overcoming selection bias[☆]

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ABSTRACT

We report reduced market response to Friday announcements of dividend changes, seasoned equity offerings, share repurchases, earnings, and mergers, which is seemingly consistent with the notion of investor inattention on Fridays. However, we show that these findings are an outcome of selection bias. Firms that make announcements on Fridays experience reduced market response on any weekday and have common unobserved characteristics across announcement types. After correcting for selection bias, there is no evidence that investors pay less attention to announcements made on Fridays. The method introduced here is applicable to other studies in which an exogenous factor influencing firm performance can actually be associated with firm characteristics.

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1. Introduction

There has been continuing debate concerning whether the market efficiently incorporates information in cor-

porate news announcements. There are good reasons to believe that cognitive constraints and limited attention (Kahneman, 1973) influence investors' decisions and even prices in financial markets.¹ The large empirical literature finds that varying investor attention due to firm attributes (e.g., Coval and Moskowitz, 1999; Barber and Odean, 2008; Da, Engelberg, and Gao, 2011) and market-wide phenomena (e.g., Gilbert, Kogan, Lochstoer, and Ozyildirim, 2012; Yuan, 2015) affect asset prices, risk premia, volatility, return covariation, liquidity, trading activity, and momentum.

One striking behavioral regularity is investors' inattention on Fridays (DellaVigna and Pollet, 2009; Louis and Sun, 2010). This regularity is explained using the intuition

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¹ Theoretical models of limited investor attention include Merton (1987), Hong and Stein (1999), Sims (2003), Hirshleifer and Teoh (2003), Peng (2005), Peng and Xiong (2006), Huang and Liu (2007), Mackowiak and Wiederholt (2009), Mondria (2010), and Andrei and Hasler (2015).

that on Fridays, investors and traders could be preoccupied with the upcoming weekend and, thus, pay less attention to corporate news announcements on that day. This preoccupation should result in a reduced market reaction to announcements that are made on Fridays. Studies investigating this issue report reduced response to earnings announcements (DellaVigna and Pollet, 2009) and merger announcements (Louis and Sun, 2010) on Fridays.

We show that this pattern of investor behavior extends to corporate news events other than earnings and merger announcements. We find a reduced reaction to announcements of dividend changes, repurchases, and seasoned equity offerings (SEOs) on Fridays. Taken at face value, these combined results present comprehensive and persuasive evidence that investors underreact to events occurring in the market on Fridays, which is consistent with inattention on these days.

The possibility of selection bias considerably complicates the interpretation of results showing reduced market reaction to announcements on Fridays. Such bias may be particularly acute in this instance because of the nature of the selection bias, i.e., firm characteristics influencing the non-random partitioning of the sample into firms that announce on Fridays and firms that never do so are unknown. Because the relevant firm characteristics are unknown, techniques such as matching firms, instrumental variables, and Heckman (1976) selection or treatment effect models reduce the extent of the bias but do not fully eliminate it. We show that one can evaluate the severity of the selection problem and then obtain an unbiased measure of the differential reaction to economic variables even without knowing the relevant observed or unobserved firm characteristics. Our method of addressing selection bias borrows from empirical research methodology in the medical and natural sciences (e.g., Chubak, Boudreau, Wirtz, McKnight, and Weiss, 2013; Braga, Farrokhyar, and Bhandari, 2012).² We employ a two-step procedure that first tests whether the selection bias problem is present. We partition firms into two groups based on whether they have made at least one announcement on a Friday during the sample period (which we call the Friday announcer firms) and then compare the announcement reaction of the Friday announcer firms to that of non-Friday announcer firms on Mondays through Thursdays. This test is analogous to exposing all subjects to a placebo (a Monday–Thursday announcement day) in that market response to Monday–Thursday announcements should not be different between the two firm types, if inattention is associated with Friday rather than firm characteristics.

For all five announcement types, we find that the Friday announcer firms experience a lower market response compared to the non-Friday announcer firms on all week-

days, not only on Fridays. For example, for repurchases, our initial finding that the market reacts 0.5% less to announcements on Fridays seems to indicate Friday inattention; however, the market also reacts 0.6% less to Friday announcer firms' announcements concerning a repurchase program on Mondays through Thursdays. This suggests that Friday announcer firms differ from non-Friday announcer firms and there is nothing special about Friday as an announcement day in terms of its effect on market reaction. The two types of firms (those that have announced on Fridays and those that never announce on Fridays) must have observable and/or unobservable characteristics that make the market react differently to their announcements regardless of the weekday. In addition, a firm's decision to announce on Fridays is not random and may depend on firm and management characteristics. Thus, a study that overlooks non-random differences between firms will mistakenly attribute a differential response on Fridays to the announcement day rather than to confounding factors—firm characteristics.

We address the selection bias problem by exclusively using the relatively homogeneous sample of the Friday announcer firms.³ Our tests compare the market response to Friday announcements and non-Friday announcements within the set of Friday announcer firms. This method allows us to avoid the sample selection problem even when the source of the difference between the two groups of firms is unknown. For example, in the full sample, SEO announcements on Fridays elicit a 0.5% less negative market reaction than SEO announcements on other weekdays, which is seemingly consistent with Friday inattention. However, because the Friday announcer firms always induce a smaller announcement reaction, on average, reaction to Friday announcements mechanically appears smaller because it is benchmarked against the sample that unjustifiably includes the non-Friday announcer firms.⁴ Based only on the sample of Friday announcer firms, the market reaction to SEO announcements on Fridays is not significantly different from that on other weekdays; thus, with selection bias removed, the market response to Friday SEO announcements does not differ from that to SEO announcements on other weekdays.

An approach that is econometrically equivalent to the homogeneous sample approach is the use of the entire sample and the addition of an indicator (the "Friday announcer" indicator) of whether the firm is a 'Friday announcer firm' to the model—to proxy for the characteristics that differentiate the Friday announcer and non-Friday announcer firms. In the regression on the full sample of SEOs, for example, the *Friday announcer* indicator has a coefficient of -0.6% and is highly significant, and the *Friday announcement* indicator is -0.1% and non-significant.

In some cases, the frequency of Friday announcements may better capture the extent of firm heterogeneity in terms of announcement timing and average market

² For example, because obesity can be positively associated with both the probability of open appendectomy (vs. minimally invasive appendectomy) and postoperative wound infection rate, it confounds the relation between the surgical approach and wound infection. A selection bias arises if obese patients are overrepresented among the patients of either surgery type. Consequently, in observational studies, a researcher can consider the samples of obese and non-obese patients separately or attempt to statistically control for obesity effects when analyzing the results.

³ The Friday announcer sample can still have firm heterogeneity in terms of the frequency of announcements on Fridays across firms, which we discuss when we consider earnings announcements.

⁴ An analogy is a study of cancer rates caused by the spread of prostate cancer in the body that mistakenly includes both men and women.

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