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FRIDAY EVENING EARNINGS NEWS TRAVEL SLOWLY

DIOGO JORGE DO VALE FORTUNATO

Supervision of Professor Joni Kokkonen

Abstract

Friday evening earnings news travel slowly

Diogo Fortunato

DellaVigna and Pollet (2009) hypothesize that Friday earnings announcements receive less attention than comparable earnings announcements on Monday through Thursday, presumably because market participants are distracted from work-related activities with the weekend approaching (Friday Distraction Hypothesis). The holistic approach developed throughout this study, addresses the main weakness in their research, the negligence of the after-hours adjustment, showing that the well-documented differential market reaction to Friday earnings news is, in fact, a phenomenon only present in evening announcements. Friday evening announcements are associated with a substantial reduced immediate reaction to both positive and negative earnings news relative to other weekdays' evening announcements. In the following weeks, Friday evening announcements are the only ones contributing to the delayed overreaction to negative news. After controlling for other possible determinants of the Friday evening effect, there is striking evidence indicating that this effect is driven by non-attention causes, being largely attributed to firm heterogeneity. The Friday Distraction Hypothesis defended by DellaVigna and Pollet (2009) does not hold.

Keywords: Friday evening announcements, after-hours adjustment, firm heterogeneity.

Resumo

Anúncios de resultados pós-fecho de mercado viajam mais lentamente

Diogo Fortunato

DellaVigna e Pollet (2009) levantam a hipótese de que resultados anunciados à sexta-feira recebem menos atenção do que resultados anunciados noutros dias da semana, presumivelmente porque os participantes de mercado estão mais distraídos das atividades relacionadas com o trabalho, com a aproximação do fim-de-semana (Hipótese de Distração à sexta-feira). A abordagem holística desenvolvida ao longo deste estudo, tem em consideração a maior limitação do seu estudo, a negligência do ajustamento pós-fecho de mercado, mostrando que a bem documentada reação diferencial do mercado a anúncios de resultados à sexta-feira é um fenómeno apenas presente em anúncios de resultados pós-fecho de mercado. Anúncios de resultados à sexta-feira pós-fecho de mercado estão associados com uma reação imediata substancialmente reduzida tanto para boas notícias como para más notícias, comparativamente com anúncios feitos noutro dia da semana depois do mercado fechar. Nas semanas seguintes, anúncios feitos à sexta-feira pós-fecho de mercado são os únicos que contribuem para a reação atrasada do mercado a notícias negativas anunciadas à sexta-feira. Depois de controlados outros possíveis determinantes deste efeito, evidências apontam para que este seja atribuído em grande parte à heterogeneidade entre empresas, exceto no que diz respeito à reação imediata substancialmente reduzida a notícias negativas. A Hipótese de Distração à sexta-feira defendida por DellaVigna e Pollet (2009) não se verifica.

Palavras-chave: Anúncios de resultados à sexta-feira pós-fecho de mercado, ajustamento pós-fecho de mercado, heterogeneidade entre empresas.

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1. Introduction

This study contributes to the field of research investigating the differential market response to Friday earnings announcements relative to other weekdays' announcements, both in the immediate aftermath of an announcement and on the following weeks. The motivation for this thesis comes from DellaVigna and Pollet (2009) research, which suggest that Friday earnings information is not readily incorporated into stock prices, possibly due to weekend-induced distraction. Their findings give rise to what will be called from this point on, the Friday Distraction Hypothesis. For the results to be consistent with this hypothesis, there are two necessary conditions. If, indeed, market participants are presumably distracted from work-related activities with the weekend approaching, the immediate market response to Friday earnings announcements should be flatter relative to other weekday's earnings announcements (Immediate Under-Reaction Sub-Hypothesis). In the post-announcement period, investors might only become aware of the neglected information when they receive new information about the firm (e.g. next earnings news about the same firm). With this new piece of information, investors will probably revisit their past investment decisions regarding that particular firm, and realize that they under-reacted. Following that, the immediate under-reaction is expected to be corrected gradually, with prices drifting in the direction of the earnings surprise as the neglected news information gets slowly incorporated into stock prices (Delayed Overreaction Sub-Hypothesis)[1]. Additionally, a low level of trading volume in response to Friday news also corroborates this hypothesis.

More than reproducing DellaVigna and Pollet (2009) results, it is addressed the main weakness in their study, which has to do with the negligence of the after-hours adjustment. Event dating accuracy is crucial for this type of study, since the focus is in the short-run market response to Friday earnings announcements. An error of one day in the imputed event date has the potential to completely distrust the results. For this reason, it is essential to adjust the event-day 0 for after-hours announcements, increasing the precision of the indicator that measures stock return and volume responses in the immediate aftermath of an earnings announcement.

This study contributes to the aforementioned field of research, evaluating the robustness of the Friday effect for more recent data, including the 2008 global financial crisis and the post-crisis

[1] Previous research provides evidence indicating that relevant earnings information can be neglected at the time of the announcement, leading the market to react later to previously released news (Ho & Michaely, 1988; Huberman & Regev, 2001).

period (caused by the collapse of the housing bubble). In this way, it is provided useful information for arbitrageurs aiming at exploring this anomaly.

The thesis is structured as follows. Chapter 2, presents the review of relevant literature for the research conducted in this study. Chapter 3, presents sample selection criteria, data sources, methodology, and descriptive statistics by weekday. In chapter 4, the DellaVigna and Pollet's (2009) methodology is replicated to test the Friday Distraction Hypothesis, from January 1995 to September 2014. In chapter 5, the robustness of this hypothesis is further analyzed, enhancing the quality of the methodology applied, by adjusting the event-day 0 for after-hours announcements. Furthermore, it is performed a segmented analysis of the Friday effect for each time-of-the-day interval, for earnings announced between January 1999 and September 2014. Also in this chapter, a regression analysis is performed to confirm or disprove a widely held belief that managers tend to report bad news on Fridays, after-market-close and on busy reporting days. Lastly, chapter 6 presents the main conclusions of this study.

2. Literature Review

In theory, rational investors are expected to timely incorporate into stock prices all the set of public information available, especially, information regarding attention-grabbing events such as earnings announcements. However, there is a well-documented tendency for a stock's cumulative abnormal return to drift for several weeks in the direction of the earnings surprise, following an earnings announcement, widely known as the post-earnings announcement drift anomaly. Even Eugene Fama, known as the father of the Efficient Market Hypothesis, describes the post-earnings announcement drift as "an anomaly above suspicion" (Fama, 1998). Inconsistent with the Efficient Market Hypothesis, there is ample empirical evidence of the delayed incorporation of relevant earnings-related information into stock prices. This anomaly, also known as earnings momentum, was first introduced into literature by Ball and Brown (1968). Later, Foster, Olsen and Shevlin (1984) report that a strategy composed of a long position in extreme positive earnings surprises combined with a short position in extreme negative earnings surprises, yields an average spread return of 6.32%, over the 60 trading days following the announcement date (Bernard & Thomas, 1989). The magnitude of the spread varies with firm size (8.34% for small firms and 3.6% for large firms). Additionally, Chan, Jegadeesh and Lakonishok (1996) investigate the profitability of rolling investment strategies exploiting this anomaly.

The well-documented immediate under-reaction following earnings announcements is the most widely accepted explanation for the post-earnings announcement drift anomaly. The reasons behind this immediate under-reaction have been studied throughout the years. The inability of the market to readily incorporate into stock prices the earnings information about the future profitability of the announcer is probably the most striking evidence of under-reaction in stock markets. According to Frazzini (2006), irrational trading by disposition investors, can be a source of immediate price under-reaction to earnings announcement news, leading to return predictability and post-earnings announcement drift. The disposition effect, introduced into literature by Shefrin and Statman (1985), is the tendency for individual investors to hold losing stocks too long, and sell winning stocks too early. A combination of prospect theory and mental accounting tends to generate this effect. For instance, when a company discloses good earnings news, experiencing an appreciation in share value, these investors tend to sell the stock to lock in the immediate profit, which reduces the price. From that lower price, the post-announcement returns will be substantially higher (positive post-announcement drift). Conversely, when bad news are released into the market, disposition investors hold on to their losses, leaving the stock temporarily overpriced. From that higher price, the post-announcement returns will be lower (negative post-announcement drift).

However, the most common explanation is related with market attention. An extensive body of psychological literature shows that there is a limit to the central cognitive-processing ability of the human mind, which is known to economists as "bounded rationality", a theory developed by psychologist Herbert Simon. Minds are finite, thus, when investors try to process multiple sources of information, or perform numerous tasks at the same time, attention must be allocated selectively. The investor's ability to process earnings-related information and fully comprehend its implications for the company's future profitability, is bounded by cognitive limits, and can be reduced by peripheral events that draw attention away from the essential, what is commonly referred to as market inattention. Therefore, it is theorized in recent behavioral literature that limited attention among investors can cause an initial market under-reaction to earnings information, and thereby generate return continuation, as the news information gets gradually incorporated into stock prices, widely known as the post-earnings announcement drift (delayed overreaction[2]). An extensive body of literature presents attention-based explanations for this

[2] Existing behavioral theories usually suggest that overreaction is caused by biases in the investors' ability to process information, such as overconfidence and extrapolative expectations (Daniel, Hirshleifer, & Subrahmanyam, 1998).

puzzling immediate market under-reaction to earnings news, stating that the market is less informationally efficient at certain periods: Fridays, after-market-close, busy days (how many competing announcements there are on a given day), among others. For the purpose of this research, the emphasis will be on past literature addressing the differential market reaction to Friday earnings announcements relative to other weekdays' announcements, presumably due to weekend-induced distraction.

Patell and Wolfson (1982), were the first to note that good earnings news are more likely to be reported when markets are open for trading, whereas bad earnings news are announced more frequently after the close of trading (Gennotte & Trueman, 1996). Furthermore, they also find a strong propensity for firms to announce bad earnings news on Fridays, consistent with the pre-conceived market perception that investors are distracted just before the weekend (Penman, 1987[3]; Bagnoli, Clement, & Watts, 2005). And more than that, Friday evenings (after the close of trading), are generally the carriers of even worse news (Damodaran, 1989). This behavior is consistent with the "old corporate trick" of disclosing bad earnings news on a Friday Evening, with the intention that it gets lost by Monday morning, attenuating the expected negative market impact. In the end, Patell and Wolfson (1982) provide two alternative explanations for the predominance of bad news releases after-hours and on Fridays. Firstly, managers can opportunistically announce bad earnings news on these periods to take advantage of the increased market inattention and reduced media coverage, thus mitigating the associated negative market reaction (Opportunism Hypothesis[4]). Secondly, they can simply be providing the market with more time to process and assimilate the earnings information, reaching a greater share of the market participants before trading resumes, which can be interpreted as a service to the investor community, rather than an attempt to hide bad news (Assimilation Hypothesis[5]).

More recently, in line with the above-mentioned body of literature, DellaVigna and Pollet (2009) hypothesize that investors are distracted before the weekend and, as a result, Friday earnings announcements receive less attention than comparable earnings announcements from Monday to Thursday. Using return and volume as proxies for market attention, DellaVigna and Pollet (2009), find lower earnings response coefficients (15% lower immediate response),

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[3] Penman (1987) documents that managers tend to disclose more bad news on Mondays and Fridays than on any other weekday.
[4] Also defended by Penman (1987) and Damodaran (1989).
[5] After controlling for firms that consistently report at the same time, Doyle and Magilke (2009) find evidence that more complex firms tend to report earnings after-hours, to provide the market with more time to assimilate the complexity of its results (Bagnoli, Clement, & Watts, 2005).

higher post-earnings announcement drift (70% higher delayed response), and lower trading volume (8% lower) on Fridays than on other weekdays, consistent with lower attention on Fridays.

The aforementioned body of literature provides the foundations for the fundamental research question addressed in this study: Do stock prices behave differently around Friday earnings announcements compared to other weekdays' announcements, consistent with the Friday Distraction Hypothesis?

Other authors have suggested additional situations in which investor inattention is a source of under-reaction to firm-related news. Recent research developed by Hirshleifer, Lim and Teoh (2009), presents evidence of lower earnings response coefficients and greater post-earnings announcement drift on days with abundant earnings announcements, indicating that there is lower market attention on busy reporting days. Logically, if there is a considerable number of competing earnings announcements scheduled for a given day, the amount of attention dedicated to each individual firm announcement should be lower. Limited attention is also a source of under-reaction to firm-related news in down market periods (Hou, Peng, & Xiong, 2008), low trading volume stocks (Hou, Peng, & Xiong, 2008), Easter week (Pantzalis & Ucar, 2014), and summer doldrums (Gaynor & Morton, 2013).

Similarly to DellaVigna and Pollet (2009), throughout this study, return and volume are used as proxies for investor attention, although aware of its limitations. Deducing a causal relationship between investor attention and stock return responses (volume responses), entails debatable assumptions about the earnings–return (earnings-volume) relation, as well as, that the many other identified determinants of the market response to earnings releases are effectively controlled in empirical investigation. Further research in this field is warranted to shed light on the determinants of investor attention, as the behavioral finance and psychology literature still do not entirely understand it[6].

3. Methodology and Statistics Analysis

3.1. Sample Selection, Data Sources and Methodology

The sources of data are CRSP, I/B/E/S and COMPUSTAT databases. Stock prices and share volume are obtained from CRSP daily stock file and merged with quarterly earnings data in

[6] Recently, DeHaan, Shevlin and Thornock (2015) innovate using a measure of attention that does not rely on assumptions of market equilibrium.

I/B/E/S, from January 1995 to September 2014. Earnings announcement dates and actual earnings announced are gathered from the I/B/E/S actuals file, while forecasts are obtained from the I/B/E/S detail file. The sample was constrained to announcements that have stock price and share volume data in CRSP, are reported in both I/B/E/S and COMPUSTAT databases with a difference in reported announcement dates of at most 5 calendar days, and have at least one analyst forecast in I/B/E/S during the 30 calendar days preceding the announcement. The resulting sample is composed of 178,981 observations. Earnings announcement dates from I/B/E/S are compared with the report date of quarterly earnings (RDQ) from the COMPUSTAT North America Fundamentals Quarterly file, to ensure maximum accuracy of the announcement date considered. It is followed the newswire study presented in DellaVigna and Pollet (2009), which suggests three rules of optimal announcement date imputation[7]. In this case, only two were considered, given the sample period in analysis (1995-2014). On the one hand, if I/B/E/S and COMPUSTAT announcement dates disagree, the announcement date is set to be the earlier one (normally the later date is the date of publication in the Wall Street Journal). On the other hand, if I/B/E/S and COMPUSTAT announcement dates agree, it usually means that the announcement date is from a newswire source, so the announcement date is set to be the I/B/E/S and COMPUSTAT date (rule applicable to announcement dates after January 1, 1990).

The earnings consensus forecast (proxy for investors' expectations) is defined as the median of all analysts' forecasts made during the 30 calendar days prior to the announcement. The earnings surprise measure is defined as the difference between the actual earnings announced and the earnings consensus forecast, divided by the stock price 5 trading days prior to the announcement. The earnings surprise $ES_{i,q}$ is expressed as

$$ES_{i,q} = \frac{e_{i,q} - \hat{e}_{i,q}}{P_{i,q}}, \quad (1)$$

where $e_{i,q}$ is the earnings per share announced by firm i in quarter q, $\hat{e}_{i,q}$ is the matching consensus analyst forecast and $P_{i,q}$ is the price for firm i, 5 trading days before the announcement date in quarter q. I/B/E/S earnings data per share reflects capital structure changes (adjusted for stock splits), while CRSP stock prices are unadjusted prices. This implies that I/B/E/S historical data is displayed on the same share basis as current data. The same does not apply to CRSP data. In order to make I/B/E/S (adjusted) and CRSP (unadjusted) data

[7] They randomly hand-collected 2,766 earnings announcements from 1984 to 2003 using the PR newswires and Lexis-Nexis.

comparable, the cumulative split factor from the adjustments file is used to "unsplit" I/B/E/S actuals and forecasts. The split factor is stored as a truncated number (resulting variables have fractional cents), so the earnings per share $e_{i,q}$ is rounded to the nearest cent, and the earnings forecast $\hat{e}_{i,q}$ to the nearest half cent.

Following an event study methodology, after merging stock returns and trading volume from CRSP with earnings data from I/B/E/S, abnormal returns are computed by subtracting normal returns from actual returns. Normal returns for firm i in quarter q are calculated, using the parameters estimated by the following market model regression for days u, from t-300 to t-46 (estimation window), where t is the announcement date (event-day 0) in quarter q,

$$R_{u,i} = \alpha_{i,q} + \beta_{i,q} R_{u,m} \quad (2)$$

The cumulative buy-and-hold abnormal return for the event window $(t+h,\ t+H)$ is expressed as

$$CAR_{i,q}^{(h,H)} = \left[\Pi_{j=t+h}^{t+H}\left(1 + R_{j,i}\right)\right] - 1 - \left[\hat{\alpha}_{q,i} + \hat{\beta}_{q,i}\left[\Pi_{j=t+h}^{t+H}\left(1 + R_{j,m}\right) - 1\right]\right] \quad (3)$$

Announcements made on Saturdays, Sundays, or holidays are excluded from the sample (430 observations), as well as, announcements in which the return time-series of the corresponding announcing firm is not complete, for the (t-300, t-46) and (t, t+70) return windows (13,563 observations). Additionally, observations with no return entry for the announcement date in the return time-series of the corresponding announcing firm are dropped (3,171 observations). Observations in which the actual earnings announced, $e_{i,q}$, or the earnings consensus forecast, $\hat{e}_{i,q}$, is larger, in absolute value, than the share price, $P_{i,q}$, are also disregarded (215 observations) to minimize possible data errors. Finally, observations in the top and bottom 0.05% of both $CAR_{i,q}^{(0,1)}$ and $CAR_{i,q}^{(2,70)}$ distributions are dropped, to control for outliers (317 observations).

3.2. Descriptive Statistics: Day of the Week

Table I presents descriptive statistics for Friday and non-Friday announcements. In Table I-A, consistent with previous studies, only 5.9% of the announcements occur on Friday, being the weekday with less volume of announcements by a large margin (e.g. Damodaran, 1989; DellaVigna & Pollet, 2009). This result corroborates the idea that Friday is perceived to be the weekday when investors are more susceptible to be distracted, discouraging firms from announcing on this day. The remaining announcements are mainly concentrated on Tuesday,

Wednesday and Thursday (81% of the announcements), leaving Monday with only 13.1% of the announcements. The fact that Monday is the second weekday with less volume of announcements can be explained by the Monday effect, anomaly reported in past literature consistently finding negative returns Monday (Damodaran, 1989), which can also discourage firms to schedule announcements on this day. Table I-B presents the difference between Friday and non-Friday announcements for the baseline (columns 1, 2 and 3) and homogeneous (columns 4, 5 and 6) samples. The homogeneous sample[8] contains announcements of firms that announce at least 10% of the time on Friday and other weekdays. This approach excludes announcements made by firms that almost always announce on Friday or that almost never announce on Friday (great part of the sample). In this way, the differences in unobservable characteristics that might exist between firms which consistently announce on Friday and firms which consistently announce on other days, are not considered. The earnings surprise measure is considerably more negative for Friday announcements in both samples, being the difference between Friday and non-Friday announcements statistically significant (at 1% level for the baseline sample and at 5% level for the homogeneous sample). This is the first evidence suggesting that firms tend to report worse than expected news on Fridays. Furthermore, firms announcing on Friday have, on average, 40% higher market capitalization than firms announcing on other weekday (+2,283$M). Moreover, Friday announcing firms have higher leverage (statistically significant difference at 5% level) and considerably lower book-to-market ratio (statistically significant difference at 1% level). These differences invert for the homogeneous sample. Friday announcements are more predominant toward the end of the sample, with a difference in the average year of announcement of roughly two months and a half for the baseline sample, and ten months and a half for the homogeneous sample. Finally, for Friday announcements, 56.03% of the announcements occur in the first month of the quarter (January, April, July and October), 36.36% in the second month, and only 7.6% in the third month. Regarding non-Friday announcements there is a higher chance of occurring announcements in the first month of the quarter (58.23%). The differences in these variables are no longer statistically significant for the homogeneous sample. Table I-C presents average surprises by earnings surprise quantile for Friday and non-Friday announcements. The sample is divided into 11 earnings surprise quantiles[9], determined by rank ordering earnings surprises

[8] Approach suggested by DellaVigna and Pollet (2009).
[9] The relation between earnings surprise and announcement abnormal return is highly nonlinear, so the decile ranks of the earnings surprise are used, instead of the earnings surprise itself, reducing the influence of outliers.

each year**.** Quantiles 1 to 5 represent five quintiles of negative earnings surprises and quantiles 7 to 11 represent five quintiles of positive earnings surprises. Quantile 6 contains announcements with earnings surprise equal to zero (100% forecast accuracy). The average surprises are identical throughout all quantiles for both Friday and non-Friday announcements, except for the bottom and top quantiles (1 and 11, respectively). Friday worst news (in relation to investor's expectations) are more negative than non-Friday worst news, whereas Friday best news are more positive than non-Friday best news. It is also visible that there are significantly more positive earnings surprises than negative, as documented by Degeorge, Patel and Zeckhauser (1999).

Table I
Descriptive Statistics: Friday and Non-Friday Announcements

Panel A exhibits the distribution of earnings announcements by weekday. Panel B exhibits descriptive statistics for the baseline sample (columns 1 and 2) and homogeneous sample (columns 4 and 5). Standard deviations are in parentheses. Columns 3 and 6 exhibit the differences for the baseline and homogeneous samples, respectively, with standard errors for these mean differences in parentheses (*10% significance, **5% significance, ***1% significance). The homogeneous sample contains announcements of companies that announce at least 10% of the time on Friday and other weekdays. Panel C exhibits the average surprise by earnings surprise quantile for Friday and other weekdays' announcements. Negative surprises are in quantiles 1 to 5, positive surprises are in quantiles 7 to 11, and zero surprises are in quantile 6.

Panel A: Earnings Announcements Distribution by Weekday

	All	Monday	Tuesday	Wednesday	Thursday	Friday
Number	161,285	21,075	38,855	41,551	50,308	9,496
Fraction	1.0000	0.1307	0.2409	0.2576	0.3119	0.0589

Panel B: Differences between Friday and Other Weekdays Announcements

	Baseline Sample			Homogeneous Sample		
	Friday	Non-Friday	Difference	Friday	Non-Friday	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
Earnings Surprise	-0.0021	-0.0006	-0.0015	-0.0020	-0.0009	-0.0011
	(0.0376)	(0.0267)	(0.0004)***	(0.0347)	(0.0287)	(0.0005)**
Market Capitalization	8,468	6,185	2,283	8,981	6,398	2,583
	(30,591)	(21,066)	(319)***	(32,245)	(21,251)	(408)***
Leverage	0.2357	0.2304	0.0053	0.2357	0.2391	-0.0034
	(0.1936)	(0.2028)	(0.0021)**	(0.1898)	(0.1862)	(0.0026)
Book-to-Market	0.7604	2.1425	-1.3820	0.7567	0.7267	0.0301
	(1.0016)	(110.9296)	(0.2849)***	(1.0395)	(0.7834)	(0.0134)**
Year	2004.69	2004.49	0.20	2004.99	2004.11	0.88
	(5.98)	(5.73)	(0.0631)***	(5.97)	(5.79)	(0.0802)***
Month 1 in Quarter	0.5603	0.5823	-0.0220	0.5693	0.5700	-0.0006
	(0.0051)	(0.0013)	(0.0052)***	(0.0059)	(0.0032)	(0.0067)
Month 2 in Quarter	0.3636	0.3460	0.0176	0.3613	0.3560	0.0053
	(0.0049)	(0.0012)	(0.0051)***	(0.0057)	(0.0031)	(0.0065)
Month 3 in Quarter	0.0760	0.0717	0.0043	0.0693	0.0740	-0.0047
	(0.0027)	(0.0007)	(0.0028)	(0.0030)	(0.0017)	(0.0035)
N	9,496	151,789	161,285	7,052	24,109	31,161

Panel C: Average Surprise by Earnings Surprise Quantile

		1					6					11
	Quantile	Low	2	3	4	5	ES=0	7	8	9	10	High
Friday	Average	-0.0495	-0.0063	-0.0025	-0.0011	-0.0004	0.0000	0.0003	0.0009	0.0017	0.0034	0.0212
	N	875	775	657	674	600	1,030	894	837	949	1,017	1,188
Non-Friday	Average	-0.0450	-0.0060	-0.0025	-0.0011	-0.0004	0.0000	0.0003	0.0008	0.0016	0.0033	0.0170
	N	8,817	8,911	9,026	9,018	9,081	19,063	17,657	17,715	17,600	17,543	17,358

4. Application of DellaVigna and Pollet Methodology

In this chapter, the DellaVigna and Pollet's (2009) methodology is replicated to assess whether there is immediate under-reaction followed by delayed overreaction in stock returns for Friday earnings announcements, from January 1995 to September 2014. Firstly, it is presented graphical evidence to test the immediate and delayed stock return response to earnings news for Friday and non-Friday announcements. The pre-announcement behavior is also analyzed graphically. Posteriorly, several models are estimated to assess the impact of earnings news on the immediate, delayed and long term stock return responses, using, initially, top (best news) and bottom (worst news) quantiles and, lastly, the whole sample. Delayed response ratios are also reported.

4.1. Stock Return Response: Graphical Evidence

4.1.1. Immediate Response

The immediate stock return response is measured by the mean cumulative buy-and-hold abnormal return from day 0 to 1, in event time, where event-day 0 is the date of announcement. As presented by the graphical evidence in Figure 1a, $\overline{CAR(0,1)}$ reacts less negatively to bad earnings news (quantiles 1 to 5) and less positively to good earnings news (quantiles 7 to 11), for Friday announcements, consistent with the Immediate Under-Reaction Sub-Hypothesis.

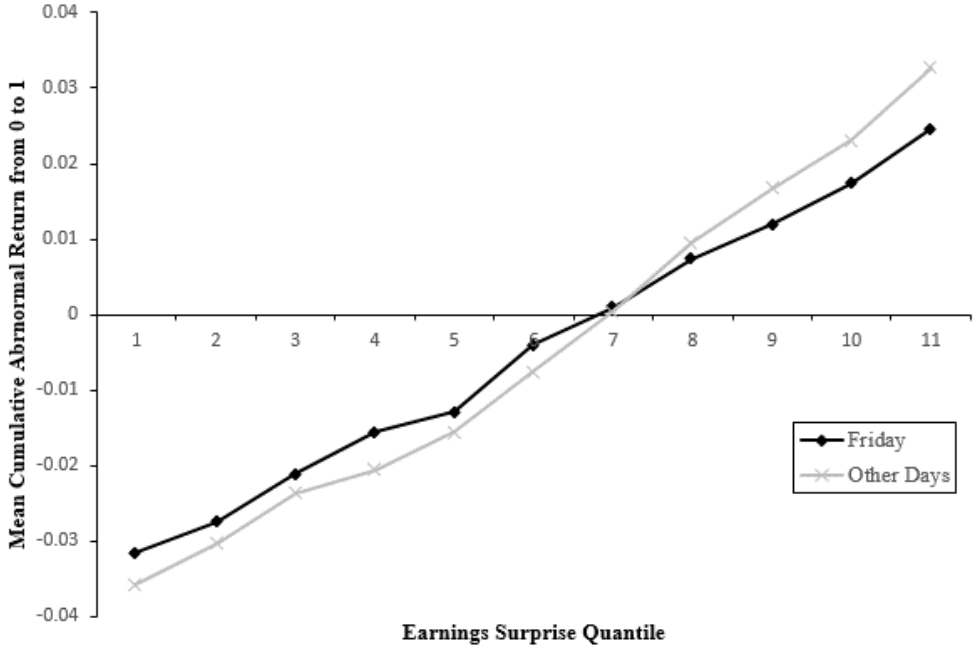
4.1.2. Delayed Response

The delayed stock return response is measured by the mean cumulative buy-and-hold abnormal return from day 2 to 70, in event time. As presented by the graphical evidence in Figure 1b, $\overline{CAR(2,70)}$ reacts more negatively to bad earnings news (quantiles 1 to 4) and less positively to good earnings news (quantiles 9 to 11), for Friday announcements, not fully consistent with the Delayed Overreaction Sub-Hypothesis.

4.1.3. Pre-Announcement Behavior

Figure 1c exhibits the pre-announcement stock return behavior (-30, -1) for Friday and non-Friday announcements. The pre-announcement behavior is very similar for both types of announcements. This means that announcing earnings on Fridays is not, in itself, bad signaling to the market.

a)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2
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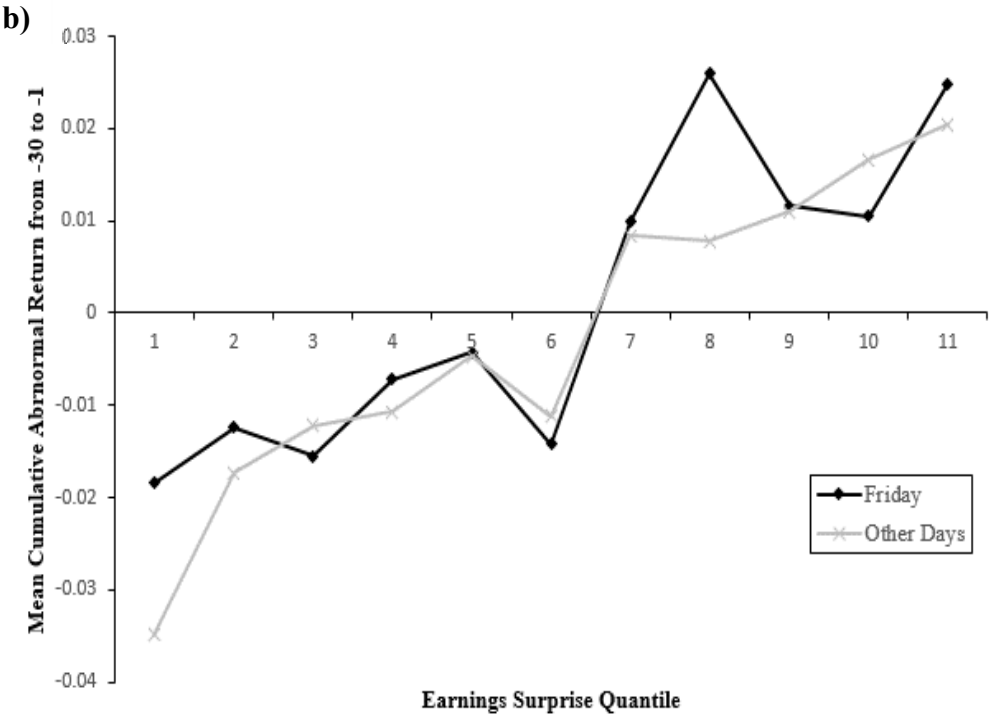
10
11
Mean Cumulative Abnormal Return from 0 to 1
Earnings Surprise Quantile
Friday
Other Days

b)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Mean Cumulative Abnormal Return from -30 to -1
Earnings Surprise Quantile
Friday
Other Days

c)

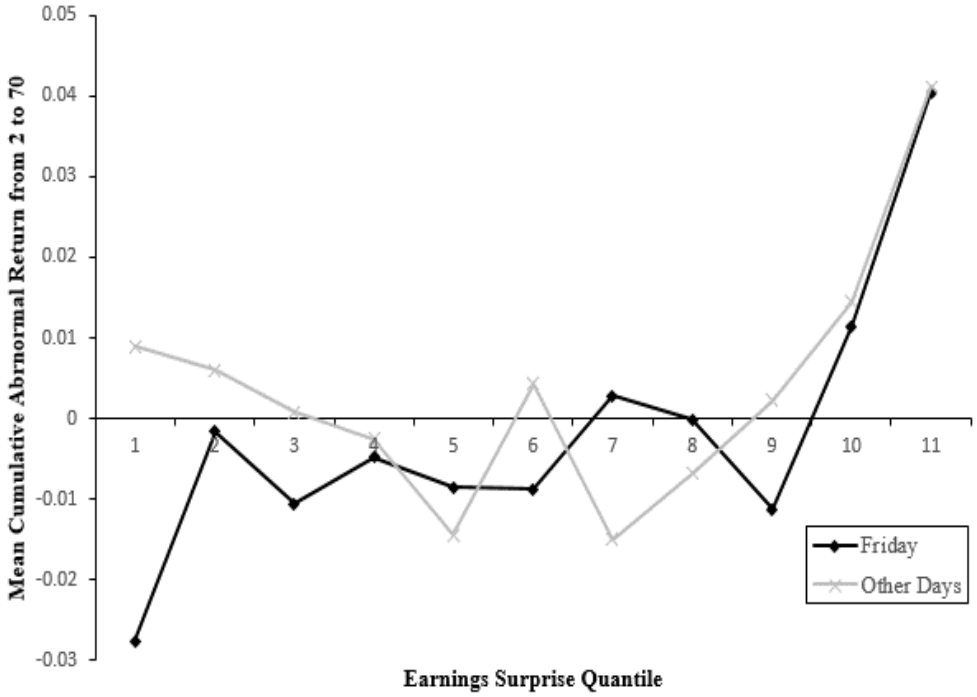


Figure 1a, b and c
Immediate and Delayed Response to Earnings Surprises and Pre-Announcement Behavior

In event time, day 0 is the earnings announcement date. Figure 1a (Figure 1b) presents the immediate (delayed) stock return response across 11 earnings surprise quantiles for Friday and other weekdays' announcements. The immediate (delayed) response is measured by the mean cumulative buy-and-hold abnormal return from day 0 to 1 (2 to 70). Figure 1c presents the pre-announcement stock return behavior (-30, -1). Negative surprises are in quantiles 1 to 5, positive surprises are in quantiles 7 to 11, and zero surprises are in quantile 6. Quantiles are determined by rank ordering earnings surprises each year.

4.2. Stock Return Response: Good vs. Bad News

In this section, the differential stock return reactions for Friday earnings announcements (relatively to non-Friday announcements) in response to very good news (top quantile or top two quantiles) and very bad news (bottom quantile or bottom two quantiles) are quantified. More precisely, what is analyzed is the immediate, delayed and long term stock return differential responses to Friday announcements in relation to non-Friday announcements. The model specification suggested by DellaVigna and Pollet (2009) is

$$CAR_{i,q}^{(h,H)} = \beta_0 + \beta_{T-B}^{NF} d_{i,q}^{top} + \beta_B^{F-NF} d_{i,q}^{F} + \beta_{T-B}^{F-NF} d_{i,q}^{top} d_{i,q}^{F} + \Gamma_0 X_{i,q} + \Gamma_1 d_{i,q}^{top} X_{i,q} + \varepsilon_{i,q}, \quad (4)$$

where $CAR_{i,q}^{(h,H)}$ is the cumulative abnormal return from day h to day H, in event time, for firm i in quarter q, $d_{i,q}^{top}$ is an indicator variable equal to one (zero) for observations in the top (bottom) quantile(s), and $d_{i,q}^{F}$ is an indicator variable equal to one (zero) for Friday (non-Friday) announcements. The sample is restricted to observations only in the top or bottom quantiles, in order to measure the impact of extreme earnings news. The β_{T-B}^{NF} coefficient measures the top-to-bottom return differential for non-Friday announcements, while the β_{T-B}^{F-NF} coefficient captures the differential reaction for Friday announcements in relation to non-Friday announcements. To obtain results consistent with the Distraction Hypothesis, β_{T-B}^{F-NF} coefficient should be negative for the immediate response ($CAR_{i,q}^{(0,1)}$) and positive for the delayed response ($CAR_{i,q}^{(2,70)}$). Assuming that a large portion of the investor's community is distracted on Fridays, it is expected the market to react less initially (underreact), and compensate later (overreact), since information will eventually be incorporated into stock prices.

$X_{i,q}$ are control variables that can be included in certain regressions. More precisely, indicator variables for the year of announcement, month of announcement (common macroeconomic trends) and market capitalization decile (size) are included. The market capitalization measure is computed as the difference between the log market capitalization of firm i in quarter q and the average of the log market capitalization for other firms with announcements in the same exact quarter. The ranked announcements are assigned to one of ten decile portfolios on the basis of their announcer's market capitalization. In some specifications, it is also controlled for earnings surprise volatility by including indicator variables for the surprise volatility deciles. The surprise volatility measure is the standard deviation of the firm's earnings surprises during the four years preceding the announcement (minimum of four observations required). Then, earnings surprise volatility deciles are obtained by rank ordering surprise volatility each year**.** The cross products between the control variables and the indicator variable for the top (two) quantile are also included. Standard errors are clustered by announcement day to control for correlation of returns on the same weekday and adjusted for heteroskedasticity.

4.2.1. Immediate Response

Table II-A presents specification (4), with the immediate abnormal response $CAR_{i,q}^{(0,1)}$ as the dependent variable. In columns 1 to 4, the sample is constrained to earnings news in the top or bottom quantiles. Regarding the specification without controls (column 1), the immediate top-to-bottom return differential for non-Friday announcements is 6.85% ($\hat{\beta}_{T-B}^{NF}$=0.0685, significant

at 1% level). Relative to this value, the immediate stock return response for Friday announcements is 18% ($\hat{\beta}_{T-B}^{F-NF}/\hat{\beta}_{T-B}^{NF}$ =0.0123/0.0685) lower, being marginally significantly smaller by 1.23 percentage points ($\hat{\beta}_{T-B}^{F-NF} = -0.0123$, significant at 1% level). Adding the standard set of controls (month, year and market capitalization controls, in column 2), the Friday differential reaction is still negative and significant ($\hat{\beta}_{T-B}^{F-NF} = -0.0113$, significant at 5% level). Likewise, with additional surprise volatility controls (column 3), the β_{T-B}^{F-NF} coefficient remains negatively significant ($\hat{\beta}_{T-B}^{F-NF} = -0.0100$, significant at 5% level). Finally, in column 4, using a decile-based sorting procedure, the β_{T-B}^{F-NF} coefficient is still negatively significant ($\hat{\beta}_{T-B}^{F-NF} = -0.0084$, significant at 10% level). In columns 5 to 8, the sample is constrained to earnings news in the top two or bottom two quantiles. This implies a larger sample, which naturally results in a higher precision of the estimates (considerably lowering standard errors of the estimates). For this sample (column 5), the immediate top-to-bottom return differential for non-Friday announcements is 6.09% ($\hat{\beta}_{T-B}^{NF}$=0.0609, significant at 1% level). Relative to this value, the immediate stock return response for Friday announcements is 16.3% ($\hat{\beta}_{T-B}^{F-NF}/\hat{\beta}_{T-B}^{NF}$ =0.0099/0.0609) lower, being marginally significantly smaller by 0.99 percentage points ($\hat{\beta}_{T-B}^{F-NF} = -0.0099$, significant at 1% level). This result is robust to the use of standard controls in column 6 ($\hat{\beta}_{T-B}^{F-NF} = -0.0090$, significant at 1% level), additional surprise volatility controls in column 7 ($\hat{\beta}_{T-B}^{F-NF} = -0.0078$, significant at 5% level), and the use of deciles as the sorting procedure in column 8 ($\hat{\beta}_{T-B}^{F-NF} = -0.0066$, significant at 5% level).

4.2.2. Delayed Response

Table II-B reports specification (4), with the delayed abnormal performance $CAR_{i,q}^{(2,70)}$ as the dependent variable. Without controls (column 1), the delayed top-to-bottom return differential for non-Friday announcements, also known as post-earnings announcement drift, is 3.22% ($\hat{\beta}_{T-B}^{NF}$=0.0322, significant at 1% level). Relative to this value, Friday announcements are associated with a 111% ($\hat{\beta}_{T-B}^{F-NF}/\hat{\beta}_{T-B}^{NF}$ =0.0358/0.0322) higher drift, which is marginally significantly higher by 3.58 percentage points ($\hat{\beta}_{T-B}^{F-NF}$ =0.0358, significant at 5% level). Restricting the sample to earnings in the top two or bottom two quantiles, in column 5, the post-earnings announcement drift for non-Friday announcements is 2.03% ($\hat{\beta}_{T-B}^{NF}$=0.0203, significant at 1% level). Relative to this value, Friday announcements are associated with a 109% ($\hat{\beta}_{T-B}^{F-NF}/\hat{\beta}_{T-B}^{NF}$ =0.0222/0.0203) higher drift, which is marginally significantly higher by 2.22 percentage points ($\hat{\beta}_{T-B}^{F-NF}$ =0.0222, significant at 5% level). This Friday differential drift

is robust to the use of standard controls, additional surprise volatility controls, but not to the use of deciles as the sorting methodology, for both samples.

To further investigate the phenomenon, Figure 2 presents the post-earnings announcement drift performance at various horizons, for Friday and non-Friday announcements. Drift is measured as the difference between the mean cumulative abnormal returns from day 2 to t (horizon) for the top and bottom quantiles. The Friday differential drift only emerges 30 trading days after the announcement (except for the 20 trading days horizon, there is always a positive Friday differential drift). From then on, the Friday differential drift increases, until reaching its maximum 70 trading days after the announcement (justifies the horizon choice used to measure the delayed stock return response)[10]. After reaching its maximum, the drift for Friday announcements falls abruptly. This can be explained by the fact that 80 (or 90) trading days after the announcement we are already including the immediate abnormal return response to the next quarter earnings announcement, which, as highlighted before, is markedly ruled by under-reaction to earnings news.

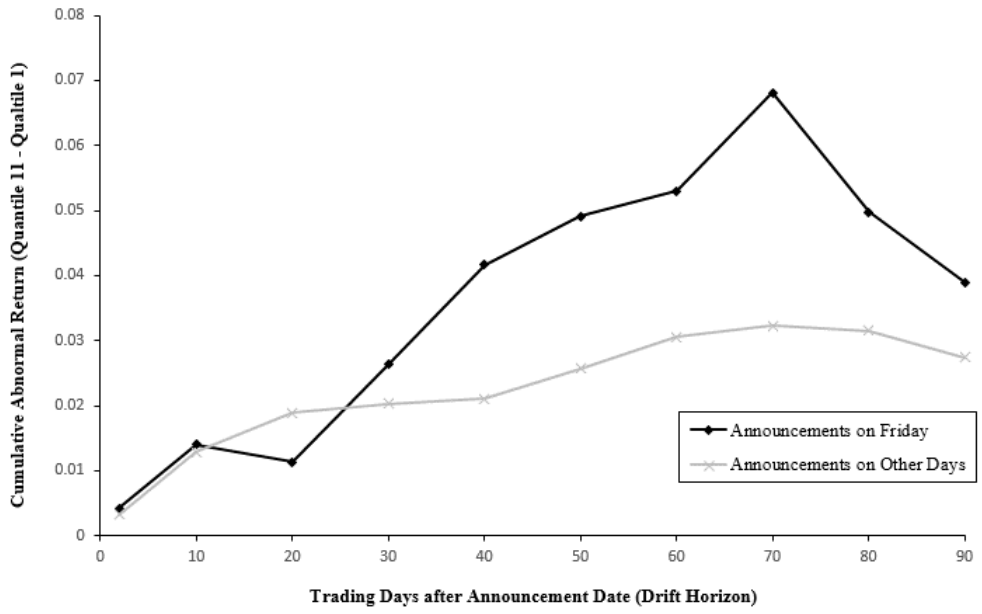


Figure 2
Post-Earnings Announcement Drift at Various Horizons

Drift is measured as the difference between the mean cumulative abnormal returns from day 2 to t (horizon) for the top and bottom quantiles.

[10] Bernard and Thomas (1989) suggest that most of the drift takes place during the first 60 trading days following the announcement (3 calendar months).

4.2.3. Long-Term Response

Table II-C presents specification (4) with the long-term response $CAR_{i,q}^{(0,70)}$ as the dependent variable. The top-to-bottom return differential for non-Friday announcements is positive and significant across all specifications. Without controls, the long-term response for non-Friday announcements ranges from 10.45% (column 1) to 8.39% (column 5). The Friday differential reaction is positive but not significant across all specifications. Without controls, the long-term differential Friday reaction ranges from 2.29% (column 1) to 1.07% (column 5).

4.3. Stock Return Response: Delayed Response Ratio

In this sub-section, the Delayed Response Ratio (DRR) is calculated for Friday and non-Friday announcements, a measure suggested by DellaVigna and Pollet (2009). The DRR measures the portion of the total long-term response ($CAR_{i,q}^{(0,70)}$) that is delayed ($CAR_{i,q}^{(2,70)}$). The DRR for non-Friday announcements is expressed as

$$DRR^{NF} = \frac{\beta_{T-B}^{NF(2,70)}}{\beta_{T-B}^{NF(0,70)}}, \quad (5)$$

where $\beta_{T-B}^{NF(2,70)}$ and $\beta_{T-B}^{NF(0,70)}$ are the coefficients estimated in specification (4).

Likewise, the DRR for Friday announcements is expressed as

$$DRR^{F} = \frac{\beta_{T-B}^{NF(2,70)} + \beta_{T-B}^{F-NF(2,70)}}{\beta_{T-B}^{NF(0,70)} + \beta_{T-B}^{F-NF(0,70)}}, \quad (6)$$

Table II-D reports the results for these measures. Standard errors are computed using the Delta method. In the specification without controls (column 1), 53.45% of the total response to Friday announcements comes with a delay, against 30.84% for non-Friday announcements (statistically significant difference). With the introduction of controls, the difference is no longer significant (columns 2 to 4). In columns 5 to 8, the top-to-bottom return differential is calculated as the difference between the top two quantiles and the bottom two quantiles. Without controls (column 5), 44.87% of the total response to Friday announcements is delayed, compared to 24.20% for non-Friday announcements. Once again, the difference between the two is statistically significant, indicating that, in fact, there is a higher delayed response to Friday earnings news, consistent with the Distraction Hypothesis. With the introduction of controls, the difference is no longer significant (columns 6 to 8).

The approach developed throughout sections 4.2 and 4.3, does not take into consideration all the available information, given that it was exclusively focused on the stock return response to extreme positive and negative news (top and bottom quantiles). Thus, to assess if the results are robust to the use of the whole sample (all quantiles), it is estimated the following model suggested by Hirshleifer, Lim and Teoh (2009),

$$CAR_{i,q}^{(h,H)} = \alpha + \beta ESQ_{i,q} + \beta^F ESQ_{i,q} d_{i,q}^F + \phi d_{i,q}^F + \Gamma_0 X_{i,q} + \Gamma_1 ESQ_{i,q} X_{i,q} + \varepsilon_{i,q}, (7)$$

where $ESQ_{i,q}$ is the earnings surprise quantile, and $X_{i,q}$ is the same set of controls used in sections 4.2 and 4.3. The results are not reported, but are in line with previous findings. The immediate stock return response is 18.57% flatter for Friday announcements relative to non-Friday announcements, whereas the delayed response is 75% higher for Friday announcements relative to non-Friday announcements. With the introduction of controls, the Friday differential drift remains negatively significant (1% level) for the immediate response, but is no longer significant for the delayed response. These results are consistent with previous findings presented in sub-sections 4.2.1 and 4.2.2.

4.4. Summary

The results in this chapter are consistent with DellaVigna and Pollet (2009) findings, which suggest that Friday earnings information is not readily incorporated into stock prices, being the weekend the natural cause for the increased inattention.

Table II
Regression Analyses on the Stock Return Response to Earnings Announcements

This table presents regression results for the immediate stock return response (Panel A), delayed response (Panel B), and long-term response (Panel C). Delayed response ratios are also presented (Panel D). Columns 1 to 4 (5 to 8) restrict the sample to surprises in the top (two) and bottom (two) quantiles. In columns 4 and 8, I use a decile-based sorting procedure (instead of quantiles). In some specifications, I control for year of announcement, month of announcement, size (Standard controls), and earnings surprise volatility. Robust standard errors are clustered by announcement day (*10% significance, **5% significance, ***1% significance).

Panel A: The Dependent Variable Is the Cumulative Abnormal Return from Event-Day 0 to 1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.0358	-0.0308	-0.0329	-0.0306	-0.0331	-0.0288	-0.0238	-0.0529
	(0.0012)***	(0.0062)***	(0.0122)***	(0.0085)***	(0.0008)***	(0.0039)***	(0.0168)	(0.0081)***
Friday	0.0043	0.0038	0.0029	0.0012	0.0034	0.0031	0.0022	0.0012
	(0.0039)	(0.0039)	(0.0044)	(0.0031)	(0.0026)	(0.0025)	(0.0028)	(0.0020)
Top Group	0.0685	0.0471	0.0443	0.0407				
	(0.0014)***	(0.0072)***	(0.0126)***	(0.0106)***				
(Top Group)*Friday	-0.0123	-0.0113	-0.0100	-0.0084				
	(0.0046)***	(0.0046)**	(0.0050)**	(0.0044)*				
Top Two Groups					0.0609	0.0372	0.0436	0.0922
					(0.0009)***	(0.0044)***	(0.0089)***	(0.0512)*
(Top Two Groups)*Friday					-0.0099	-0.0090	-0.0078	-0.0066
					(0.0030)***	(0.0030)***	(0.0032)**	(0.0027)**
Standard Controls (Interacted)		X	X	X		X	X	X
Surprise Volatility Controls (Interacted)			X	X			X	X
Sorting Procedure	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles
R^2	0.1002	0.1136	0.1248	0.1331	0.0965	0.1087	0.1203	0.1240
N	28,238	28,238	21,645	24,643	56,484	56,484	44,656	51,180

Panel B: The Dependent Variable Is the Cumulative Abnormal Return from Event-Day 2 to 70

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.0089	-0.0682	-0.2079	-0.1540	0.0074	-0.0562	-0.1141	-0.1296
	(0.0054)	(0.0226)***	(0.0460)***	(0.0322)***	(0.0037)**	(0.0145)***	(0.0372)***	(0.0274)***
Friday	-0.0365	-0.0359	-0.0421	-0.0208	-0.0228	-0.0213	-0.0183	-0.0147
	(0.0140)***	(0.0136)***	(0.0148)***	(0.0109)*	(0.0094)**	(0.0090)**	(0.0095)*	(0.0067)**
Top Group	0.0322	0.0923	0.2034	0.1463				
	(0.0053)***	(0.0259)***	(0.0542)***	(0.0457)***				
(Top Group)*Friday	0.0358	0.0352	0.0427	0.0206				
	(0.0179)**	(0.0177)**	(0.0200)**	(0.0185)				
Top Two Groups					0.0203	0.0518	0.0730	0.1537
					(0.0033)***	(0.0163)***	(0.0348)**	(0.0542)***
(Top Two Groups)*Friday					0.0222	0.0217	0.0199	0.0161
					(0.0107)**	(0.0107)**	(0.0117)*	(0.0108)
Standard Controls (Interacted)		X	X	X		X	X	X
Surprise Volatility Controls (Interacted)			X	X			X	X
Sorting Procedure	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles
R^2	0.0024	0.0473	0.0501	0.0509	0.0012	0.0369	0.0399	0.0397
N	28,238	28,238	21,645	24,643	56,484	56,484	44,656	51,180

Table II - Continued

Panel C: The Dependent Variable Is the Cumulative Abnormal Return from Event-Day 0 to 70								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.0276	-0.1021	-0.2419	-0.1861	-0.0261	-0.0873	-0.1363	-0.1843
	(0.0055)***	(0.0229)***	(0.0469)***	(0.0322)***	(0.0037)***	(0.0146)***	(0.0448)***	(0.0272)***
Friday	-0.0331	-0.0326	-0.0398	-0.0202	-0.0190	-0.0175	-0.0162	-0.0135
	(0.0141)**	(0.0135)**	(0.0148)***	(0.0111)*	(0.0096)**	(0.0091)*	(0.0097)*	(0.0069)*
Top Group	0.1045	0.1437	0.2478	0.1874				
	(0.0055)***	(0.0270)***	(0.0547)***	(0.0457)***				
(Top Group)*Friday	0.0229	0.0229	0.0317	0.0105				
	(0.0168)	(0.0167)	(0.0193)	(0.0180)				
Top Two Groups					0.0839	0.0914	0.1166	0.2627
					(0.0034)***	(0.0167)***	(0.0358)***	(0.1056)**
(Top Two Groups)*Friday					0.0107	0.0109	0.0111	0.0085
					(0.0107)	(0.0106)	(0.0120)	(0.0111)
Standard Controls (Interacted)		X	X	X		X	X	X
Surprise Volatility Controls (Interacted)			X	X			X	X
Sorting Procedure	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles
R^2	0.0175	0.0620	0.0644	0.0680	0.0144	0.0491	0.0524	0.0554
N	28,238	28,238	21,645	24,643	56,484	56,484	44,656	51,180

Panel D: Ratio of the Delayed Stock Response (2 to 70) to the Long-Term Stock Response (0 to 70)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Response ratio for Friday	0.5345	0.7656	0.8808	0.8430	0.4487	0.7186	0.7268	0.6262
announcements	(0.0269)	(0.0568)	(0.0762)	(0.1057)	(0.0169)	(0.0559)	(0.1286)	(0.1016)
Response ratio for announcements on	0.3084	0.6424	0.8210	0.7805	0.2420	0.5670	0.6260	0.5851
other days	(0.0529)	(0.2169)	(0.2841)	(0.3091)	(0.0406)	(0.2065)	(0.3547)	(0.3129)
Difference between the response ratio	0.2261	0.1232	0.0598	0.0625	0.2067	0.1516	0.1009	0.0411
for Friday and other days	(0.0594)***	(0.2242)	(0.2941)	(0.3267)	(0.0440)***	(0.2139)	(0.3772)	(0.3290)
Standard Controls (Interacted)		X	X	X		X	X	X
Surprise Volatility Controls (Interacted)			X	X			X	X
Sorting Procedure	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles	11 Quantiles	11 Quantiles	11 Quantiles	10 Deciles
N	28,238	28,238	21,645	24,643	56,484	56,484	44,656	51,180

5. Event-Day 0: Adjustment for After-Hours Announcements

After the application of DellaVigna and Pollet (2009) methodology, in this chapter, the implications of event date misspecification for the study here conducted are shown, and it is further analyzed the robustness of the Friday Distraction Hypothesis. Event dating accuracy is crucial for this type of study, in which the short-term market response to Friday earnings announcements is of great importance. An error of one day in the imputed announcement date completely distrusts the results. But more than the accuracy of the imputed announcement date, it is crucial to consider the time of the announcement because, in some situations, it is not correct to consider the announcement date as the event-day 0. For instance, when an announcement is made after-hours, the market reaction is only consummated on the next trading day, when the market reopens. For this reason, it is essential to adjust the event-day 0 for after-hours announcements, otherwise, the immediate stock return response will capture the return for the day preceding the effective reaction. Specifically, the event-day 0 for after-market-close announcements is adjusted by adding one trading day to the announcement date. In this way, the main weakness in DellaVigna and Pollet (2009) research is addressed, regarding the negligence of the after-hours adjustment. Their inability to put this adjustment into practice, was due to the inexistence of information regarding the time of announcements when the study was conducted. To overcome this obstacle, they defined the immediate stock return reaction as the cumulative buy-and-hold abnormal return from day 0 to 1 ($CAR_{i,q}^{(0,1)}$), where day 0 is the date of announcement. This return window encompasses the immediate stock return reaction for both, before-market-close announcements (event-day 0), and after-market-close announcements (event-day 1). Fortunately, on April 2009, I/B/E/S started providing the exact time stamp of earnings announcements in its database. This announcement time variable goes back to January 1999[11], effectively allowing for the after-hours adjustment to be performed from this date onwards. Considering this, from the initial sample of earnings, a sub-sample adjusted for after-hours was created. To do so, the observations without time stamp were dropped and the sample was restricted to only include announcements posterior to January 1999. The resulting sub-sample is composed of 124,370 observations. From this point onwards, the emphasis will lie on this sub-sample, in order to further investigate if, in fact, investors are more distracted on Fridays. Additionally, several analysis will be performed by time-of-the-day

[11] The time stamp in I/B/E/S detail file goes back to 1998, however, the time stamp for announcements made before 1999 concerns the activation time (the time at which Thomson Reuters recorded the announcement), rather than the announcement time.

intervals, which means that announcements can be segregated into before-market-close (BMC) and after-market-close (AMC) announcements or morning, during-trading and evening announcements. BMC is from midnight until the closing of the market at 4PM EST. morning is from midnight to 9:30AM, during-trading hours are from 9:30AM to 4PM EST, and evening is from 4PM to midnight.

5.1. Analysis of Announcement Time: Graphical Evidence

In this section, it is conducted an analysis of the announcement time variable over the sub-sample period, from January, 1999 to September, 2014. Figure 3 presents the distribution of earnings announcements by announcement time. It is evident the concentration of announcements in the hours preceding the market opening (approximately 40% of the total announcements occur from 6AM to 9:30AM) and just after-market-close. The first half an hour after-market-close is the time interval with the highest frequency of announcements, reporting the occurrence of 22.2% of the total announcements (7.2% occur in the subsequent half an hour). The clustering of announcements in the first half an hour after-market-close and just before the market opens, specially between 7AM and 8AM, is in line with the idea that companies try to disseminate earnings news at specific times of the day, when trade does not take place. It is also worth mentioning, that only 12.7% of the total announcements occurred during-trading hours. To better understand why there are so few earnings disclosures during trading hours, the monthly proportion of during-trading announcements is reported in Figure 4. There is a clear downward trend in the monthly proportion of during-trading announcements. The average proportion of during-trading announcements was approximately 37.8% in the pre-RegFD[12] period (January, 1999 – September, 2000) and 29.6% in the pre-SOX[13] period (October, 2000 – July, 2002). After that, it went down to around 11.9% between August 2002 and December 2005 and, finally, 4.6% between January 2006 and September 2014, consistent with Berkman and Truong (2009) and Bagnoli, Clement and Watts (2005) findings. Conversely, there is a clear upward trend regarding the monthly proportion of evening announcements. It increased from around 33.8% in 1999 to 46.1% in 2014. Similarly, the proportion of morning announcements increased from approximately 28.4% in 1999 to 46.7% in 2014. It seems that

[12] Regulation Fair Disclosure, became effective in October 2000, is intended to promote the full and fair disclosure, while eliminating selective disclosures of nonpublic information.
[13] The Sarbanes-Oxley Act of 2002 was passed on July 30, 2002 by the U.S. Congress to protect shareholders and the general public by improving the accuracy and reliability of corporate disclosures.

the period of adaptation to new legislation contributed the most for the decrease in during-trading announcements.

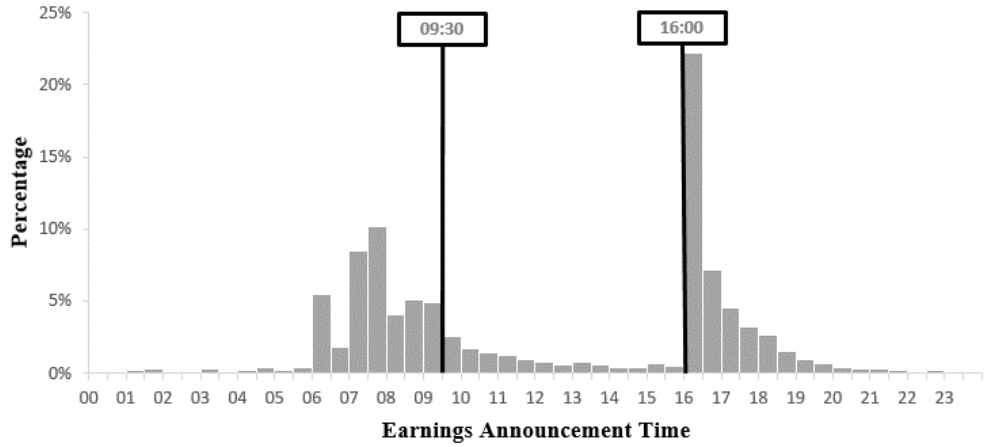


Figure 3
Announcement Time Distribution (January, 1999-September, 2014)

Trading hours are from 9:30 to 16:00 EST.

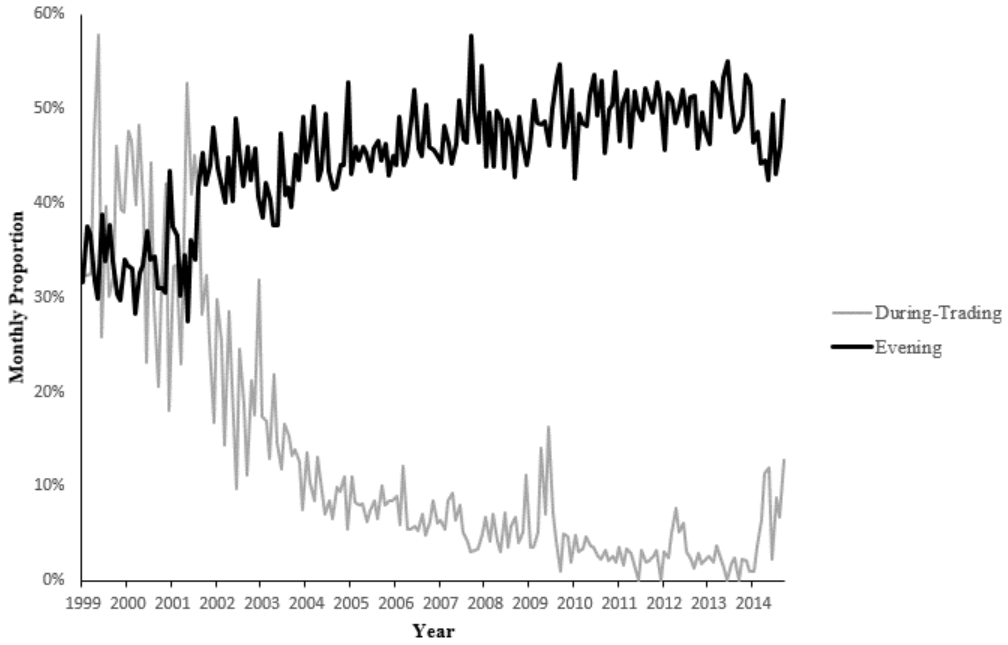


Figure 4
Monthly Proportion of During-Trading and Evening Announcements
(January, 1999-September, 2014)

During-Trading hours are from 9:30AM to 4PM EST, and Evening is from 4PM to midnight.

5.2. Importance of Adjusting the Event Date

In this section, it is shown how misspecification of event-day 0 due to after-hours announcements impacts two types of common event studies around earnings announcements. But first of all, it is examined whether the stock market response to earnings announcements depends on the time of the announcement, particularly, if it occurs BMC or AMC. The sub-sample is divided into three groups of firms: firms that only announce BMC; firms that only announce AMC; and firms that announce both BMC and AMC (further divided in BMC announcements and AMC announcements). Table III, documents average earnings surprise and average three-day abnormal announcement returns by earnings surprise quintiles for these three groups of firms (quintiles are used for the sake of brevity, instead of 11 quantiles). The three-day size-adjusted abnormal announcement return is cumulated over day -1 through day +1 in relation to the correct event-day 0 (adjusted for after-hour announcements). To obtain size-adjusted returns, the three-day cumulative abnormal return for the announcing firm is calculated. Then, based on the market capitalization at the quarter of the announcement, a decile-based sorting methodology is applied to rank observations by size. Lastly, the three-day cumulative return is calculated for the same size decile as the announcing firm, using the ten portfolios formed on size from Kenneth French data library daily file, and subtracted from the announcing firm's return. Table III-A, shows that the average earnings surprise is significantly different between BMC and AMC firms for quintiles 1, 2 and 4 (column 5), while the average three-day abnormal announcement return is significantly different for all quintiles, except quintile 4 (column 6). Table III-B, helps shedding light on whether the different return reaction between BMC firms and AMC firms, results from firm heterogeneity or announcement time. After controlling for firm heterogeneity in Table III-B, there is less evidence indicating that the market reaction to earnings news depends on the announcement time. Thus, the difference between the market reactions for BMC and AMC announcements can be, in part, explained by differences in firm characteristics (BMC firms and AMC firms). It might exist other unobservable factors contributing for this difference, beyond differences in firm characteristics.

Table III

Earnings Surprise and Earnings Announcement Return in Relation to Announcement Time

The sub-sample adjusted for after-hours announcements is divided into three groups of firms: firms that only announce BMC; firms that only announce AMC; and firms that announce both BMC and AMC. This Table presents average earnings surprise, and average three-day abnormal announcement returns by earnings surprise quintiles for these three groups of firms. Differences are reported in columns 5 and 6. Standard errors are in parentheses (*10% significance, **5% significance, ***1% significance).

Panel A: Earnings surprise and CAR(-1,1) by earnings surprise quintiles for BMC firms and AMC firms

Quintile	BMC Firms		AMC Firms			
	Earnings Surprise (1)	CAR(-1,1) (2)	Earnings Surprise (3)	CAR(-1,1) (4)	Difference (1)-(3) (5)	Difference (2)-(4) (6)
1	-0.0151	-0.0318	-0.0174	-0.0398	0.0024	0.0080
	(0.0006)***	(0.0011)***	(0.0007)***	(0.0015)***	(0.0009)**	(0.0018)***
2	-0.0006	-0.0188	-0.0007	-0.0274	0.0001	0.0086
	(0.0000)***	(0.0010)***	(0.0000)***	(0.0015)***	(0.0000)***	(0.0018)***
3	0.0003	-0.0012	0.0003	-0.0052	0.0000	0.0041
	(0.0000)***	(0.0006)*	(0.0000)***	(0.0012)***	(0.0000)	(0.0014)***
4	0.0017	0.0156	0.0018	0.0159	-0.0001	-0.0002
	(0.0000)***	(0.0008)***	(0.0000)***	(0.0013)***	(0.0000)***	(0.0015)
5	0.0121	0.0342	0.0114	0.0276	0.0007	0.0066
	(0.0004)***	(0.0011)***	(0.0003)***	(0.0015)***	(0.0005)	(0.0019)***

Panel B: Earnings surprise and CAR(-1,1) by earnings surprise quintiles for firms announcing both BMC and AMC

Quintile	BMC Announcements		AMC Announcements			
	Earnings Surprise (1)	CAR(-1,1) (2)	Earnings Surprise (3)	CAR(-1,1) (4)	Difference (1)-(3) (5)	Difference (2)-(4) (6)
1	-0.0165	-0.0280	-0.0179	-0.0328	0.0014	0.0048
	(0.0006)***	(0.0011)***	(0.0007)***	(0.0012)***	(0.0009)	(0.0016)***
2	-0.0006	-0.0165	-0.0007	-0.0199	0.0001	0.0034
	(0.0000)***	(0.0014)***	(0.0000)***	(0.0014)***	(0.0000)***	(0.0020)*
3	0.0003	0.0001	0.0003	-0.0021	0.0000	0.0022
	(0.0000)***	(0.0011)	(0.0000)***	(0.0008)***	(0.0000)***	(0.0013)*
4	0.0017	0.0163	0.0017	0.0170	-0.0001	-0.0007
	(0.0000)***	(0.0010)***	(0.0000)***	(0.0011)***	(0.0000)***	(0.0015)
5	0.0133	0.0301	0.0131	0.0319	0.0002	-0.0018
	(0.0004)***	(0.0012)***	(0.0004)***	(0.0013)***	(0.0006)	(0.0018)

After finding evidence supporting the idea that the market reacts differently for BMC and AMC announcements, in Table IV, are presented the implications of not adjusting the event-day 0 for after-hours announcements. Therefore, the initial sample (where event-day 0 is the announcement date), subject of analysis throughout chapter 4, is compared with the sub-sample adjusted for after-hours (where event-day 0 is adjusted for after-hours announcements). Table IV-A, reports size-adjusted abnormal returns around earnings announcements from event-day -1 through event-day 1, for the initial sample (columns 1 to 3) and the sub-sample adjusted for after-hours (columns 4 to 6) across five earnings surprise portfolios. For the initial sample, a large part of the return response is concentrated on event-days 0 and 1, as expected. Event-day 0 is responsible for 41% (averaged over all quintiles) of the total return response from event-day -1 through event-day 1, while event-day 1 is responsible for 54%. With the adjustment for after-hours announcements, a great share of the return response is shifted from event-day 1 to event-day 0 (return differences for days 0 and 1 are statistically significant across all quintiles). In the sub-sample adjusted for after-hours announcements, the return response is concentrated on event-day 0, which is now responsible for 84% of the total return response from event-day -1 through event-day 1, while event-day 1 is responsible for only 14%.

In turn, Table IV-B presents the abnormal volume response around earnings announcements, from event-day -1 through event-day 1. Abnormal volume on trading day t is defined as the difference between the actual share volume on that trading day and the daily share volume averaged over the preannouncement period from event-day -30 through event-day -11, divided by that same average. Similarly to return-related results, once the event dates are adjusted for after-hours announcements, there is a shift of a great share of the abnormal volume response from event-day 1 to event-day 0. In this case, 63% of the total abnormal volume response occurs on event-day 0 (in relation to 40% for the initial sample), whereas only 26% occurs on event-day 1 (contrasting with the 52% registered for the initial sample).

Table IV
Importance of the After-Hours Adjustment

Panel A (Panel B) reports size-adjusted abnormal returns (abnormal volume) around earnings announcements from event-day -1 through event-day 1, for the initial sample (columns 1 to 3), and the sub-sample adjusted for after-hours (columns 4 to 6) across five earnings surprise portfolios. Columns 7 to 9 report the differences between the initial sample (event-day 0 is the announcement date) and the sub-sample (event-day 0 is adjusted for after-hours announcements). Standard errors are in parentheses (*10% significance, **5% significance, ***1% significance).

Panel A: Size-adjusted returns around earnings announcements by earnings surprise quintiles

	Initial Sample			Sub-Sample Adjusted for After-Hours			Difference		
Event Day	-1	0	1	-1	0	1	-1	0	1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Quintile									
1	-0.0009	-0.0131	-0.0166	-0.0008	-0.0279	-0.0044	-0.0001	0.0148	-0.0123
	(0.0003)***	(0.0003)***	(0.0004)***	(0.0003)***	(0.0005)***	(0.0003)***	(0.0004)	(0.0006)***	(0.0005)***
2	-0.0010	-0.0083	-0.0103	-0.0008	-0.0179	-0.0028	-0.0001	0.0095	-0.0075
	(0.0002)***	(0.0003)***	(0.0004)***	(0.0003)***	(0.0005)***	(0.0003)***	(0.0003)	(0.0006)***	(0.0005)***
3	0.0000	-0.0007	-0.0019	0.0003	-0.0019	-0.0010	-0.0002	0.0012	-0.0010
	(0.0002)	(0.0002)***	(0.0002)***	(0.0003)	(0.0003)***	(0.0002)***	(0.0004)	(0.0004)***	(0.0003)***
4	0.0010	0.0066	0.0069	0.0006	0.0140	0.0004	0.0004	-0.0074	0.0066
	(0.0002)***	(0.0003)***	(0.0003)***	(0.0002)***	(0.0004)***	(0.0002)	(0.0003)	(0.0005)***	(0.0004)***
5	0.0024	0.0142	0.0123	0.0027	0.0253	0.0021	-0.0003	-0.0111	0.0102
	(0.0003)***	(0.0003)***	(0.0004)***	(0.0003)***	(0.0005)***	(0.0003)***	(0.0004)	(0.0006)***	(0.0005)***

Panel B: Abnormal Volume around earnings announcements

	Initial Sample			Sub-Sample Adjusted for After-Hours			Difference		
Event Day	-1	0	1	-1	0	1	-1	0	1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Abnormal Volume	0.1929	0.9680	1.2800	0.2981	1.6913	0.7043	-0.1052	-0.7232	0.5757
	(0.0057)***	(0.0073)***	(0.0138)***	(0.0046)***	(0.0096)***	(0.0154)***	(0.0073)*	(0.0121)***	(0.0207)***

5.3. Analysis by Time-of-the-Day Intervals

Once aligned the event dates, in this section, an analysis segmented by time-of-the-day intervals is performed. The adjusted sub-sample is divided into three groups: morning (from midnight to 9:30 AM); during-trading (from 9:30 AM to 4 PM EST); and evening (from 4 PM to midnight). The Friday effect is measured separately for each group.

5.3.1. Descriptive Statistics: Time-of-the-Day

Table V reports average earnings surprises, average one-day announcement returns, and fraction of positive earnings surprises to initiate a segmented analysis of the differences between Friday and other weekdays' announcements by time-of-the-day intervals (morning, during-trading and evening). One-day abnormal announcement return is defined as the return on the announcement date, for morning (before-trade) and during-trading announcements, and on the next trading day, for evening (after-trade) announcements.

For the whole sub-sample (columns 1 to 3), there is a lower fraction of positive earnings surprise announcements, and a lower average earnings surprise on Fridays relative to other weekdays (statistically significant differences). This result is consistent with the idea that companies tend to disseminate worse than expected earnings news at a larger scale, on Fridays. The one-day announcement return is less negative in response to bad news (statistically significant), and less positive in response to good news (non-significant) on Fridays relative to other weekdays. This means that the market reacts less to Friday news, consistent with results from the previous chapter, which corroborate the Friday Distraction Hypothesis. Segmenting the analysis by time-of-the-day intervals (columns 4 to 9), Friday announcements present a lower fraction of positive earnings surprise announcements, as well as, a lower average earnings surprise relative to other weekdays for all time-of-the-day intervals. However, the difference in average earnings surprise is only significant for evening announcements (columns 10 to 12). Likewise, there is a significant lower immediate stock return response to Friday evening announcement relative to other weekdays' evening announcements for both good and bad news. However, the same does not apply to morning and during-trading announcements. In sum, there is striking evidence indicating that Friday evening announcements are the only responsible for the well-documented immediate under-reaction to Friday earnings announcements. Moreover, beyond the tendency for companies to report worse news on Fridays (relative to other weekdays), there is also a strong tendency for companies to report worse than expected news on Friday evenings (relative

to other times of the day). This behavior seems to be consistent with the Opportunism Hypothesis but it is not a certainty.

Table V
Friday and Non-Friday Announcements at Different Periods of the Day

This table reports the differences between Friday and other weekdays' announcements in average earnings surprises, mean one-day announcement returns, and fraction of positive earnings surprises for the whole sub-sample and by time-of-the-day intervals (morning, during-trading and evening). T-statistics for the differences are presented (*10% significance, **5% significance, ***1% significance).

		All Friday			Friday Morning		
		Friday (1)	Other Weekdays (2)	Dif. t-statistic (3)	Friday (4)	Other Weekdays (5)	Dif. t-statistic (6)
Positive SUE (Fraction)		0.5335	0.5894	-9.196***	0.5630	0.5972	-4.7426***
SUE		-0.0017	-0.0004	-2.7673***	-0.0010	-0.0002	-1.2503
One-day Announcement Return	Negative SUE	-0.0203	-0.0255	4.0228***	-0.0221	-0.0239	1.0824
	Positive SUE	0.0128	0.0139	-1.1486	0.0138	0.0143	-0.4066

		Friday Trading Hours			Friday Evening		
		Friday (7)	Other Weekdays (8)	Dif. t-statistic (9)	Friday (10)	Other Weekdays (11)	Dif. t-statistic (12)
Positive SUE (Fraction)		0.4738	0.5673	-5.9637***	0.4188	0.5887	-9.5999***
SUE		-0.0017	0.0000	-1.6000	-0.0070	-0.0006	-3.6094***
One-day Announcement Return	Negative SUE	-0.0144	-0.0148	0.1012	-0.0178	-0.0296	4.0636***
	Positive SUE	0.0116	0.0082	1.4197	0.0057	0.0151	-3.64444***

5.3.2. Stock Return Response: Graphical Evidence

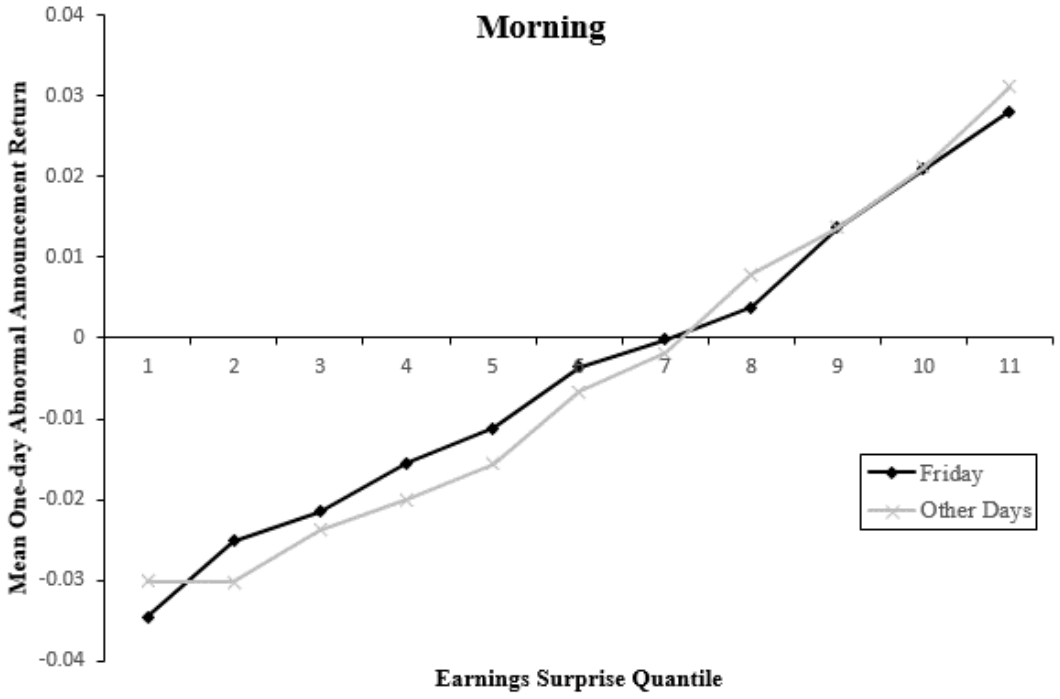
In this sub-section, it is presented graphical evidence measuring the responsiveness of stock market returns to earnings announcement news, by time-of-the-day intervals (morning, during-trading and evening). The sample is divided into 11 earnings surprise quantiles, as in chapter 4. Quantiles are determined by rank ordering earnings surprises each year, separately for each time-of-the-day sub-sample**.**

5.3.2.1. Immediate Response

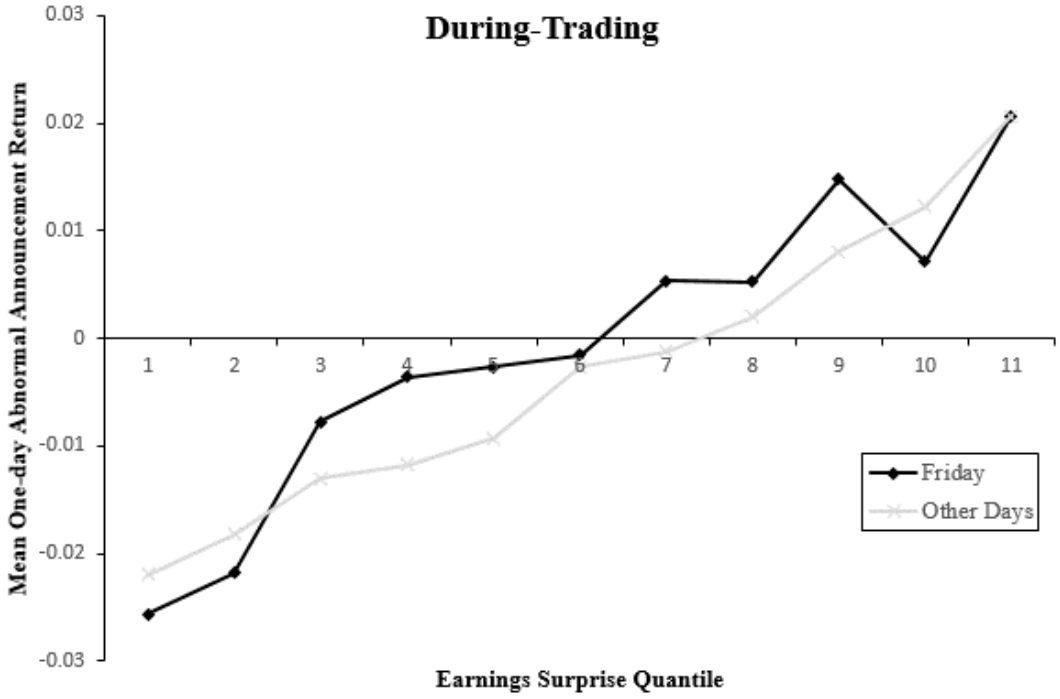
The immediate stock return response is measured by the mean one-day abnormal announcement return adjusted for after-hours announcements. As presented by the graphical evidence in Figure 5c, concerning evening announcements, the market reacts less negatively to bad earnings news (quantiles 1 to 5) and less positively to good earnings news (quantiles 7 to 11), for Friday evening announcements, consistent with the Immediate Under-Reaction Sub-Hypothesis.

Regarding morning announcements, there is some evidence of this under-reaction to Friday earnings news, especially in response to negative news, but not as striking as for evening announcements (Figure 5a). Finally, regarding during-trading announcements, there is inconclusive (mixed) graphical evidence (Figure 5b). In short, once again, there is compelling evidence indicating that Friday evening announcements are the only responsible for the immediate under-reaction to Friday earnings announcements.

a)



b)



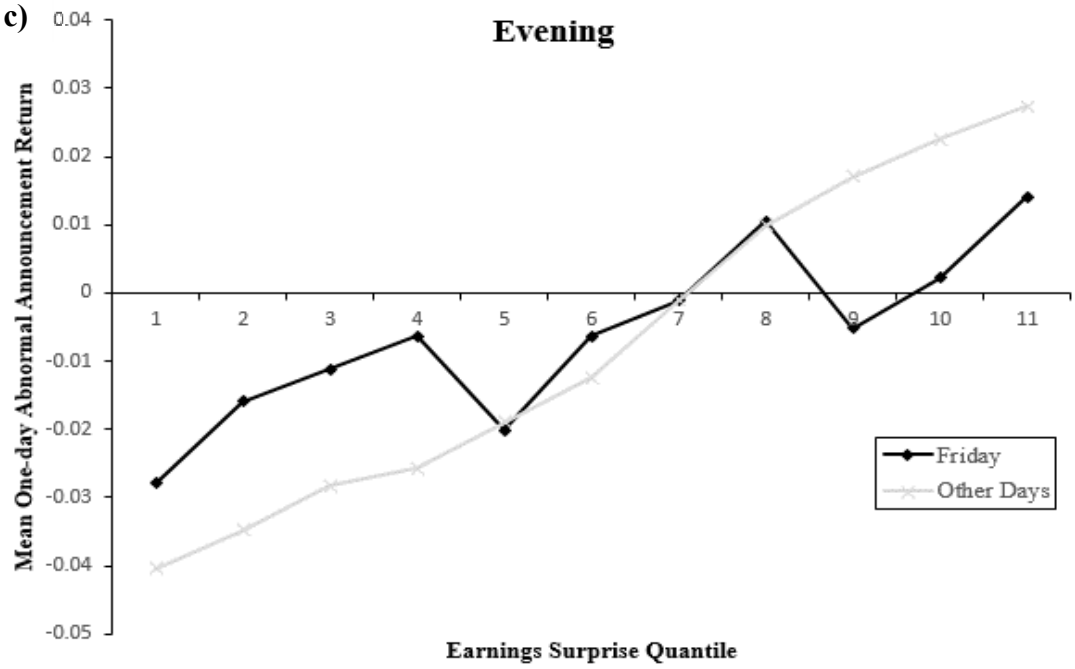


Figure 6
Immediate Stock Return Response to Earnings Surprises by Time-of-the-Day Intervals

Graphical evidence presents the immediate stock return response across 11 earnings surprise quantiles for Friday and other weekdays' announcements segmented by morning (Figure 5a), during-trading (Figure 5b), and evening (Figure 5c) groups. The immediate response is measured by the mean one-day abnormal announcement return adjusted for after-hours announcements. Negative surprises are in quantiles 1 to 5, positive are in quantiles 7 to 11, and zero are in quantile 6.

5.3.3. Stock Return Response: Good vs. Bad News

After obtaining results consistent with DellaVigna and Pollet's (2009) findings (chapter 4) for my sample period (1995-2014), in this sub-section, it is analyzed if the results still hold using a more precise measure of the immediate stock return response to earnings news. Using the more precise abnormal announcement return to measure the immediate response, it is further investigated the robustness of the Friday Distraction Hypothesis across different time-of-the-day intervals (morning, during-trading and evening), following Doyle and Magilke (2009). Thus, to quantify the graphical findings from the previous sub-section, it is employed a specification rather similar to the one presented in DellaVigna and Pollet (2009), also estimated in chapter 4 (Equation 7). It differs from DellaVigna's specification only to the extent that allows to separately test the response to good news and bad news, taking into account the possible asymmetries[14]. The model estimated is expressed as

[14] Past literature reports that there is asymmetry between positive and negative earnings surprises, both in terms of distribution (Degeorge, Patel, & Zeckhauser, 1999) and market responses (Basu, 1997). Also, there is an extensive body of literature suggesting that bad news are perceived differently from good news, due to psychological biases such as negativity bias (tendency to concentrate on bad news) and loss aversion.

$$AR_{i,q} = \beta_0 + \beta_T^{F-NF} d_{i,q}^{top} d_{i,q}^{F} + \beta_B^{F-NF} d_{i,q}^{bot} d_{i,q}^{F} + \beta_T^{NF} d_{i,q}^{top} + \Gamma X_{i,q} + \varepsilon_{i,q}, \quad (8)$$

where $AR_{i,q}$ is the abnormal announcement return for company i in quarter q. $d_{i,q}^{top}(d_{i,q}^{bot})$ is an indicator variable equal to one for observations in the top (bottom) two earnings surprise quantiles, and zero for observations in the bottom (top) two earnings surprise quantiles. $d_{i,q}^{F}$ is an indicator variable equal to one (zero) for Friday (non-Friday) announcements. Instead of $d_{i,q}^{top}(d_{i,q}^{bot})$, in some regressions, I use $d_{i,q}^{pos}(d_{i,q}^{neg})$, which is an indicator variable for positive (negative) news. This alternative allows for a wider use of the sample. Moreover, several controls can be included in specification (8). Namely, indicator variables for the year of announcement, month of announcement, as well as, industry and firm fixed effects[15]. However, the use of these controls does not rule out the hypothesis that some omitted variables could explain the results.

5.3.3.1. Immediate Response

Table VI-A reproduces DellaVigna and Pollet's (2009) results for the immediate stock return response, but instead of using the two-day buy-and-hold abnormal return, $CAR_{i,q}^{(0,1)}$, as the dependent variable (replicated in chapter 4), the one-day abnormal announcement return adjusted for after-hours announcements is used. For the results to be consistent with the Immediate Under-Reaction Sub-Hypothesis, it is expected a negative (positive) coefficient for the $d_{i,q}^{top} d_{i,q}^{F}(d_{i,q}^{bot} d_{i,q}^{F})$ cross-term. For the total sample (column 1), there is a significant Friday reduced reaction to negative news (bottom two quantiles), but the reduced reaction to positive news (top two quantiles) is only marginally significant (10% p-value threshold). In response to good news, Friday is associated with a reduced immediate reaction, compared to other weekdays, for all time-of-the-day intervals (columns 2 to 4), but the coefficients for the morning and during-trading groups are too small and statistically indistinguishable from zero. In turn, there is a largely significant Friday reduced immediate reaction to positive news for evening announcements ($\hat{\beta}_T^{F-NF} = -0.0152$, significant at 1% level). Similarly, the Friday differential immediate reaction to negative news is only positive and largely significant for evening announcements ($\hat{\beta}_B^{F-NF} = 0.0152$, significant at 1% level). The results are rather similar using almost all observations (columns 5 to 8). For the total sample (column 5), there is a significant Friday reduced immediate reaction to negative news, but the reduced reaction to positive news

[15] Industry and firm fixed effects are introduced using the Least Squares Dummy Variable method.

is not significant. Finally, there is a largely significant Friday reduced immediate reaction to positive and negative news, exclusively for evening announcements ($\hat{\beta}_{pos}^{F-NF} = -0.0094$, significant at 1% level; $\hat{\beta}_{neg}^{F-NF} = 0.0119$, significant at 1% level).

In sum, Friday evening announcements are associated with a substantial reduced immediate reaction to both positive and negative news relative to other weekdays' evening announcements, consistent with graphical findings from the previous sub-section. The same does not verify for morning and during-trading announcements. Therefore, there is striking evidence indicating that Friday evening announcements are the only responsible for the well-documented immediate under-reaction to Friday earnings announcements. Only the results for the evening group are consistent with the Immediate Under-Reaction Sub-Hypothesis. The under-reaction to Friday evening announcements here documented cannot be explained by Hirshleifer, Lim and Teoh's (2009) notion of distraction, implying that extraneous news distract investors, causing market prices to underreact to relevant news. There are relatively few earnings announced on Friday evenings, so investors are not likely to get distracted from a specific firm's announcement, since there are no relevant competing information signals to draw investor's attention away.

5.3.3.2. Delayed Response

Table VI-B reproduces DellaVigna and Pollet's (2009) results for the delayed stock return response, measured by the cumulative buy-and-hold abnormal return from day 2 to 70, in event time, where event-day 0 is adjusted for after-hours announcements. For the results to be consistent with the Delayed Overreaction Sub-Hypothesis, it is expected a positive (negative) coefficient for the $d_{i,q}^{top} d_{i,q}^{F}$($d_{i,q}^{bot} d_{i,q}^{F}$) cross-term. For the total sample (columns 1 and 5), there is no evidence supporting the Delayed Overreaction Sub-Hypothesis, except for the increased reaction to negative news (bottom two quantiles) on Fridays, in column 1, which is only marginally significant (10% p-value threshold). Segmenting the analysis by time-of-the-day intervals, it is possible to conclude that Friday evening announcements are the only ones contributing to this overreaction to negative news. The Friday differential delayed response to negative news (bottom two quantiles) is negative and marginally significant for evening announcements ($\hat{\beta}_{B}^{F-NF} = -0.0352$, significant at 10% level). Using almost all observations, Friday evening announcements are still associated with an increased delayed reaction (overreaction) compared to other weekdays' evening announcements, in response to negative news ($\hat{\beta}_{neg}^{F-NF} = -0.0276$, significant at 5% level).

In conclusion, Friday evening announcements are associated with a significant increased delayed response to negative news relative to other weekdays' evening announcements, consistent with the Delayed Overreaction Sub-Hypothesis. However, the same does not verify for positive earnings surprises, possibly because rational arbitrageurs have an incentive to exploit this market inefficiency.

5.3.4. Introduction of Controls for Evening Announcements

In this sub-section, it is analyzed whether the regression results for evening announcements are robust after controlling for month of announcement, year of announcement, industry fixed effects and firm fixed effects. Table VI-C presents these results for the immediate stock return response. With the introduction of month and year controls, the interaction between the Friday indicator and the top (bottom) two quantiles indicator is still negative (positive) and significant at the 5% p-value threshold (column 1). This also verifies when using indicator variables for positive and negative news (column 2). The results are also robust to the introduction of industry fixed effects[16], since the cross-terms in analysis remain significant, and consistent with the Immediate Under-Reaction Sub-Hypothesis (columns 3 and 4). After controlling for firm fixed effects[17], the cross-term measuring the Friday differential response to good news loses its significance for the regression using the top and bottom earnings news (column 5), but is still marginally significant, at the 10% p-value threshold, for the regression using almost all observations (column 6). In turn, the cross-term measuring the Friday differential response to bad news remains positive and statistically significant at the 5% p-value threshold for both regressions. Finally, for the regressions with all controls (columns 7 and 8), Friday evening announcements are still associated with a significant reduced immediate reaction to negative news relative to other weekdays' evening announcements (significant at 5% p-value threshold for both regressions). The same does not apply in response to positive news, since the cross-term measuring the Friday differential response is no longer significant for the regression using top and bottom observations, and is only marginally significant at the 10% p-value threshold for the regression using almost all observations. Unreported results concerning the effect of adding controls on the delayed stock return response for evening announcements, show that the delayed overreaction to negative news associated with Friday evening announcements is not robust after controlling for industry and firm fixed effects. Inconsistent with the attention-based

[16] Industry fixed effects are introduced using the INDNAM variable from I/B/E/S database.
[17] Firm fixed effects are introduced using the PERMNO variable from CRSP database.

explanation defended by DellaVigna and Pollet (2009), firm heterogeneity seems to explain the Friday (evening) effect, except the immediate stock return under-reaction to negative earnings news.

Irrational trading by noise investors is a reasonable explanation for the documented under-reaction to Friday evening negative news that persists even after the introduction of controls. Noise traders are usually net buyers of attention-grabbing stocks following an earnings announcement (Lee, 1992; Barber & Odean, 2008), possibly due to short-sale constraints, and also because they rely heavily on recommendations issued by analysts and brokers, which are strongly one-sided (Groth et al., 1979). Lee (1992) provides evidence that small noise traders are net buyers following both positive and negative earnings surprises (Hirshleifer et al., 2008; Lamont & Frazzini, 2007). As a result, this generates an upward price bias, strengthening the reaction to positive surprises and weakening the reaction to negative surprises. The premise for this assumption is that there is more time for slow noise traders to accumulate orders over the weekend[18]. Alternatively, announcement delay can also be a valid explanation for the immediate under-reaction to Friday evening negative news. Graham, Harvey and Rajgopal (2005) present survey evidence that managers frequently delay the announcement of bad news, giving managers the opportunity to anticipate it. Consistent with this, Bagnoli, Clement and Watts (2005) find that Friday bad news are at least in part anticipated by investors. They present evidence of price declines in the two days prior to these announcements, which are not corrected in the following days, implying that investors are anticipating the earnings news rather than being distracted. Furthermore, Friday announcements are intrinsically different from non-Friday announcements, given the two-day halt in trading following Fridays. Orders accumulate over the weekend flooding the market on Monday. Overwhelmed investors on Monday may not have the time to react appropriately to Friday earnings announcements, which can explain this under-reaction.

[18] Dey and Radhakrishna (2007) provide evidence that sophisticated institutions react quickly and aggressively in the immediate aftermath of an announcement, whereas slow and overconfident individual investors take more time to react but then overreact, exceeding institutional trading.

Table VI
The Impact of Friday on the Stock Return Response at Different Periods of the Day

This table presents regression results explaining the immediate stock return response (Panel A), and delayed response (Panel B), for each time-of-the-day interval (morning, during-trading, and evening). The immediate response is measured by the one-day abnormal announcement return adjusted for after-hours announcements, and the delayed response is measured by the cumulative buy-and-hold abnormal return from day 2 to 70. Columns 1 to 4 restrict the sample to surprises in the top two and bottom two quantiles, while columns 5 to 8 use almost all observations. The effect of adding controls for evening announcements is also presented (Panel C). The controls introduced are year of announcement, month of announcement, industry and firm fixed effects. Standard errors are in parentheses (*10% significance, **5% significance, ***1% significance).

Panel A: Immediate Stock Return Response								
	Total	Morning	During-Trading	Evening	Total	Morning	During-Trading	Evening
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.0326	-0.0302	-0.0201	-0.0376	-0.0255	-0.0239	-0.0148	-0.0296
	(0.0008)***	(0.0013)***	(0.0019)***	(0.0012)***	(0.0005)***	(0.0008)***	(0.0011)***	(0.0008)***
Friday x Top Two SUE Quantiles	-0.0034	-0.0015	-0.0021	-0.0152				
	(0.0018)*	(0.0022)	(0.0041)	(0.0035)***				
Friday x Bottom Two SUE Quantiles	0.0050	0.0002	-0.0037	0.0152				
	(0.0024)**	(0.0031)	(0.0058)	(0.0048)***				
Top Two SUE Quantiles	0.0569	0.0563	0.0365	0.0625				
	(0.0010)***	(0.0014)***	(0.0022)***	(0.0014)***				
Friday x Positive SUE Quantiles					-0.0011	-0.0005	0.0034	-0.0094
					(0.0012)	(0.0014)	(0.0027)	(0.0026)***
Friday x Negative SUE Quantiles					0.0052	0.0018	0.0003	0.0119
					(0.0015)***	(0.0018)	(0.0033)	(0.0034)***
Positive SUE Quantiles					0.0394	0.0382	0.0230	0.0447
					(0.0006)***	(0.0008)***	(0.0012)***	(0.0009)***
R^2	0.1013	0.1149	0.0625	0.1019	0.0640	0.0742	0.0354	0.0650
N	43,949	18,766	5,452	19,730	109,863	46,910	13,626	49,327

Table VI- Continued

Panel B: Delayed Stock Return Response								
	Total	Morning	During-Trading	Evening	Total	Morning	During-Trading	Evening
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.0181	0.0105	0.0367	0.0210	0.0095	0.0068	0.0198	0.0092
	(0.0042)***	(0.0054)*	(0.0101)***	(0.0053)***	(0.0024)***	(0.0029)**	(0.0054)***	(0.0029)***
Friday x Top Two SUE Quantiles	-0.0027	-0.0033	-0.0082	0.0018				
	(0.0103)	(0.0104)	(0.0214)	(0.0312)				
Friday x Bottom Two SUE Quantiles	-0.0208	-0.0090	-0.0243	-0.0352				
	(0.0112)*	(0.0135)	(0.0235)	(0.0202)*				
Top Two SUE Quantiles	0.0135	0.0142	0.0197	0.0094				
	(0.0038)***	(0.0056)**	(0.0109)*	(0.0053)*				
Friday x Positive SUE Quantiles					0.0007	0.0013	-0.0003	0.0035
					(0.0053)	(0.0053)	(0.0126)	(0.0192)
Friday x Negative SUE Quantiles					-0.0079	-0.0002	-0.0220	-0.0276
					(0.0061)	(0.0070)	(0.0139)	(0.0127)**
Positive SUE Quantiles					0.0025	0.0021	0.0069	0.0017
					(0.0019)	(0.0027)	(0.0054)	(0.0027)
R^2	0.0006	0.0006	0.0012	0.0003	0.0001	0.00002	0.0004	0.0001
N	43,949	18,766	5,452	19,730	109,863	46,910	13,626	49,327

Panel C: Impact of Introducing Controls for Evening Announcements								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Friday x Top Two SUE Quantiles	-0.0147		-0.0147		-0.0112		-0.0115	
	(0.0064)**		(0.0065)**		(0.0084)		(0.0084)	
Friday x Bottom Two SUE Quantiles	0.0145		0.0151		0.0184		0.0177	
	(0.0062)**		(0.0062)**		(0.0081)**		(0.0081)**	
Top Two SUE Quantiles	0.0630		0.0630		0.0627		0.0628	
	(0.0013)***		(0.0013)***		(0.0016)***		(0.0016)***	
Friday x Positive SUE Quantiles		-0.0088		-0.0112		-0.0092		-0.0095
		(0.0044)**		(0.0044)**		(0.0053)*		(0.0053)*
Friday x Negative SUE Quantiles		0.0119		0.0109		0.0115		0.0110
		(0.0042)***		(0.0042)***		(0.0051)**		(0.0051)**
Positive SUE Quantiles		0.0450		0.0455		0.0466		0.0466
		(0.0008)***		(0.0008)***		(0.0009)***		(0.0009)***
Month and Year Controls	X	X					X	X
Firm Fixed Effects					X	X	X	X
Industry Fixed Effects			X	X			X	X
R^2	0.1048	0.0667	0.1086	0.0681	0.3267	0.1790	0.3287	0.1807
N	19,730	49,327	19,730	49,327	19,730	49,327	19,730	49,327

5.3.5. Volume Response: Graphical Evidence

In this sub-section, it is presented graphical evidence introducing another common type of event study around earnings announcements, the volume-related one. Price movements are typically correlated with trading volume. Usually, before a stock price movement, volume comes into play, in other words, volume precedes price. If indeed investors are more distracted on Fridays, in addition to the immediate stock return under-reaction, it is also expected a lower abnormal trading volume in response to Friday earnings announcements compared to other weekdays' announcements. This is because trading triggers stock price movements, and also, because investors should trade less on high inattention days, since they cannot trade if they are not paying attention (volume can also be seen as a proxy for market attention).

Figure 6 reports abnormal volume for Friday and other weekdays' announcements, from day -2 to day 5, in event time, where event-day 0 is adjusted for after-hours announcements. Abnormal volume is defined in section 5.2. Consistent with the Distraction Hypothesis, the abnormal announcement volume response is 32 percentage points smaller for Friday announcements (139% abnormal volume) compared to other weekdays' announcements (171% abnormal volume), measured by the abnormal volume on event-day 0. In the subsequent event-day, the lower abnormal volume for Friday news in relation to non-Friday news persists, but seems to be compensated in the following event-days (event-day 2 to 5). One week after event-day 0, volume is still 30% (24%) higher than normal for Friday (non-Friday) announcements.

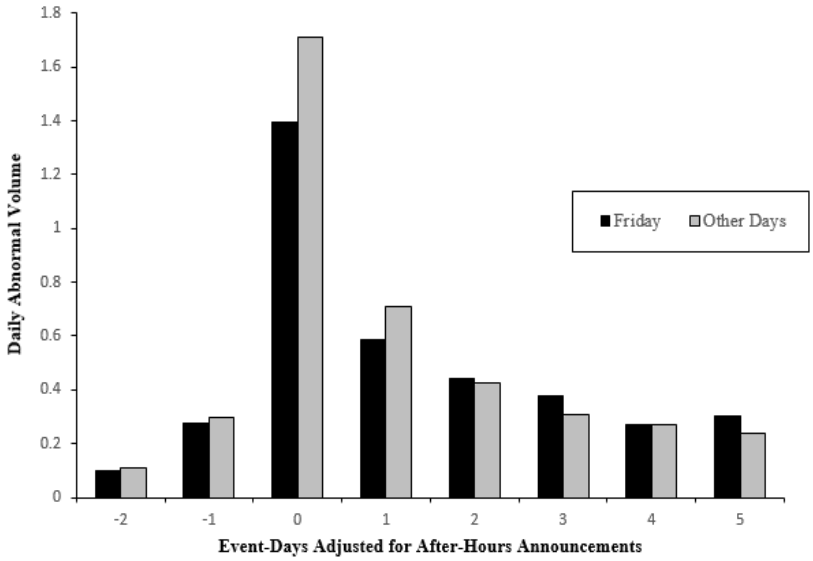


Figure 7
Abnormal Volume around Earnings Announcements

Abnormal volume on trading day t is defined as the difference between the actual volume on that trading day and the daily volume averaged over the preannouncement period (-30, -11), divided by that same average. Event-day 0 is adjusted for after-hours announcements.

5.3.6. Volume Response: Absolute News

To quantify the graphical evidence from the previous sub-section, the following model is estimated,

$$AV_{i,q} = \beta_0 + \beta^F d^F_{i,q} + \beta^{F,ES} AbsESQ_{i,q} d^F_{i,q} + \beta^{ES} AbsESQ_{i,q} + \Gamma X_{i,q} + \varepsilon_{i,q}, \quad (9)$$

where $AV_{i,q}$ is the abnormal announcement volume for company i in quarter q, $d^F_{i,q}$ is an indicator variable equal to one (zero) for Friday (non-Friday) announcements, and $X_{i,q}$ are firm fixed effects. The absolute earnings surprise quantile, $AbsESQ_{i,q}$, is also included in Equation (8). This variable, inspired in the volume regressions from Hirshleifer, Lim and Teoh (2009), is expressed as $\left|ESQ_{i,q} - 6\right|$, where $ESQ_{i,q}$ is the earnings surprise quantile. It assumes the highest values for extreme positive and negative news, which are susceptible to generate more trading volume. The β^{ES} coefficient measures the abnormal volume increase for each one-quantile increase in the $AbsESQ_{i,q}$ variable, for non-Friday announcements. This coefficient is expected to be positive, since greater earnings surprises are susceptible to capture more market attention and, consequently, generate more trading. However, the variable of interest to test the Friday effect is the $AbsESQ_{i,q} d^F_{i,q}$ cross-term, which captures the differential abnormal volume reaction for Friday announcements relative to non-Friday announcements. For the results to be consistent with the Immediate Under-Reaction Sub-Hypothesis, it is expected a lower abnormal volume response for Friday announcements compared to other weekdays' announcements, implying that the $\beta^{F,ES}$ coefficient should be negative. Table VII presents regression results for the total sample and the morning, during-trading and evening sub-samples. First, it is estimated the model without controls (columns 1 to 4) and, afterwards, firm heterogeneity is accounted for by introducing firm fixed effects into the model (columns 5 to 8). Without controls, the β^{ES} coefficient is positive and largely significant for the total sample and all time-of-the-day intervals. The $\beta^{F,ES}$ coefficient is negative and largely significant, at the 1% p-value threshold, for the total sample and all time-of-the-day intervals, with special emphasis on evening announcements. For each one-quantile increase in $AbsESQ_{i,q}$, abnormal volume increases by 56 percentage points, for non-Friday evening announcements (β^{ES} =0.5636). Comparatively to this value, the abnormal volume reaction in response to the same increase, for Friday evening announcements, is marginally significantly smaller by 44 percentage points ($\beta^{F,ES} = -0.4363$).

In this case, contrary to return-related findings from previous sections, the negative Friday differential volume reaction is a phenomenon present in all time-of-the-day intervals, not

exclusive to evening announcements. After controlling for firm fixed effects, the Friday effect is completely dissipated for the total sample and all time-of-the-day intervals. This means that the negative Friday (evening) differential volume reaction is explained by the different characteristics of firms announcing on Fridays relative to other weekdays, rather than by investor inattention to Friday (evening) earnings announcements.

Table VII
The Impact of Friday on Announcement Trading Volume at Different Periods of the Day

This table presents regression results explaining the immediate volume response for each time-of-the-day interval (morning, during-trading, and evening). the immediate response is measured by the abnormal announcement volume adjusted for after-hours announcements. Firm fixed effects are introduced in columns 5 to 8. Standard errors are in parentheses (*10% significance, **5% significance, ***1% significance).

	Total	Morning	During-Trading	Evening	Total	Morning	During-Trading	Evening
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Friday	1.0498	1.1626	0.5226	0.4595	0.0549	-0.0047	-0.0746	-0.1698
	(0.0808)***	(0.0917)***	(0.1496)***	(0.2780)*	(0.0824)	(0.0971)	(0.1658)	(0.2844)
Friday x Abs SUE Quantiles	-0.3692	-0.3223	-0.1469	-0.4363	0.0081	0.0550	0.0830	-0.0614
	(0.0250)***	(0.0288)***	(0.0455)***	(0.0785)***	(0.0249)	(0.0295)*	(0.0502)*	(0.0799)
Abs SUE Quantiles	0.4916	0.4663	0.2990	0.5636	0.1437	0.1538	0.0811	0.1518
	(0.0033)***	(0.0049)***	(0.0069)***	(0.0052)***	(0.0067)***	(0.0104)***	(0.0151)***	(0.0104)***
Firm Fixed Effects					X	X	X	X
R^2	0.1615	0.1619	0.1136	0.1760	0.1895	0.2516	0.4400	0.2842
N	124,370	52,587	16,064	55,719	124,370	52,587	16,064	55,719

5.4. Strategic Timing of Earnings Announcements

There is a well-documented tendency for firms to report worse than expected earnings on perceived low market attention periods. The objective of this section is not to assess whether firms strategically time the releases of earnings news on low market attention periods to opportunistically hide bad news, but instead to verify if this empirical regularity still holds for my sample period.

An extensive body of literature presents attention-based explanations for the puzzling immediate market under-reaction to earnings news, using different proxies for investor distraction. However, to conduct this analysis, are only used three types of possible timing variables: Fridays (Patell & Wolfson, 1982; Penman, 1987; Damodaran, 1989; Bagnoli, Clement, & Watts, 2005; DellaVigna & Pollet, 2009), after-hours (Patell & Wolfson, 1982; Damodaran, 1989), and high information flow days with numerous competing announcements (Hirshleifer, Lim, & Teoh, 2009). To assess if these periods, perceived to be low market attention periods, are indeed associated with lower earnings surprises, I estimate the following model suggested by DeHaan, Shevlin and Thornock (2015),

$$ES_{i,q} = \beta_0 + \beta_F FRIDAY_{i,q} + \beta_{AMC} AMC_{i,q} + \beta_{BD} BUSYDAY_{i,q} + \Gamma X_{i,q} + \varepsilon_{i,q}, \quad (10)$$

where $ES_{i,q}$ is the earnings surprise for firm i in quarter q, $FRIDAY_{i,q}$ is an indicator variable equal to one (zero) for Friday (non-Friday) announcements, and $AMC_{i,q}$ is and indicator variable equal to one (zero) for after-market-close announcements (before-market-close announcements). $BUSYDAY_{i,q}$ is the decile rank for how busy a reporting day is. Following Hirshleifer, Lim and Teoh (2009), it is assigned to each announcement day, the frequency of earnings announced on that same day (across the whole sample), to measure how busy a particular reporting day is. Deciles are determined by rank ordering the frequency of earnings announcements per announcement day, each year. Table VIII presents the results of regressing earnings surprise on each timing variable in separate (columns 1 to 3), and all timing variables (columns 4 and 5). Controls, if included, are month of announcement, year of announcement, industry fixed effects, and firm fixed effects. However, the emphasis will be on the regressions reported in columns 4 and 5, because they take into account all the timing variables at the same time. This is important for the simple reason that firms can strategically time the release of an earnings announcement by considering two timing variables simultaneously (e.g. announcing bad news on a Friday evening, or on a busy evening). If, indeed, managers strategically time lower earnings surprises to be released on Fridays, after-market-close, and on busy days, the

associated coefficients are expected to be negative. The coefficients for the timing variables in the separate models, are significantly negative for the Friday and AMC models, but only marginally significant for the busy days' model. The unconditional earnings surprise average is -0.00046, or -0.046% of price. Considering the timing decisions simultaneously, without controls (column 4), the coefficients associated with $FRIDAY_{i,q}$ and $AMC_{i,q}$ variables are significantly negative, whereas the coefficient associated with the $BUSYDAY_{i,q}$ variable is significantly positive. The earnings surprise measure tends to be 360% ($\frac{\beta_F}{\overline{ES}} = -0.0017/-0.00046$) worse on Fridays than average and 183% ($\frac{\beta_{AMC}}{\overline{ES}} = -0.0009/-0.00046$) worse after-market-close than average, consistent with the Opportunism Hypothesis. This behavior seems to be consistent with the Opportunism Hypothesis, but the reason why managers tend to report worse news on Fridays and after-hours may not be driven by opportunistic motivations. A fair share of the managers may schedule the release of bad earnings news after-hours and/or on Fridays, only to allow the market to have more time to process the information (Assimilation Hypothesis).

These findings seem to support the idea that there is lower market attention during Fridays and after-hours, especially on Friday evenings. However, it can be only a matter of perception, since managers may perceive attention to be reduced on Fridays and after-hours, but in the end, investors do not exhibit inattention. A reasonable explanation for the positive $BUSYDAY_{i,q}$ coefficient is that, mangers may not be able, beforehand, to distinguish with precision a high information flow day (busy reporting day) from a low information flow day (quite reporting day), and thus, they are not able to accurately time the earnings releases according to this variable. The other alternative explanation, is that managers may not perceive high information flow days as to be high inattention days, simply because earnings season is a highly anticipated period, giving investors appropriate time to organize themselves. After controlling for month, year, industry fixed effects and firm fixed effects (column 5), it is obtained marginally significant results for the $FRIDAY_{i,q}$ variable, implying that the controls put in place explain the predominance of worse news after-hours.

Table VIII
Strategic Timing of Earnings Announcements

This Table presents results of regressing earnings surprise on each timing variable (columns 1 to 3), and on all timing variables, without and with controls (columns 4 and 5, respectively). Friday, AMC, and EAFREQ are used as timing (explanatory) variables. Controls are month of announcement, year of announcement, industry fixed effects, and firm fixed effects. Standard errors are in parentheses (*10% significance, **5% significance, ***1% significance).

	Friday	AMC	EAFREQ	All Timing Variables (w/o Controls)	All Timing Variables (w/Controls)
	(1)	(2)	(3)	(4)	(5)
Friday	-0.0017			-0.0017	-0.0007
	(0.0003)***			(0.0003)***	(0.0004)*
AMC		-0.0007		-0.0009	-0.0003
		(0.0001)***		(0.0001)***	(0.0002)
EAFREQ			-0.000001	0.000002	-0.000001
			(0.000001)*	(0.000001)**	(0.0000)
R^2	0.0002	0.0003	0.00003	0.0005	0.1585
N	124,370	124,370	124,370	124,370	124,370

6. Concluding Remarks

After replicating DellaVigna and Pollet's (2009) methodology, the results obtained are consistent with their findings for my sample period (January, 1995 to September, 2014). Friday announcements are associated with a 16.3% to 18% lower immediate stock return response, and a 109% to 111% higher delayed stock return response (post-earnings announcement drift), compared to other weekdays. These results are robust to the use of standard controls (year, month and size), and additional surprise volatility controls. Regarding delayed response ratios, 44.87% to 53.45% of the total stock return response to Friday announcements comes with a delay, against 24.20% to 30.84% for non-Friday announcements.

In chapter 5, are highlighted the implications of event date misspecification, resulting from the negligence of the after-hours adjustment. Once proven the importance of this adjustment for a study of this nature, it is addressed the main weakness in DellaVigna and Pollet's (2009) research, which has precisely to do with the negligence of the after-hours adjustment. More specifically, the event-day 0 is adjusted for after-market-close announcements by adding one trading day to the announcement date. Using this more precise measure of the stock return response to earnings news, it was further investigated the robustness of the Friday Distraction Hypothesis across different time-of-the-day intervals (morning, during-trading and evening), from January 1999 to September 2014. Regression analyses indicate that, for the total sample,

there is a significant Friday reduced immediate reaction to negative news in relation to other weekdays, but the reduced reaction to positive news is not significant. Segmenting the analysis by time-of-the-day intervals, there is a largely significant Friday reduced immediate reaction to both positive and negative earnings news, exclusively for evening announcements. Therefore, there is striking evidence indicating that Friday evening announcements are the only responsible for the immediate under-reaction to Friday earnings announcements. Regarding the delayed response, for the total sample, there is no evidence supporting the Delayed Overreaction Sub-Hypothesis, except for the increased reaction to negative news (bottom two quantiles) on Fridays, which is only marginally significant. Segmenting the analysis by time-of-the-day intervals, it is possible to conclude that Friday evening announcements are the only ones contributing to this overreaction to negative news. In sum, Friday evening earnings news travel slowly than other weekdays' evening news. After the introduction of controls, regression results indicate that firm heterogeneity explains the immediate under-reaction to positive earnings news associated with Friday evening announcements. However, the immediate under-reaction to negative earnings news remains robust, consistent with the Immediate Under-Reaction Sub-Hypothesis. Unreported results, show that the delayed overreaction to negative earnings news associated with Friday evening announcements is not robust after controlling for industry and firm fixed effects.

According to volume graphical findings, the abnormal announcement volume response is 32 percentage points smaller for Friday announcements (139% abnormal volume) compared to other weekdays' announcements (171% abnormal volume), further corroborating the Friday Distraction Hypothesis. According to regression analysis, the differential abnormal volume reaction for Friday announcements relative to non-Friday announcements is negative and largely significant, for the total sample and all time-of-the-day intervals, with special emphasis on evening announcements. For each one-quantile increase in $AbsESQ_{i,q}$ variable, abnormal volume increases by 56 percentage points, for non-Friday evening announcements. Comparatively to this value, the abnormal volume reaction in response to the same increase, for Friday evening announcements, is marginally significantly smaller by 44 percentage points. In this case, contrary to return-related findings, the negative Friday differential volume reaction is a phenomenon present in all time-of-the-day intervals, not exclusive to evening announcements. After controlling for firm fixed effects, the Friday effect is completely dissipated for the total sample and all time-of-the-day intervals. This means that the negative

Friday (evening) differential volume reaction is explained by the different characteristics of firms announcing on Fridays relative to other weekdays, rather than by investor inattention.

Also in this chapter, it is presented evidence that the earnings surprise measure tends to be 360% worse on Fridays than the unconditional average, and 183% worse after-market-close than the same average, consistent with the Opportunism Hypothesis. The same does not apply to busy reporting days. After controlling for month, year, industry and firm fixed effects, the results obtained for the $FRIDAY_{i,q}$ variable are only marginally significant, implying that the controls put in place explain the managers' propensity to report worse news after-hours. Additional research is warranted to explore alternative explanations for these empirical regularities, as well as, to corroborate or disprove its strategic nature.

The main finding of this study is that the well-documented differential market reaction to Friday earnings news (DellaVigna & Pollet, 2009) is, in fact, a phenomenon only valid for evening announcements. After controlling for other possible determinants of this effect, there is striking evidence indicating that the Friday evening effect is driven by non-attention causes, being largely attributed to firm heterogeneity, except for the immediate stock return under-reaction to negative earnings news. In sum, the Friday Distraction Hypothesis does not hold[19]. Further investigation in this field is welcome to shed light on which firm characteristics are responsible for the Friday evening effect, as well as, on the reasons behind the persistent immediate stock return under-reaction to Friday evening negative news.

[19] DeHaan, Shevlin and Thornock (2015) do not find lower attention on Fridays as well. They also theorize that investor distraction on Fridays is inconsistent with the typical work patterns for an investment banker, analyst, or money manager, who normally work long hours and weekends.

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