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New Evidence on the Information Content of Earnings Announcements for the Swiss Market

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Abstract: A semi-strong efficient market incorporates relevant new information immediately. Using an event study, we investigate whether and to what extent regular earnings announcements of Swiss companies listed on the Swiss Market Index show the expected effects in share prices. For this purpose, we test for abnormal returns caused by earnings announcements in the period from 2012 until 2022. In contrast to previous studies of the Swiss market, we find that deviations from analysts' expected earnings lead to pronounced immediate movements in stock prices, as predicted by the semi-strong efficient market hypothesis. Pre- and post-announcement abnormal returns are modest and generally not statistically significant.

Keywords: earnings announcements; short-window event study; abnormal returns; market efficiency; Swiss Market Index

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1. Introduction

Event studies provide valuable evidence on how stock prices react to information (Fama 1998, p. 283). We study the information content of earnings announcements regarding a firm's value on the Swiss stock market. According to the (semi-strong version of the) efficient market hypothesis of Fama (1970), surprising earnings should lead to an instantaneous price reaction that (mainly) reflects the deviations of the actual earnings from market expectations. For example, a company may present solid quarterly earnings that nevertheless cause a negative share price movement because the figures are below the market expectations. By means of a short-window event study, we investigate to what extent the publication of quarterly and semi-annual earnings reports of firms listed on the Swiss Market Index (SMI) leads to abnormal returns. We examine if the market learns to some extent about the forthcoming announcements and if post-earnings-announcement drifts (PEAD) are observable for the Swiss market. The impact of the COVID-19 pandemic on our results is also analyzed.

In contrast to the U.S. market, the impact of earnings announcements on the Swiss stock market has been scarcely studied and the research is dated. Knight (1991) and Ammann and Kessler (2004) found that earnings announcements had a significant impact on stock prices, but that the reaction was sluggish, which is not in line with semi-strong market efficiency. The main objective of this paper is to examine whether these findings hold in more recent history, especially as financial market regulation has become more stringent in Switzerland over the last decade (FINMA 2013), and retail investors have largely gained access to real-time public information over the internet in recent years, as well as low-cost means to trade on that information (Friedman and Zeng 2022).

Our main findings are that earnings announcements convey significant information for the Swiss stock market and that the market reaction is practically instantaneous and, thus, almost perfectly in line with an information efficient market.

The remainder of the paper is organized as follows. In Section 2, we present the relevant literature for our study. In Section 3, we discuss the sample and the econometric design of our study. In Section 4, we present the main empirical results and discuss the robustness of the findings. Section 5 concludes.

2. Literature Review

Many studies have researched the relationship between capital markets and financial statements, starting with Ball and Brown (1968). A main finding of Ball and Brown and subsequent papers is that earning announcements contain useful information for the valuation of firms (MacKinlay 1997). However, numerous research papers demonstrate significant abnormal returns over an extended period (Kothari 2001, p. 208), which seems at odds with an efficient market that would require an instantaneous price reaction. Bernard and Thomas (1989) find partial adjustment of the abnormal returns before the release of the earnings figures and, more importantly, pronounced PEAD for the U.S. stock market. Cumulative abnormal returns continue to drift up for firms that beat the market expectations (good news events) and drift down for firms that do not meet the analysts' forecasts (bad news events).

The recent literature has particularly examined the PEAD. Doyle et al. (2006) find even larger and more persistent PEAD than was found in prior studies by defining earnings surprises relative to I/B/E/S consensus forecasts, rather than using a time-series model to define expected earnings (p. 850). Fink (2021) reviews this literature and states that the PEAD is a global phenomenon but that the effect might be disappearing, especially for large, capitalized U.S. stocks. Although the PEAD describes the drift of stock prices in the direction of the earnings surprise for an extended period, Fink (2021) notes that "a significant fraction of the PEAD return is concentrated in the three-day announcement window of the subsequent quarter" (p. 3, see also Kothari 2001, p. 194). Hence, a short-window-event study can potentially research this anomaly and is less sensitive to the assumed model for the expected (normal) returns (i.e., the bad-model problem, see Fama 1998).

Few studies were conducted for the Swiss market. The first study that investigated the information content of financial statements in Switzerland is Knight (1991). He examines the influence of earnings and dividend announcements on the price of Swiss shares. He uses weekly return data from July 1984 to December 1988. The author uses time-series methods to group events into good and bad news and to estimate abnormal returns. He finds that the events have a significant impact on prices, while earnings are more important than dividends. His research also finds that pre-announcement cumulative abnormal returns for good and bad news were positive, though not significantly so. Post-announcement cumulative abnormal returns were highly significant and with the expected sign but showed post-announcement drifts. The author concludes that the sluggish response for both news classes suggests some inefficiency in the Swiss stock market.

The sample of Ammann and Kessler (2004) includes Swiss companies for the period of January 1997 to July 2003. They use daily return data and also use post-event abnormal returns to group the events into news classes. The authors state that the processing of information into Swiss stock prices was fairly slow. Significant abnormal returns were found for about two to four days after the release of new financial information or announcements of corporate control actions (p. 277). The authors speculate that part of the inefficiencies could be due to the liberal insider trading regulations that were in place in the Swiss market during the sample period.

Our study extends the literature in at least two ways. First, we investigate whether the noted anomalies in the Swiss market can also be identified in more recent years, especially since the Swiss regulation regarding insider trading (FINMA 2013) has become considerably stricter after the publication of Knight (1991) and Ammann and Kessler (2004). Moreover, retail investors are arguably more informed today than they were in the past due to the availability of web-based technologies. The trading activity of uninformed retail investors has often been viewed as a cause of noisy market prices (Friedman and Zeng 2022).

Second, we will group events into news classes based on analysts' forecasts of earnings as a proxy for the market consensus before the event date, and not by the sign of the abnormal returns in the post-event window, as was done by Knight (1991) and Ammann and Kessler (2004). Thus, our analysis will allow for a better understanding of the relation between the perceived surprise of the investor community at the event date and the succeeding effect of the abnormal returns.

3. Data and Methodology

3.1. Data

This study examines the information content of earnings announcements of the 20 companies that were included in the Swiss Market Index on 1 December 2022. The companies in the SMI report either quarterly (e.g., Novartis) or semi-annual financial statements (e.g., Nestlé). For each reporting date from the beginning of 2012 to 3 November 2022, we obtained from Refinitiv the percentage deviations of the actual earnings per share (EPS) from the mean earnings forecast (reported by the Institutional Brokers Estimate System) in the previous period (the variable "surprise" in Refinitiv). Analyst forecasts serve as a proxy for the market consensus on expected EPS. Neglecting missing values, we ended up with 530 events. Following MacKinlay (1997), we categorized each event using the surprise variable. If the surprise measure was above 2.5 percent (i.e., actual earnings were more than 2.5 percent higher than expected earnings), the event was considered "good news", and if the measure was below minus 2.5 percent, it was considered "bad news". In the interval from −2.5 to 2.5 percent, the event was classified as "neutral news" (i.e., actual earnings were basically in line with analyst expectations). The 530 events were thereby categorized into 152 bad, 100 neutral, and 278 good news.

The return data for all the 20 stocks were also obtained from Refinitiv. We use total daily log-returns between the beginning of 2012 and December 1 2022. The corresponding variable for the "market" is the log-return of the Swiss Performance Index (SPI), which we obtained from SIX (Swiss Exchange).

3.2. Methodology

The methodology of our study follows that of MacKinlay (1997) and is briefly outlined here. The event day of this analysis is the day of the earnings announcement. It is common to define not only the event day itself, but an event window around the event day. This makes it possible to study the effects of the event around the event day (MacKinlay 1997, p. 15).

Next, a measure of abnormal return is required to evaluate the impact of the event. The abnormal return AR_{it} of security i at time t in the event window equals the difference between the observed return R_{it} and the expected return $E(R_{it})$.

$$AR_{it} = R_{it} - E(R_{it}) \tag{1}$$

A model must be chosen to estimate expected returns. El Ghoul et al. (2022) discuss 10 widely employed methods. We chose the frequently used market model in our study. It states that the return on a security, R_{it}, depends linearly on the return on the market portfolio, R_{mt}.[1]

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{2}$$

The parameter β_i measures the extent of the security's responsiveness to market movements. Conditions that are unique to the firm are summarized by the error term, ε_{it}, with $E(\varepsilon_{it}) = 0$ and $Var(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$. The regression parameters α_i and β_i for each individual event are estimated in an estimation window prior to the event window. Figure 1 shows the timeline for this event study. We used an estimation window of 250 trading days before the event window ($t = -265$ to $t = -16$) and an event window of 31 trading days centered around the event day ($t = -15$ to $t = +15$).[2] The 31 abnormal returns for each event are estimated by

$$\hat{AR}_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}. \tag{3}$$

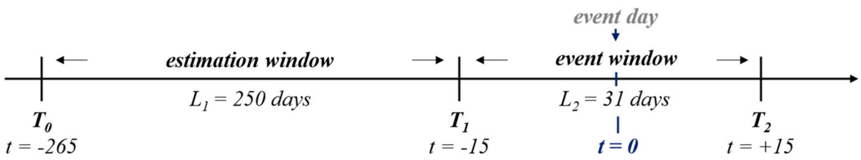

Figure 1. Timeline for the event study.

For a sufficiently long estimation window, the variance of $\hat{AR}_{it}$ is under the null hypothesis that the event has no effect on securities returns, approximately $\sigma^2\left(\hat{AR}_{it}\right) = \sigma^2_{\varepsilon_i}$.

The analysis of single events is usually not interesting. Aggregation across securities and time is used for more conclusive results. For any period t in the event window, the average abnormal return across a set of N events is given by

$$\overline{AR}_t = \frac{1}{N}\sum\nolimits_{i=1}^{N} \hat{AR}_{it}. \tag{4}$$

Following MacKinlay (1997), the distribution of the average abnormal return is under the null hypothesis of zero abnormal returns, approximately

$$\overline{AR}_t \sim N\left(0, \sigma^2\left(\overline{AR}_t\right)\right), \tag{5}$$

with $\sigma^2\left(\overline{AR}_t\right) = \left(1/N^2\right)\sum_{i=1}^{N} \sigma^2_{\varepsilon_i}$. Hence, we can test the significance of an average abnormal return at time t with the test statistic

$$\theta = \frac{\overline{AR}_t}{\sigma\left(\overline{AR}_t\right)} \sim N(0,1). \tag{6}$$

Substituting the unknown standard error into the denominator with its estimate leads to a regular t-test.

Next, we aggregate the expression (4) over time to obtain the cumulative average abnormal return (CAR) between the start of the event window, T_1, and t.

$$\overline{CAR}_t = \sum_{\tau=T_1}^{t} \overline{AR}_\tau. \tag{7}$$

The distribution of $\overline{CAR}_t$ follows from Equation (5) and the assumption of i.i.d. returns and is approximately

$$\overline{CAR}_t \sim N\left(0, \sigma^2\left(\overline{CAR}_t\right)\right) \tag{8}$$

with $\sigma^2\left(\overline{CAR}_t\right) = (t - T_1 + 1)\sigma^2\left(\overline{AR}_t\right)$.

4. Results

This section is divided into two parts. Section 4.1 discusses the results of the event study for the whole sample period. In Section 4.2, we discuss the robustness of the results. In particular, the potential impact of the COVID-19 pandemic and the choice of the proxy for the market return on our results are examined.

4.1. Results for the Whole Sample Period

Figure 2 shows the evolution of the CAR for the three groups of events, as defined in Section 3.1, from the start of the event window, i.e., 15 days before the event day, to the end of the event window, i.e., 15 days after the event day. The figure clearly shows that the information content of earnings releases is very relevant for the Swiss stock market. The evolution of the CAR for the good news portfolio is almost ideal and consistent with efficient markets. The CAR is around zero prior to the event day and then increases to 1.4 percent on the event day. After the event day, the CAR stays roughly constant. The shaded 95 percent confidence interval for the CAR reveals that the CAR is significantly different from zero after the event day. There is no indication of information leakage before the event day or of a post-earnings drift thereafter. Table A1 in Appendix A lists the CAR in the event window, including the t-statistics and the p-values from two-sided tests showing that the corresponding CAR equals 0.

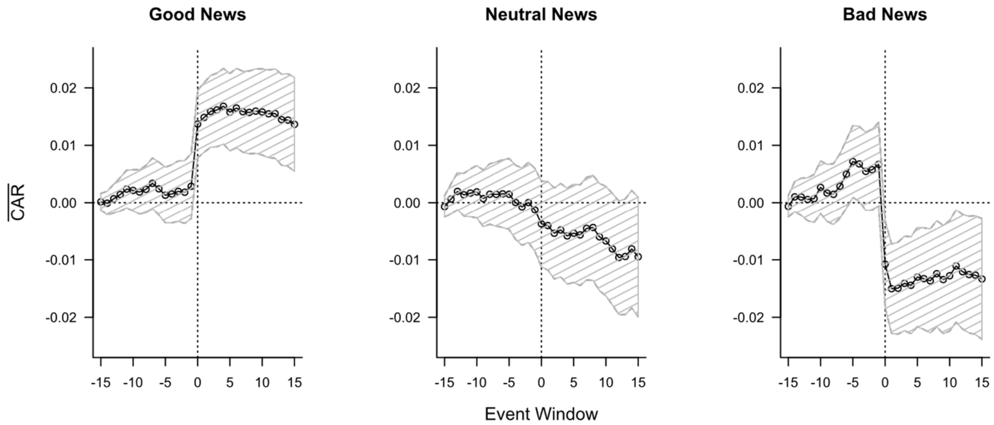

Figure 2. Evolution of $\overline{CAR}_t$ for all news classes with 95 percent confidence intervals.

Figure 3 plots the t-statistics for the abnormal returns $\overline{AR}_t$ from Equation (6) and supports the findings for good news. All the test statistics are in the interval from -2 to 2 and are therefore not significantly different from 0 at the 5 percent significance level, except for the event day itself, where the sample average abnormal return is 1.084 percent with a standard error of 0.073 percent, leading to a t-statistic of almost 15. Hence, the null hypothesis that the good news event has no effect on the stock price is strongly rejected. Details can be found again in Table A1 in Appendix A.

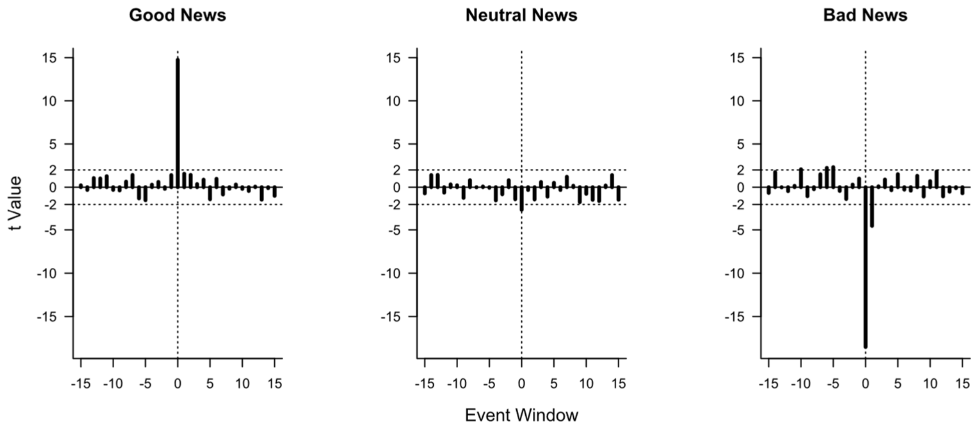

Figure 3. t statistics for the significance of $\overline{AR}_t$.

The sample CAR for neutral news is also constant and close to zero before the events take place. On the event day, the CAR turns slightly negative and keeps drifting more negative, though it never becomes significantly different from zero at the 5 percent level. On the event day, the sample average abnormal return equals -0.247 percent with a standard error of 0.094 percent, leading to a t-statistic of -2.63, as Figure 3 reveals. It is the only significant average abnormal return in the event window at the 5 percent level of significance (see details in Table A2 in Appendix A). Nevertheless, the mild negative drift of the sample CAR after the event day is somewhat surprising. We checked if more surprises were negative than positive in the interval defining neutral news. This is not the case. Exactly half the surprises were positive, and half were negative, with a mean surprise of almost zero.

The general pattern of the CAR for the portfolio of bad news also reveals the expected reaction on the event day. The average abnormal return on the event day equals −1.745 percent with a standard error of 0.094 percent, leading to a test statistic of −18.5 (see details in Table A3 in Appendix A). We again find strong evidence against the null hypothesis that earnings announcements have no impact on abnormal returns. Bad news show no signs of a post-announcement drift in the 15 days after the event. Interestingly, the days before the event show an increase in the CAR. Three of the fifteen average abnormal returns prior to the event are statistically significant at the 5 percent level. Information leakage, however, would lead to the opposite effect, i.e., a declining CAR. A closer investigation showed that the events of Credit Suisse have a noticeable impact on this result. Neglecting these events reduces the CAR from 0.669 percent to 0.547 percent one day before the event, with only one average abnormal return remaining significant at the 5 percent level.

4.2. Robustness

We imposed additional robustness checks to validate our main results, i.e., earnings announcements are relevant for the Swiss market and the market reactions are in line with semi-strong market efficiency.

A special feature of the SPI (our measure for the market) is the high concentration of market capitalizations (and thus index weights). Out of the over 200 firms in the index as of 1 December 2022, the largest three companies (i.e., Nestlé, Roche, and Novartis) accounted for over 47 percent of the index weight. This may lead to an endogeneity problem, since the expected returns in the market model are strongly influenced by events of individual large-capitalized companies. We therefore also used an equally weighted index of all the companies used in our study for the market model to mitigate the endogeneity problem. We found that the results remained similar, as Figure 4, panel (a) shows. The only notable difference was that the unexpected increase in the CAR for the portfolio of bad news before the event day was lessened (and excluding events of Credit Suisse, almost completely disappeared).

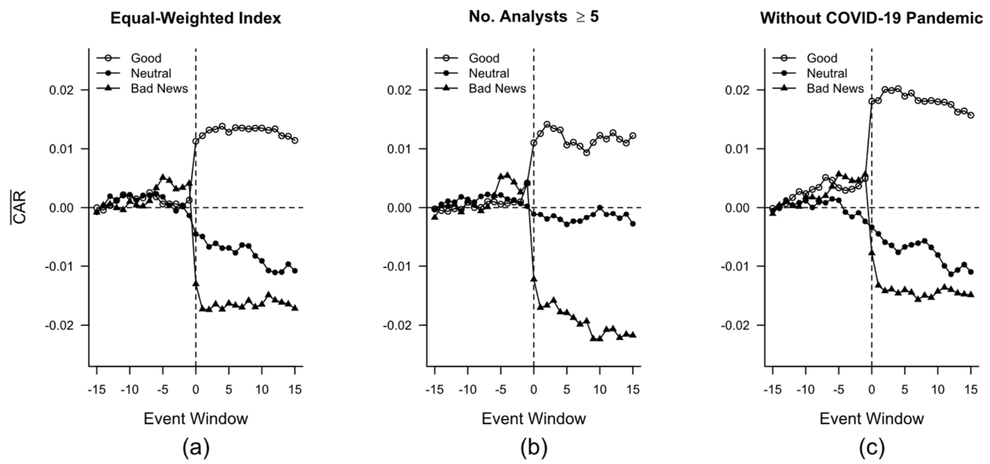

Figure 4. Different analyses for robustness checks: (**a**) Analysis over the whole sample period with an equal-weighted index of all stocks in the study for the market return; (**b**) Analysis over the whole sample period using only event with at least five earnings forecasts from analysts; (**c**) Analysis for the sub-sample containing only events until the end of 2019.

Furthermore, we implemented the event study only with events that included at least five analysts' forecasts (Figure 4, panel (b)). This reduced the number of events from 530 to 209 (105 good, 55 neutral, and 49 bad news). Again, the results look similar and there is strong evidence of the information content of earnings news. A notable change is that the (non-significant) post-announcement drift for neutral news disappears in this sub-sample altogether.

Figure 4, panel (b), shows the evolution of the CAR for the period from the beginning of the sample period in 2012 to the end of 2019, excluding the events during the COVID-19 pandemic. This reduced the number of events from 530 to 389 (194 good, 78 neutral, and 117 bad news). The development of the CAR is not significantly affected by this restriction of the sample. Only the CAR for the portfolio of good news is somewhat higher after the event days.

Finally, we examined the effect of the grouping parameter on the results. When good (bad) news is defined as a positive (negative) surprise of at least 5 percent and neutral news is in between, the results remain very similar.

5. Concluding Remarks

Our empirical analysis found convincing evidence that in the examined period from 2012 to 2022 the information content of earnings announcements is very relevant for the Swiss market. Furthermore, the Swiss market reacts very quickly, i.e., within a single day or at most two days of the announcement date, to new information revealed by the announcement. Such a behavior has also been found in many other markets and time periods (Kothari 2001). In contrast to Knight (1991) and Ammann and Kessler (2004), we found no clear evidence of anomalies in the pre- or post-event window that conflict with an information-efficient stock market in Switzerland for the more recent time period studied in this paper. The more stringent regulation in Switzerland that was enacted during the sample period and better-informed retail investors might explain this finding. Different checks confirmed the robustness of our main results.

Therefore, our research suggests that it might not be possible (anymore) for investors to benefit from price movements such as post-announcement drifts, unless they are able to react and trade within the day of the announcement. Put simply, for most investors the abnormal returns will already be gone before they could themselves react to announcements.

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Appendix A

Table A1. Abnormal-return statistics for good news.

Event Day	AR	t-Statistic	*p*-Value	CAR	t-Statistic	*p*-Value
−15	0.0002	0.22	0.829	0.0002	0.22	0.829
−14	−0.0002	−0.32	0.747	−0.0001	−0.08	0.940
−13	0.0008	1.06	0.291	0.0007	0.55	0.583
−12	0.0007	1.01	0.312	0.0014	0.98	0.327
−11	0.0009	1.28	0.202	0.0024	1.45	0.148
−10	−0.0002	−0.31	0.754	0.0021	1.19	0.233
−9	−0.0003	−0.38	0.706	0.0019	0.96	0.336
−8	0.0005	0.64	0.521	0.0023	1.13	0.260
−7	0.0010	1.41	0.157	0.0034	1.53	0.125

Table A1. *Cont.*

Event Day	AR	t-Statistic	*p*-Value	CAR	t-Statistic	*p*-Value
−6	−0.0010	−1.30	0.192	0.0024	1.04	0.297
−5	−0.0011	−1.51	0.131	0.0013	0.54	0.589
−4	0.0002	0.29	0.770	0.0015	0.60	0.548
−3	0.0004	0.61	0.542	0.0020	0.75	0.455
−2	−0.0001	−0.19	0.846	0.0018	0.67	0.504
−1	0.0010	1.40	0.161	0.0029	1.01	0.314
0	0.0108	14.75	0.000	0.0137	4.66	0.000
1	0.0011	1.56	0.120	0.0148	4.90	0.000
2	0.0010	1.43	0.154	0.0159	5.10	0.000
3	0.0003	0.36	0.718	0.0162	5.05	0.000
4	0.0006	0.87	0.386	0.0168	5.11	0.000
5	−0.0010	−1.40	0.161	0.0158	4.68	0.000
6	0.0007	0.97	0.332	0.0165	4.78	0.000
7	−0.0006	−0.85	0.394	0.0159	4.50	0.000
8	−0.0001	−0.18	0.860	0.0157	4.37	0.000
9	0.0002	0.31	0.758	0.0159	4.34	0.000
10	−0.0001	−0.20	0.844	0.0158	4.22	0.000
11	−0.0003	−0.44	0.660	0.0155	4.05	0.000
12	0.0001	0.07	0.943	0.0155	3.99	0.000
13	−0.0011	−1.45	0.148	0.0145	3.66	0.000
14	−0.0001	−0.11	0.911	0.0144	3.57	0.000
15	−0.0007	−1.01	0.314	0.0136	3.34	0.001

Abnormal-return statistics for the good-news portfolio using the full sample of 278 positive surprises. Event day is the number of days relative to the announcement date. AR is the sample average abnormal return for the specified day in the event window and CAR is the sample average cumulative abnormal return for day −15 to the stated day. All returns are given in decimals (not percent). *p*-values are from two-sided tests and the corresponding abnormal return equals 0. No abnormal returns within the event window are significantly different from zero except for the day of the announcement itself (event day 0), where we find a highly significant positive abnormal return slightly above 1%. The CAR remains insignificant until the day of the announcement, where it becomes highly significant positive, jumping to a CAR of about 1.5% and remaining at this level until the end of the event window.

Table A2. Abnormal-return statistics for neutral news.

Event Day	AR	t-Statistic	*p*-Value	CAR	t-Statistic	*p*-Value
−15	−0.0007	−0.72	0.473	−0.0007	−0.72	0.473
−14	0.0013	1.41	0.159	0.0006	0.49	0.626
−13	0.0013	1.42	0.156	0.0020	1.22	0.224
−12	−0.0006	−0.63	0.527	0.0014	0.74	0.461
−11	0.0003	0.32	0.746	0.0017	0.81	0.421
−10	0.0002	0.22	0.829	0.0019	0.82	0.411
−9	−0.0012	−1.24	0.214	0.0007	0.29	0.770
−8	0.0008	0.81	0.419	0.0015	0.56	0.576
−7	0.0000	−0.01	0.989	0.0015	0.52	0.601
−6	0.0001	0.08	0.933	0.0015	0.52	0.601
−5	−0.0001	−0.07	0.944	0.0015	0.48	0.633
−4	−0.0014	−1.53	0.126	0.0000	0.01	0.988
−3	−0.0008	−0.82	0.411	−0.0007	−0.21	0.831
−2	0.0008	0.80	0.421	0.0000	0.01	0.993
−1	−0.0013	−1.40	0.162	−0.0013	−0.35	0.724
0	−0.0025	−2.63	0.009	−0.0037	−1.00	0.318
1	−0.0003	−0.32	0.746	−0.0040	−1.05	0.295
2	−0.0013	−1.42	0.155	−0.0054	−1.35	0.176
3	0.0006	0.60	0.548	−0.0048	−1.18	0.238
4	−0.0010	−1.10	0.273	−0.0058	−1.40	0.163
5	0.0005	0.51	0.613	−0.0054	−1.25	0.211
6	−0.0003	−0.32	0.747	−0.0057	−1.29	0.197
7	0.0011	1.21	0.228	−0.0045	−1.01	0.312

Table A2. *Cont.*

Event Day	AR	t-Statistic	p-Value	CAR	t-Statistic	p-Value
8	0.0002	0.17	0.868	−0.0044	−0.96	0.339
9	−0.0016	−1.73	0.084	−0.0060	−1.28	0.200
10	−0.0007	−0.77	0.440	−0.0067	−1.41	0.159
11	−0.0014	−1.47	0.142	−0.0081	−1.66	0.096
12	−0.0015	−1.61	0.108	−0.0096	−1.94	0.053
13	0.0002	0.19	0.848	−0.0094	−1.87	0.062
14	0.0013	1.40	0.161	−0.0081	−1.58	0.114
15	−0.0014	−1.45	0.147	−0.0095	−1.82	0.069

Abnormal-return statistics for the neutral-news portfolio using the full sample of 100 neutral surprises. Event day is the number of days relative to the announcement date. AR is the sample average abnormal return for the specified day in the event window and CAR is the sample average cumulative abnormal return for day −15 to the stated day. All returns are given in decimals (not percent). *p*-values are from two-sided tests and the corresponding abnormal return equals 0. No abnormal returns in the event window are significantly different from zero except for the day of the announcement, where we find a slightly negative return of −0.25%. The CAR, however, remains insignificant throughout the whole event window.

Table A3. Abnormal-return statistics for bad news.

Event Day	AR	t-Statistic	p-Value	CAR	t-Statistic	p-Value
−15	−0.0006	−0.66	0.507	−0.0006	−0.66	0.507
−14	0.0017	1.75	0.079	0.0010	0.77	0.440
−13	0.0000	−0.03	0.979	0.0010	0.61	0.539
−12	−0.0004	−0.46	0.647	0.0006	0.30	0.761
−11	0.0001	0.16	0.874	0.0007	0.34	0.732
−10	0.0020	2.07	0.038	0.0027	1.16	0.246
−9	−0.0010	−1.05	0.296	0.0017	0.68	0.498
−8	−0.0002	−0.24	0.814	0.0015	0.55	0.581
−7	0.0014	1.50	0.134	0.0029	1.02	0.308
−6	0.0021	2.23	0.025	0.0050	1.67	0.094
−5	0.0022	2.32	0.020	0.0072	2.30	0.022
−4	−0.0004	−0.44	0.661	0.0068	2.07	0.038
−3	−0.0013	−1.37	0.169	0.0055	1.61	0.108
−2	0.0003	0.30	0.762	0.0058	1.63	0.103
−1	0.0009	0.99	0.320	0.0067	1.83	0.067
0	−0.0175	−18.52	0.000	−0.0108	−2.86	0.004
1	−0.0043	−4.53	0.000	−0.0150	−3.87	0.000
2	0.0001	0.10	0.920	−0.0149	−3.74	0.000
3	0.0008	0.89	0.375	−0.0141	−3.43	0.001
4	−0.0003	−0.35	0.725	−0.0144	−3.43	0.001
5	0.0014	1.51	0.131	−0.0130	−3.01	0.003
6	−0.0003	−0.29	0.776	−0.0133	−3.00	0.003
7	−0.0004	−0.40	0.687	−0.0137	−3.02	0.003
8	0.0012	1.32	0.188	−0.0124	−2.69	0.007
9	−0.0010	−1.08	0.278	−0.0134	−2.85	0.004
10	0.0007	0.70	0.483	−0.0128	−2.66	0.008
11	0.0017	1.81	0.070	−0.0111	−2.26	0.024
12	−0.0010	−1.06	0.287	−0.0121	−2.42	0.015
13	−0.0005	−0.52	0.601	−0.0126	−2.48	0.013
14	−0.0001	−0.12	0.909	−0.0127	−2.46	0.014
15	−0.0007	−0.70	0.482	−0.0133	−2.54	0.011

Abnormal-return statistics for the bad-news portfolio using the full sample of 152 bad surprises. Event day is the number of days relative to the announcement date. AR is the sample average abnormal return for the specified day in the event window and CAR is the sample average cumulative abnormal return for day −15 to the stated day. All returns are given in decimals (not percent). *p*-values are from two-sided tests and the corresponding abnormal return equals 0. Abnormal returns on a few single days before the announcement date are slightly, but significantly positive. However, by far the largest (negative) and most significant abnormal returns are found at the announcement day (abnormal return −1.75%) and one day later (abnormal return −0.43%). Except for event days −5 and −4 the CAR remains insignificant until the announcement date, when it becomes highly significant negative and remains like that until the end of the event window, showing a CAR between −1.0% and −1.5%.

Notes

1 The gains from using multifactor models for (short-window) event studies is limited as the additional explanatory power of more factors is small and, hence, the variance of abnormal returns is not much reduced (Campbell et al. 1997, p. 156).

2 Armitage (1995) suggests using an estimation window of 100 to 300 days.

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