

DO FINANCIAL MARKETS DISCIPLINE FIRMS FOR ILLEGAL CORPORATE BEHAVIOUR?

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***Abstract.** This paper examines the relationship between the discovery of illegal behaviour by companies on the stock price. It examines whether shareholders care about illegal corporate behaviour and punish companies by driving the stock price down. The empirical results show that stock prices react negatively on the announcement date of corporate malfeasance. We examine different impacts of the type of illegal behaviour, the level of misconduct, the phase and the magnitude.*

Keywords: event study, fraud, illegal behaviour, insider trading, reputational effect.

1. Introduction

Responsible corporate behaviour received a lot of attention during the last decade in the CSR literature. After the U.S. financial markets being troubled in 2002 by several major scandals, involving companies like Enron and Tyco, financial ethics received a lot of attention by a much broader public. This paper examines the relationship between the discovery of illegal behaviour of listed companies and their stock price. It examines whether shareholders care about corporate misconduct and punish companies by driving down the stock price. And if so, how heavy does the market penalise this behaviour?

2. Research design

2.1. Hypotheses

This study examines the effect of the announcement of illegal corporate behaviour on stock prices. The examined types of illegal behaviour are insider trading, corruption, tax fraud, accounting fraud and a residual group (e.g. theft or employee enrichment). Three other dimension are examined as well. First, it is examined whether there is a differences if the illegal behaviour has a direct impact on the firm's profits or bottom-line (intrinsic value) or on shareholders trust (indirect impact). Second, the impact of the scope of the illegal behaviour is examined. Is there a difference between malfeasance at company-level or at the corporate agent level (employee or manager)? Third, the study looks into differences of the phase of the corporate misconduct. Is there a difference between just a rumour and a more formal investigation, such as a police investigation or a litigation phase?

We define the following four hypotheses:

Hyp.1 – Stock prices of listed firm show a negative abnormal return upon the announcement of the corporate misconduct

This hypothesis is tested for all categories of malfeasance. Is there a significant difference between the effects of different categories on the stock prices? Do shareholders penalise certain types of malfeasance harder than other types? Or, maybe not at all?

Hyp.2 – A value-impact corporate misconduct exhibits a larger negative abnormal return of stock returns than a malfeasance with only an impact on the trust of shareholders

This hypothesis examines difference in the impact of corporate misconduct which has a direct impact on the value of the firm such as accounting fraud and illegal behaviour which has no direct impact on firm's profit (e.g. insider trading by the CEO). We expect a larger negative abnormal return of stock returns for value-impact corporate misconduct.

Hyp.3 – Corporate misconduct at the firm level has a larger negative abnormal return than at the individual level

Corporate misconduct can occur both at the individual level as well as at the firm level. We can expect the cost of malfeasance at the corporate level to be accounted to the firm and thereby to the shareholder level. Legal fees, penalties, loss of customers, increased regulation and so on have a direct impact on the firm's profits and therefore on shareholders' returns. The cost of misconduct at the individual level are borne by the involved employees only. We therefore expect a larger negative abnormal return of stock prices of illegal corporate activities at firm level.

Hyp.4 – The further corporate malfeasance is along the formal investigation procedure, the larger the abnormal negative return

This hypothesis examines three different phases: rumour, police investigation and court phase. We expect the impact of rumour to have a smaller information content to investors since the true nature of the malfeasance is still highly uncertain. The further down the formal investigation and court phase the information of the announced illegal behaviour is, the higher the price impact.

2.2. Sample description

The paper examines the impact of the public announcement of 57 illegal corporate activities in the period 1994 till 2003 in financial press (*Het Financieele Dagblad*, *De Financieel Economische Tijd*) on stock prices of Belgian and Dutch companies listed on Euronext Brussels and Euronext Amsterdam. The paper examines if the announcement exhibits any abnormal return behaviour on the announcement date by means of an event study. Furthermore, it is examined whether the market's response

lags by examining the cumulative abnormal returns over a period of twenty trading days after the announcement (post-announcement drift).

2.3. Event study methodology

To evaluate the impact of the public announcement of corporate misconduct, an event-time study is used. An event study examines if the average abnormal return on the event day is equal to zero (null hypothesis) versus an alternative hypothesis of a non-zero abnormal return:

$$\begin{cases} H_0 : AAR_E = 0 \\ H_1 : AAR_E \neq 0 \end{cases} \quad [1]$$

The average abnormal return (AAR_E) on the event day is the aggregation of the individual stock abnormal returns aligned in event time:

$$AAR_E = \frac{1}{N} \sum_{i=1}^N AR_{i,E} \quad [2]$$

On the event day and on twenty trading days before and after the announcement, resulting in a 41-day event window, abnormal returns are being calculated to examine returns behaviour around the event date. Individual stock abnormal returns ($AR_{i,t}$) are measured as the difference between the realized or actual return on the event day ($R_{i,t}$) and the expected return $E[R_{i,t}]$, which is the benchmark normal return in the absence of the event. Several methods exist to estimate the expected return of the stocks. This study uses the market adjusted model and the market model for an estimation of the benchmark expected return for each individual stock.

The expected return of a stock in the market-adjusted model is the current market index return. This model thus uses no information from outside the event window to calculate abnormal returns during the event period. Market model abnormal returns are calculated as

$$AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{b}_i \cdot R_{m,t}) \quad [3]$$

where ' $\hat{\cdot}$ ' denotes the OLS-estimates from the market model:

$$R_{i,t} = a_i + b_i \cdot R_{m,t} + e_{i,t} \quad [4]$$

with $R_{i,t}$ = the return of stock i in period t ; $R_{m,t}$ = the market index return in period t ; a_i , b_i = intercept and slope coefficient of the market model (stock- i -specific and time-independent parameters); $e_{i,t}$ = random disturbance term of the market model for stock i in period t . In order to calculate market model abnormal returns information from outside the event window is used. The parameters of the market model are estimated over a period from -220 to -21 trading days before the event day. The significance of mean abnormal returns is first tested using the standard Brown and Warner (1985) test statistic assuming cross-sectional independence, which standardizes abnormal returns for each stock by its standard deviation calculated from the estimation period. Significance is also tested by using a non-parametric Mann-Whitney-Wilcoxon test.

3. Empirical results

The empirical results show that stock prices react negatively on the announcement date of the illegal activity (on average for the full sample a market-adjusted abnormal return of -0.94% and an abnormal market model return of -0.86%) (see day [0] in Table 1). On day [+1] an additional negative abnormal return of -1.03% is found. The immediate announcement effect seems quite small, although we observe a declining abnormal return over the first twenty trading days. Interestingly, the announcement of insider trading did not reveal a significant abnormal return on the announcement date (Table 2). This is striking since the reputational effect of insider trading is often cited as an argument against this type of behaviour (Engelen, 2003). Do shareholders not care? Or is their reaction very slow? Tables 2 to 4 report the market reaction to the announcement of the different types of corporate misconduct. Illegal activities with a direct impact on the bottom line show a higher abnormal return impact than the category of indirect impact on the firm's reputation. Illegal behaviour at firm level shows greater impact than at the individual level. Announcement of illegal activities in the judicial phase show greater impact than just rumours in financial press.

4. Conclusions

The results show a cumulative abnormal return of about 2% for [0,+1]. This results hides differences for the sub samples. There was hardly any reaction of investors with respect to corruption news. The insider trading and tax fraud news shows a very small reaction on day [0] and a larger, delayed reaction on day [+1]. Investors seem to anticipate news on accounting fraud as an abnormal return of -10.40% is found on day [-2]. Future research will fine-tune the above results by expanding the sample, by comparing a larger sample of countries, by looking at long-term effects and changes in the risk profile of companies. It will focus on the impact and consequences of the results for business ethics and corporate ethical risk management.

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Do financial markets discipline firms for illegal corporate behaviour?

Table 1

Abnormal return behaviour for the entire sample

Tabel A: (C)AAR op dag t met bijbehorende t-waarden voor de gehele verzameling events.

Dag	N	Market Adjusted Returns		Market Model Returns		CAAR	
		AAR	t-waarde	AAR	t-waarde		
-20	57	0,37%	0,99	0,37%	0,39%	1,04	0,39%
-19	57	0,67%	1,82	1,04%	0,71%	1,91	1,10%
-18	57	-0,13%	-0,35	0,91%	-0,14%	-0,38	0,96%
-17	57	0,34%	0,90	1,25%	0,37%	0,99	1,32%
-16	57	0,27%	0,73	1,52%	0,43%	1,17	1,76%
-15	57	-0,33%	-0,89	1,19%	-0,30%	-0,80	1,46%
-14	57	0,39%	1,06	1,58%	0,34%	0,92	1,80%
-13	57	0,47%	1,26	2,05%	0,56%	1,52	2,37%
-12	57	-0,51%	-1,38	1,54%	-0,43%	-1,15	1,94%
-11	57	-0,62%	-1,68	0,92%	-0,67%	-1,81	1,27%
-10	57	0,29%	0,79	1,21%	0,36%	0,96	1,62%
-9	57	-0,16%	-0,43	1,05%	-0,16%	-0,43	1,46%
-8	57	-0,08%	-0,22	0,97%	-0,03%	-0,08	1,44%
-7	57	0,02%	0,05	0,99%	-0,04%	-0,12	1,39%
-6	57	-0,46%	-1,23	0,53%	-0,35%	-0,98	1,03%
-5	57	-0,12%	-0,32	0,41%	-0,11%	-0,31	0,91%
-4	57	0,63%	1,69	1,04%	0,78%	2,10 **	1,70%
-3	57	1,13%	3,05 †	2,17%	1,07%	2,88 †	2,76%
-2	57	-0,73%	-1,96	1,45%	-0,68%	-1,85	2,08%
-1	57	-0,41%	-1,11	1,03%	-0,40%	-1,07	1,68%
0	57	-0,94%	-2,54 *	0,09%	-0,86%	-2,32 **	0,82%
+1	57	-1,03%	-2,78 †	-0,94%	-1,11%	-2,98 †	-0,28%
+2	57	-0,13%	-0,35	-1,07%	-0,03%	-0,08	-0,31%
+3	57	-0,09%	-0,24	-1,16%	-0,02%	-0,04	-0,33%
+4	57	0,36%	0,96	-0,80%	0,45%	1,20	0,12%
+5	57	0,91%	2,45 *	0,10%	0,89%	2,41 *	1,01%
+6	57	0,14%	0,37	0,24%	0,06%	0,15	1,07%
+7	57	-0,04%	-0,10	0,21%	-0,06%	-0,17	1,00%
+8	57	0,39%	1,05	0,60%	0,31%	0,83	1,31%
+9	57	0,10%	0,27	0,69%	-0,05%	-0,13	1,26%
+10	57	0,18%	0,50	0,88%	0,44%	1,18	1,70%
+11	57	-1,64%	-4,41 †	-0,76%	-1,33%	-3,59 †	0,37%
+12	57	-0,34%	-0,91	-1,09%	-0,28%	-0,75	0,09%
+13	57	-0,49%	-1,32	-1,58%	-0,35%	-0,94	-0,26%
+14	57	0,40%	1,08	-1,18%	0,53%	1,43	0,27%
+15	57	-0,23%	-0,62	-1,41%	-0,25%	-0,66	0,02%
+16	57	0,50%	1,35	-0,91%	0,48%	1,30	0,51%
+17	57	-0,21%	-0,57	-1,12%	-0,09%	-0,25	0,41%
+18	57	-0,07%	-0,20	-1,20%	0,03%	0,07	0,44%
+19	57	-0,34%	-0,92	-1,54%	-0,22%	-0,60	0,22%
+20	57	-0,35%	-0,94	-1,89%	-0,35%	-0,95	-0,13%

De symbolen †, * en ** staan respectievelijk voor significantie op 1%, 5% en 10% significantieniveau (tweezijdige toets). Het symbool N staat voor het aantal events opgenomen in de (C)AAR.

Table 2

Abnormal return behavior for the, "Insider Trading" subsample

Tabel A1: (C)AAR op dag t met bijbehorende t-waarden voor de verzameling events ingedeeld op TYPE; VOORKENNIS.

Dag	N	VOORKENNIS					
		Market Adjusted Returns			Market Model Returns		
		AAR	t-waarde	CAAR	AAR	t-waarde	CAAR
-20	22	0,41%	0,60	0,41%	0,38%	0,56	0,38%
-19	22	0,74%	1,08	1,16%	0,89%	1,30	1,28%
-18	22	0,27%	0,39	1,42%	0,33%	0,48	1,61%
-17	22	0,52%	0,76	1,95%	0,89%	1,29	2,50%
-16	22	0,44%	0,63	2,38%	0,93%	1,34	3,42%
-15	22	-0,29%	-0,42	2,10%	-0,37%	-0,54	3,05%
-14	22	0,43%	0,63	2,53%	0,37%	0,54	3,42%
-13	22	-0,18%	-0,26	2,35%	-0,10%	-0,15	3,32%
-12	22	-0,54%	-0,78	1,81%	-0,27%	-0,40	3,05%
-11	22	-0,50%	-0,72	1,32%	-0,61%	-0,89	2,44%
-10	22	0,20%	0,30	1,52%	0,25%	0,36	2,68%
-9	22	-0,82%	-1,18	0,71%	-0,80%	-1,17	1,88%
-8	22	0,53%	0,75	1,24%	0,79%	1,15	2,67%
-7	22	0,95%	1,38	2,19%	0,66%	0,96	3,33%
-6	22	-0,39%	-0,56	1,80%	-0,21%	-0,30	3,12%
-5	22	0,02%	0,03	1,82%	0,06%	0,09	3,18%
-4	22	1,15%	1,67	2,98%	1,34%	1,95	4,53%
-3	22	3,97%	5,76 §	6,95%	3,83%	5,56 §	8,36%
-2	22	-0,24%	-0,34	6,71%	-0,19%	-0,27	8,17%
-1	22	-2,13%	-3,09 §	4,58%	-2,16%	-3,13 §	6,02%
0	22	-0,66%	-0,96	3,92%	-0,47%	-0,68	5,55%
+1	22	-0,37%	-0,54	3,54%	-0,56%	-0,82	4,98%
+2	22	-0,22%	-0,31	3,33%	-0,26%	-0,38	4,73%
+3	22	-0,95%	-1,37	2,38%	-0,64%	-0,93	4,08%
+4	22	0,12%	0,18	2,51%	0,17%	0,25	4,26%
+5	22	1,06%	1,53	3,57%	0,89%	1,29	5,19%
+6	22	0,24%	0,35	3,81%	0,05%	0,08	5,20%
+7	22	0,47%	0,69	4,28%	0,54%	0,78	5,74%
+8	22	-0,15%	-0,21	4,14%	-0,19%	-0,28	5,58%
+9	22	0,08%	0,12	4,22%	-0,43%	-0,63	5,11%
+10	22	0,20%	0,29	4,43%	0,65%	0,94	5,76%
+11	22	-4,41%	-6,39 §	0,02%	-3,88%	-5,63 §	1,88%
+12	22	-0,36%	-0,53	-0,35%	-0,25%	-0,36	1,63%
+13	22	0,10%	0,14	-0,25%	0,18%	0,27	1,81%
+14	22	0,39%	0,57	0,14%	0,77%	1,11	2,58%
+15	22	-0,81%	-1,17	-0,66%	-0,93%	-1,34	1,65%
+16	22	0,75%	1,09	0,09%	0,68%	0,99	2,33%
+17	22	-0,07%	-0,10	0,02%	0,09%	0,13	2,42%
+18	22	0,19%	0,27	0,21%	0,34%	0,49	2,76%
+19	22	-0,48%	-0,69	-0,27%	-0,40%	-0,58	2,36%
+20	22	-0,63%	-0,92	-0,80%	-0,64%	-0,93	1,72%

De symbolen §, * en ** staan respectievelijk voor significantie op 1%, 2% en 5% significantieniveau (tweezijdige toets). Het symbool N staat voor het aantal events opgenomen in de (C)AAR.

Do financial markets discipline firms for illegal corporate behaviour?

Table 3

Abnormal return behavior for the „Corruption” sub-sample

Tabel A2: (C)AAR op dag t met bijbehorende t-waarden voor de verzameling events ingedeeld op TYPE; „CORRUPTIE”.

		„CORRUPTIE”					
Dag	N	Market Adjusted Returns			Market Model Returns		
		AAR	t-waarde	CAAR	AAR	t-waarde	CAAR
-20	10	0,73%	0,93	0,73%	0,61%	0,79	0,61%
-19	10	0,99%	1,27	1,71%	0,97%	1,25	1,58%
-18	10	-0,62%	-0,79	1,09%	-0,65%	-0,84	0,93%
-17	10	-0,01%	-0,02	1,08%	-0,11%	-0,14	0,62%
-16	10	0,94%	1,21	2,02%	0,95%	1,22	1,77%
-15	10	1,25%	1,61	3,27%	1,46%	1,88	3,23%
-14	10	-0,20%	-0,26	3,07%	-0,29%	-0,38	2,93%
-13	10	2,10%	2,70 **	5,17%	2,05%	2,63 **	4,98%
-12	10	-0,12%	-0,16	5,04%	0,06%	0,08	5,04%
-11	10	-0,61%	-0,79	4,43%	-0,63%	-0,81	4,41%
-10	10	1,20%	1,54	5,63%	1,20%	1,54	5,61%
-9	10	1,02%	1,32	6,65%	1,12%	1,44	6,73%
-8	10	-1,17%	-1,50	5,49%	-1,09%	-1,40	5,64%
-7	10	-0,60%	-0,77	4,88%	-0,60%	-0,77	5,04%
-6	10	-0,87%	-1,11	4,02%	-0,82%	-1,19	4,12%
-5	10	-0,70%	-0,90	3,31%	-0,75%	-0,96	3,37%
-4	10	0,82%	1,06	4,14%	0,65%	0,84	4,02%
-3	10	-1,18%	-1,51	2,96%	-1,25%	-1,60	2,78%
-2	10	1,31%	1,69	4,27%	1,44%	1,85	4,22%
-1	10	0,99%	1,28	5,26%	1,11%	1,43	5,33%
0	10	-1,67%	-2,15	3,59%	-1,77%	-2,27 **	3,56%
+1	10	-0,47%	-0,60	3,12%	-0,39%	-0,50	3,17%
+2	10	-0,29%	-0,37	2,83%	-0,34%	-0,43	2,84%
+3	10	-0,44%	-0,57	2,39%	-0,45%	-0,57	2,39%
+4	10	0,72%	0,92	3,11%	0,58%	0,75	2,98%
+5	10	1,01%	1,30	4,12%	1,04%	1,34	4,02%
+6	10	0,07%	0,09	4,19%	-0,13%	-0,17	3,89%
+7	10	1,02%	1,31	5,21%	0,80%	1,03	4,69%
+8	10	1,08%	1,39	6,29%	1,17%	1,50	5,86%
+9	10	0,24%	0,31	6,54%	0,41%	0,53	6,27%
+10	10	-0,02%	-0,03	6,51%	-0,02%	-0,03	6,25%
+11	10	-0,28%	-0,35	6,23%	-0,13%	-0,16	6,12%
+12	10	0,67%	0,86	6,90%	0,39%	0,50	6,51%
+13	10	-1,80%	-2,32 **	5,10%	-1,67%	-2,14	4,85%
+14	10	0,72%	0,93	5,82%	0,69%	0,99	5,54%
+15	10	0,15%	0,20	5,97%	0,27%	0,35	5,81%
+16	10	0,47%	0,60	6,44%	0,57%	0,74	6,38%
+17	10	0,09%	0,12	6,53%	0,08%	0,11	6,47%
+18	10	-0,72%	-0,93	5,81%	-0,64%	-0,82	5,83%
+19	10	-0,37%	-0,47	5,44%	-0,24%	-0,31	5,58%
+20	10	-0,79%	-1,01	4,65%	-0,78%	-1,01	4,80%

De symbolen \$, * en ** staan respectievelijk voor significantie op 1%, 2% en 5% significantieniveau (tweezijdige toets). Het symbool N staat voor het aantal events opgenomen in de (C)AAR.

Table 4

Abnormal return behavior for the „Tax Fraud” sub-sample

Tabel A4: (C)AAR op dag t met bijbehorende t-waarden voor de verzameling events ingedeeld op TYPE: BELASTINGFRAUDE.

BELASTINGFRAUDE							
Dag	N	Market Adjusted Returns		Market Model Returns		CAAR	
		AAR	t-waarde	AAR	t-waarde		
-20	10	1,34%	3,26 \$	1,34%	1,63%	1,96	1,63%
-19	10	0,59%	1,44	1,93%	0,55%	0,56	2,18%
-18	10	0,11%	0,27	2,05%	-0,06%	-0,07	2,12%
-17	10	0,24%	0,59	2,29%	0,14%	0,17	2,26%
-16	10	-1,05%	-2,53 **	1,20%	-1,10%	-1,33	1,16%
-15	10	-0,69%	-1,66	0,52%	-0,84%	-1,01	0,32%
-14	10	0,86%	2,08	1,38%	0,68%	0,81	1,00%
-13	10	0,48%	1,16	1,86%	0,68%	0,81	1,67%
-12	10	-0,69%	-1,68	1,17%	-0,75%	-0,91	0,92%
-11	10	-0,36%	-0,85	0,81%	-0,45%	-0,54	0,47%
-10	10	0,46%	1,12	1,27%	0,59%	0,70	1,05%
-9	10	0,24%	0,59	1,52%	0,17%	0,20	1,22%
-8	10	-0,05%	-0,11	1,47%	-0,20%	-0,24	1,02%
-7	10	-0,64%	-1,55	0,83%	-0,31%	-0,38	0,71%
-6	10	-1,12%	-2,73 **	-0,29%	-0,83%	-0,99	-0,12%
-5	10	0,31%	0,76	0,02%	0,46%	0,55	0,34%
-4	10	0,33%	0,80	0,35%	0,35%	0,42	0,65%
-3	10	0,69%	1,69	1,04%	0,43%	0,52	1,12%
-2	10	-0,70%	-1,69	0,35%	-1,00%	-1,20	0,12%
-1	10	0,90%	2,19	1,24%	0,95%	1,14	1,08%
0	10	-0,99%	-2,42 **	0,25%	-0,97%	-1,16	0,11%
+1	10	-3,55%	-8,63 \$	-3,30%	-3,45%	-4,14 \$	-3,34%
+2	10	-0,25%	-0,60	-3,55%	-0,13%	-0,15	-3,46%
+3	10	0,06%	0,16	-3,48%	0,18%	0,22	-3,28%
+4	10	0,43%	1,06	-3,05%	0,58%	0,70	-2,70%
+5	10	0,99%	2,40 **	-2,06%	1,04%	1,25	-1,56%
+6	10	0,57%	1,38	-1,49%	0,58%	0,70	-1,07%
+7	10	-1,64%	-4,00 \$	-3,13%	-1,60%	-1,92	-2,67%
+8	10	0,47%	1,15	-2,66%	0,54%	0,65	-2,13%
+9	10	1,43%	3,48 \$	-1,23%	1,31%	1,57	-0,82%
+10	10	1,38%	3,36 \$	0,15%	1,19%	1,43	0,37%
+11	10	-0,01%	-0,02	0,14%	0,17%	0,20	0,54%
+12	10	-1,97%	-4,79 \$	-1,83%	-1,70%	-2,05	-1,16%
+13	10	0,82%	2,00	-1,01%	0,99%	1,18	-0,17%
+14	10	0,00%	0,01	-1,01%	0,05%	0,06	-0,13%
+15	10	-0,24%	-0,58	-1,24%	-0,16%	-0,21	-0,30%
+16	10	0,20%	0,48	-1,05%	0,19%	0,23	-0,11%
+17	10	-0,44%	-1,08	-1,49%	-0,40%	-0,46	-0,52%
+18	10	0,05%	0,12	-1,44%	0,02%	0,03	-0,49%
+19	10	-1,37%	-3,33 \$	-2,81%	-1,16%	-1,40	-1,66%
+20	10	-0,39%	-0,95	-3,20%	-0,30%	-0,36	-1,98%

De symbolen \$, * en ** staan respectievelijk voor significantie op 1%, 2% en 5% significantieniveau (tweezijdige toets). Het symbool N staat voor het aantal events opgenomen in de (C)AAR.