

Johann Wolfgang Goethe-Universität, Frankfurt am Main
Fachbereich Wirtschaftswissenschaften
Working Paper Series: Finance & Accounting

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**An Investigation into the
Capital Market Reaction on Accounting
Standards Enforcement**

No. 17
July 1998

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ISSN 1434-3401

* The findings included in this contribution were presented at the European Doctoral Colloquium in Accounting and at the 21st Annual Congress of the European Accounting Association in Antwerp, April 1998. The author gratefully acknowledges helpful comments by John Christensen, Christian Leuz, Dieter Ordelheide, Michael Stubenrath, Eric Theissen, Alfred Wagenhofer and Steven Zeff. Anja Seiler (Bloomberg) and D. Kistler (German Association of Financial Analysts, (*Deutsche Vereinigung für Finanzanalyse und Anlageberatung* - DVFA)) deserve thanks for their valuable assistance in data collection.

An Investigation into the Capital Market Reaction on Accounting Standards Enforcement

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Abstract

Compliance with prevailing accounting standards is induced if the expected disadvantage due to sanctions imposed if non-compliance is detected outweighs the advantage of non-compliant accounting choices. The expected disadvantage materialises the threat potential of sanctions imposed by an enforcement agency. The capital market mechanism unfolds an important threat potential if companies expect an adverse share price reaction suite to enforcement actions. Enforcement agencies in turn can make use of this capital market related sanction by releasing information on defections to the market after the settlement of an investigation.

The present contribution analyses the capital market reaction on accounting standards enforcement activities of the British Financial Reporting Review Panel (FRRP). After a brief introduction into the legal basis and working procedure of the Panel, the analysis of its activities will serve a dual purpose: firstly, the significance of capital market related sanctions for the overall enforcement regime will be elaborated upon. Secondly, the extent to which capital market related sanctions accomplish their function within the overall enforcement regime will be assessed empirically. The results of the empirical analysis suggest that the capital market related sanctioning by the FRRP may not unfold a sufficient threat potential which is a prerequisite for compliance enhancement.

JEL-Classification: G 14, G 18, K 42, M 41

Keywords: Accounting, Enforcement, Capital Market, UK-Environment, Financial Reporting Review Panel (FRRP)

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Introduction

Accounting standards are rules introduced by a central agency in order to direct the information provision of companies via financial statements in collectively desired channels. The implied behavioural restrictions are not likely to meet the needs of all companies in every instance: for some of them there will be incentives to deviate from the standards imposed, thus to actively choose not to comply with accepted standards. Given that individual incentives deviate from the collective goal pursued by standard setting, control of potential defectors and subsequent sanctioning, i.e. enforcement of imposed standards, is a prerequisite for successful accounting regulation.

In many jurisdictions enforcement of accounting standards is exclusively effectuated by the institution of statutory audit. Due to recurrently perceived independence problems (e.g. Acemoglu and Gietzman, 1997), central enforcement agencies directed against companies have been established mainly in outsider systems where accounting information primarily serve investor information purpose as is the case in the United States and the United Kingdom. An important sanctioning device of these agencies is information release on detected non-compliance to the market. Knowledge on the capital market reaction on accounting standards enforcement is hence important for considerations on the effectiveness of the national enforcement mechanisms.

Furthermore, insights into the capital market reaction on accounting standards enforcement is of high importance on an international level. Internationally, enforcement is impeded because of the lack of supranational institutions granted with the right to sanction defectors seated in various nation states. In contrast, the increasingly global capital market mechanism may make up for this deficiency by sanctioning the respective companies via an adverse share price reaction and the enhanced effects on the cost of market mediated corporate finance.

A first part will discuss the threat potential of the capital market mechanism in the context of accounting related enforcement actions. Afterwards, I will turn to an analysis of the British Financial Reporting Review Panel (FRRP). After a brief introduction into the legal basis and working procedure of the Panel, the analysis of its activities will serve a dual purpose: firstly, the significance of capital market related sanctions for the overall enforcement regime will be elaborated upon; secondly, the extent to which capital market related sanctions accomplish their function within the overall enforcement regime will be assessed empirically.

The deterrence potential of the capital market mechanism

Deterrence potential of any sanction can only be assessed with respect to its impact on the choices of the regulated entities, i.e. in the current context, the companies. Setting up accounts, a company is confronted with the choice between applying the accounting standards, i.e. to comply, or to manipulate accounting information in an advantageous way. The advantage from non-compliance depends on the function the accounting information is prepared for. In the case of accounting for capital market purposes, earnings manipulations either aimed at increasing the shareholder value or at smoothing the income stream in order to show a steady growth of the company's affairs are examples for advantageous defections (Marsh, 1994; Healy and Palepu, 1993). The advantage materialises in improved market mediated corporate finance, i.e. in comparatively lower cost of capital.

Furthermore, companies will form their expectations on the detection probability α as well as the sanction imposed by the enforcement agency in the case of detection of non-compliant behaviour. Both theoretical (Becker, 1968) and empirical evidence suggest that α is systematically lower than 100%. The expected sanction shapes the ex ante incentives for compliant behaviour: if defective accounting information was merely corrected after the investigation without further sanctioning, the ex ante expected advantage from non-compliance would always be positive, given $\alpha < 1$. This follows from the fact that, once detected, the company will not be worse off than in the situation where she had ex ante chosen to comply. In contrast, the company expects ex ante to keep the advantage with probability $(1-\alpha)$. Consequently, in a setting without sanctions non-compliance will always be the dominant strategy.

Sanction may be prefixed ex ante, e.g. as a fine. Alternatively, enforcement agencies can make use of the capital market related threat potential by releasing information in defections to the capital market after the settlement of an investigation. The capital market unfolds threat potential by adversely reacting to information on enforcement activities. Theoretically, the share price reaction can be subdivided into two coinciding effects: a first effect is due to changed expectations on value-relevant fundamentals due to introduced corrections suite to an investigation. As argued above this effect is not sufficient for deterrence.

As a second effect, a deteriorated risk assessment due to the discovered non-compliance may result. In view of the enforcement action the capital market may revise its assessment on the credibility of information provided by the respective companies as well

as the stability of prevailing corporate governance structures in general: the company hence loses reputation for compliant behaviour. The changed risk assessment systematically leads to a negative share price reaction irrespective of whether the corrections to be introduced have an increasing or decreasing effect on value relevant fundamentals (for a discussion of the market response to increased uncertainty see Brown *et al.*, 1988: 357). This share price reaction will deteriorate the financing capacities of the companies via the capital market due to the enhanced increase in the cost of capital relative to the situation of *ex ante* compliance. Reconsidering the *ex ante* incentives of potential defectors it is this risk related reaction which constitutes a threat necessary for deterrence of non-compliance.

Both effects can be enhanced by an enforcement agency by the release of information on perceived defections from accounting standards to the capital market and will be summarised under the label of capital market related enforcement in the remainder of this contribution.

In the following, the extent to which the capital market reacts on the enforcement activities of the British financial Reporting Review Panel will be assessed empirically after a brief introduction into its organisational background and working procedure.

The Financial Reporting Review Panel (FRRP)

Creation and function

The FRRP was founded suite to the reformatory propositions of the Dearing Report (CCAB, 1988) as a sister body of the Accounting Standards Board (ASB), the British accounting standard setter. Both act under the Financial Reporting Council (FRC) (Solomons, 1989). The primary objective was stated consistently with the critics regarding the former regulatory framework: the enhancement of the credibility of UK-GAAP accounting which deteriorated due to the lack of enforcement authority (Bromwich and Hopwood, 1983; Napier and Noke, 1992). The activities of the FRRP focus on PLCs and large private companies.

The FRRP strictly follows a reactive control and enforcement policy (Perrin, 1996). Instead of screening systematically the annual accounts of the companies within its authority investigations are started only if information on potential defections are referred to the FRRP by the companies themselves according to CA 1989, Schedule 1

No. 7 'Compliance with Accounting Standards', by qualifications of audit reports systematically reported to the FRRP by the London Stock Exchange, the press, individuals or corporations.

Once the FRRP takes notice of potential defective accounting practices, the Panel invites representatives of the respective companies, especially the directors who are formally liable for compliance with accounting standards in force as well as the auditors in charge for informal discussions. The aim is to clarify the accounting practice in question and to settle for amendments if necessary (for a comprehensive analysis of the activities of the FRRP, see Brandt *et al.*, 1997). Investigations are not systematically settled formally. In the majority of cases, the investigation is settled informally because of compliance to the standards in spite of information referred to the Panel or due to non-materiality of the issue under investigation. However, if the company and the Panel settle for material corrections, the FRRP issues a formal Press Notice (PN) released to the capital market.

Threat potential of the FRRP

Appeal to court

The authorisation of the FRRP as agent of the Secretary of State is included in section 245C CA 1985 which implements the 'Companies (Defective Accounts) (Authorised Person) Order' (see Cooke and Wallace, 1995). The order includes the transfer of the right to make appeal to court from the Secretary of State to the FRRP and constitutes hence the dominating threat potential of the Review Panel. Due to this position between the regulated companies and the jurisdiction, the Panel has no further legal sanctioning devices at hand: the imposition of fines or other punitive actions as defined in various parts of the Companies Act is left to the courts.

It is a frequently expressed assessment of the British system that the threat potential of potential court action renders the enforcement system effective. In contrast, accounting and law evolved as rather distinct concepts which were only recently linked formally within the new regulatory framework (for comprehensive discussions on the interrelation between law and accountancy see Freedman and Power, 1992). Before the establishment of the accounting governance system proposed by the Dearing Report (CCAB, 1988), there were very few court cases dealing with accountancy issues, mostly conceptualising on the interrelation between law and professional standards as well as the overarching accounting principle of the 'true and fair view'. Since the establishment of the FRRP, no

further cases have been referred to court. The threat against companies under review was occasionally pronounced but never followed by action: the companies under review always chose to introduce amendments voluntarily.

Doubts remain on the credibility of the threat. Although recurrently stressing the Panel's determination to pursue this ultimate resort, Edwin Glasgow, the former chairman of the FRRP, also expresses severe concerns against court action: 'It [the appeal to court] is not only costly in terms of lawyers' fees. It's also costly in terms of the damage that it does to the general integrity of the system if auditors' judgements and the Panel's view have to be tested in an adversarial system, in court. We would regard that as most unfortunate, we would regard that as having failed.'" (citation taken from Perrin, 1996).

The costs of an investigation

A rather indirect sanctioning device consists in the costs incurred during or in the aftermath of an investigation which likewise unfold threat potential. However, there is little evidence in the press on the costs of an investigation to be born by the companies. In the case of Trafalgar House, the Financial Times (1992) included an estimate of £500,000 which certainly is material but likewise exceptional as the case in question differed from the majority of remaining cases with respect to the degree of confrontation and public interest.

Indirect costs may be born by company representatives. They may suffer from intra-organisational effects such as loss of reputation, decreasing competence areas, increased control via internal auditing or even replacement (Perrin, 1996: 38; Singleton-Green, 1992). However, evidence on the briefly sketched cost categories is rare, if not impossible to objectify because of the concealing incentives of the companies: companies do have an incentive to overstate the outlined costs in order to prevent more severe sanctions from being established.

Capital market related sanction

A third sanctioning device consists in the enhanced share price reaction on a Press Notice release to the capital market. From the early days of the FRRP, the threat potential of adverse publicity was widely recognised. 'Company directors are now uneasily aware [...] that a rebuke from the Panel could lead both to some unpleasant press coverage and

a dip in the share price.” (see Singleton-Green, 1992: 117; and also Connon, 1992; Fisher, 1993). Internationally, the FRRP sanctioning via publicity is recognised: e.g. Achleitner (1995: 490) stressed the outlined capital market related sanctioning potential of the FRRP and concluded from singularly observed (negative) share price reactions that the FRRP is an effective enforcement mechanism which should be copied by the Swiss authorities.

For a theoretical assessment of possible share price reactions one has to consider the information policy of the FRRP during and after the investigations. The Panel will not provide the public with information on the proceeding of the investigation as well as the accounting issues under review unless an investigation is closed with an agreement on material corrections (Perrin, 1996). In this case, a PN is displayed in the London Stock Exchange’s information system via the Regulatory News Service of the Companies Announcement Office. The procedure clearly reflects the expectation of the FRRP that information on investigations is value relevant.

However, capital market reactions on dubious accounting practices may occur irrespective of an eventual FRRP investigation and/ or PN release and/ or potential court action. Information on dubious accounting practices will regularly be in the market regardless whether a Panel investigation is initiated and irrespective of its settlement. As outlined above, the Panel itself base its reactive policy approach on information brought to its attention. Likewise, rumours on Panel investigations circulate frequently. Both information may affect the share prices of the respective companies at the time of first occurrence. The capital market forms rational expectations on the impact of the dubious accounting practices on key accounting data (Brennan, 1991: 68). As the true impact on the specific share may not be assessable, the market will introduce an average adjustment to be adjusted by the time of further information arrival, e.g. the PN release. The pre-event capital market reaction is hard to assess if not impossible to measure due to the fact that the exact timing of first occurrence can hardly be determined. In the present contribution, the measurement of the capital market reaction was therefore limited to the share price reaction on observable enforcement action, i.e. information release by the enforcement agency.

Firstly, possible corrections to be introduced in the aftermath of a Panel investigation will enable the market to correctly price the defection if value relevant accounting information is affected. The enhanced correction of the share price will be the net effect of the former average adjustment and the firm specific adjustment due to the PN information. In principle, this adjustment is not necessarily negative as hypothesised by the above stated authors: it crucially depends on the impact of the corrections on value-

relevant fundamentals as well as the relation between the average adjustment and firm specific adjustment.

A second effect due to deteriorated risk assessment as outlined above will strictly lead to a negative share price reaction.

The actual impact of the PN release on the share prices of the respective companies will be measured empirically in the following section.

Empirical analysis of the market reaction on PN releases

Share price reaction: an event study

Event studies are designed to measure systematic capital market reactions on a specific event which occurs repeatedly in time. Ideally, the exact timing of the event is known or can at least be located in a narrow time interval. As for the PN releases, the arrival of the included information on the market is printed on the PN (date and time). The event day, i.e. the day of observable enforcement action, can therefore generally be determined to a day close.

The current event study is based on daily adjusted returns (closing rates) taken from the Bloomberg database. The sample comprises all companies which were investigated by the FRRP and whose investigation ended with a PN release between 1990 and 1997. Within this period 48 PNs were released of which 6 dealt with administrative details. For 11 of the remaining company related PNs, share price data was not available (see Appendix). Accordingly, the sample consists of 31 companies (for further information on the companies under review (size, industry sector etc.) the reader is referred to Brandt *et al.*, 1997).

Due to the already small sample size I will restrain from additional segmenting of the sample e.g. according to trading frequency, size, former qualifications of the audit report (affecting only PN 15), potential serial correlation (affecting PN 14 and 15) etc.. The hypothesis to be tested are as follows:

H_0 : The abnormal return during the event window is zero.

H_A : The abnormal return during the event window is negative.

The abnormal return AR_{it} for share i in t is calculated by the constant-mean-return model with μ_i as the mean return for share i measured over the 120 trading days preceding the event (Campbell *et al.*, 1997: 154).

$$(1) \quad AR_{it} = r_{it} - \mu_i$$

Though conventionally the first choice, the market model (Campbell *et al.*, 1997: 155) is not applicable because for the 31 companies included, the regression parameters are only significant for 11 due to severe trading infrequency the remainder are affected from. Tests with the subgroup of significant OLS regressions as well as tests based on betas adjusted for trading infrequency's according to Scholes and Williams (1977) support the results outlined below. Tests with market adjusted returns (the market return was proxied by the total return index of the Financial Times All Shares Actuaries Index (FTA)) are likewise consistent with the below outlined results and will not be further elaborated upon.

The distorting effects of highly non-normal daily data will be controlled by applying a test statistic based on rank orders. The testing technique was developed by Corrado (1989) who demonstrated the superiority of the non-parametric rank test over conventional t -statistics in cases of non-normality and small sample size. Ranks K_{it} are assigned to the returns $AR_{i,t=0}$ within the period ranging from $t = [-30; +30]$ around the event day ($t=0$). The test statistic is calculated as follows with N as the number of shares in the sample:

$$(3) \quad T_t = \frac{1}{N} \sum_{i=1}^N (K_{it} - 30,5) / S(K)$$

$$\text{with } S(K) = \sqrt{\frac{1}{60} \sum_{t=-30}^{+30} \left(\frac{1}{N} \sum_{i=1}^N (K_{it} - 30,5) \right)^2}$$

T follows a student distribution with 60 degrees of freedom. For the current investigation, the event window was successively enlarged by one day, starting from the

event day ($t=0$) until the period covering the event day and the five subsequent days. Ranks are assigned to cumulative abnormal returns ($CAR_{i, t=0} = \sum_{t=0}^u AR_{it}$, where u refers to the upper bound of the event window). The T statistics are included in the following table:

[Table 1 to be inserted]

The results lead to adherence to the null hypothesis: a negative abnormal return or a share price dip as suspected by the above cited authors cannot be concluded on a systematic basis. The result of the empirical study is supported by Brandt *et al.* (1997: 39) who ‘compared the share price of the affected companies with the FT All Shares index covering the period 66 days before the FRRP Press Notice and to a minimum of 20 days afterwards (...)’ though their testing methodology is not outlined.

However, this result is not astonishing: the enhanced share price reaction depends crucially on the information provided on the defective accounting choices as well as on the impact of corrections on value relevant fundamentals such as earnings figure, the cash flow etc.. In contrast, the information content of the PNs have been subject to frequently pronounced criticism, mainly because of the scarce facts which are provided. For a comprehensive assessment of the information policy one has to keep in mind, that the Panel relies largely on the companies to disclose further information on the outcome of the Panel investigation. Hence, the FRRP restrains his information release to a minimum.

The timing of the PN release is subject to negotiations by the company under investigation and the FRRP. In the majority of cases the PN Release coincides with the issuance of annual accounts or interim statements, with earnings announcements or public statements by the company under review (see Table 2).

[Table 2 to be inserted]

Hence, the measured effect on the event date does not reflect the impact of the PN on the share prices but include also the effect of other information released to the market

coincidentally. The effect of the PN release is hence not be separable from the overall share price reaction for those companies who chose confounding action.

In contrast, the null hypothesis may be rejected for those companies which did not confound the PN release. The above outlined test was conducted with two sub-samples of the overall group under investigation: eleven companies did not release information coincidentally whereas the remaining 20 did. The test statistics are outlined in the following table:

[Table 3 to be included]

The test statistics reveal that for the unconfounded events, there is a statistically significant negative share price reaction measured with respect to the $CAR_{t=4}$. The effects of the introduced corrections on EPS calculated by Brandt *et al.* (1997) reveal, that in this sub-group of eleven, six companies suffered a negative impact on the key figure whereas for the remaining five companies disclosure matters only were affected. Accordingly, the share price reaction can be interpreted as based on changed expectations of the market participants on value relevant fundamentals.

However, the result is exclusively obtained by measuring the AR according to the mean return model. Especially, tests with OLS and Scholes-Williams Betas do not support the negative share price reaction. Likewise, the result needs to be interpreted in the light of the narrow data basis and the resulting potential weakness of the test applied.

Risk enhancement

A risk related change in the share price behaviour may occur at different stages of the investigation process. Once rumours on dubious accounting practices and/ or potential Panel investigations reach the market the volatility of the share prices may increased. This share price reaction is not measurable unless the date of first occurrence of respective information in the market can be determined and is therefore not subject to empirical testing in the present contribution. However, the PN release may decrease the pre-event volatility due to the fact that certainty on the actual defections as well as their impact on accounting data is enhanced.

In contrast to the outlined hypothesis, the contrary may apply: PNs are only released in severe cases where material corrections were agreed upon. At the day of the PN release, the mere fact that a PN was released may introduces additional volatility into the share price due to the increased uncertainty on the credibility of accounting information by the specific company and, in a broader sense, on the integrity of the management.

In the following, the risk related effects of the PN release will be measured empirically. Again, as the results of OLS regressions are very unsatisfactory, in-depth analysis of different risk components, i.e. the systematic risk measured by beta and the unsystematic risk measured in terms of market model residuals, is precluded. To assess the impact of the PN release on the volatility of the share price behaviour, variances of both nominal and market adjusted returns were calculated for succeeding periods.

The total sample of companies comprises 30 companies. Compared to the return event study, the share price reaction on PN 43 was eliminated due to the fact that the respective shares were close to suspension and merely showed any share price movement at all. After aggregating the return series tests have been conducted in two steps: in a first step the period before the PN release took place was investigated. The variances of the return series for interval $I_1 = [-80;-40]$ and $I_2 = [-40;-1]$ were tested for significant deviation. Furthermore, the periods ranging from $I_2 = [-40;-1]$ and $I_3 = [+1;+40]$ were tested for variance shifts.

Due to non-robustness of conventional F-statistics against wide-spread non-normality of the daily return data revealed by Komolgorov-Smirnov tests, an ANOVA statistic developed by Levene (1960) was applied. The Levene statistic is calculated from a one-way ANOVA between groups whereby the single observations have been replaced by their absolute deviation from the sub-sample means. Brown and Forsythe (1974: 364) modified the Levene statistic by trimming the effect of outliers in order to obtain a robust and unbiased test for differences in variances (see for an application and comprehensive discussion Gerety and Mulherin, 1994). The outlined results refer to statistics incorporating the median as the central location parameter; alternative tests with the ten percent trimmed mean did not alter the results. Conventional F statistics indicate the direction of the variance change though inference on significant deviations is impeded because of non-normality of the daily return data. Table 4 includes the results for nominal return data.

[Table 4 to be inserted]

For the entire sample, the F_L reveals a pre-event increase in variance at a 5 % level of significance. As becomes clear from the sub-sample analysis of eleven unconfounded PN releases and nineteen confounded PN releases, a significant rise in variance can be inferred for the latter. For the unconfounded PN releases, no change in volatility can be inferred for the pre-event intervals.

Further evidence on risk shifts is revealed by eliminating overall market volatility proxied by total return FTA data. The results are summarised in table 5.

[Table 5 to be inserted]

Again, the results indicate a rise in variance before the event date for the entire sample. Additionally, the results suggest a decrease in variance after the event date for the share price behaviour of the group of confounded events. One may argue that the decrease of variance reflects the fact that the market gained certainty on the actual accounting issues under investigation as well as the impact on the corrections on accounting data.

However, the shift in variance cannot clearly be attributed to the PN release: empirical research on the market reaction on new accounting information sustain the outlined pattern of increased pre-event variance and lowered post-event variance (Brennan, 1991: 68). Furthermore and in contrast to the findings regarding the confounded events, tests on the sub-sample of unconfounded events do not reveal any shifts in variances through time.

In summary, a systematic and significant risk related share price reaction attributable to the release of FRRP Press Notices cannot be inferred from the data.

Discussion of the results

As outlined in the beginning, deterrence of potential defectors can only be effectuated if a credible threat is established. In the light of empirical results, it stands to reason whether FRRP enforcement matters at all in the capital market context. A threat potential of the FRRP due to enhanced publicity cannot generally be acknowledged.

This result has consequences for the overall assessment of the effectiveness of the FRRP's enforcement action: the reason for court action avoidance may not exclusively

be due to the enormous threat potential of a court case, but to the fact that the alternative sanction of publicity via PN release is not material. In view of the uncontrollable outcome of a court case, it seems only rational from the companies' point of view to settle the issue in question voluntarily and to actively confound the effect of the PN release. The companies' ability to codetermine the timing of the PN release introduces a strategic component into the information transfer between the enforcement agency and the capital market which is not congruent with the ultimate goal of enforcement action: the deterrence of future defections.

In contrast to the assessment developed in the present contribution, Brandt *et al.* (1997: 39) welcomed the fact that 'no systematic evidence of economic damage to investors through adverse share price reactions to the PN releases' occurred. In contrast, the present contribution claims that capital market related enforcement action should make explicitly use of the disciplining action of capital market participants: their investment and reallocation decisions suite to perceived defections exerts disciplining effects on the companies. Welcoming the fact that investors wealth positions were left unchanged after enforcement action amounts to welcoming the fact that the market did not sanction the provision of defective accounting information and, in a broader sense, that defections were not sanctioned at all.

Concluding remarks

With the increasing importance of accounting for capital market purposes, capital market related enforcement will be of increasing significance on the level of nation-states. Furthermore, research on capital market related enforcement is of high significance on an international level: given that to date no supranational institution holds the power to sanction companies seated in different jurisdictions, the capital market mechanism may fill this authority vacuum.

In order to optimally design the information transfer between the enforcement agency and the capital market, the elaborated reflections on capital market related enforcement action need to be systematically linked with findings of empirical research streams on the function of accounting data in capital markets as well as its impact on share prices. The reaction of the market towards accounting information needs to be taken into consideration in order to utilise the market mechanism effectively in the enforcement context. For an approach to these issues, further research especially into the quality of information provided is necessary. In principle, information on enforcement action should bear the same features of accounting information prepared for capital market

purpose: decision useful, timely and comprehensive. However, further insights and recommendations are left to future research.

Appendix

	Company	PN Release	Remark
1.	4. Ultramar plc	28.01.1992	No continuous listing in the relevant period.*)
2.	5. Williams Holding plc	28.01.1992	
3.	6. Shield Group plc	31.01.1992	No continuous listing in the relevant period.*)
4.	7. Forte plc	04.02.1992	
5.	10. Williamson Tea Holdings plc	30.08.1992	No Bloomberg record
6.	11. Associated Nursing Services plc	10.08.1992	infrequently traded
7.	12. GPG plc	07.10.1992	No continuous listing in the relevant period.*)
8.	13. Trafalgar House plc	15.10.1992	
9.	14. British Gas plc	26.10.1992	
10.	15. SEP Industrial Holdings plc	26.10.1992	
11.	16. Eurotherm plc	22.02.1993	
12.	17. Foreign & Colonial Investment Trust plc	17.03.1993	
13.	18. Wamford Investments plc	01.04.1993	infrequently traded
14.	19. Penrith Farmer's&Kidd's plc	05.04.1993	No Bloomberg record
15.	20. Breverleigh Investments plc	27.07.1993	No Bloomberg record
16.	21. Royal Bank of Scotland plc	10.08.1993	
17.	22. Control Techniques plc	24.09.1993	infrequently traded
18.	24. BM Group plc	19.10.1993	No Bloomberg record
19.	25. Parmigan Holdings plc (now Graystone plc)	25.10.1993	Name changed between balance sheet date and PN Release
20.	26. Chrysalis Group plc	29.11.1993	
21.	27. Intercare Group plc	28.01.1994	
22.	28. Pentos plc	11.02.1994	
23.	29. BET plc	24.05.1994	
24.	30. Butte Mining plc	02.11.1994	
25.	31. Clyde Blowers plc	23.11.1994	infrequently traded
26.	32. Alliance Trust plc	20.03.1995	infrequently traded
27.	33. Courts plc	21.06.1995	infrequently traded
28.	34. Caradon plc	08.11.1995	
29.	35. Ferguson International Holdings plc	13.12.1995	
30.	36. Securicor Group plc	15.02.1996	infrequently traded
31.	37. Newarthill plc	08.03.1996	No continuous listing in the relevant period.*)
32.	38. Brammer plc	28.03.1996	
33.	39. Foreign & Colonial Investment Trust plc	09.04.1996	
34.	40. Alexon Group plc	01.05.1996	
35.	41. Ransomes plc	30.05.1996	
36.	42. Sutton Harbour Holdings plc	24.06.1996	No continuous listing in the relevant period.*)
37.	43. Butte Mining plc	02.10.1996	infrequently traded
38.	44. Associate Nursing Services plc	17.02.1997	infrequently traded
39.	45. Reckitt&Colman plc	15.04.1997	
40.	46. M&W Mack	29.08.1997	No continuous listing in the relevant period.*)
41.	47. Burn Stewart	02.10.1997	
42.	48. Stratagem	10.11.1997	

*) The relevant period comprises 30 days before and after the event date.

Table 1: Test statistics for cumulative abnormal returns

Event window	T value ($T_{\alpha = 2,5\%} = 2,00$)
t = 0	1,66
t = [0; +1]	1,06
t = [0; +2]	1,24
t = [0; +3]	1,41
t = [0; +4]	1,27
t = [0; +5]	0,88

Table 2: Confounding events

Publication of accounts	8
Publication of own statement	7
Results announcements	4
Publication of interim statements	1
<u>Remainder</u>	<u>11</u>
	<u>31</u>

Table 3: Test statistics for cumulative abnormal returns following confounded and unconfounded PN releases

Event window	T_C	T_{UC}
t = 0	1,30	1,10
t = [0; +1]	1,07	0,21
t = [0; +2]	1,20	0,30
t = [0; +3]	1,18	1,24
t = [0; +4]	0,44	2,15*
t = [0; +5]	0,11	1,98

UC: unconfounded events; C: confounded events

* denotes a significant negative share price reaction at a 2,5 % level

Table 4: Variance shifts through time - nominal returns

r_i	Intervals to be compared	$F = \sigma^2_2 / \sigma^2_1$	F_L
Total	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	3,041	4,200*
1 - 30	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	0,379	2,933
UC	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	0,373	0,283
1-11	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	0,716	1,401
C	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	4,369	11,032**
12-30	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	0,473	2,598

* denotes significant deviation of the tested variances at a 5 % level
($F_c (v_1 = 1; v_2 = 40) = 4,08$)

** denotes significant deviation of the tested variances at a 1 % level
($F_c (v_1 = 1; v_2 = 40) = 7,31$)

Table 5: Variance shifts through time - net of market returns

$r_i - r_m$	Intervals to be compared	$F = \sigma^2_2 / \sigma^2_1$	Levene F
Total	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	3,33	6,033*
1 - 30	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	0,41	3,53
UC	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	0,387	0,389
1-11	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	2,089	1,366
C	$I_1 = [-80;-40]$ $I_2 = [-40;-1]$	5,583	10,867**
12-30	$I_2 = [-40;-1]$ $I_3 = [+1;+40]$	0,379	4,554*

* denotes significant deviation of the tested variances at a 5 % level
($F_c (v_1 = 1; v_2 = 40) = 4,08$)

** denotes significant deviation of the tested variances at a 1 % level
($F_c (v_1 = 1; v_2 = 40) = 7,31$)

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