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THE RELEVANCE OF FINANCIAL REPORTING: FURTHER UK EVIDENCE

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ABSTRACT

This study uses event study methodology to investigate the information content of four annual accounting releases. The issues of company size and industrial classification are also investigated. The results demonstrate that all four disclosures have some information content; this is much greater for the interim report and preliminary earnings report than for the annual report to shareholders and annual general meeting. Significant size effects are demonstrated and some evidence is found for an industry effect.

INTRODUCTION

There is an extensive accounting literature on the influence of corporate accounting releases on investor behaviour and on security prices. However, there are several significant unresolved issues and this paper seeks to contribute towards their resolution. Ball and Brown (1968) established the general proposition that accounting announcements and reports hold information content for investors. Since then, much research, founded on the event study methodology originating from the work of Ball and Brown (1968) and Fama, Fisher, Jensen and Roll (1969), has attempted to ascertain which specific accounting releases affect investor behaviour.

Past research has mainly concentrated on four different accounting events. These are the interim report (IR), the preliminary earnings report (PER), the annual report to shareholders (ARS) and the annual general meeting (AGM).

However, we have identified only two papers – Firth (1981) and Rippington and Taffler (1995) – which have studied all four of these events, and most research has concentrated on the two announcements that are most obviously focused on earnings (that is, the IR and the PER). The evidence on the usefulness of the ARS is ambiguous and there has been practically no research on the impact of the AGM[1]. A further study focusing on the impact of all four of these disclosures is therefore appropriate. Additionally, our work tests for both size and industry effects. Whereas earlier studies have found evidence of an inverse relationship between firm size and strength of share price reaction, no previous event study that addresses the issue of industry classification could be identified.

The present study uses data from the period 1992 to 1994. Intuitively one might expect data from this period to hold more information content than that from the 1970s or 1980s, due to the establishment of the Accounting Standards Board (ASB) and the reorganisation of accounting standard setting in 1990. This paper employs both parametric and non-parametric test statistics. Corrado and Zivney (1992) indicate that the non-parametric Corrado rank test gives superior performance to other tests investigated by them and so in this paper we report results utilising the Corrado test.

Our results show that all four accounting announcements have some information content. Our results provide strong evidence of a size effect, as well as indicating that industrial classification may play a role in the market's reaction to accounting disclosures.

The structure of the paper is organised as follows. The first section reviews some of the prior literature on the impact of accounting disclosures and this is followed by a description of the research design, together with the sample data and methodology. The third section presents and analyses our results. The final section offers some general conclusions as well as suggestions for further research.

LITERATURE REVIEW

Information content of accounting disclosures

Ball and Brown (1968) established the general proposition that earnings announcements convey information to investors, and subsequent work (Beaver, 1968; Firth, 1981; Maingot, 1984; Foster, Jenkins and Vickrey, 1986; Brookfield and Morris, 1992; Rippington and Taffler, 1995) has shown that both the PER and the IR hold information content. Opong (1996) concludes that significant price response to the release of the PER occurs in the hour in which the report is released. Several studies have focused only on the IR. Courtis (1987) found that the IR appears to be useful to investors when predicting quarterly and annual results and Opong (1995, 1997) found that the IR contains information content on an hourly basis. The findings of Ou and Penman (1989) and of Holthausen and

Larcker (1992) reinforce this body of research. These authors both suggest that financial statement items can be combined into one summary measure to yield insights into the subsequent movement of share prices.

Evidence on the usefulness of non-earnings accounting disclosures is sparse and inconclusive. In general, research on the ARS – Foster et al. (1986) and Cready and Mynatt (1991) in the US and Rippington and Taffler (1995) in the UK – finds an absence of information content. Firth (1981), however, is an exception and indicates that in the UK the ARS contains additional information to that contained in the PER. There is little research on the impact of the AGM and neither of the studies – Firth (1981) and Rippington and Taffler (1995) – which examined this issue found compelling evidence of information content.

Given then that only two papers have examined the impact of all four accounting disclosures, that the evidence on the usefulness of the ARS is ambiguous and that there is little research on the impact of the AGM, an additional study focusing on all four disclosures is appropriate. A further consideration is that recent work by Holland (1998) highlights the deficiencies of scheduled financial reports as a communication system as perceived both by major UK companies and their core financial institutions. He investigates the extant and extensive network of private and public voluntary disclosure that is designed to compensate for these deficiencies (this is consistent with companies characterised by relative political sensitivity being more inclined to disclose additional information voluntarily, as noted by Meeks, Roberts and Gary, 1995). The research reported in this paper, therefore, helps to shed further light on the usefulness of scheduled accounting reports and announcements in a contemporary environment characterised by this extensive voluntary disclosure network.

Size effects

Previous research (Banz, 1981; Atiase, 1985, 1987; Ro, 1988) has found evidence of an inverse relationship between firm size and strength of share price reaction. In the US, Grant (1980) found that the annual earnings announcements of firms traded over-the-counter appeared to possess more information content than those of firms traded on the New York Stock Exchange because of the different amounts of interim information available on the two groups. The rationale for these various results lies in the differential information hypothesis – see, for example, Hodgson and McCall (1997) – which states that the amount of information available from sources other than annual reports is an increasing function of firm size. Several reasons have been advanced in the literature for this. The likely cost structure of information search (Freeman, 1987) implies that incentives to research mispricing are greater in the case of larger firms (Atiase, 1985). In the case of small firms, trading on private information is likely to be more noticeable than it is in the case of larger firms, as stocks of smaller firms will tend to be more thinly traded (Atiase, 1985). As a result, the potential to

profit from private information will be less in the case of smaller firms, leading analysts to concentrate their search activities on larger firms.

Industry classification effects

The present paper is innovative in that it examines whether or not industry classification has any effect on share price reaction. There appears to be no generally accepted theory as to whether or not an industry effect might be expected or the possible nature and magnitude of any such effect. However, Graham and King (1996) note that Lev (1983) found that the earnings of durable goods manufacturers have greater variance than those of service firms and of other manufacturing firms. As higher earnings variance implies greater uncertainty about undisclosed earnings, this may therefore mean that earnings reports for durable goods manufacturers are likely to be more informative than those in other industries. Meek, Roberts and Gray (1995), in a study which examines factors influencing voluntary disclosures in the annual reports of multinationals, find something of an industry effect in that companies in the oil, chemical and gas industries are more inclined to disclose additional *voluntary* information than are other industry groupings. They surmise that this may be due to this industry grouping being more politically sensitive than others.

Lev (1996) and Lev and Zarowin (1999) provide evidence that the accounting system does not cope well with business change and the uncertainty that is associated with this. The usefulness of accounting information, in particular accounting earnings, for the valuation of high-tech companies may be substantially lower than it is for non-high-tech firms. One reason suggested for this is that the key variables needed to evaluate innovative capability and success in coping with change (e.g., the total investment in research and development, the time required to bring new products to the market and to translate research efforts into cost savings) are not currently provided in financial reports. Lev (1996), therefore, suggests that accounting reports are relatively less informative for companies such as those engaged in the chemical, pharmaceutical and biotechnology industries or in computer hardware or software.

In summary, there are a variety of tentative explanations as to why individual industries or industry groupings may exhibit distinctiveness as to the strength of share price reaction. Although no one theory appears to be dominant, the work of Lev (1996), of Lev and Zarowin (1999) and of Meek et al. (1995) appears to indicate that the financial statements of firms that are either heavily engaged in innovation (or which are subject to change) or are politically sensitive may be less informative than those of other firms. Taken in conjunction with the earlier finding of Lev (1983) that the earnings of durable goods manufacturers exhibit relatively greater variance, these findings lead us to expect tentatively that financial reports of companies in manufacturing industries characterised by relatively stable technology and relative political insensitivity are likely to be more informative than the financial reports of companies characterised by the

opposite characteristics. However, further details as to expected industry effects are unclear.

RESEARCH DESIGN AND METHODOLOGY

Research method

The research examines the information content of the four selected accounting disclosures using standard event study methodology. We assume that the London Stock Exchange is semi-strong efficient and we calculate the abnormal returns of our sample of companies around the four accounting announcements. Since it is not possible to specify whether the accounting announcements reflect good or bad information, absolute abnormal returns are used to assess the market reaction.

We evaluate the market reaction using the following three-step approach. First, we calculate the abnormal returns for each security as

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

where AR_{it} is the abnormal return of security i on day t, R_{it} is the actual return, and $E(R_{it})$ is the expected return on security i on day t. In our study we calculate the expected returns of the security using the average return of the security during the estimation window. The length of the estimation period has little effect in the calculation of expected and abnormal returns (Strong, 1992); a short estimation period was selected, therefore, to avoid conflict with prior years' announcements[2]. We experiment with using market model returns and market adjusted returns to estimate expected returns but find similar results[3]. Second, we calculate the daily cross-sectional average absolute abnormal returns on day t across the entire sample of companies as

$$(2) \qquad MAAR_t = \frac{1}{N}\sum_{i=1}^{N}|AR_{it}|$$

where $MAAR_t$ is the mean absolute abnormal return on day t, and $|AR_{it}|$ is the absolute values of the abnormal return for firm i on day t. Under the null hypothesis of no market reaction to the accounting announcement, we expect that $MAAR_t = 0$ on the day of the announcement. Where the accounting announcement has information content, we expect that $MAAR_t > 0$. Third, we test the statistical significance of the market reaction using the parametric t-statistic of Cready and Mynatt (1991) and the non-parametric rank test of Corrado (1989) based on absolute abnormal returns[4]. We use the non-parametric test, since prior

evidence (Faff, Hillier and Hillier, 2000) suggests that daily UK stock returns are non-normal[5].

We split the sample separately into four market value groups and seven industry groups. For each group we compute $MAAR_t$ and the test statistics. If size and industry affect the market reaction, then we would expect certain groups to demonstrate relatively greater market reaction.

Data

We evaluate the market reaction of four accounting announcements using UK stock returns available on the London Business School Share Price Database (LSPD). We select a random sample of 750 companies that were live during the period January 1992 to December 1994.

We include securities in our final sample if they meet the following four criteria. First, the company has complete daily share price data for 100 days prior to the interim report event window and for 40 days after the AGM window. Second, there are at least five trading days between each event. Third, there are no other significant news events likely to affect share prices in the surrounding test period (e.g., a stock split). Fourth, we require all companies to have a financial year-end within the calendar year of 1993[6]. We have 290 companies in our final sample. However, we have only 251 companies for the IR and PER announcements since there were other potentially confounding news events around the dates of these announcements for the remaining companies.

We collect the release date of the ARS[7]. As the release date is not usually reported by market sources, the date used was the day subsequent to that of the Notice of Meeting (or similar) in the annual report and accounts[8]. The announcement dates were identified from the Micro Extel Financial Package IBS[9] and the daily returns of individual companies were collected from the Extel database. The Extel dataset was used to collect the daily, and the corresponding market, returns for the 290 companies over the period. We employ the daily returns on the Financial Times All-Share Index (FTA) as the market return[10].

We collect information on size and industry classification from the LSPD. We form the four size quartiles using the market value as at the start of 1994 as recorded on the LSPD. We group the securities into seven broad industry classifications using the classifications given in the 1994 LSPD Handbook[11]. **Table 1** shows the number of firms in each size quartile and industry grouping, as well as their respective average market values in millions of pounds sterling (£) for each size quartile.

TABLE 1: SUMMARY OF SAMPLE SPLITS

Panel A

Size Quartile	Market Values	Number of Companies (290)	Average Market Value (£m.)
Quartile 1	< £10m	74	4.5
Quartile 2	£10m–£35m	74	18.7
Quartile 3	£35m–140m	72	72.3
Quartile 4	> £140m	70	1232.8
Average			321.4

Panel B

Industry		
General Manufacturers:	99	160.8
Consumer Goods	31	240.0
Services:	67	195.2
Financials	38	303.0
Investment Trusts	39	142.9
Mineral Extraction	11	3157.0
Utilities	5	989.2
Average		321.4

Panel A of **Table 1** shows each quartile to have approximately 72 firms, with average market values ranging from £4.5 million for quartile one to £1.2 billion for quartile four. This gives an average market value of £321.4 million for the sample as a whole.

RESULTS

We examine the market reaction to the four announcements for the whole sample of companies. **Table 2** reports the mean absolute abnormal returns, the median absolute abnormal returns, the cross-sectional standard deviation of abnormal returns, and the *t*-statistic of the significance of the market reaction. We report the results for the day of the announcement (0) and for the following day (+1).

We indicate, next to the *t*-statistic, cases of significance using the Corrado (1989) rank test.

TABLE 2 SUMMARY OF MARKET REACTION

Announcement	Mean AAR (%)	Median AAR (%)	Standard Deviation	*t*-statistic
IR_0	3.69	1.41	6.40	5.64*[1]
IR_{+1}	1.56	0.56	2.39	5.36*[1]
PER_0	3.40	1.97	4.37	9.59*[1]
PER_{+1}	1.71	0.68	2.61	5.25*[1]
ARS_0	1.23	0.34	2.53	2.46*[1]
ARS_{+1}	1.07	0.37	2.37	2.56*[1]
AGM_0	1.35	0.36	3.67	2.81*[1]
AGM_{+1}	1.03	0.39	1.96	2.34*[1]

** Significant at 5 per cent*

[1] Significant at 5 per cent using the Corrado (1989) rank test

Table 2 shows that there is a significant market reaction to all four accounting announcements on the day of the announcement and on the following day. This finding holds regardless of whether we use the *t*-statistic or the Corrado (1989) rank test. By comparing the mean absolute abnormal returns across the four announcements, we find that the market reaction is greatest for the IR and the PER. Our results in respect of the IR and PER support earlier studies such as Rippington and Taffler (1995). However, we also find that both the ARS and the AGM announcements hold information content, and in this respect our results differ from earlier UK studies (Firth, 1981; Rippington and Taffler, 1995).

The evidence in **Table 2** suggests that all four announcements hold significant information content. To explore the reaction in more detail, we rank the daily mean absolute abnormal returns across the entire test period (estimation period and event period). **Table 3** reports the 10 highest mean absolute abnormal returns across the test period. We expect that if the announcements contain significant information content, then the mean absolute abnormal returns around the four announcement dates will dominate.

TABLE 3: RANKING OF SAMPLE ABSOLUTE ABNORMAL RETURNS

Rank	Mean	Day
1	0.0369	IR
2	0.0340	PER
3	0.0171	PER+1
4	0.0165	66
5	0.0156	IR+1
6	0.0136	AGM
7	0.0135	37
8	0.0125	10
9	0.0123	ARS
10	0.0119	16
Mean	0.0095	
Median	0.0088	

Table 3 confirms the findings reported in **Table 2**. The 10 largest mean absolute abnormal returns across the test period include the event day mean absolute abnormal returns for all four announcements. Additionally, we find that the mean absolute abnormal returns for the IR and PER are the highest across the test period.

We then investigate whether the market reaction to the four announcements varies across the market value quartiles. In accordance with the differential information hypothesis, we expect relatively stronger market reaction for smaller companies. **Table 4** presents the results. The table reports similar information to **Table 2** except that the day +1 results are excluded. **Table 4** also reports the ranking results, for each announcement by quartile, across the test period.

Table 4 shows that there is a clear size effect in the market reaction to the four announcements. The market reaction as measured by mean absolute abnormal returns is largest for the bottom quartile of firms for all announcements with the exception of the IR. In contrast, the market reaction is smallest for the largest two quartiles of firms. The results also indicate a monotonic decline in the mean absolute returns for the PER and the ARS for all four quartiles. We find that there is a significant market reaction to the IR and PER across all four quartiles. This finding is reflected in the magnitude of the mean absolute abnormal returns and in the ranking of the daily absolute abnormal returns across the whole estimation period.

TABLE 4: MARKET REACTION AND COMPANY SIZE

Announcement	Mean AAR (%)	Standard Deviation	*t*-statistic	Rank
IR				
Q1	3.97	5.59	3.80*[1]	3
Q2	5.13	9.90	3.28*[1]	1
Q3	2.76	4.73	2.05*[1]	1
Q4	2.81	2.67	5.50*[1]	1
PER				
Q1	5.55	6.42	4.96*[1]	1
Q2	3.13	3.94	4.39*[1]	2
Q3	2.57	2.65	5.34*[1]	2
Q4	2.33	2.56	5.06*[1]	2
ARS				
Q1	2.00	3.87	1.87*[1]	11
Q2	1.15	2.68	0.97	17
Q3	0.93	1.32	2.03*[1]	9
Q4	0.81	0.83	0.93	74
AGM				
Q1	2.21	5.91	1.74*[1]	7
Q2	1.21	2.73	1.47[1]	10
Q3	0.69	1.39	0.95	63
Q4	1.27	2.82	1.56	4

** Significant at 5 per cent*

[1] Significant at 5 per cent using the Corrado (1989) rank test

In contrast to the IR and PER, we find that the ARS and AGM are only significant for certain size quartiles. Information content of the ARS and AGM is highest for the bottom quartile of companies and is significant using both the *t*-statistic and the Corrado (1989) rank test. The ARS and AGM announcements are not significant for the largest quartile of firms.

The findings reported in **Table 4** provide support for the differential information hypothesis. We find that the content of all four announcements is useful to investors in the smallest quartile of companies.

We next explore the role of industry classification on the degree of market reaction. **Table 5** reports the results.

TABLE 5: MARKET REACTION AND INDUSTRY CLASSIFICATION

Announcement	Mean AAR (%)	Standard Deviation	*t*-statistic	Rank
IR				
CG	3.25	4.33	3.69*[1]	1
GM	5.69	8.32	3.90*[1]	1
Fin	3.09	4.39	2.97*[1]	3
IT	0.71	0.79	1.07	34
Services	3.61	6.66	4.25*[1]	3
PER				
CG	2.99	3.67	3.11*[1]	2
GM	4.03	5.02	6.76*[1]	2
Fin	4.65	3.76	3.91*[1]	1
IT	0.63	0.86	0.47	56
Services	3.90	4.91	4.74*[1]	2
ARS				
CG	0.81	1.66	0.01	48
GM	1.38	2.74	2.41*[1]	8
Fin	0.83	0.84	0.41	81
IT	0.50	0.55	0.12	106
Services	1.27	2.73	1.26[1]	33
AGM				
CG	0.70	1.03	0.29	63
GM	1.68	4.48	2.19*	6
Fin	2.09	4.75	1.69*[1]	6
IT	1.22	4.42	0.56	2
Services	1.00	1.85	1.03[1]	56

** Significant at 5 per cent*

[1] Significant at 5 per cent using the Corrado (1989) rank test

CG – consumer goods

GM – general manufacturers

Fin – financials

IT – investment trusts

Table 5 indicates an industry effect in the market reaction to the four accounting announcements. The industry effect is less clear than the size effect. There is no significant market reaction to any of the four announcements for the investment trusts sector. Each of the remaining four sectors demonstrates a significant reaction to at least some announcements. Market reaction is greatest for the IR and PER. All four sectors have a significant reaction to these two announcements.

The results for the ARS and the AGM are inconclusive. The results for the financial sector demonstrate a significant reaction to the AGM announcement.

The results for the general manufacturing sector indicate that the ARS and the AGM may hold information content. Our work on industry is exploratory in nature; nevertheless, it may provide tentative support for the hypothesis that the financial reports of manufacturing companies are likely to be more informative than those of other companies, given the size of the mean AAR[12].

CONCLUSIONS

This study explores the reaction of share prices in the UK using both parametric and non-parametric tests. It examines the four main accounting announcements of the financial year: the interim report (IR), the preliminary earnings report (PER), the annual report to shareholders (ARS) and the annual general meeting (AGM). The study also explores the issues of market size and industry classification.

We find that all four announcements have some information content and in this respect our results may be distinguished from previous UK studies that have examined these announcements. Market reaction is high for the IR and PER, but much less significant for the ARS and AGM.

The results demonstrate a clear size effect and provide strong support for the differential information hypothesis. The research provides some initial evidence for an industry effect. In general, information content of accounting announcements is greater for the general manufacturing sector. Additional results relating to industry are that the AGM appears to be of significance for the financial sector and that in the case of investment trusts no announcement is significant. Future research might usefully investigate the issue of an industry effect in more depth, possibly by utilising a more refined industrial classification.

NOTES

1 This may not be surprising, since items for discussion at the AGM will normally be known to the market prior to the meeting.

2 The days (-100 to -11) were taken as the estimation period and for each event the days (-4 to +4) were taken as the event period.

3 Brown and Warner (1980, 1985) find that the choice of expected returns has little impact on inferences of an event study over short time periods. The results generated from the other methods are available from the authors on request.

4 Though the test is normally applied to abnormal returns or residuals (Corrado, 1989; Corrado and Zivney, 1992; Cowan and Sergeant, 1996), it can be applied equally to absolute values of abnormal returns. The authors are grateful to Charles Corrado for his assistance in dealing with this matter.

5 These authors examined the distributional properties of the returns in 32 UK industrial sectors. They found that each industry's return distribution was leptokurtic with

kurtosis values reaching a high of 25 and a minimum of seven. As a consequence, every industry sector failed a Jarque-Bera test of normality at the one per cent level.

6 1993 was chosen as the earliest year for which it would be reasonable to expect the changes in accounting standard setting to have had an impact in terms of market reaction. Although major changes in the apparatus of UK accounting standard setting took place in 1990, few new standards became mandatory for companies before their 1993 financial year-end annual reports and accounts. Arguably, the new accounting standard which might be expected to have had the greatest impact on the usefulness of financial reporting was FRS3 *Reporting Financial Performance* (ASB, 1992). This resulted in major changes to the shape and content of the profit and loss account and to the reporting of financial performance. This standard became mandatory for accounting periods ending on or after 22 June 1993. *A priori*, therefore, we might expect the results from research using data from 1993 (or later years) to suggest greater information content than previous studies.

7 Where the annual reports could not be obtained from the companies, microfiche copies of the annual reports produced by the Financial Times MIRAC Service were utilised.

8 A sample of companies was contacted to validate this assumption. In addition, for certain companies the actual release date was given in the annual report and this supported the use of the day following the *Notice of Meeting*.

9 Where the date of the AGM was not given, the Financial Times MIRAC Service was used and this also provided, for certain firms, the dates of the IR and PER. This gave a means of verifying the dates employed for these events.

10 The Financial Times All-Share Price Index is a value-weighted index representing 750 of the UK's largest companies. To verify the suitability of the FTA index in calculating returns from a sample containing small companies, we compared monthly excess returns computed on the basis of an equally-weighted combination of the two smallest deciles in the LBS dataset with those computed on the basis of the FTA index. The period January 1992 to December 1994 was used in both cases and a simple '*t*' test was conducted to examine the difference between each set of mean returns. Our results identified no discernible differences between the two indexes. It was therefore deemed unnecessary to conduct our tests on the lower quartiles using a small firm, or equivalent, index.

11 Mineral Extraction (11 firms) and Utilities (five firms) were eliminated from the industry analysis due to the small number of firms within these two sectors.

12 Future work of this nature might usefully consider using a more sensitive sector classification than that which has been adopted here. The financial reports of manufacturing companies seem likely to be more informative than, for instance, those of AIM, oil exploration or technology companies. Such companies have not been considered specifically in the present study; future work might adopt an industrial classification that allows the market reaction to accounting announcements in these sectors to be specifically identified. Even with the present classification there may be grounds for supposing that the reports of general manufacturing companies might at least be more informative than those of service companies. Service companies involved with PFI or PPP, for instance, may be politically sensitive and have been the subject of much recent press comment.

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