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VOLUNTARY TRADING SUSPENSIONS AND MEDIA COVERAGE ON THE LSE

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Abstract
This study examines voluntary suspensions and subsequent relistings on the London Stock Exchange. The results show that voluntary suspensions produce an abnormal return series very similar in pattern to the exchange-initiated suspensions observed elsewhere. The paper then examines the role of media coverage on price movements around the suspension. In the pre-suspension period the quantity of news is positively associated with abnormal returns. Subsequent to relisting, the impact of media coverage switches from a quantitative role to a more qualitative informative role. Other evidence shows that firms associated with takeover activity have lower volatility of returns around the suspension consistent with a convergence of beliefs, that the length of the suspension period is not significant, and media coverage does not increase the heterogeneity of investor beliefs. Overall the results suggest incremental media information may have a significant association with price movements.

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1. **INTRODUCTION**

Trading suspensions are an interesting feature of security markets. They can be induced either through an exchange-controlled mechanism, voluntarily by the firm, or occur naturally through weekend, overnight or lunchtime closures. The contrast between trading suspensions and continuous trading illustrates a fundamental economic trade-off between timely execution and full information execution. Under extenuating circumstances, the informational problems and costs associated with continuous trading may be greater than the disruption and costs arising from a suspension of trading. For example, if current prices no longer provide accurate information about subsequent execution prices, then it may be worthwhile to accept some loss (and costs) in immediacy and impose a suspension to allow market participants to condition their responses on a wider information set expected to eventuate over the suspension period.

Controversy surrounds the usefulness and value of trading suspensions. Greenwald and Stein (1991) contend that trading suspensions provide traders with access to wider information sets, in turn, induce lower transaction risk and generally have a calming influence on market participants. However, note that this argument implicitly assumes that there is either new information released, or at least, a revision of beliefs concerning the value of current information that occurs during the suspension period. Alternatively, it is argued that trading suspensions may increase the uncertainty regarding the ability to exit the market and such an environment may lessen the stability, or perceptions thereof, of the market (Gerety and Mulherin, 1992). Pragmatically, a trading suspension effectively withdraws the information mapping advantage induced from market prices and the ability to close out exposed positions. Of course, suspensions represent the ultimate illiquid market and there is support that the reduced liquidity results in lower asset values (Amihud and Mendelson, 1986, 1988).

Prior research on trading suspensions has generally concentrated on exchange-initiated suspensions (eg. Hopewell and Schwartz, 1978; Kryzanowski, 1978, 1979; Howe and Schlarbaum, 1986; Lee et al. 1994; Kabir, 1994). Action taken by authorities to suspend trading is often argued to be necessary to reverse the negative externality provided by current prices and reduce the extent of any deviation from
Walrasian efficiency. In contrast, the focus of this paper is on firm-initiated trading suspensions. This research is differentiated because it examines the price and volatility impact associated with decisions by firms who have determined extenuating circumstances, and *voluntarily* suspended trading in their shares (which are subsequently re-listed). Voluntary suspensions may give rise to different price reactions because of the different signal associated with managerial intervention, rather than exchange-initiated intervention. The paper investigates the price behaviour surrounding voluntary suspensions on the London Stock Exchange (LSE) using a sample drawn from 1987 to 1992.

The paper’s significant other contribution is to examine the confounding impact of media coverage, to determine if media coverage in the major financial newspapers provides some explanation of the price reactions. Media information, both quality and quantity, is modelled as one part of an information set that includes past public information and private information search.

Briefly, the results reveal that in the pre-suspension period the quantity of news is positively associated with the positive spikes in unexpected prices. Hence, when media news occurs, in the absence of other potential information sources, it appears there is a degree of associated price ‘hype’ consistent with ‘follow-the-leader’ pricing behaviour. Subsequent to relisting and after the benefit of a suspension period, the focus of the impact of media coverage switches from quantity to a more qualitative and informative role. Other evidence shows that firms connected with takeover activity have lower price volatility, that the length of the suspension period is not a significant factor, and media coverage does not increase the heterogeneity of investor’s beliefs. Overall the results suggest that incremental media information has a substantial affect on the way investors view prices.

The remainder of the paper is structured as follows. The previous research is reviewed in section two. In section three, the data and method are described, and the empirical results are presented and discussed in section four. The paper is concluded in section five.
2. PRIOR RESEARCH

Apart from ‘natural’ suspensions in trading such as end of day, holiday and lunch-time closures, trading suspensions in individual stocks can be initiated by either the firm or the exchange. Exchange initiated trading halts have been the subject of several studies. Kryzanowski (1978), using Canadian data, cited four conclusions: (i) a group of market participants had monopolistic access to new information; (ii) the market was not efficient in the semi-strong form; (iii) strategies which deliberately disseminated and then exploited 'misinformation' were profitable; and, (iv) the test results were robust to different estimates of return construction. Howe and Schlarbaum (1986) analysed suspensions initiated by the Securities and Exchange Commission (SEC) in the USA and reported significant price declines after the suspension period and noted that the market appears to be slow in reacting to unfavourable information released during a trading suspension.

Lee et al. (1994) determined that absolute price adjustments, quote revisions, high-low price spreads and trading volume were higher up to three days after a trading suspension. Further, they also observed a link between news coverage and market activity with increased media information appearing to increase the heterogeneity of traders’ beliefs. Kabir (1994) studied exchange imposed suspensions on the London Stock Exchange and observed significant abnormal price residuals two months before suspension, a continuing (and significant) upward trend in the month after relisting, with price reversion afterwards. Kabir surmised that there was some doubt about the wide dissemination of information during the trading halt and the information impact (and price adjustment) takes place gradually. In summary, the research is consistent with abnormal price and volume reactions before and after trading suspensions. The typical price reaction involves a run-up increase before suspension which is most likely attributable to information effects, with a slow decay in prices after relisting.

Firm-initiated suspensions have received less attention. While some of these suspensions may be a result of pressure exerted by the exchange, nevertheless the decision to suspend trading rests with the firm itself. The motivation for firm-initiated suspensions presumably lies with management wishing to reduce speculative volatility in the share price. This implies an information effect.
The potential for media news to modify or accentuate fundamental information has also previously been given little attention in the literature. Yet information about trading suspensions is typically disseminated by media coverage in the financial press. Announcements are initially made by the exchange but reported more generally through the financial media. There are several competing schools of thought as to the likely impact of media news on financial asset prices.

Lee et al. (1994) have argued that increased media coverage draws additional traders into the market, increasing the dispersion of beliefs, leading to higher trading volume and volatility in the post-suspension period. Further, the media coverage provides the major current information focus to attract the additional traders and has a destabilising impact.\(^1\) Additionally, even if the news event has already been reported elsewhere, subsequent media coverage induces an incremental impact over and above prior public information announcements (Stice, 1991). This 'media impact' hypothesis relies on an implicit model concerning differences of opinion, whereby price and volume reactions are an increasing function of the dispersion of beliefs. Empirical analysis by Lee et al. (1994) showed a relationship between post-suspension trading activity and total news coverage, with no-news trading halts having lower post-suspension trading volume and lower price variance compared to those suspensions that received media coverage.

Other models argue that media coverage induces herding behaviour, or homogeneity of action behaviour. Traders react to each other with heightened attention and emotion, eventually falling back on intuitive models of price discovery. More specifically, traders tend to overweight and focus on recent information (De Bondt and Thaler, 1989; Pettengill and Jordan, 1990; Froot et al. 1992). In the presence of a continuous supply of naive or uninformed traders (Kaldor, 1939), the effect is exacerbated. Further, media coverage is typically a raw (not qualitative) element of the information set. A logical extension to these arguments is that trading suspensions allow a more rational assessment of all information in a removed and impassive environment. Hence, greater price stability is expected than would otherwise be the case.

\(^1\) In contrast to the argument that suspensions lower volatility and allow information to be disseminated in an orderly and rational manner.
The prominence or salience of the news report has also been claimed as an important element. Andreassen (1990) and Andreassen and Kraus (1990) have argued that forecasts of stock prices vary as a function of the relative salience of recent observations, and this relative salience is affected by news reports. Following this argument, Klibanoff et al. (1998) hypothesised that individual investors assign more importance to prominent news compared to less prominent news. Klibanoff et al. proposed that ‘salience of news’ is measurable by reference to the coverage of a major news event such as the front page of a major newspaper (eg. *New York Times*), and this is correlated with the degree of reaction in prices. The evidence in Klibanoff et al. shows that the short-run elasticity of prices to fundamentals is faster following the release of salient media news. In other words, salient media coverage aids the movement of prices closer to fundamentals.

A research question related to this issue is whether media coverage adds to the quality of the overall public information set. In summary, there are two competing arguments. First, media news that leads to a higher quality information set should aid prices to more quickly revert back to fundamentals. Alternatively, media attention that contributes to information overload or provides low quality coverage might create additional uncertainty or provide the impetus for follow-the-leader type pricing behaviour. An advantage of investigating this issue in trading suspensions is that the suspension provides a very clear break to separate the media coverage into a pre- and post-event period.

Our research first examines the issue of whether the different trading structures and information dissemination associated with voluntary trading suspensions differs in the impact it has on prices compared to the existing literature that has dealt with exchange and regulatory initiated suspensions. Then, following the above discussion, the paper investigates the impact of media coverage on the price reaction.
3. DATA

3.1 Sample Collection

The sample was constructed from information in the *Quality of Markets Review*. This publication details all securities that have been suspended on the LSE over each quarter. The sample period spans six years of April 1987 through July 1992. Over the sample period, the relevant regulations (now superseded) were proscribed in the *Financial Services Act 1986*, which provided for the temporary suspension of companies listed on the LSE. Suspensions could, and can, occur at either the request of the company or by direction of the exchange.

The date of suspension, date of reinstatement, the Financial Times Actuaries Index sector code for each company, the type of securities suspended and a reason for suspension were collected for each suspension. In order for a suspension to be included in the sample, it had to satisfy several filters. First, the suspension had to be voluntary and requested by the company. Second, the stock had to be traded on the main market, as opposed to the unlisted securities market. Third, the suspension period had to be for at least one day. Finally, share price data was required for 500 trading days (or two calendar years) either side of the suspension to enable calculation of the return metrics and to maintain comparability with similar studies (Kryzanowski, 1978; Howe and Schlarbaum, 1986). From the initial sample of all suspensions, a filtered sample of 43 suspensions resulted representing 41 different firms.2

We note a number of characteristics associated with the sample. First, the suspensions all relate to takeovers, restructuring initiatives or news that would generally be seen as positive news. This natural grouping mitigates problems associated with suspensions being driven by both good and bad news, which would otherwise induce price reactions of opposite sign such that the aggregated portfolio would tend to wash out opposing effects. To some extent, this result is not surprising given that the suspensions are voluntary and prior research has documented the reticence of management to voluntarily disclose bad news, other than in a 'big-bath' position. Second, the selection procedure deliberately introduces a survivorship bias. Recall

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2 In the case of two firms they were each suspended twice over the sample period. In both cases there was at least two years between the suspension dates. The results are unaffected by the exclusion of these two firms.
the requirement that firms must survive for at least two years following relisting. The purpose of this requirement is to restrict the sample to firms which are known to be successful in the long-run and which voluntarily suspended trading activities. Firms with short-term prospects are more likely to engage in price manipulation strategies. The survivorship requirement reduces the possibility that the observed price reaction is attributable to mis-information or manipulation as survivors must be conscious of reputational effects (Kryzanowski, 1978, 1979).

3.2 Calculation of Abnormal Returns

The paper initially employs the standard event study method whereby abnormal returns are estimated and analysed around the suspension event. The event date (t=0) is defined as the date of delisting through the suspension. The market model is used to estimate expected returns using an estimation period of 180 trading days prior to suspension. The event window is taken as the 41 trading day period comprising 20 days either side of the suspension. Abnormal returns for each stock over each day of the event window are calculated as follows:

$$AR_{it} = R_{it} - \alpha_i - \beta_i^{SW} R_{mt}$$

with $R_{mt}$ denoting the closing market return on each day $t$, and $\alpha_i$ and $\beta_i^{SW}$ estimated by OLS using the Scholes-Williams method to adjust for the effects of thin trading, viz:

$$\beta_i^{SW} = \frac{\beta_i^{-1} + \beta_i^0 + \beta_i^{+1}}{1 + 2\rho_m}$$

where $\beta_i^{-1}$, $\beta_i^0$ and $\beta_i^{+1}$ are estimated by OLS and $\rho_m$ denotes the estimate of the first-order serial correlation coefficient for the market index.

For each firm, a geometric summed abnormal return series ($API_i$) over the event period $T$ is obtained by:

$$API_i = \prod_{t=1}^{T} [1 + AR_{it}] - 1$$

---

3 The period of 180 days is selected following Bruner (1999). The market model parameter estimates are generally insensitive to a longer estimation period.
The individual summed series are then averaged across the stocks thereby yielding an abnormal performance index (API) on the portfolio of stocks over the event period T. The statistical significance of the series is assessed by standard t-statistics.4

Finally, two API series were constructed using different coefficients estimates obtained through varying the method of beta estimation.5 Noting that the estimation methods provided similar results, only the results obtained from the Scholes-Williams estimates are reported.

4. RESULTS

4.1 Descriptive Statistics

Figure 1 plots the API across the portfolio of suspensions and table 1 reports the average abnormal returns for each day in the event window.

The abnormal returns reveal mixed signals. Focussing on the period close to the suspension, the abnormal return is generally positive from around a week before the suspension, with a significant positive spike at day (t-3). Immediately prior to the suspension, there is a significant negative spike at day (t-1) which may reflect the anticipated loss of liquidity. This downturn immediately prior to suspension is consistent with the results from prior studies that have considered exchange-initiated suspensions. After relisting, the abnormal returns are relatively large and positive for the first two days and significant at day (t+2). The abnormal returns then turn negative, are significant at day (t+6), and generally remain around zero for the remainder of the event window. Figure 1 shows a positive trend leading up to the suspension. The positive spike directly after relisting is obvious in figure 1. However, the reversal is apparent from day (t+3).6 These results are broadly consistent with those observed in exchange-initiated suspensions (Kryzanowski 1978, 1979; Howe and Schlarbaum 1986).

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4 The calculation of the t-values follows Bruner (1999) and adjusts for autocovariance in returns.
5 Standard OLS beta values are calculated in addition to Scholes-Williams adjusted betas.
6 The analysis was repeated with the removal of nine suspensions that could be regarded as outliers. These observations were identified as the most extreme cumulative abnormal returns measured at three days after relisting. There was little difference between the reduced sample results and those reported in the text.
A more relevant comparison is Kabir (1994) who examines UK stock exchange imposed suspensions, as opposed to the UK voluntary suspensions examined here. Kabir shows post-suspension abnormal returns which are positive for up to one month after relisting. Whilst the abnormal returns from voluntary suspensions have a similar pattern (as in figure 1), they revert to a more stable pattern in a much shorter length of time. This could be related to voluntary suspensions being associated with the release of more relevant information of higher quality during the suspension period. These issues are examined further in the next section.

**Figure 1**

**Abnormal Performance Index Over the Suspension Period**

The abnormal performance index is calculated from abnormal returns based on the market model with Scholes-Williams betas using daily returns over a 180 trading day period prior to the event window. The date of suspension is given as t=0. Event time is measured in days. The sample is based on a sample of 43 suspensions on the LSE over the period April 1987 to July 1992.
Table 1
Daily Average Abnormal Returns Over the Pre- and Post-Suspension Periods

The average abnormal returns are calculated from the market model using daily returns with Scholes-Williams betas over a 180 trading day period prior to the event window. The date of suspension is given as t=0. Event time is measured in days. The sample is based on a sample of 43 suspensions on the LSE over the period April 1987 to July 1992. * denotes significance at 5%.

<table>
<thead>
<tr>
<th>Event Time</th>
<th>Average AR</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>-0.0025</td>
<td>-0.53</td>
</tr>
<tr>
<td>-19</td>
<td>-0.0032</td>
<td>-0.67</td>
</tr>
<tr>
<td>-18</td>
<td>0.0027</td>
<td>0.56</td>
</tr>
<tr>
<td>-17</td>
<td>0.0094</td>
<td>11.97*</td>
</tr>
<tr>
<td>-16</td>
<td>-0.0017</td>
<td>-0.36</td>
</tr>
<tr>
<td>-15</td>
<td>0.0050</td>
<td>1.06</td>
</tr>
<tr>
<td>-14</td>
<td>-0.0023</td>
<td>-0.48</td>
</tr>
<tr>
<td>-13</td>
<td>0.0064</td>
<td>1.34</td>
</tr>
<tr>
<td>-12</td>
<td>-0.0027</td>
<td>-0.58</td>
</tr>
<tr>
<td>-11</td>
<td>-0.0009</td>
<td>-0.20</td>
</tr>
<tr>
<td>-10</td>
<td>0.0057</td>
<td>1.21</td>
</tr>
<tr>
<td>-9</td>
<td>-0.0059</td>
<td>-1.23</td>
</tr>
<tr>
<td>-8</td>
<td>-0.0007</td>
<td>-0.15</td>
</tr>
<tr>
<td>-7</td>
<td>-0.0033</td>
<td>-0.69</td>
</tr>
<tr>
<td>-6</td>
<td>0.0066</td>
<td>1.39</td>
</tr>
<tr>
<td>-5</td>
<td>0.0028</td>
<td>0.58</td>
</tr>
<tr>
<td>-4</td>
<td>-0.0001</td>
<td>-0.01</td>
</tr>
<tr>
<td>-3</td>
<td>0.0094</td>
<td>1.97*</td>
</tr>
<tr>
<td>-2</td>
<td>0.0067</td>
<td>1.41</td>
</tr>
<tr>
<td>-1</td>
<td>-0.0117</td>
<td>-2.45*</td>
</tr>
<tr>
<td>0</td>
<td>0.0000</td>
<td>0.00</td>
</tr>
<tr>
<td>1</td>
<td>0.0074</td>
<td>1.55</td>
</tr>
<tr>
<td>2</td>
<td>0.0109</td>
<td>2.28*</td>
</tr>
<tr>
<td>3</td>
<td>-0.0034</td>
<td>-0.72</td>
</tr>
<tr>
<td>4</td>
<td>-0.0029</td>
<td>-0.62</td>
</tr>
<tr>
<td>5</td>
<td>-0.0023</td>
<td>-0.47</td>
</tr>
<tr>
<td>6</td>
<td>-0.0111</td>
<td>-2.32*</td>
</tr>
<tr>
<td>7</td>
<td>-0.0048</td>
<td>-1.00</td>
</tr>
<tr>
<td>8</td>
<td>-0.0040</td>
<td>-0.83</td>
</tr>
<tr>
<td>9</td>
<td>-0.0069</td>
<td>-1.44</td>
</tr>
<tr>
<td>10</td>
<td>-0.0035</td>
<td>-0.74</td>
</tr>
<tr>
<td>11</td>
<td>0.0009</td>
<td>0.20</td>
</tr>
<tr>
<td>12</td>
<td>0.0001</td>
<td>0.01</td>
</tr>
<tr>
<td>13</td>
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<td>-0.05</td>
</tr>
<tr>
<td>14</td>
<td>0.0006</td>
<td>0.13</td>
</tr>
<tr>
<td>15</td>
<td>-0.0026</td>
<td>-0.54</td>
</tr>
<tr>
<td>16</td>
<td>0.00134</td>
<td>0.28</td>
</tr>
<tr>
<td>17</td>
<td>-0.0018</td>
<td>-0.37</td>
</tr>
<tr>
<td>18</td>
<td>0.0013</td>
<td>0.26</td>
</tr>
<tr>
<td>19</td>
<td>0.0011</td>
<td>0.23</td>
</tr>
<tr>
<td>20</td>
<td>0.0051</td>
<td>1.08</td>
</tr>
</tbody>
</table>
4.2 The Impact of Media Coverage

In this section the relationship is investigated between abnormal returns and the volatility of abnormal returns, media variables, the length of suspension period and takeover activity. The analysis is split into two sub-periods, namely the pre-suspension period and the post-suspension period, each of twenty trading days duration.

Media coverage is difficult to define. It is likely that a broad range of media are considered by investors, including the press, radio, television, magazines and the internet. In this paper, media coverage is restricted to the financial press. While this definition is potentially limiting, it focuses on the information source that was generally accepted as the key outlet for financial news over the sample period. Whilst noting this limitation, we also note that any limitation from this approach will bias against finding a significant result.

The major UK financial papers were examined around the dates of each suspension period for relevant articles. The length of the period under examination is dependent on the length of suspension. However, in all cases it included seven calendar days prior to the suspension date, the suspension period and seven calendar days after relisting. The news report was obliged to be qualitatively substantive, specifically related to the factors surrounding the suspension event, and to be quantitatively greater in size than half an A4 page (per Guthrie and Parker, 1989; Klibanoff et al. 1998).

Media news is measured in two ways: (i) by the number of articles, and (ii) by the average lines per article. The number of articles is selected as a proxy for the quantity of media exposure to capture the prominence and relative degree of media coverage. The average number of lines per article is chosen as a proxy for the quality of media exposure, with the assumption that the longer the article, the more relevant is the information contained within. In other words, we extend the definition of ‘salience of news’, by arguing that salience can be split into an ‘impact’ or quantity component

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7 Over the sample period, the internet was only in a development stage and it is unlikely to have been used as a major source of market information. Further, information on radio and television coverage was not available.
and a ‘quality’ component. The average number of articles per suspension was 22.9 and the average number of lines per article was 50.1.\(^8\)

Table 2 reports the correlation matrix between the number of articles and the average lines per article. The table reports the correlations for the two news variables in the pre-suspension period, the relisting period and across the total period. Note that the correlation is not high giving support for the contention that the number of articles and lines per article are proxies for different information factors.

### Table 2

**Correlation Matrix for the Media News Proxies**

The media news proxies are estimated as (i) quantity of news which is the number of articles appearing in the print media (No. of articles); and (ii) quality of news which is the average number of lines per article (Ave lines). The period of media coverage incorporates seven calendar days prior to the suspension date, the length of the suspension period and seven calendar days after relisting. The table reports on total figures over the suspension period and the pre-suspension and post-suspension periods (Total); figures over the seven calendar days prior to the suspension date (Pre); and figures over the length of the suspension period and seven calendar days after relisting (Post).

<table>
<thead>
<tr>
<th>Media News Variables</th>
<th>Ave. lines - Total</th>
<th>Ave. lines - Pre</th>
<th>Ave. lines - Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of articles - Total</td>
<td>0.4054</td>
<td>0.3493</td>
<td>0.1392</td>
</tr>
<tr>
<td>No. of articles - Pre</td>
<td>0.3178</td>
<td>0.2518</td>
<td>0.1044</td>
</tr>
<tr>
<td>No. of articles - Post</td>
<td>0.4378</td>
<td>0.4339</td>
<td>0.1626</td>
</tr>
</tbody>
</table>

4.2.1 *The Impact of Media Coverage on Returns*

The first analysis is to estimate the impact of media coverage on the abnormal returns in the period prior to suspension. This is done by estimating the following regression model over the 20-day event window before voluntary suspension:

\[
API_{i,pre} = \alpha + \beta (QANTM_{i,pre}) + \delta (QUALM_{i,pre}) + \gamma (TAKEOVER_{i}) + \epsilon_i \quad (4)
\]

Where \(API_{i,pre}\) are pre-suspension geometric summed abnormal returns estimated over the 20-day period immediately prior to the suspension date; \(QANTM_{i,pre}\) is the proxy for the quantity of public information measured as number of media articles

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\(^8\) When the sample was decomposed into takeover and non-takeover subsets, takeover firms had a higher proportion of news coverage before suspension (35.7 articles) compared to the period after relisting (10.8 articles).
appearing seven calendar days immediately prior to the suspension date; \( \text{QUALM}_{i,\text{pre}} \) is the proxy for the quality of public information measured as average number of lines per article appearing seven calendar days immediately prior to the suspension date; and \( \text{TAKEOVER}_i \) is a bivariate zero-one dummy variable which assigns one for firms involved in takeover or merger activities and zero otherwise.

In (4), the main test is whether either the quantity or quality of news is related to the abnormal returns leading up to the suspension date. The target control premium and significant return behaviour leading up to a takeover are well known features. Hence, the takeover dummy in (4) is included to assess if the information set provided by the takeover activity of traders may be quantitatively and qualitatively different from non-takeover events. The results of estimating equation (4) are reported in table 3.

Table 3

The Impact of Media Coverage on Abnormal Returns in the Pre-Suspension Period

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Estimate</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \alpha )</td>
<td>-0.00194</td>
<td>-0.03</td>
<td>0.9767</td>
</tr>
<tr>
<td>( \beta )</td>
<td>0.00172</td>
<td>4.20*</td>
<td>0.0001</td>
</tr>
<tr>
<td>( \delta )</td>
<td>-0.00013</td>
<td>-0.10</td>
<td>0.9201</td>
</tr>
<tr>
<td>( \gamma )</td>
<td>-0.01466</td>
<td>-0.27</td>
<td>0.7923</td>
</tr>
</tbody>
</table>

From table 3 we observe that in the run-up period prior to voluntary suspension the number of media articles has a significant positive association with the abnormal returns, whilst the average number of lines is not significant. Hence, using the earlier classification scheme, the quantity of news is found to be relevant whereas the quality is not. The results support the relative degree of coverage, or prominence, of media
attention before suspension is relevant. In turn, this may induce behaviour that manifests itself in abnormal returns. Such behaviour could influence prices away from fundamentals. These results are consistent with follow-the-leader type pricing (De Bondt and Thaler, 1989; Pettengill and Jordon, 1990), in which the amount of media coverage is a current important focus of traders when setting prices (Lee et al. 1994). Conversely, it could be argued that the positive abnormal returns themselves induce media attention.

The dummy coefficient on takeover activity is not significant. This does not mean that the advent of a takeover per se is not related to abnormal returns, but rather the information content of the event may be captured through the public information news variables. This latter finding is similar to those of prior studies that have investigated the influence of media news on price run-ups observed in takeover announcements (eg. Aitken and Czernkowski, 1989; Holland and Hodgkinson, 1994).

The next step in the analysis concerns an examination of the impact of media coverage in the period immediately after relisting through the following model:

\[ API_{i, post} = \alpha + \phi(API_{i, pre}) + \beta(QANTM_{i, post}) + \delta(QUALM_{i, post}) + \psi(LENGTH_{i}) + \gamma(TAKEOVER_{i}) + \epsilon_i \] (5)

Where \( API_{i, post} \) are geometric summed abnormal returns estimated over the 20-day period immediately following relisting; \( API_{i, pre} \) and \( TAKEOVER_{i} \) are as previously defined in (4); \( QANTM_{i, post} \) is the proxy for the quantity of public information measured as number of media articles appearing during the suspension period and seven calendar days immediately after relisting; \( QUALM_{i, post} \) is the proxy for the quality of public information measured as average number of lines per article appearing during the suspension period and seven calendar days after the relisting date; \( LENGTH_{i} \) is a zero-one dummy variable for the length of suspension with the value of one assigned if the duration of the suspension exceeds the sample median period of suspension (7 calendar days) and zero otherwise.

Equation (5) incorporates the impact of a number of various information sources. First, the variable \( API_{i, pre} \) represents all information (both public and private) incorporated in the pre-suspension period. The inclusion of this variable is essentially as a control so that the impact of media news on the post-suspension abnormal returns
can be examined after controlling for any prior news. Second, the length of the voluntary suspension period is likely to be related to private information. During the suspension period, there is no trading by definition. However, this period represents a time when investors are able to engage in their own private information search. The longer the suspension period, the higher the probability of private information search and the associated discovery of information perceived to be of value. Third, the dummy variable for takeover activity again controls for differences in the information between takeover and non-takeover events. Thus, after these controls, the main focus is again on the two proxies for public information, quantity and quality, that arrives in the form of media coverage.

Table 4

The Impact of Media Coverage on Abnormal Returns in the Relisting Period

The table reports the results from the following regression:

$$API_{i,\text{post}} = \alpha + \phi API_{i,\text{pre}} + \beta (QANTM_{i,\text{post}}) + \delta (QUALM_{i,\text{post}}) + \psi (\text{LENGTH}_i) + \gamma (\text{TAKEOVER}_i) + \epsilon_i$$

Where $API_{i,\text{post}}$ are the geometric summed abnormal returns estimated over the 20-day period immediately following relisting; $API_{i,\text{pre}}$ are geometric summed abnormal returns estimated over the 20-day period immediately prior to the suspension date; $QANTM_{i,\text{post}}$ is the proxy for the quantity of public information measured as number of media articles appearing during the suspension period and seven calendar days immediately after relisting; $QUALM_{i,\text{post}}$ is the proxy for the quality of public information measured as average number of lines per article appearing during the suspension period and seven calendar days after the relisting date; $\text{LENGTH}_i$ is a bivariate zero-one dummy variable for the length of the suspension period with the value of one assigned if the duration of the suspension exceeds the sample median period of suspension (7 calendar days) and zero otherwise; and $\text{TAKEOVER}_i$ is a bivariate zero-one dummy variable which assigns one for firms involved in takeover or merger activities and zero otherwise. The sample is based on a sample of 43 suspensions on the LSE over the period April 1987 to July 1992. White's heteroskedastic-consistent standard errors and covariance are used. * denotes significance at 5%.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Estimate</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha$</td>
<td>0.04983</td>
<td>0.77</td>
<td>0.4440</td>
</tr>
<tr>
<td>$\phi$</td>
<td>0.24563</td>
<td>1.71</td>
<td>0.0950</td>
</tr>
<tr>
<td>$\beta$</td>
<td>-0.00006</td>
<td>-0.02</td>
<td>0.9841</td>
</tr>
<tr>
<td>$\delta$</td>
<td>-0.00124</td>
<td>-2.05*</td>
<td>0.0477</td>
</tr>
<tr>
<td>$\psi$</td>
<td>-0.01985</td>
<td>-0.31</td>
<td>0.7586</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>0.08487</td>
<td>1.35</td>
<td>0.1849</td>
</tr>
</tbody>
</table>

The main interest in table 4 is the two proxies for media coverage. The coefficient on the proxy for media quality ($\delta$) is now significant and negative whilst the coefficient on media quantity ($\beta$) is not significant. These results are the reverse of the presuspension period (as in table 3). We interpret this as evidence that the focus of attention has changed over the suspension period. Prior to the suspension, the quantity of news appeared to be relevant through an arguable homogenous set of
expectations resulting in follow-the-leader type behaviour. After relisting, it is the quality of news that influences the abnormal returns. This change may have been brought about by the calming influence provided by the suspension period (Greenwald and Stein, 1991), allowing investors to more rationally assess the prior information and return to an equilibrium level of pricing. Hence, one argument that follows is that the time provided by the suspension allows media news to be dissected for its quality which in turn is associated with price reversion back to fundamentals.

Another explanation could be that the price reversal effect has been bought about by the private information search of traders during the suspension period. However, the coefficient on the dummy variable that captures the length of suspension is not significant. Recall that this variable is likely to be related to private information search. It appears that any value obtained from private information search over the suspension period is subsumed by the quality of information provided by the media over the same period. None of the other control variables are significant except noting that the sign of the coefficient estimate ($\phi$) on the pre-suspension abnormal returns is positive and weakly significant. This finding is mildly supportive of a consistent reaction before and after the suspension.

4.2.2 The Impact of Media Coverage on Volatility
This section examines the impact of media coverage on volatility. The previous section concentrated on returns in which it was argued that the observed return behaviour was influenced by the degree of divergence in investor beliefs that in turn was related to media coverage. Volatility can be viewed as a proxy for the heterogeneity of investors’ beliefs. If media coverage increases the dispersion of beliefs then the volatility of returns will increase. Conversely, if media coverage creates a convergence of beliefs then the volatility of returns will diminish. This section examines these issues.

The standard deviation of abnormal returns is utilised as the volatility measure, and therefore implicitly the proxy for the dispersion of beliefs. This variable is calculated for both the 20-day pre-suspension period and the 20-day relisting period. Equation (6) shows the regression for the pre-suspension period using the same variables as the
The analysis of returns, except for the dependent variable which is now volatility. The results from estimating (6) are presented in table 5.

\[
\text{VOLTY}_{i,\text{pre}} = \alpha + \beta (\text{QANTM}_{i,\text{pre}}) + \delta (\text{QUALM}_{i,\text{pre}}) + \gamma (\text{TAKEOVER}) + \varepsilon_i \quad (6)
\]

where VOLTY_{i,pre} is the standard deviation of abnormal returns estimated over the 20-day period immediately prior to the suspension date; all other variables are as previously defined.

### Table 5

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Estimate</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha$</td>
<td>0.02165</td>
<td>3.33*</td>
<td>0.002</td>
</tr>
<tr>
<td>$\beta$</td>
<td>0.00002</td>
<td>0.19</td>
<td>0.853</td>
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<tr>
<td>$\delta$</td>
<td>0.00012</td>
<td>0.66</td>
<td>0.513</td>
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<tr>
<td>$\gamma$</td>
<td>-0.01561</td>
<td>-2.95*</td>
<td>0.005</td>
</tr>
</tbody>
</table>

From table 5, neither of the coefficients on the media coverage variables are significantly different from zero in the pre-suspension period. These results indicate that volatility of the abnormal returns is not associated with media coverage. One interpretation is that the increased media coverage in this period is not associated with a divergence in beliefs. But similarly, there is little evidence that volatility is reduced as a result of the media coverage. Taken together with the results in table 3, if media attention results in a temporary shift in the return series (and hence the price level), then it is not associated with a concurrent increase in volatility. However, some further insight can be gleaned through the variable that proxies for takeover activity. The coefficient is significant and negative on the takeover dummy variable. This finding implies that the volatility for firms associated with takeover activity is lower than the volatility of firms not engaged in takeover activity. In other words, the
event of a takeover reduces the divergence of beliefs and lowers volatility. Intuitively, investors have a reasonable homogeneity of beliefs as to the price effect of takeovers. To this extent, it is the news itself, rather than the quantity or quality that impacts on volatility.

The final stage of the analysis concerns volatility in the relisting period. The regression model follows the earlier analysis and takes the following form:

\[
\text{VOLTY}_{i,\text{post}} = \alpha + \phi(\text{VOLTY}_{i,\text{pre}}) + \beta(\text{QANTM}_{i,\text{post}}) + \delta(\text{QUALM}_{i,\text{post}}) + \psi(\text{LENGTH}) + \gamma(\text{TAKEOVER}) + \epsilon_i \tag{7}
\]

Where \(\text{VOLTY}_{i,\text{post}}\) is the standard deviation of abnormal returns estimated over the 20-day period immediately following relisting; \(\text{VOLTY}_{i,\text{pre}}\) is the standard deviation of cumulative abnormal returns estimated over the 20-day period immediately prior to the suspension date; all other variables are as previously defined.

**Table 6**
The Impact of Media Coverage on Volatility in the Relisting Period

The table reports the results from the following regression:

\[
\text{VOLTY}_{i,\text{post}} = \alpha + \phi(\text{VOLTY}_{i,\text{pre}}) + \beta(\text{QANTM}_{i,\text{post}}) + \delta(\text{QUALM}_{i,\text{post}}) + \psi(\text{LENGTH}) + \gamma(\text{TAKEOVER}) + \epsilon_i
\]

Where \(\text{VOLTY}_{i,\text{post}}\) is the standard deviation of abnormal returns estimated over the 20-day period immediately following relisting; \(\text{VOLTY}_{i,\text{pre}}\) is the standard deviation of cumulative abnormal returns estimated over the 20-day period immediately prior to the suspension date; \(\text{QANTM}_{i,\text{post}}\) is the proxy for the quantity of public information measured as number of media articles appearing during the suspension period and seven calendar days immediately after relisting; \(\text{QUALM}_{i,\text{post}}\) is the proxy for the quality of public information measured as average number of lines per article appearing during the suspension period and seven calendar days after the relisting date; \(\text{LENGTH}\) is a bivariate zero-one dummy variable for the length of the suspension period with the value of one assigned if the duration of the suspension exceeds the sample median period of suspension (7 calendar days) and zero otherwise; and \(\text{TAKEOVER}\) is a bivariate zero-one dummy variable which assigns one for firms involved in takeover or merger activities and zero otherwise. The sample is based on a sample of 43 suspensions on the LSE over the period April 1987 to July 1992. White's heteroskedastic-consistent standard errors and covariance are used. * denotes significance at 5%.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Estimate</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\alpha)</td>
<td>0.01655</td>
<td>2.54*</td>
<td>0.016</td>
</tr>
<tr>
<td>(\phi)</td>
<td>0.39980</td>
<td>2.10*</td>
<td>0.042</td>
</tr>
<tr>
<td>(\beta)</td>
<td>0.00005</td>
<td>0.19</td>
<td>0.847</td>
</tr>
<tr>
<td>(\delta)</td>
<td>-0.00002</td>
<td>-0.64</td>
<td>0.526</td>
</tr>
<tr>
<td>(\psi)</td>
<td>0.01034</td>
<td>1.58</td>
<td>0.122</td>
</tr>
<tr>
<td>(\gamma)</td>
<td>-0.00357</td>
<td>-0.73</td>
<td>0.468</td>
</tr>
</tbody>
</table>

Similar to the pre-suspension period, in the relisting period none of the coefficients on the media variables are significant. That is, media coverage is not related to
volatility in either period. The only coefficient that is significant is the volatility in the pre-suspension period which adds weight to the proposition that the volatility of prices in either period is not associated with media coverage. The positive relationship between volatility across the two periods is consistent with the view that uncertainty continues across the suspension period. Finally, the coefficient on the length of suspension is positive but is not significant at conventional levels. One argument for suspending trading is to allow time for the market to settle down and to fully absorb all relevant information. Therefore one would expect a negative coefficient on suspension length. A caveat on this argument is that there may be an optimum suspension period, whereby uncertainty first decreases but then increases as the suspension length increases due to speculation arising as to whether the firm can resolve the issue.

5. CONCLUSION

This paper represents an initial study of voluntary suspensions and relistings on the LSE, and the impact of media coverage. Prior research has concentrated on exchange-initiated suspensions. The analysis first determines that voluntary suspensions produce a pattern in abnormal returns that are very similar to the exchange-initiated suspensions observed elsewhere. The results show an upward trend in the abnormal performance index in the lead-up to the suspension with a significant negative abnormal return observed on the day immediately prior to the suspension date. Following relisting, a subsequent positive spike is observed immediately thereafter but the trend beyond the first two days reverses the pre-suspension return movement. A notable difference between these findings and exchange-initiated suspensions is that the relisting reversal occurs over a shorter time period.

The paper documents that the abnormal returns around suspensions are significantly associated with media coverage. Specifically, the results show the role that media coverage, in the form of quantity and quality of news, may play in the pricing process. In the pre-suspension period the quantity of news is positively associated with the abnormal return series. Hence, when media news occurs in the absence of other potential information sources, it appears there is a degree of associated price ‘hype’, consistent with a ‘follow-the-leader’ type behaviour. Subsequent to relisting, it appears the focus of the impact of media coverage switches from quantity to a more
qualitative mode. The suspension period appears to allow investors to more rationally assess the prior information and return to an equilibrium level of pricing. The suspension allows news to be dissected for its quality and relationship with fundamentals. There is an implication in this interpretation for firms that believe that their share price has moved from its fundamental value. That is, trading suspensions may be a possible tool that can be used to influence prices. Other findings show that firms associated with takeover activity have lower price volatility, that the length of the suspension period is not a significant factor, and media coverage does not increase the heterogeneity of investor’s beliefs (as measured by volatility).

Do investors ‘overreact’ to salient news in the form of significant media coverage by financial newspapers? Given the limited nature of this research, it is difficult to generalise, but the results suggest that incremental media information may have some impact on prices. However, the influence of media news switches from a quantitative to a more qualitative influence after a period of trading suspension. This observation may be, and probably is, related to the impact of unobservable private information generated over the suspension period.
REFERENCES


