

**To comply or not to comply: Evidence on changes and
factors associated with the changes in compliance with the
UK code of corporate governance**

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30 November 2006

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Acknowledgement: I would like to thank my PhD advisor Dr. Carol Padgett, ICMA Centre, University of Reading, for all her invaluable guidance in this work, which is based on a part of my PhD research at the ICMA Centre, University of Reading, UK.

To comply or not to comply: Evidence on changes and factors associated with the changes in compliance with the UK code of corporate governance

1.0 Introduction

In an earlier paper (see Shabbir and Padgett, 2005), we investigate the link between an index of non-compliance (hence forth called the Index), with the UK code of corporate governance (hence forth called the Code) and firm performance for a panel of FTSE 350 companies over four years (2000-2003) and find greater non-compliance to lead to lower total shareholder returns in our sample of firms. In this paper I delve deeper into the compliance practices of the same panel of firms over time, examining the changes in the Index and then explore the factors associated with these changes. As the Index developed relates specifically to non-compliance with the Code's recommendations with respect to the board's structure and composition, any change in the value of the Index for a firm would reflect changes in the board¹.

Although full details related to the rationale and construction of the Index are available in the above mentioned paper (Shabbir and Padgett, 2005), I reproduce here the actual construction to give the reader some idea of what the Index covers.

“The Index is constructed by assigning one point for each aspect of non-compliance with either the letter or the spirit of the Code. Thus, the board should be chaired by an independent non-executive director (0 if so, 1 if not); the board should consist of one-third non-executives (0 if so, 1 if not), the majority of whom should be independent (0 if so, 1 if not); the board should have a senior independent member other than the chair, to whom concerns can be conveyed, (0 if so, 1 if not); board should have a

¹ For full details on the Index, its development and its components, see Shabbir, A., and Padgett, C., (2005), The UK Code of Corporate Governance: Relationship between Compliance and Firm Performance, ICMA Centre Discussion Paper, DP2005-17, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=934313

remuneration, audit and nomination committee (0 for each, 1 for each added if not present); the committees should be headed by independent non-executives, (0 if so for each, 1 for each if not); the remuneration committee should be composed entirely of independent non-executives (0 if so, 1 if not); the audit committee should be composed of non-executives only, have majority independent non-executives, (0 if so, 1 if not); nomination committee be present (0 if so, 1 if not) and finally, the nomination committee should be chaired by an independent non-executive, who could be the chairman (0 if so, 1 if not). With this scoring system, a firm's index score can vary between 0 and 12, with 0 indicating perfect compliance and 12 indicating complete non-compliance". (Reproduced from Shabbir and Padgett, 2005; p. 9)

2.0 Setting the context

The time period covered in this study, i.e. the beginning of 2000 to end 2003, is a period marked by a high level of takeover activity in the UK market. Table 1 below presents details of the level of mergers/acquisitions by UK firms of other domestic companies for the years 1998-2003.

Table 1: Mergers and Acquisitions in the UK by UK Companies

Period	No. of acquisitions/disposals	Value of acquisitions/disposals (£m)
1998	635	29525
1999	493	26163
2000	587	106916
2001	492	28994
2002	430	25239
2003	558	18679

Source: Office of National Statistics, UK

As the above table indicates, the level of mergers and acquisitions rose more than four-fold in 2000 as compared to the average for the other years in the period. It is important to note that this sharp increase in takeover activity in 2000 coincided with

the decline in the stock market that began at the end of the first quarter of 2000 and lasted up to the end of first quarter of 2003. It appears therefore, that this wave of takeover activity in 2000 could be a response to a fall in stock prices leading to industry wide shocks, which may not have been fully anticipated by the market.

It can be argued that corporate governance, by its very nature, becomes more significant at a time when markets are turbulent than at a time when markets are generally calm and neither the managers nor the stock holders of the firm are particularly concerned about making significant changes in firms' governance structures including compliance with the Code. This time period as such, offers a good context for studying the changes in the compliance by firms and exploring the factors affecting these changes.

The rest of the paper is organized as follows: in section 3, I review the research on corporate boards, section 4 discusses the data and the variables used in the analysis, followed by an analysis of the changes in the Index in section 5, descriptive statistics on all relevant variables are presented in section 6, section 7 presents the correlation matrix for all the variables used in the empirical analysis, which is presented in section 8, section 9 summarises and concludes the paper.

3.0 Research on Corporate Boards

Until quite recently, corporate boards were like a 'black box', with little understanding of how the boards operated or what factors influenced their structure and composition. With the introduction of the code of corporate governance in the UK, the structure of the board has become far more transparent over the years. Companies reporting since 1993 have been required to disclose in their annual statements, full details of their board structure as well as composition, in terms of duality, number of directors, their type, whether executive or non-executive and in the case of latter, their extent of independence.

As more information has become available on corporate boards, it has prompted researchers to undertake research on various aspects of board structure and composition and relate it to corporate performance. Most previous work on corporate

boards, however, has assumed the board structure and composition to being given and then related various aspects of composition and structure to either corporate performance as a whole or to individual corporate decisions. The main focus of the majority of these studies has been to measure the effectiveness of board structure and composition, in improving corporate performance and enhancing shareholder value. (See for example Gillan, et. al. 2003; Bhagat and Black, 1999; Klein, 1998; and Agrawal and Knoeber, 1996, in the US; Vafeas and Theodorou, 1998 and Weir, Laing and Mcknight, 2002 in the UK). Contrary to our recent findings (Shabbir and Padgett, 2005) most of these previous studies find little evidence of the relationship between board structure and firm performance. More recently, Black et.al. (2005) in the Korean context, however do find a positive and significant correlation between the number of non-executive directors on the boards of companies listed on the Korean stock exchange and firm performance, as measured by Tobin's Q.

Relatively little research has investigated how the board structure and composition changes over time, and what factors affect these changes. Among the first studies in the US, to explore the factors leading to changes in board composition is the work of Hermalin and Weisbach (1988), who find that, following poor stock market performance, and/or when firms leave a market and/or when there is a change in the CEO, outsiders are more likely to enter and insiders are more likely to leave the board.

Similar results are also found by Denis and Sarin (1999), who investigate the factors associated with significant changes in ownership and board structures in public corporations in the US over a ten year period (1983-1999) and find that contrary to general belief, significant changes in board and ownership structures are not uncommon. A total of 65% of the sample firms in their study, exhibit either a significant change in ownership structure (exceeding 5%), in the fraction of outsiders on the board (exceeding 20%), or a change in the board size (exceeding 2 members) in any given year. Consistent with the findings of Hermalin and Weisbach (1988) these researchers also find top executive change, corporate control threats and prior stock price performance to be the main factors associated with these changes, which they conclude to be part of the larger process of changes in asset allocation in response to changing business conditions. However, contrary to Hermalin and

Weisbach's (1988) findings, these researchers do not shed much light on the direction of the ownership and board structure changes. Hence, for example, it is not immediately clear from their analysis whether a change in the CEO or poor prior stock market performance would lead to an increase or decrease in the number or fraction of outsiders on the board. This is probably due to the fact that they measure changes in ownership and board structure variables in absolute rather than relative terms.

Given that the period covered in this study (2000 - 2003) also presents a time when the corporate sector in the UK experienced a change in business conditions, the current study takes a view similar to that of Denis and Sarin (1999), and Hermalin Weisbach (1988) in the US. Accordingly, I hypothesize that the factors associated with changes in compliance with respect to board structure and composition in the UK, would be similar to those found by the above mentioned researchers in the US. More specifically, I explore the relation between mergers and acquisitions, reorganizations, and corporate control threats and compliance, all events which are a response to business shocks. Additionally, given that changes in business conditions can also lead to changes in top management, capital structure as well as ownership structure, I explore the association of these factors with compliance. Finally, in line with the prior research findings, I explore the impact of prior operating and stock market performance on compliance with respect to board structure and composition.

4.0 Data and variables

The Index covers the financial years ending 2000 to 2003 for a panel of FTSE 350 industrial companies. Changes in the Index thus relate to changes in compliance with respect to board structure and composition for 2001 over 2000, 2002 over 2001 and 2003 over 2002. Based on the availability of Index values for at least three of the four years of the study for a given firm, changes in the Index are available for 115 companies for 2003 over 2002, 115 for 2002 over 2001 and 107 for 2001 over 2000, making a total of 337 firm-years.

Data on mergers, acquisitions and reorganizations related to companies included in the panel has been collected from FTSE.com document entitled "Notes on the FTSE

Actuaries Share Indices: United Kingdom Series: 2000”, and the same for 2001, and 2002. This document gives information on events leading to changes in the constituents of the FTSE All Share Index series. These events could be mergers, acquisitions, reorganizations, name changes, delisting etc. Two dummy variables are created which take the value 1 for each firm-year, if the firm has undergone a merger/acquisition or a reorganization in any of the years 2000, 2001 and 2002, one year each preceding the year of the change in the Index. Reorganization in the context of this study mainly means de-mergers/asset sales but may also involve other forms of asset restructuring including share buybacks. Given that the firms in the current sample are those for which data on the Index are available for all four years, these firms by design represent the ones that have survived the merger/acquisition, in other words are the acquirers, rather than the acquired firms.

Prior research suggests that periods of high level of merger/acquisition activity are also marked by significant changes in the ownership and capital structure of the firms. I therefore investigate the relation between changes in directors’ shareholdings as well as changes in other block holdings with changes in compliance. Data on significant ownership by both directors as well as external block holders (3% and above) has been collected from the Waterlow Stock Exchange Year books. Change in stock ownership is then simply recorded as the difference in the percentage values for total director and total external block holdings for 2003 over 2002, 2002 over 2001 and 2001 over 2000. Given that there is little prior theoretical or empirical guidance on the relation between mergers/acquisitions, reorganizations and changes in ownership structure and changes in compliance, these relationships are open to exploration.

To study the association of the changes in capital structure as measured by changes in leverage with changes in compliance, I include the change in the debt to asset ratio of the firm over the same period as the change in the Index as an explanatory variable. According to agency theory predictions, leverage can act as a bonding mechanism reducing the need for other forms of monitoring, in this case compliance, suggesting an a priori positive relationship between the two.

The corporate control threat experienced by the firms in an industry can be captured by the probability of takeover faced by the firms in that industry. This variable is

calculated for each year preceding the year of the change in the Index, as a percentage value of the total number of firms within the 2-digit FTSE global classification system that were taken over in a particular year divided by the total number of firms in that 2-digit FTSE global classification system that were a part of the FTSE All Share Index, at the beginning of that year. One would a priori expect a negative relationship between the probability of takeover variable and changes in the Index, assuming that increased threat of takeover would tend to increase compliance, hence a fall in the value of the Index.

Changes in the CEO are also more likely during periods marked by high level of takeover threat, possibly as a defensive measure. This assumption is supported by the significant correlation, not reported here, that is found between the reorganization variable and CEO change variable in the bi-variate analysis. I therefore investigate the impact of the changes in CEO on compliance. Data on CEO change is collected from the annual reports of the companies. Annual reports of UK public companies report the date of appointment of the CEO to the position hence, a change in that date signifies a change in the CEO in that year. No attempt has been made to distinguish whether the change in CEO is forced or otherwise. A dummy variable is created taking a value of 1 for each firm-year if the firm has undergone a change in the CEO in either the year 2000, 2001 or 2002. Based on prior empirical evidence (Hermalin and Weisbach, 1988) I expect a negative relationship between changes in CEO and changes in the Index.

Following Hermalin and Weisbach (1988) prior operating performance is calculated as the change in the firm's EBIT for the year preceding the year of the change in the Index standardised by the book value of assets as of the beginning of the year of the EBIT change. Hence, for Index change for 2001 over 2000, prior operating performance would be calculated as the difference in the EBIT as of the end of the calendar year 2000 over 1999 divided by the book value of assets as of the end of 1999, expressed as a percentage. I also used industry-adjusted values but the initial analysis showed no relationship between industry-adjusted prior operating performance and changes in the Index, whereas significant correlation was observed between a firm's own prior operating performance and changes in the Index.

Consequently the analysis that follows uses only the firm's own change in EBIT. Based on prior empirical evidence in the US, (Hermalin and Weisbach, 1988), I expect a positive relationship between the change in EBIT and change in the Index, suggesting that prior poor operating performance would lead to a fall in the Index.

Prior stock price performance is measured by the previous year 12-month return on the stock relative to the year of the change in the Index. Hence for change in the Index for 2001 over 2000, prior period stock return would be calculated simply as the difference in the stock price from end 2000 over end 1999, divided by the price at the end of 1999 and then expressed as a percentage. Again, I initially used industry-adjusted values of stock returns but these were found to be statistically insignificant. Hence the following analysis uses the firm's own prior period stock return.

Following Hermalin and Weisbach (1988), I also include firm age as an explanatory variable which may affect changes in compliance. Age not only represents the culture and history of the firm, but can itself affect the evolution of a firm's board, as older firms are likely to have board members with longer tenures, and other features which might affect their compliance.

5.0 Analysis of the changes in the Index

I start by an analysis of the changes in the Index over the four years of the study. This analysis will give us an insight into how board structure and composition has changed in our panel of firms over the four years of the study. As Table 2 below indicates, relatively few firms experienced a change in their Index values for the year 2001 over 2000, with the largest proportion (45%) of firms having stable ratings. In contrast, for 2002 over 2001 the largest proportion (48%) is of the firms showing a decline in their rating, in other words becoming more compliant. This trend however has reversed markedly in 2003 over 2002, with the largest proportion of the total that is 40% of the firms becoming less compliant in this period.

Table 2: Changes in the Index

Year	2000-2001	2001-2002	2002-2003
Type of Change	No. of Firms	No. of Firms	No. of Firms
Increasing	15 (14%)	19 (16%)	46 (40%)
Decreasing	44 (41%)	55 (48%)	30 (26%)
Stable	48 (45%)	41 (36%)	39 (34%)
Total No. of Firms	107 (100%)	115 (100%)	115 (100%)

To gain a deeper understanding of the behaviour of the firms in terms of their compliance/non-compliance, I next analyse the frequency of non-compliance of the firms with each component of the Index for each of the four years of the study. This will give us an insight into which recommendations of the Code are the firms most compliant or non-compliant with and how this behaviour is changing over time.

As Table 3 below indicates, 62 out of 107 firms in 2000 i.e. about 58% of the sample had either an executive or a non-independent non-executive as the chairman of the board. This declined to 39% (45 out of 115) in 2003. It appears then that more firms are now appointing independent non-executives as chairman of the board. Other areas in which firms have become more compliant in 2003 over 2000 are in having a deputy chairman or senior non-executive on the board; having more independent remuneration committees; and putting in place a nomination committee chaired by an independent non-executive. One important area, however, in which compliance has not increased is in the composition of audit committees.

It is also important to note that the trend in compliance in all the above mentioned aspects has reversed in the year 2003 when considered over 2002. It may not be a coincidence that the stock market also showed a reversal of trend in 2003 and with the economy picking up again and companies experiencing rising profitability, they may have become less concerned about compliance as an issue. I will investigate this point further in the subsequent cross-sectional regressions.

On the whole, the preceding analysis suggests that compliance, which in turn represents changes in the board, has not been very stable over time. This finding is

consistent with the earlier evidence of Denis and Sarin (1999) in the US, who also find boards to be not as stable as generally assumed, especially during turbulent times. Firms it appears continuously reassess their board structures in the light of internal and external developments and adjust them accordingly.

Table 3: Cross sectional Frequency of Non-compliance for Each Component of the Index

Year	Chair E/N	% of NEDs	% of INED	DC/ SNED	RC Y/N	Chair RC	Comp. RC	AC Y/N	Chair AC	Comp. AC	NC Y/N	Chair NC
2000	62 (58%)	3 (3%)	8 (7%)	53 (50%)	1 (1%)	8 (7%)	41 (38%)	1 (1%)	9 (8%)	11 (10%)	12 (11%)	31 (29%)
2001	56 (49%)	2 (2%)	14 (12%)	39 (34%)	0 (0%)	16 (14%)	37 (32%)	0 (0%)	8 (7%)	6 (5%)	7 (6%)	22 (19%)
2002	38 (33%)	2 (2%)	9 (8%)	24 (21%)	0 (0%)	7 (6%)	18 (16%)	0 (0%)	8 (7%)	9 (8%)	9 (8%)	12 (10%)
2003	45 (39%)	0 (0%)	11 (10%)	39 (33%)	0 (0%)	6 (5%)	33 (29%)	0 (0%)	8 (7%)	12 (10%)	1 (1%)	17 (15%)

Total No. of Firms: 107 for 2000; 115 for 2001; 115 for 2002; 115 for 2003. Proportion of firms not complying with each component of the Index for each year expressed to the nearest whole percentage is given in brackets.

6.0 Descriptive statistics

Table 4 presents the descriptive statistics for all the variables used in the analysis except for the dummy variables. I discuss both the mean and the median values, as in a sample of limited size where some variables exhibit substantial standard deviation, the median is more meaningful than the mean which can be unduly affected by the outliers.

As Table 4 indicates, the mean age of a firm in the sample is 46 years, while the median is 33 years. It appears that the average age of the firm in the current sample is greater than that of the firms in Denis and Sarin's (1999) US study. The difference could be due to the fact that the current sample consists of large firms which are part

of the FTSE 350 Index, while Denis and Sarin's sample consists of firms of all sizes quoted on the NYSE, Amex or Nasdaq.

Taken over the entire period (2000-2003), the firms in the sample show a declining trend in the Index, with a mean change of -0.23 point and a median of zero. Over the entire period (1999-2002), both the mean and median values of stock return have been similar and negative being -10.05% and -10.54% respectively. The trend in the stock returns is consistent with the overall climate of the period being marked by a falling stock market. In terms of individual years, the decline has been the greatest for 2002 over 2001, with a mean (median) of -23.53%, (-21.07%), while still negative but relatively less for 2001 over 2000 with a mean (median) of -4.47% and (-4.76%). The mean stock return for 2000 over 1999 however, is positive (1.54%) while the median is negative (-3.84%).

The operating performance (EBIT change) on the other hand shows a substantial difference in the mean and median values over the entire period (1999-2002), being -0.08% and 1.0% respectively. The median in this case becomes more relevant, given that there was a large variation in the values for individual firms, with a minimum of -278.81% to a maximum of 75.87%. In terms of individual years also, the trend is similar for changes in operating performance, with completely opposite values for mean and median, being -0.5% and 0.5% respectively for 2002 over 2001 and for 2001 over 2000, -0.45% and 0.76%, although these have a consistent sign for 2000 over 1999, being 0.75% and 2.3% respectively. The variation in means and medians suggest that overall there was considerable variation in changes in operating performance for individual firms in the year 2002 over 2001 and 2001 over 2000, whereas the trend as a whole was more consistent for all firms for 2000 over 1999, being generally positive.

Change in director shareholdings is negative when considered over the entire period, with a mean of -0.23% and a median of zero and also for each of the individual years, with the highest mean change in holdings occurring in 2002 over 2001 of -0.48%. It appears then, that on average director shareholdings have been decreasing over the period 2000 to 2003. Considered over the entire period, change in external block holdings is positive, with a mean of 1.59% and a median of 0.89%. The trend is also

the same for each of the individual years, with the highest change in external block holdings occurring in the year 2002 over 2001, with a mean of 4.38% and a median of 3.01%. The differences in the trends of changes in director and block shareholdings suggest that directors, who have less diversified personal wealth, tend to be more risk averse and reduce risk by selling shares in periods of falling stock prices. Block holders who are mostly institutions in the UK, on the contrary, having much greater wealth, diversification and appetite for risk, tend to increase their shareholdings, taking advantage of the falling prices. It is also worth noting that the negative change in director shareholdings could also be associated with changes in top management, merger/acquisition and restructuring activities.

Taken over the entire period (2000-2003), leverage measured by the debt to asset ratio has increased for the firms in the sample by a mean of 1%, with a median of zero. The change however varies over the individual years, with debt to asset ratio having a mean (median) of -1% (0.00) in 2003 over 2002 and a positive mean (median) of 2% (1%) in 2002 over 2001 and a mean (median) of 3% (2%) in 2001 over 2000. These trends are consistent with theoretical expectations based on the pecking order theory that companies are likely to take on more debt during periods of declining profitability, as was the case for the firms in the period from 2000 to 2002. The highest positive change (3%) in debt to asset ratio in 2001 over 2000 is also consistent with the fact that most mergers/acquisitions took place in 2000, and being financed at least partly by debt, is likely to be one of the important factors contributing to the rise in firms' debt to asset ratios in this period.

Table 4: Descriptive Statistics for All Variables Used in the Analysis (excluding dummy variables)

Variable	Indexchng	Age	Return	Ebitchnng	Chngdh	Chngbh	Chngda	Pbtov
Year	2000-2003	2000-2003	1999-2002	1999-2002	2000-2003	2000-2003	2000-2003	2000-2003
Mean	-0.23	45.52	-10.05	-0.08	-0.23	1.59	0.01	4.31
Median	0.00	33.00	-10.54	1.00	0.00	0.89	0.00	2.50
Standard Deviation	1.51	36.21	34.21	18.16	6.37	11.68	0.10	5.53
Minimum	-5.00	1.00	-92.08	-278.81	-79.65	-59.71	-0.49	0.00
Maximum	6.00	164.00	122.57	75.87	53.27	63.27	0.45	40.00
Year	2002-2003	2002-2003	2001-2002	2001-2002	2002-2003	2002-2003	2002-2003	2002-2003
Mean	0.34	46.00	-23.53	-0.50	-0.11	0.04	-0.01	2.71
Median	0.00	33.00	-21.07	0.50	0.00	-0.15	0.00	2.50
Standard Deviation	1.52	36.42	27.19	6.64	9.83	10.57	0.08	3.18
Minimum	-5.00	2.00	-89.39	-26.87	-79.65	-39.15	-0.21	0.00
Maximum	6.00	164.00	86.57	13.42	53.27	30.31	0.30	11.11
Year	2001-2002	2001-2002	2000-2001	2000-2001	2001-2002	2001-2002	2001-2002	2001-2002
Mean	-0.59	45.00	-4.47	-0.45	-0.48	4.38	0.02	4.15
Median	0.00	32.00	-4.76	0.76	0.00	3.01	0.01	2.08
Standard Deviation	1.39	36.42	33.37	11.69	4.49	12.77	0.09	5.61
Minimum	-4.00	1.00	-92.08	-71.49	-31.76	-59.71	-0.20	0.00
Maximum	4.00	163.00	102.16	43.37	21.79	63.27	0.45	25.00
Year	2000-2001	2000-2001	1999-2000	1999-2000	2000-2001	2000-2001	2000-2001	2000-2001
Mean	-0.45	45.55	1.54	0.75	-0.08	0.27	0.03	6.21
Median	0.00	36.00	-3.84	2.30	0.00	0.58	0.02	5.88
Standard Deviation	1.48	36.08	37.59	29.16	1.67	11.14	0.12	6.76
Minimum	-5.00	1.00	-87.88	-278.81	-6.39	-33.23	-0.49	0.00
Maximum	3.00	162.00	122.57	75.87	11.69	34.16	0.42	40.00

In table 4, Indexchng stands for index change, Ebitchnng stands for EBIT change, Chngdh is change in director holdings, Chngbh is change in block holdings, and Chngda is the change in debt to asset ratio.

7.0 Correlation matrix

Given below in table 5 are the full sample and cross sectional correlations of the changes in the Index with each of the explanatory variable.

Table 5: Full sample and cross-sectional Pearson correlation of Index change with all the explanatory variables (p-values are in parenthesis)

Variable	Full Sample	2002-2003	2001-2002	2000-2001
Reorganization	-.082 (.131)	-.226 (.015)**	-.047 (.618)	.007 (.942)
Merger/acquisition	.116 (.034)**	.299 (.001)***	.046 (.627)	.001 (.988)
CEO change	-.110 (.043)**	-.027 (.771)	-.178 (.057)*	-.131 (.178)
EBIT change	.030 (.581)	.236 (.011)**	-.117 (.213)	.056 (.569)
Return	-.033 (.546)	-.079 (.399)	.080 (.396)	.135 (.165)
Age	.055 (.316)	.204 (.029)**	-.125 (.185)	.081 (.409)
Prob. of takeover	-.070 (.200)	-.107 (.255)	-.131 (.163)	.120 (.219)
Change in DA	.067 (.220)	.029 (.760)	.237 (.011)**	.097 (.319)
Change in DH	-.098 (.074)*	-.151 (.106)*	-.153 (.103)*	.139 (.155)
Change in BH	-.005 (.923)	.062 (.508)	.023 (.809)	.013 (.895)

***, **, * show significance at the 1%, 5% and 10% level respectively.

The above table shows that for the full sample, the changes in the Index are significantly positively correlated with mergers and acquisitions, and significantly negatively correlated with CEO change and change in directors' shareholdings. This suggests that generally, firms which engage in mergers and acquisitions tend to become less compliant, perhaps because they experience an initial rise in operating and/or stock market performance, following the merger which tends to make them less concerned about compliance or more simply, because they take on more non-independent directors on board from the company taken over or merged. Although not reported here but the correlation between mergers/acquisition variable and the stock return variable shows an insignificant but positive relationship for the year 1999-2000, (2000 was the year when most of the mergers and acquisitions took place) followed by an insignificant but negative relationship in the two subsequent years. This suggest, that firms which engaged in mergers/acquisitions enjoyed positive stock return in the year prior to when merger/acquisition took place followed by a negative relationship in the two subsequent years. This trend is consistent with results of other studies which suggest that acquirers tend to experience a decline in stock market performance following the merger/acquisition.

The negative correlation in the full panel between changes in the Index and CEO change suggests that newer CEOs lead to fall in Index that is greater compliance. A decrease in shareholdings of the directors leading to increase in the Index, that is, lower compliance suggests that there is lowered alignment of the interest of the inside and outside shareholders as the stake of insiders falls.

The individual year cross sectional correlations indicate different factors to be influencing changes in compliance in different years. In 2001-2002, reorganization and CEO change appear to be associated with a decrease in the Index while merger/acquisitions, change in operating performance and age of the firm appear to be positively associated with the Index change. The positive association between debt to asset ratio and Index change in 2001-2002 suggests that firms which took on more debt became less compliant with higher debt possibly acting as an alternative control mechanism consistent with the agency theory predictions. Newer CEOs tend to increase compliance in 2001-2002. For 2000-2001, it appears that none of the factors have any significant impact on compliance. It is worth noting that there was in effect, the least change in the Index during this period, as is evident from Table 1 above which shows 45% of the firms to have stable ratings over this period. It appears therefore, that most changes in the Index occurred in 2003 over 2002 and 2002 over 2001.

8.0 Empirical Analysis

Given that firms exhibit a varying trend in compliance over time, it makes sense to first study the cross section of changes in the Index and explore what factors are associated with these changes for each year from 2000 to 2003.

Specifically, the model I test is the following,

$$\begin{aligned} \text{Index change} = & \text{constant} + \beta_1 \text{ reorganization} + \beta_2 \text{ merger/acquisition} + \beta_3 \text{ CEO} \\ & \text{change} + \beta_4 \text{ age} + \beta_5 \text{ return} + \beta_6 \text{ EBIT change} + \beta_7 \text{ probability of takeover} + \beta_8 \\ & \text{change in director holdings} + \beta_9 \text{ change in block holdings} + \beta_{10} \text{ change in debt to} \\ & \text{assets ratio} + \varepsilon \end{aligned}$$

Tables 6, 7 and 8 present the results of the cross sectional regressions. I report results based on both regular OLS and White's heteroscedasticity-adjusted standard errors, as regressions for some years show signs of heteroscedasticity. Table 6 below shows reorganizations, mergers/acquisitions, age of the firm and change in prior operating performance, to have a significant association with the changes in the Index for 2002-2003.

Table 6: Cross-sectional Regression Analysis for 2002-2003

Dependent variable is the change in the Index

Explanatory Variables	Full Model for 2002-2003	Based on White's S.E.'s
Constant	-0.27 (-0.94)	-0.27 (-0.94)
Reorganization	-1.62 (-2.76)***	-1.62 (-1.77)*
Merger/acquisition	1.27 (3.19)***	1.27 (2.48)***
CEO change	0.19 (0.45)	0.19 (0.57)
Age	0.01 (2.92)***	0.01 (2.66)***
Return ₋₁	-0.01 (-1.47)	-0.01 (-1.83)*
EBIT change ₋₁	0.05 (2.58)***	0.05 (2.81)***
Probability of Takeover	-0.03 (-0.80)	-0.03 (-0.87)
Change in director Holdings	-0.01 (-0.84)	-0.01 (-0.47)
Change in block Holdings	-0.01 (-0.66)	-0.01 (-0.67)
Change in debt to asset ratio	1.02 (0.65)	1.02 (0.73)
R-Squared	0.27	0.27
R-Bar-Squared	0.20	0.20
No. of Observations	115	115

***, **, * denote significance at 1%, 5% and 10% level.

However, the nature of the association varies for different factors. Whereas mergers/acquisitions tend to increase the Index, i.e. decrease compliance, reorganizations appear to decrease the Index, in other words increase compliance.

These results are quite consistent with a priori expectations, assuming that firms which merge/acquire other firms most probably take on more non-independent, non-executives from the acquired firm. This would tend to make boards less independent leading to a decrease in compliance. This explanation is further supported by the findings of table 3 which shows significant increase in non-independent or executive chair on the board (rising from 38 in 2002 to 45 in 2003). The number of non-independent members on remuneration committee has also almost doubled over the period, rising from 18 in 2002 to 33 in 2003, along with a significant increase in the non-independent members on audit committee as well as chairs of nomination committee.

Reorganizations, on the contrary, which are also a response to business shock, tend to increase compliance. This result is consistent with the argument that reorganizations, involving asset sales, share buy backs or any other form of restructuring are a defensive reaction to a business shock and hence, and like another defensive action such as a change in CEO, tend to make firms more compliant. Moreover, asset sales tend to decrease the executive directors on the boards, especially those linked to the assets disposed off, thus decreasing the number of executive directors on the board in line with making boards more independent. This argument is supported by the results of the bivariate correlations (not reported here) which show a strong correlation between reorganizations and CEO change, suggesting that firms which dispose of their assets, also tend to change their CEOs.

Age of the firm is an indicator of a firm's history and culture as well as of the type of industry a firm belongs to. The results for 2002-2003 show a strong positive association between firm age and the changes in the Index. It appears that compliance decreases with firm age that is older firms which are likely to be in more established, mature industries tend to be less compliant. An alternative and more likely explanation is simply that the older a firm, the greater the probability that it is going to have both executive as well as non-executive directors with longer tenures, thus decreasing compliance.

It is interesting to note the positive relationship between prior period change in operating performance and the change in the Index for 2002-2003. The positive

association suggests that as firms experienced rising profitability in 2002 over 2001, they tended to become less compliant during 2002-2003. This finding is consistent with my earlier stated hypothesis, that firms may become less concerned with compliance as the general business outlook improves, with improvements in operating performance preceding the upturn in stock market performance.

Table 7: Cross-sectional regression analysis for 2001-2002
Dependent variable is Index change

Explanatory Variables	Full Model for 2001-2002	Based on White's S.E.'s
Constant	-0.35 (-1.53)	-0.35 (-1.6)
Reorganization	-0.32 (-0.59)	-0.32 (-0.51)
Merger/acquisition	0.26 (0.68)	0.26 (0.57)
CEO change	-0.66 (-1.51)	-0.66 (-1.42)
Age	-0.003 (-1.04)	-0.003 (-1.13)
Return _{t-1}	0.01 (2.10)**	0.01 (2.46)***
EBIT change _{t-1}	-0.01 (-1.71)*	-0.01 (-1.69)*
Probability of Takeover	-0.03 (-1.41)	-0.03 (-1.27)
Change in director Holdings	-0.05 (-1.77)*	-0.05 (-3.03)***
Change in block Holdings	0.01 (0.74)	0.01 (1.11)
Change in debt to asset ratio	3.69 (2.69)***	3.69 (3.24)***
R-Squared	0.18	0.18
R-Bar-Squared	0.10	0.10
No. of Observations	115	115

***, **, * denote significance at 1%, 5% and 10% level

Given that the overall changes in the Index have been positive for 2003 over 2002, (as in Table 3) it indicates that the net affect of the factors which tend to increase the Index namely rising profitability, mergers/acquisitions and age has been greater than that of reorganization which tends to decrease the Index.

I now turn to an analysis of the results for 2001-2002. Table 7 above indicates prior period stock return, changes in director share holdings and changes in leverage as measured by the debt to asset ratio, to be the most significant factors in explaining changes in the Index in 2002 over 2001. The highly significant and positive relationship between changes in the Index and stock market performance in this period appears to be consistent with the prevailing downward trend in the stock market making firms more compliant. It appears that with the fall in the stock prices continuing in 2001, a trend which started in early 2000, and the sudden jump in the level of merger activity around the period (2000-2001), led firms to become more compliant in 2002 perhaps as part of a larger process of rationalisation. An argument consistent with the signalling theory, that during periods of adverse business conditions, greater compliance may act as a signal that firms are working in the interest of the shareholders.

A closer look at Table 2 strengthens the preceding argument. As the table shows there was a significant decrease in the number of non-independent or executive chairs in 2002 over 2001 (from 56 to 38) as well as increase in compliance in other areas such as putting in place a deputy chair or a senior non-executive (39 to 24), as well as significant decrease in the non-independent directors on remuneration committee, as well as chairs of nomination committee.

The highly significant and positive relationship between changes in leverage and changes in compliance in this period is consistent with the predictions of the agency theory that higher leverage can act as a substitute for other monitoring mechanisms-compliance in this case. This finding is also consistent with the alternative explanation that firms tend to take on more debt to finance acquisitions during periods of high level of merger/acquisition activity, which in turn tends to reduce compliance.

The negative relationship between changes in director shareholdings and changes in the Index in this period suggests that in companies where the directors are significant shareholders, even a fall in their shareholdings would not lead to a fall in the Index, in other words, an increase in compliance, consistent with the 'entrenchment hypothesis' argument. Also, significant shareholdings by directors constitute an element of non-independence according to the Code, hence in companies where directors are

significant shareholders and are non-executives, compliance is unlikely to rise. Given that for 2002 over 2001, the change in the Index was generally negative, it suggests that the impact of factors which decreased the Index was overall greater than those which increased the Index.

Table 8: Cross-sectional regression analysis for 2000-2001

Dependent variable is Index change

Explanatory Variables	Full Model for 2001-2000	Based on White's S.E.'s
Constant	-0.61 (-2.18)**	-0.61 (-1.98)**
Reorganization	0.39 (0.64)	0.39 (0.56)
Merger/acquisition	0.02 (0.05)	0.02 (0.04)
CEO change	-0.59 (-1.38)	-0.59 (-1.70)*
Age	0.37E-3 (0.08)	0.37E-3 (0.08)
Return ₋₁	0.00 (1.00)	0.00 (1.19)
EBIT change ₋₁	0.00 (1.00)	0.00 (1.82)*
Probability of Takeover	0.02 (1.22)	0.02 (1.05)
Change in director Holdings	0.08 (0.89)	0.08 (0.76)
Change in block Holdings	0.96E-3 (0.07)	0.96E-3 (0.07)
Change in debt to asset ratio	1.37 (1.08)	1.37 (1.14)
R-Squared	0.08	0.08
R-Bar-Squared	-0.01	-0.01
No. of Observations	107	107

***, **, * denote significance at 1%, 5% and 10% level.

As can be seen from Table 8 above none of the explanatory variables other than the change in the CEO appear to have a significant relationship with changes in the Index for the year 2000-2001. It is important to note that the Index itself, as pointed out earlier, changed relatively little for the firms in this period.

Taken together, the cross sectional results for the changes in the Index over the three years suggest different factors to be influencing the changes in the Index over different time periods. An important result to note from the above analysis is the different response of firms to changes in operating and stock market performance. The results suggest that improvements in operating performance, which tend to precede improvements in stock market performance, tend to make firms less compliant while declining trends in stock market returns, which would inevitably follow declines in operating performance, tend to make firms more compliant. These results are entirely consistent with my argument that firms would tend to become more compliant in troubled times and less compliant with improvements in operating and stock market performance.

Given that certain variables especially changes in CEO, reorganizations and mergers/acquisitions have a consistent trend in terms of their effect on compliance in all cross-sectional regressions, it would be interesting to investigate the association of these factors with Index changes over the entire sample period. Presented below are the results of three models relating changes in the Index to the various explanatory variables for the full sample. As these results do not show evidence of heteroscedasticity, they are not adjusted for White's standard errors. Two year dummies are added to capture the effect of variation in time.

Model 1 in Table 9 below is the full model over the entire period. As expected, most variables in this model show an association with changes in Index as expected, except for the performance related variables which have no significant coefficient nor have any statistical significance when considered over the full sample. The latter finding is not surprising given that performance variables have provided varying incentives for changes in compliance in different years. I therefore drop these two variables in model 2 and additionally, drop age and changes in block holdings in model 3, with almost no impact on the significance of the remaining variables as well as on the R-bar-squared suggesting that these variables have no explanatory power.

Table 9: Regression analysis for the full sample 2000-2003**Dependent variable is Index change**

Explanatory Variables	Model 1	Model 2	Model 3
Y1	0.56 (3.2)***	0.47 (2.91)***	0.47 (3.24)***
Y2	-0.48 (-2.95)***	-0.50 (-3.07)***	-0.49 (-3.30)***
Reorganization	-0.45 (-1.32)	-0.48 (-1.41)	-0.49 (-1.51)
Merger/acquisition	0.41 (1.70)*	0.38 (1.59)	0.38 (1.61)*
CEO change	-0.51 (-2.06)**	-0.56 (-2.25)**	-0.54 (-2.22)**
EBIT change	0.00 (0.81)		
Return	0.00 (1.30)		
Age	-0.40E-3 (-0.20)	-0.78E-3 (-0.03)	-
Probability of Takeover	-0.02 (-1.87)*	-0.02 (-1.79)*	-0.02 (-1.97)**
Change in director Holdings	-0.02 (-1.65)*	-0.02 (-1.66)*	-0.02 (-1.67)*
Change in block Holdings	0.00 (0.52)	-0.00 (0.44)	-
Change in debt to asset ratio	1.52 (1.89)*	1.28 (1.63)*	1.28 (1.64)*
R-Squared	0.11	0.10	0.10
R-Bar-Squared	0.08	0.08	0.09
No. of Observations	337	337	337

***, **, * denote significance at 1%, 5% and 10% level. T-statistics are in parenthesis.

As expected, all other variables in all 3 models have an association with changes in the Index in the expected direction and consistent with cross-sectional results.

Reorganization being a defensive action, although marginally insignificant, tends to decrease the Index, in other words increasing compliance while mergers and acquisitions, which one can view as a more aggressive form of reaction to business shocks, tend to increase the Index, or decrease compliance.

Changes in CEO, irrespective of the reason leading to the change, tend to increase compliance. The negative relationship between director shareholdings and changes in the Index, suggests that firms with significant shareholders on the board would remain

less compliant, even if shareholdings of directors fall, an argument consistent with entrenchment hypothesis.

The overall positive relationship between changes in the Index and leverage suggests as firms take on more leverage perhaps to finance acquisitions, compliance falls. Another important result to note over the full sample period is the statistically significant relationship of the probability of takeover variable. Its negative relationship with the changes in the Index, most probably captures the overall climate of the period, being marked by high level of takeover threat leading firms to generally become more compliant over the period.

9.0 Summary and Conclusion

In this paper I have aimed to achieve two objectives: First, to investigate how firms respond to changes in business conditions in terms of their compliance with the recommendations of the code of corporate governance in the UK. I do this by examining the changes in the index of non-compliance developed in an earlier paper, over the period 2000 to 2003, a period marked by economic downturn, followed by high level of takeover activity and restructurings in the UK. I find that on the whole, compliance has increased over the period. More firms are now appointing independent chairs, deputy chairs or senior non-executive directors, making remuneration committees independent and putting in place nomination committees. One important area in which compliance does not appear to have increased is in the composition of audit committees. A closer look for individual years, however, finds that whereas compliance has generally increased from 2000 to 2002, the trend has actually reversed in 2003.

My second objective is to explore the potential factors affecting the changes in compliance and I find some interesting results: for the period as a whole, mergers and acquisitions are associated with a decrease in compliance, whereas reorganizations with an increase in compliance. Changes in CEO, whatever the reason for change, tend to increase compliance, while changes in director shareholdings where directors are significant shareholders, tend to decrease compliance, a finding consistent with the entrenchment hypothesis. Contrary to expectations, changes in leverage measured by

the change in debt to asset ratio are associated with increase in the Index that is decreased compliance which is consistent with debt acting as a substitute governance mechanism, or alternative because debt may have been used by the firms to finance acquisitions which in turn tends to decrease compliance.

An important result emerging from the cross sectional analysis is the incentive effect of the prior period stock market performance and operating performance on compliance. The results suggest that when operating performance improves, firms tend to become less compliant, whereas compliance tends to increase with the decline in stock market performance.

My results as a whole are consistent with and support the findings of earlier studies particularly those of Hermalin and Weisbach (1988) and Denis and Sarin (1999) in the US. Moreover my results extend the work of Denis and Sarin (1999) by not only finding associations of the factors that they find to be associated with changes in board structure, such as corporate control threat and prior period stock market performance, but also shed light on the *direction* of the change. One limitation of this research is its limited time period and hence how generalizable are these results to other countries and other time periods, remains a question open for future research.

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