The Impact of Corporate Governance on Closed-End Funds

by

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Abstract

This study uses a large sample of UK-listed funds to examine whether governance has an impact on two indicators of management performance: the level of fund-management fees and the discount at which a fund trades. Fees are important, because we find that a 1% rise in fees leads to a 1.5% fall in investor returns. Fees are higher for those funds which have large boards, few directors from outside the fund-family, and low ownership by the management company. Discounts are larger for funds in which the manager (or any blockholder) has a significant stake, suggesting that investors dislike funds which have entrenched management. Our results, which are more clearcut than those of US studies, are generally consistent with agency theory.

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1. Introduction

Despite a large research effort, there is little conclusive evidence about which aspects of corporate governance really matter. The result is that codes of governance are based mainly on *a priori* reasoning rather than on empirical research. [1] One reason for the lack of clear results from empirical research is the difficulty of defining and measuring performance for companies which are heterogeneous. This paper has the advantage of focussing on one class of company: closed-end mutual funds. These are stock-exchange-listed companies established with the sole aim of managing a portfolio of investments on behalf of shareholders. Performance of closed-end funds can be measured simply as the net return on the shares, which is itself derived from three variables: the gross return on the underlying asset portfolio; fund-management fees; and the changes in the discount (market-to-book ratio).

The objective of this paper is to examine whether corporate governance – as measured by the size/composition of the board and the pattern of blockholdings – has an impact on two of these three variables which drive performance: the fund manager's fees and the discount at which the fund trades. The main focus is on fees, which we find are able to explain two-thirds of cross-sectional variation in net returns within a particular fund sector. Although we also examine whether the discount is affected by governance, fees are the more important measure because they have a continuing impact whereas the discount is a snapshot of investors' current valuation of a fund.

There have been few previous studies of governance in the mutual-fund sector, apart from Barclay, Holderness and Pontiff (1993) and Del Guercio, Dann and Partch (2003), who report on closed-end funds, and Tufano and Sevick (1997), who report on open-end funds.[2] Our study of 193 funds in the UK brings international evidence to an area which has heretofore been limited to the US. One advantage of using UK data is that we have more

[1] Almost all of the world's rich nations have introduced such codes over the last decade. In the UK the Cadbury Committee reported in 1992; the latest code is the Higgs Report of 2003. France has the Viénot Report of 1999 and Germany the Cromme Report of 2002. In the US the Sarbanes-Oxley Act of 2002 has clarified the responsibilities of directors; a code of conduct on corporate governance from the SEC is awaited.

[2] An early study of management of closed-end funds in the UK is Draper (1989).

equity-holding closed-end funds available than exist in the US, where two-thirds of closed-end funds hold bonds; equity funds are more likely to show governance effects, because they require closer management than bond funds and have higher annual fees and larger discounts.

Our findings are broadly consistent with agency theory. Fund-management fees are important for performance, because an increase in fees leads to a more-than-proportional fall in returns. In turn, fund-management fees are larger if there is a large board of directors, a small degree of representation on the board by outside directors, and a low level of fund ownership by the manager. Governance is therefore important for the setting of fees and, on average, higher fees are not worth paying-for in terms of better returns – indeed, we find the opposite. Apart from choosing managers and setting fees, boards of directors of closed-end funds frequently consider that they can influence the discount (i.e. the market-to-book ratio at which the fund trades). We find that the level of the discount is not affected either by board size or by board composition. However, the discount is affected by the presence of blockholdings, either by the managers or by other shareholders, (consistent with US results from Barclay et al. (1993), but counter to Del Guercio et al. (2003)), which suggests that investors view any blockholding as a potential impediment to the restructuring of a fund.

In summary, we find that smaller boards with a larger number of outside directors tend to perform better. Board focus and director independence are key elements for fund-manager performance.

The paper is written as follows. In section 2 we set this study in the context of previous research on governance, both for conventional companies and for mutual funds. In section 3 we give details of the sample and discuss some of the measurement problems. Section 4 is the core of this work, in which we specify and estimate three separate cross-sections to explain returns, fund-management fees and book-to-market ratios (premia/discounts) respectively. Section 5 draws together the conclusions and implications of this study.

2. The Research Context and the Current Study

Because closed-end funds are constituted as companies, we will consider briefly both the general literature on the governance of companies and that which concentrates more narrowly on mutual funds. It is useful to keep in mind what motivates the managers of funds: their objective is to maximise the present value of the future stream of management fees. This implies that managers prefer weak boards and little external control, allowing them to raise the annual fee per dollar of investment (i.e. the expense-ratio). At the same time, managers have two reasons for wanting the fund to perform well: first, good performance increases the assets under management and therefore the fee income; second, good performance extends the time period over which the fund survives.[3]

Corporate governance can be divided into internal and external mechanisms; the former are concerned with the size and composition of the board of directors; the latter are concerned with the influence of blockholders and the functioning of the market for corporate control. Although the literature is large, there is no unified theory linking governance and performance (John and Senbet, 1998) and most studies have focussed on the empirical relationship between a particular feature of governance and a chosen measure of performance.

Beginning with internal features, the first to consider is ***board size***. Small boards tend to be associated with superior performance, either in terms of higher Tobin's Q (Yermack, 1996) or in terms of higher profitability (Eisenberg et al., 1998). This finding is attributed to the benefits of more effective co-ordination and improved decision-making. In relation to mutual funds, smaller boards have a more direct impact on performance because they negotiate cheaper fund-management contracts (Tufano and Sevick, 1997; Del Guercio et al., 2003).

The impact on performance of the second internal feature, ***board composition,*** is less clear. Some studies find a positive market reaction when new independent directors are appointed (Rosenstein and Wyatt, 1990), but most studies do not find any relationship between board independence and firm value (Agrawal and Knoeber, 1996; Yermack, 1996; Hermalin and Weisbach, 1991). There are degrees to which directors can be considered to be 'independent'; for example, they may be less so if they hold many directorships (Bhagat

[3] A formal statement of manager objectives which puts these together is given in the Appendix.

and Black, 2001). Nevertheless, the study by Ferris et al. (2003) does not suggest that company performance is worse if directors sit on many boards.

The notion of 'director busyness' has a particular relevance for mutual funds. Unitary boards, which have the same directors sitting on all of the boards in a fund family, are a characteristic of the US mutual-fund industry.[4] The Investment Companies Institute argues that this is a cost-effective arrangement. The danger is that a high level of manager/director dependence leads to inflated fund-management fees. Del Guercio et al. (2003), for example, find in one of their regressions for closed-end funds that unitary boards lead to significantly higher fees, but this relationship is not robust to a change in specification. On the other hand, Tufano and Sevick (1997) lend support the Investment Companies Institute's view, finding for open-end funds that management fees are lower if there is a unitary board. Our study sheds some light on this controversy.

Turning to external features, it might be expected that ***external blockholders*** would exercise the same scrutinizing role as external directors, but the empirical findings on this matter for conventional companies are mixed. Bethel, Liebeskind and Opler (1998) find that purchases by blockholders have a positive impact on profitability and, consistent with this, Barclay and Holderness (1990) and Shome and Singh (1995) both report that share prices rise when block purchases are announced. On the other hand, Agrawal and Knoeber (1996), Wahal (1996), Faccio and Lasfer (2000), and Bhagat and Black (2001) find no link between firm performance and external blockholdings.

In the mutual-fund industry, the impact of blockholders depends critically on motive: are they long-term holders who are friendly to the existing managers, or are they short-term arbitrageurs who would profit from a re-structuring of the fund? Barclay, Holderness and Pontiff (1993) find that funds which have large external blockholders tend to have larger discounts, because the blockholders derive private benefits from the continuation of the fund and therefore oppose any re-structuring. Del Guercio et al. (2003), however, find the opposite: smaller discounts are associated with more external blockholders, suggesting that blockholders are not always friendly to the management.

[4] Another term which is sometimes used instead of "family" is "complex".

The studies cited so far have investigated external blockholders, but directors of the company may also hold shares and so be ***internal blockholders***. Morck, Shleifer and Vishny (1988) and Barnhart, Marr and Rosenstein (1994) examine the relationship between Tobin's Q and the level of equity held by the firm's inside directors. The finding that a modest degree of ownership increases Q is attributed to the alignment of shareholder and manager interests, while the subsequent fall in Q at higher levels of director ownership is interpreted as reflecting the entrenchment of management.

Overall, the previous research suggests that small boards with a large proportion of outside directors should be more effective monitors of management and should therefore increase company value. Whether multiple directorships are good or bad for performance is not clear, nor is the impact of there being significant blocks of shares held either by managers or by outsiders.

3. Sample and Variables

At the end of 1996 there were 331 closed-end funds traded on the London Stock Exchange, with a total market value of £48 billion ($72 billion). We begin by describing this whole universe of funds, before excluding 138 for reasons given at the end of this section (leaving 193 funds for most of the analyses). The universe of funds can be classified into ten different sectors: emerging (25), European (10), Far-East excluding Japan (26), international (50), Japan (13), small-company (38), split-capital (70), UK (13), US (8) and venture capital (21). There are 93 different managers, of which 46 manage only one fund; the other 47 have families ranging in size from two funds under management (which is also the sample median) to twenty-two funds under management.

All of the data on prices and portfolio values come from Datastream. Companies listed in the UK are obliged to disclose the beneficial ownership of any blocks of shares which exceed 3% of the total; these data are obtained from the SBC Warburg Closed-End Funds Manual. All other data on individual funds are obtained from the Credit Lyonnais Investment Trust 1996 Yearbook. Descriptive statistics of the data are given in Table 1. The typical (median) fund has a size of £57 million ($91 million), is 7 years old, has a board with 5 directors, has an expense-ratio of 1.16% per annum, and trades at a market-to-book

premium (discount) of -12.8% (estimated as the monthly average for 1995-98). The manager of the median fund has a notice period of 1.5 years and owns 5.5% of the fund. At the median, the outside blockholders together own 31% of the fund (by value), with the largest of them owning 10% of the fund's equity.

Two 'relationship' variables in Table 1 are original to this study and shed some light on whether directors can be regarded as 'insiders' or 'outsiders'. The first such variable is the 'board-insider' index, which is calculated as the total number of boards in the same fund-family on which the directors of an individual fund sit. For example, if there are five directors and they each sit on one other board within the same fund-family, then this variable will take a value of 10 (= 5+5). By contrast, if there is only a single fund in the family and the number of directors is five, then this variable equals 5. The value of the 'board-insider' index variable ranges from 3 to 29, with a median of 7.

The second 'relationship' variable in Table 1 is the 'board-outsider' index, calculated as the number of fund directorships held by members of a board which are outside the fund-family (but within our universe of funds). For example, if only one director of a fund has any outside directorships and that director has only one such position, then this variable equals 1. If two directors each have two outside directorships, then the variable equals 4, etc. The value of this variable ranges from 0 to 17, with a median of 3.

Figure 1 illustrates with an example what we mean by 'fund-families', 'insider' directors and 'outsider' directors. At the end of 1996, Aberdeen Fund Managers had a family comprising 17 closed-end funds (as well as several open-end funds which we do not consider here). M.J. Gilbert was chairman of Aberdeen Fund Managers and sat on ten of these boards, including those of Abtrust Asian Smaller and Abtrust Scotland, as shown in the diagram. One of the directors of the latter fund was C.A. MacLeod, who also sat as an outside director on the board of the Scottish Eastern fund, part of the Martin Currie family of funds. The data given in Table 2 demonstrate the position of the Abtrust Scotland closed-end fund in terms of its 'board-insider' index and 'board-outsider' index. The seven directors of the Abtrust Scotland fund held a total of 18 directorships within the Aberdeen family ('board-insider' index = 18, with M.J. Gilbert

accounting for 10 of these) and a total of 2 directorships outside the Aberdeen Fund Manager family ('board-outsider' index = 2, with C.A. MacLeod accounting for 1 of these).[5]

It might be thought that the insider and outsider indices should be normalised by size of board or size of family. For example, Del Guercio et al (2003) use as their determining variables the proportion of independent directors and a dummy for whether the board is unitary or not. Our insider index is a measure of the extent to which the fund-manager has an influence on the directors, because it reflects the total number of family boards on which the directors of this fund sit. If there are many funds in the family and they all have unitary boards, then this variable is large. If there is one fund in the family, then there is again a unitary board but the insider index will be small (and equal to the size of this single board). Our insider index therefore reflects both the scale of family size and the degree to which boards are unitary. Considering next the outsider index, the arguments for normalising this variable by size of board do not seem very strong; what the index measures is the total number of outside connections to this board and that is only weakly related to size of board (see correlations below).

From the original 331 funds, it is necessary to exclude the following from the analysis:

- 70 split-capital funds which have more than one class of share and no published discounts;
- 74 funds which have asset values of less than £30 million ($45 million) and are therefore likely to be illiquid;
- 8 funds which have no data on fees;
- 20 funds which have an expense-ratio in excess of 3.2% per annum – such expense-ratios are likely to reflect a recent fall in the value of these funds rather than being representative of the expense-ratio which was envisaged in the management contract.

Because some of these reasons for exclusion overlap, the total exclusions are less than the sum of the above. There remain 193 funds for analysis, although for some regressions the number falls to 170 because a full set of governance variables is not available for all funds..

[5] An earlier version of this paper considered the funds as a network and measured the strategic importance of each fund to each other fund, using the methodology of Freeman (1979). This measure of 'betweenness' is correlated 0.68 with the 'board insider' index used here and the latter is preferred because it is simpler to compute and understand.

4. Cross-Section Regressions

We carry out three separate cross-section analyses, which are reported in sub-sections 4.1 to 4.3: in 4.1 we examine whether managers' fees (expense-ratios) affect returns; in 4.2 we investigate whether governance factors affect fees; and in 4.3 we examine whether governance factors affect discounts.

4.1 fund returns and management fees

The first step in our analysis is to examine whether average fund-specific returns (measured as the monthly average over the four-year period, January 1995 - December 1998) are influenced by fund-specific fees (measured for the year 1996). Clearly, returns also depend on risk factors such as beta, market-to-book, size, and momentum (Carhart, 1997). These factors are proxied here by sector dummy variables. The specification is:

$$\text{returns}_i = \alpha + a\ \text{expense-ratio}_i + b\ \text{sector}_i + z_i \qquad (1)$$

where returns are either net-asset-value returns or share-price returns, expense-ratio is the annual fund-management fee divided by the net-asset value at the end of 1996, sector is a dummy variable, α is an intercept term, z is a disturbance term, and subscript i denotes a particular fund from the sample of 193. In doing the individual cross-section regressions with net-asset-value returns and share-price returns as dependent variables, the standard deviations of these two variables (estimated from monthly time-series) are used as weights in order to correct for heteroscedasticity.

The results are given in Table 3. The two regressions indicate that expense-ratios are highly significant (1% level) in determining both net-asset-value returns and share-price returns. In the first column, a 1 percentage point increase in the annual expense-ratio leads to a 1.39% drop in net-asset-value returns, while in the second column it leads to a 1.58% drop in share-price returns. Share-price returns are thus more sensitive to fees than are net-asset-value returns, the difference being accounted-for by changes in discounts (which become larger when expense-ratios rise, as shown later). The two regressions indicate that there is approximately a 1½ percentage point decline in returns for every 1 percentage point

increase in the expense-ratio, which is consistent with the existing literature on mutual funds (see Jensen, 1968; Elton et al., 1993; Malkiel, 1995; Carhart, 1997; Del Guercio et al., 2003).[6] Together expense-ratios and sectors explain 66% of the variance of net returns in cross-section.

4.2 management fees and board characteristics

Directors of a fund select a manager who is expected to meet (or beat) a specified benchmark. They are therefore not interested solely in the sector and fees, but also in the quality of portfolio selection. Before turning to our main focus of governance and fees, we have checked that governance does not have any significant impact on average portfolio-selection performance over the four-year period, 1993-96. [7]

The variables which might affect fees (measured as the expense-ratio) can be divided into a set relating to governance and a set which controls for other influences. The set of control variables is as follows:

a. We expect that **size of fund** will have a negative effect on the expense-ratio, because of economies of scale. Even if there is imperfect competition between managers, some of the benefits of scale are likely to be passed to investors in terms of lower fees.
b. We expect that the **age of the fund** will have a negative effect on the expense-ratio, because new funds are launched with relatively high fees (Gemmill and Thomas, 2002).
c. We use eight dummy variables for the nine remaining **sectors** (split-capital funds having been excluded), because some types of fund (such as venture capital funds) will need more intensive management than others (such as UK general funds).

The set of governance variables is as follows:

[6] Note that the estimated coefficients are not significanlty different from unity. If the 48 funds excluded from the sample due to size are included, the coefficients fall to –0.87% for nav-returns and –1.15% for price-returns, both remaining significantly different from zero at the 1% level. The relationship between returns and fees could be non-linear, but introducing a squared term to allow for this does not give a significant coefficient.

[7] To do this, portfolio-selection ability is estimated for each fund as the residual from Equation (1), z_i, i.e. that part of net returns which cannot be attributed to fees or sector (34% of the total variance of net returns). We then conduct cross-section regressions between the (residual) portfolio-selection-performance and the governance and control variables detailed immediately below. No governance variable is a significant influence on portfolio-selection performance at the 5% level, and we therefore reject any simple connection between governance and portfolio-selection-performance in our sample for the four-year period.

d. We expect that the **larger the board** (as found in other studies discussed above), the larger the expense-ratio. The rationale for this hypothesis is that larger boards lack focus in controlling managers.

e. We expect that if **directors sit on many funds within the same fund-family**, the expense-ratio will be larger because the directors are more likely to be beholden to the fund-management group. If they do not comply with the fund manager's wishes, they risk losing a whole set of directorships. Our measure of family connection for directors is the 'board-insider' index, as defined above.

f. We expect that if there are more directors with **connections to funds 'outside' the fund-family**, then there will be more 'outsider' influence and therefore pressure which reduces fees. We measure this with the 'board-outsider' index, as defined above.

g. If the **manager owns a significant proportion of the fund**, there is less incentive for the manager to press the directors into agreeing a large management fee. To the extent that the fee reduces the performance of the fund (as reported above), pushing for a larger fee leads to more income for the manager but also leads to lower performance. However, unless we move to the limit in which the manager owns all of the fund, the offset is partial so we expect higher fund ownership by the manager to give a slightly lower expense-ratio.

h. A long **notice period for the manager** indicates an entrenched position and so we expect that the longer the notice period, the higher will be the expense-ratio.

i. If there are many **directors from the fund-management company on the fund board**, we expect there to be more pressure for a higher expense-ratio.

The specification of the equation which determines the expense-ratio is:

$$\text{Expense-ratio}_i = \alpha + \{a\ \text{asset-value}_i + b\ \log(\text{fund-age}_i) + c\ \text{sector-dummy}_i\} + \{d\ \text{board-size}_i + e\ \text{'board-insider' index}_i + f\ \text{'board-outsider' index}_i + g\ \text{percentage of fund owned by manager}_i + h\ \text{notice period of manager}_i + j\ \text{directors from fund manager}_i\} + z_i \quad (2)$$

where subscript i denotes a particular fund, the first set of curly brackets encloses the control variables, the second set of curly brackets encloses the governance variables, α is an intercept term, and z is a disturbance term.

Before estimating the equation in cross-section, we check whether there is collinearity across the right-hand-side variables. The correlation matrix is given in Table 4. Beginning with the top row, it is apparent that the expense-ratio is closely related to age (-0.58) and fund size (-0.49), but not correlated in any simple way with the governance variables. There is a complex set of intercorrelations between the independent variables, which suggests that they are co-dependent. In particular:

- old funds are large (+0.61) and have long notice periods (+0.37), suggesting that their management may be entrenched;
- larger boards have more directors from the fund manager (+0.46) and are more strongly connected to the fund-family according to the correlation with the 'board-insider' index (+0.53), but this is partly by construction of that index (see above);
- boards with family connections (as indicated by the 'board-insider' index) also have longer notice periods for the managers (+0.37).

Table 5 gives the results from estimating the expense-ratio regression (Equation 2). The first two numerical columns give coefficients and t-values for the full set of regressors, while the other two columns give results when those regressors which are not significant at the 10% level are excluded. Beginning with the first two numerical columns, we find that the two control variables – fund age and fund size – are significant determinants of the expense-ratio; as expected, old funds and large funds have lower expense-ratios. A 2-year-old fund has on average an expense-ratio which is 28 basis points more than that of a 20-year-old fund. A fund with £30 million under management has on average an expense-ratio which is 53 basis points more than that of a fund with £300 million under management. Turning to the governance variables, we find that larger boards, less 'outsider' directors (proxied by the 'board-outsider' index), and less manager-ownership all lead to significantly (5% or better) higher expense-ratios.[8] If there are ten directors rather than five, then the expense-ratio on average rises by 35 basis points. If the board-outsider index rises from the median 3 to a revised 10, then the expense-ratio falls on average by 15 basis

[8] We also examined whether manager ownership might have a non-linear impact, but there was no evidence of this.

points. If manager ownership rises from zero to 10%, then there is a rather modest fall in the expense-ratio on average of 3 basis points.

The 'board-insider' index has an effect which is only significant at the 10% level. The other two variables – notice period and the number of directors from the fund manager – are not significant and this is likely to reflect their high correlation with the 'board-insider' index (see Table 4). Excluding these two variables gives the results listed in the last two columns of Table 5. The only change from the previous regression worth noting is that directors' seats on boards within the fund-family (proxied by the 'board-insider' index) now reaches the 5% significance level.[9] This particular result is very similar to that of Del Guercio et al. (2003), who find that unitary boards have a small impact in raising fees for US closed-end funds, but it contrasts with the result of Tufano and Sevick (1997) for US open-end funds, who find that unitary boards have lower fees.

The message from the regressions in Table 5 is that large boards, and boards which lack external connections, are associated with managers who charge high fees. If managers own more of the fund, there is a small mitigating effect. Given that we already know that fees (on average) pass through to performance on more than a one-for-one basis, the implication is that funds with small boards, a diverse set of directors, and in which the fund manager holds a stake, are likely to perform better.

4.3 discount and governance variables

The third part of the analysis is concerned with testing in cross-section whether governance has any influence on the closed-end-fund discount. In their annual reports, directors often discuss the discount and imply that they have some influence over it. For example:

"The Board's policy is to ensure that the shares of Personal Assets (unlike those of most other investment trusts) do not sell at other than a nominal discount to net asset value" (Personal Assets Investment Trust, Annual Report for year ended June 2003).

We know from other work (e.g. Gemmill and Thomas, 2002) that the premium/discount depends in the long term both on the expense-ratio and on the openness of the fund to

[9] One should note that this is not a true 5% significance level, because the choice of specification benefits from the hindsight of the previous regression.

arbitrage, while in the short-term it depends on flows of retail money into the relevant sector (i.e. on investor sentiment). Because governance variables (such as board size) affect the expense-ratio, we would expect there to be a consequent effect of such variables on the discount.

The variables which might affect the individual-fund premium or discount (measured as an average of monthly data over the four years, 1/95 – 12/98) can be divided into a control set and a governance set. In the control set we hypothesise the following variables to be relevant:

a. **age**, as new funds are always launched at positive premia;
b. **expense-ratio**, as previous research indicates that the the premium is reduced by this;
c. **sentiment**, measured by flows of retail money to open-end funds investing in the same sector (including this variable also removes the need to have a sector dummy);
d. **unexplained past performance**, being that part of net-asset-value returns which is not explained by the expense-ratio or by the sector over the period 1/95 to 12/98 (as reported in Table 3).

In the governance set are:

e. **board size**, the effect of which is not clear *a priori*;
f. **'board-insider' index,** which is expected to reflect the dependence of directors on the management company and so have a negative effect on the premium;
g. **'board-outsider' index**, which is expected to have a positive effect on the premium, for reasons opposite to those in (f);
h. **proportion of fund owned by the manager**, which is expected to have a negative effect on the premium because it entrenches the manager and prevents re-structuring;
i. **notice period**, which is expected to have a negative impact on the premium as it also entrenches management;
j. **blockholding by outsiders**, the effect of which on the premium could be either positive or negative, depending on whether it facilitates or hinders a change of manager or re-structuring.

The specification of the equation which determines the premium (discount) is:

$$\text{premium}_i = \alpha + \{a\ \text{fund-age}_i + b\ \text{expense-ratio}_i + c\ \text{retail flows to sector}_i + d\ \text{nav performance not explained by fees or sector}_i\} + \{e\ \text{board-size}_i + f\ \text{'board-insider' index}_i + g\ \text{'board-outsider' index}_i + h\ \text{percentage of fund owned by manager}_i + i\ \text{notice period of manager}_i + j\ \text{blockholdings by outsiders}_i\} + z_i \quad (3)$$

where subscript i denotes a particular fund, the first set of curly brackets encloses the control variables, the second set of curly brackets encloses the governance variables, α is an intercept term, and z is a disturbance term.

The results from the cross-section regressions on fund premia are given in Table 6. The three pairs of numerical columns represent three separate regressions which use progressively less explanatory variables. The first regression, with all of the independent variables included, indicates that retail flows to the sector (which have the expected positive impact on the premium) and blockholdings by outsiders (which have a negative impact) are the main influences on the premium; their coefficients are significant at the 1% level. The other variables with 10% significance are the expense-ratio (negative impact, as expected) and ownership by the fund manager (negative impact, as expected).

A difficulty in interpreting such cross-sections is the potentially complicated set of correlations between the explanatory variables. In this case, board size, 'board-outsider' index, and notice-years all have at least two intercorrelations which exceed 0.32. In the second pair of numerical columns of Table 6 we report results with the variables 'board-insider' index, 'board-outsider' index and nav-residual-returns all excluded. The implications of this regression remain similar to those of the first regression. In the third pair of numerical columns of Table 6 we eliminate any variable which does not reach 20% significance, and the implications still remain unchanged: the premium is higher when the fund has a lower expense-ratio, when more retail money flows into the sector, when there is less fund ownership by the management company, and when outside blockholders own less of the fund.

These results provide only limited support for the claim by directors that they can influence the premium/discount. The two most obvious ways to achieve a smaller discount appear to be to reduce the manager's expense-ratio and to switch the fund into a sector which has positive investor sentiment. While the regressions also suggest that preventing managers from owning part of the fund would reduce the discount, this might be self-defeating; we know from the previous set of regressions that less manager-ownership raises the expense-ratio and that would feed back into a larger discount. Similarly, directors would find it difficult to limit the size of 'outsider' blockholdings (which would reduce the discount), because the managers are likely to have initiated and encouraged these holdings in the first place in order to protect their own positions. Note that the finding that more outside blockholding leads to a larger discount is consistent with the result for US closed-end funds of Barclay et al. (1993), but runs counter to the (statistically not-robust) finding of Del Guercio et al. (2003). The detrimental effect of outside blockholdings on the discount is one of the strongest results in our analysis.

An interesting difference arises between our results and those of Ferris et al. (2003), who examine the governance of conventional companies. They conclude that the market-to-book ratio (which is equivalent to the fund premium) is larger if the board is large and directors sit on more boards. Our work on closed-end-fund companies does not support either of these conclusions. In our study the size and character of the board have no impact on the market-to-book.

5. Conclusions and Implications

The aim of this paper has been to test whether corporate governance has an impact on the performance of closed-end funds, via the setting of fees and via directors' influence on the discount. It is the first empirical study of its kind to use the large sample of funds which is traded on the London Stock Exchange.

Consistent with US studies of mutual funds, we find that higher fees lead to proportionally lower returns. In our sample, a 1% increase in the expense-ratio leads to an approximately 1½% fall in returns. It follows that a board of directors which seeks the lowest-cost management contract will, on average, raise the net-returns of a fund.

Knowing that fees have an important influence on returns, we investigate whether the size and characteristics of the board of directors can influence fees. We find that fees (as a proportion of fund value) are strongly related to governance in precisely those ways which are predicted by agency theory: fees are higher if the board is large, if there are less 'outsider' directors, and if there are more 'insider' directors; fees are lower if the fund manager is a large shareholder. In order to make this analysis, we have been careful in defining insiders and outsiders in the most relevant ways: our 'insider' measure relates to the number of boards in this fund-family on which a director sits; our 'outsider' measure relates to the number of boards outside the fund-family on which a director sits. Whether the director of a fund works for the fund-management company does not seem to matter in our sample; what is important is whether directors sit on many boards within the same fund-family (which raises fees) and whether directors sit on boards outside the fund-family (which reduces fees). Our results run counter to those of Tufano and Sevick (1997) who find that unitary boards (in which the same directors sit on all boards within a fund-family) reduce management fees.

Our results also provide an interpretation of the findings of Ferris et al. (2003) that having directors with more seats on other boards is good for company performance. We find that employing directors who hold seats on the boards of unrelated (non-family) funds is good for performance (in terms of lower fees), but if they hold seats on boards of related (family) funds that is bad for performance. It is the diversity of board positions held by directors which appears to be important and not just the total number of boards on which they sit.

Managing the 'market-to-book' (premium or discount) is something that concerns managers and directors of all public companies. Our results suggest that there is limited scope for directors of closed-end funds to influence the level of the discount. Reducing the manager's fees and limiting total blockholdings – regardless of whether blocks are held by the managers themselves or by outside shareholders – would contribute to an improvement in the discount. A larger influence on the discount than either of these two factors, however, is the net flow of funds into the sector in which a fund operates. This suggests that directors could reduce the discount if they were able periodically to shift the style of the fund to that which was currently in fashion. Such a 'style-rotation strategy' is extremely

difficult to accomplish, however, because shifts in sentiment are not easily predictable.[10] The rational response of managers may be to diversify the set of funds in their family, so that at least one fund is currently in fashion, as argued by Bowen and Statman (1997).

The code of governance for UK-listed closed-end funds, introduced in November 2003, requires a majority of the board to be independent, not more than one director to be linked to the fund manager, and the company chairman to be independent. A revision of the code in January 2004 states that a director who serves on more than one board in the fund-family is not considered to be independent. We have found that funds which have many in-family directors are likely to charge higher fees and the revised code should help shareholder to recognise which funds have this undesirable attribute.

Finally, it would be useful to extend our study to several other aspects of governance. Three such are: whether performance-related fees for managers have any impact; whether the risk-adjusted performance of managers in time-series is affected by governance; and whether directors' fees, either individually or in total, affect fund performance.

[10] Some authors would disagree, e.g. Bauer and Molenaar, 2002.

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Appendix The Objective of the Fund Manager

Stated formally, the objective of the fund manager is to :

$$\max imise \sum_{i=1}^{n} \frac{\pi_i}{(1+r)^i}$$

where

π_i = f (ter_i [board features, external controls, style], $size_i$ [investment performance])

n = f (investment performance)

and where

π is manager profit
r is the discount rate applicable to manager profits
ter is total expense-ratio
size is the value of assets under management
i denotes year
n denotes the life of the fund
f ( ) denotes a function
[ ] denotes a subsidiary function.

Table 1 Descriptive Statistics for All 331 Closed-End Funds Listed on the London Stock Exchange at the End of 1996

item	min.	max.	mean	median	s.d.	sample
assets (£m)	3	1,883	146	57	233	323
age (years)	1	120	25.4	7	35.0	331
board size	3	11	5.4	5	1.3	331
board-insider index	3	29	8.56	7	4.73	331
board-outsider index	0	17	3.98	3	3.62	331
directors from fund manager	0	5	1.30	1	0.93	331
total expense-ratio (% p.a.)	0.14	6.75	1.35	1.16	0.87	323
market-to-book premium (%)	-35.4	+33.4	-11.8	-12.8	6.7	255
funds managed per manager	1	22	3.56	2	4.51	93
notice period for manager (years)	0	5	1.64	1.50	0.85	311
% owned by manager	0.0	96.8	11.7	5.5	16.6	247
% held by block-holders (excl. all fund managers)	0.0	94.4	33.9	31.0	19.3	247
largest % block held by individual outsider	0.0	85.0	11.5	9.7	9.2	230

Note

The table reports summary statistics for the universe of closed-end funds in London. Data relating to all variables are measured as at December 1996 and are extracted from the Credit Lyonnais and SBC Warburg Year Books. The number of funds for which data are available varies from 230 to 331, as indicated in the final column.

Table 2 Data For Example Fund – Abtrust Scotland

Board size	7
Directors from fund manager	3
Funds in this manager's family	17
Total number of boards on which these 7 directors sit:	
• family board directorships	18
• non-family board directorships	2
Notice period	2 years
Expense-ratio	2.6% per annum
Age of fund	10 years
Size of fund	£36 million
Premium (discount)	-20%

Note
The table reports data relating to the Abtrust Scotland closed-end fund. The fund is one of the 17 managed by Aberdeen Fund Managers. The 'insider' directorship measure is the total number of directorships of closed-end funds managed by Aberdeen Fund Managers which are held by the seven board members of the Abtrust Scotland fund. The 'outsider' directorships is the total number of directorships of closed end funds other than those managed by Aberdeen Fund Managers which are held by the directors of Abtrust Scotland.

Table 3 Cross-Section Regressions of Annual Fund Returns on Expense-ratios and Sector Dummy-Variables

Item	**regression of returns based on net asset values**	**regression of returns based on share prices**
constant	0.0407 (7.71)***	0.0351 (6.14)***
expense-ratio (%)	-1.3958 (-4.21)***	-1.5760 (-4.53)***
dummy variables	included by sector	included by sector
weighting variable to correct heteroscedasticity	standard deviation of net-asset-value returns	standard deviation of share-price returns
R-squared (unweighted)	0.659	0.663
adjusted R-squared (unweighted)	0.641	0.644
number of observations	193	193

Note

The table reports the estimates of the coefficients of the cross-sectional regression (1). The dependent variables (net-asset-value and share-price returns) are the annualised monthly returns averaged over the period January 1995-December 1998. The expense-ratio is the fund management charge for 1996 scaled by the fund asset-value in 1996. t-values are shown in parentheses. *** denotes significance at the 1% level.

Table 4 Correlation Matrix for Independent Variables in Expense-Ratio Regression

	ex-pense ratio	age	Fund size	board size	board-insider index	board out-sider index	manager owner-ship in %	notice in years	direc-tors from fund man-ager
expense-ratio	1	-0.58	-0.49	+0.06	+0.16	-0.14	+0.01	-0.08	+0.10
age		1	+0.61	+0.22	+0.11	+0.04	-0.13	+0.37	-0.05
fund size			1	+0.37	+0.20	+0.07	-0.15	+0.25	+0.11
board size				1	+0.53	+0.13	-0.07	+0.17	+0.46
board-insider index					1	+0.07	-0.07	+0.37	+0.44
board-outsider index						1	-0.02	+0.01	+0.06
manager owner-ship in %							1	+0.03	+0.05
notice in years								1	+0.15
directors from fund manager									1

Note

The table reports the correlation coefficients across the 193 funds in the sample. Data relating to all variables are measured as at December 1996 and are extracted from the Credit Lyonnais and SBC Warburg Year Books.

Table 5 Cross-Section Regressions of Expense-ratios on Fund and Board Characteristics

Item	**coefficient**	**t-value**	**coefficient**	**t-value**
constant	0.0371	10.28***	0.0382	11.22***
log(fund age)	-0.0012	-4.51***	-0.0012	-4.73***
log(fund size)	-0.0023	-6.67***	-0.0024	-7.23***
board size	0.00069	2.47**	0.00058	2.38**
board-outsider index	-0.00021	-2.57***	-0.00022	-2.65***
board-insider index	0.00012	1.70*	0.00013	1.96**
manager ownership %	-3.06×10^{-5}	-2.06**	-3.19×10^{-5}	-2.24**
notice period	0.00036	0.92	-	-
directors from fund manager	-0.00043	-1.12	-	-
dummy variables	included		included	
adjusted R-squared	0.58		0.59	
number of observations	185		193	

Note

The table reports the estimated coefficients of the cross-sectional regression (2).The dependent variable (the expense-ratio) is measured as the fund management charge for 1996 scaled by the fund asset-value in 1996. The independent fund-specific variables are derived from data extracted from the Credit Lyonnais and SBC Warburg Year Books. t-values are shown in parentheses. ***, **, * denote significance at the 1%, 5% and 10% levels respectively. The White correction is used for heteroscedasticity.

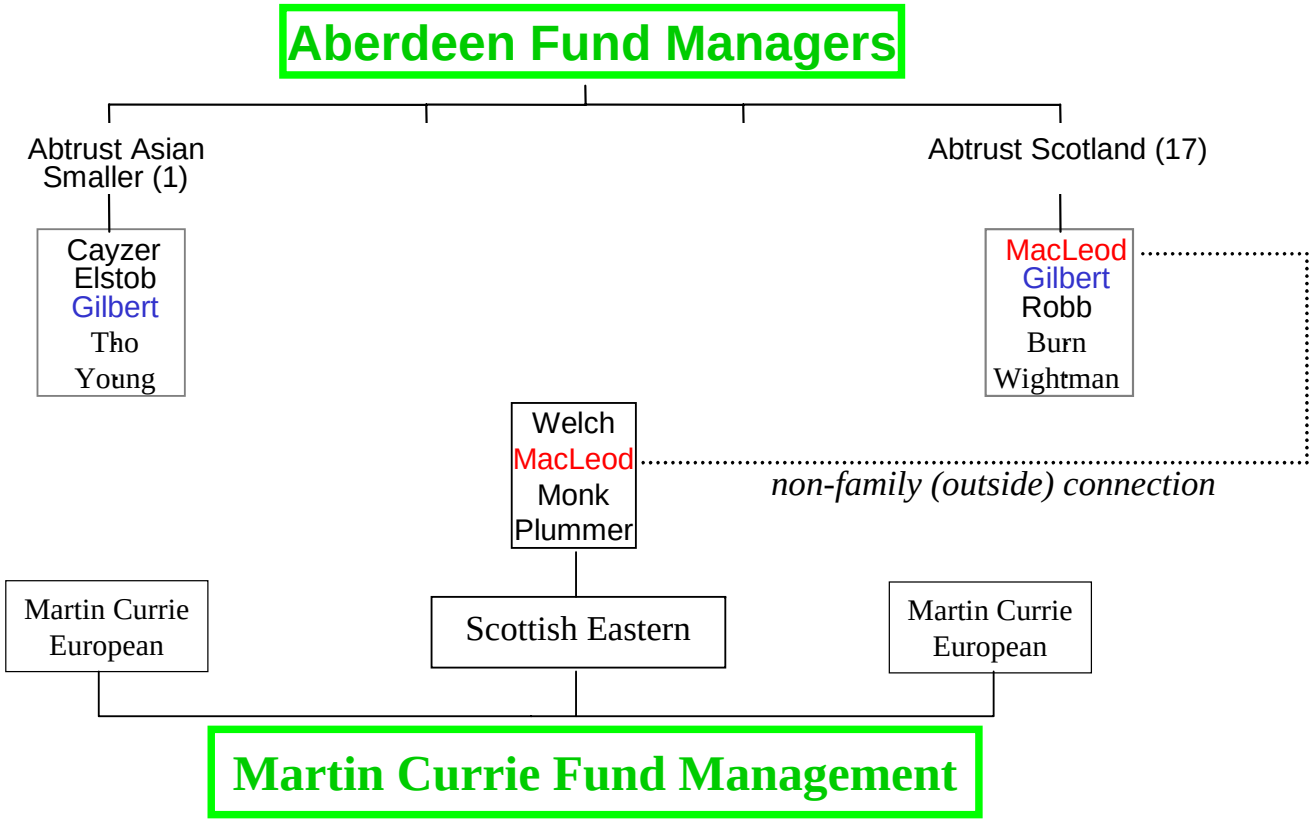
Table 6 Cross-Section Regressions of Average Market-to-Book Premia on Fund and Board Characteristics

Item	**coefficient**	**t-value**	**coefficient**	**t-value**	**coefficient**	**t-value**
constant	-0.0626	-2.96***	-0.0600	-3.01***	-0.0632	-5.86***
log(fund age)	0.0011	0.74	0.00096	0.77		
expense-ratio	-1.658	-1.91*	-1.708	-2.07**	-1.315	-2.05**
net retail flows into fund sector	0.0481	2.90***	0.0484	2.96***	0.0537	3.51***
nav returns unexplained by fees or sector	0.363	0.88				
board size	0.0014	0.62	0.0009	0.70		
board-insider index	-0.00029	0.73				
board-outsider index	0.00022	0.82				
manager owned %	-0.00039	-1.84*	-0.00041	-1.90*	-0.00046	-2.25**
notice for manager	-0.0029	-0.55	-0.0032	-0.47		
total blockholding in fund (excluding fund mgr. holdings)	-0.0010	-5.10***	-0.0010	-5.17***	-0.0010	-5.39***
number of observations	170		170		170	
adjusted R-squared (unweighted)	0.18		0.18		0.19	

Note

The table reports the estimated coefficients of the cross-sectional regression (3). The dependent variable is the fund-specific market-to-book premium (measured as the average premium over the period January 1995-December 1998). Data relating to average monthly retail flows into open-end funds investing in the various sectors are obtained from the Institutional Management Association. All other fund-specific data are measured as at December 1996 and are derived from the Credit Lyonnais and SBC Warburg Year Books. t-values are shown in parentheses. ***, **, * denotes significance at the 1%, 5% and 10% levels respectively. The independent variables are weighted by the standard deviation of the premium, in order to correct for heteroscedasticity.

Error!Figure 1 Example to Show the Character of Fund Families and Inter-Family Connections



Gilbert sits on 10 family boards; Macleod sits on 1 family and 1 non-family board