

# The return on human capital: the case of UK non-executive directors that are also executive directors

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## Abstract

This paper studies the relationship between directors' human capital and the company's performance. In particular, we focus on the effect of non-executive directors who are also executive in other firms (independent executives, IE). The analysis is based on a unique dataset of publicly traded firms in the UK which we obtain by matching Extel Financial and Corporate Register data. Our results suggest a positive relationship between the presence of IE on corporate board and company performance. The effect is stronger IEs come from well performing firms. Additionally, the similarity of industries plays a role.

JEL: G34, G39

Key words: human capital, corporate board, non-executive directors

## 1 Introduction

“London, 2008-Nov-24. Andreas J Goss, chief executive, Siemens plc said, “I would like to welcome Dr Martin Read as an advisory member of the board of Siemens Holdings plc. Dr Read’s extensive experience of electronics, complex industrial and IT systems and large-scale projects in both the private and public sectors will be a valuable addition to Siemens in the UK.”<sup>1</sup> Besides this appointment Martin Read had been the chief executive of international IT services company Logica for fourteen years and a non-executive director of British Airways. While Siemens is likely to benefit from expertise of Dr Read, it is not clear whether he promotes shareholders interests or raises agency costs.

This paper addresses two issues raised by the dilemma highlighted in the above quotation. First, it provides insights into an important agency relationship given that countries such as the US and UK have introduced governance codes that are designed to align the interests of executive directors and shareholders. If a person acts as both an executive director and a non-executive director, given the recommendations of the various UK governance codes, there would appear to be an implicit contradiction in the roles and functions of this type of non-executive director. Second, in terms of company performance, it analyses the relationship between executive director human capital and the accounting performance of the company appointing that director as a non-executive director. Therefore this paper analyses how far a firm appointing an executive director as a non-executive director benefits from better performance.

Knowledge capital and the ability to provide valuable advice is related to managerial human capital which may be firm specific, industry specific or occupational specific (Antonij and Williams, 2005). In particular, it is possible that experience obtained in one company could be transferred to another company in the same industry. Aivazian et al (2010) investigate the relationship between CEO human capital and investment and financing decisions. They find that when CEOs with more general skills are matched with a firm requiring these generalised skills, shareholders benefit from higher profits. Fich (2001) shows that CEOs are more likely to have interlocking relationships when boards have more outsider (non-executive) directors. Parent (2000) finds that industry specific human capital is the main determinant of managerial pay and that occupational factors play an unimportant part. However, Sullivan (2009) and Kambourov and Manovskii (2009) argue that the industry specific result is dependent on the omission of occupational influences

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<sup>1</sup> Citation: [http://www.siemens.co.uk/en/news\\_press/index/news\\_archive/drmartinread.htm](http://www.siemens.co.uk/en/news_press/index/news_archive/drmartinread.htm)

from the analysis. Zangelidis (2008) finds that occupational experience has a significant impact on wage growth. However, he also reports that industry and occupational factors are important for certain types of jobs including managerial posts. Sullivan (2009) and Kambourov and Manovskii (2009) also find that wages are driven primarily by occupational factors rather than industrial factors. However, as Zanegidis (2008), Sullivan (2009) also finds evidence that industry specific human capital affects wages when type of occupation is analysed. The impact is significant for managers. Further, Custodio et al (2010) find significant positive abnormal returns were earned when the acquirer's CEO has had top management experience in the target's industry.

However, these studies tend to refer to the returns to human capital in terms of pay and also to the returns to the individual. This paper provides additional insights into the returns to human capital by analysing the impact of top management, executive directors, on firm performance. Will a company that appoints an executive director as a non-executive director benefit from the insights that person can offer, and hence promote shareholder interests? Alternatively will the appointment raise agency costs and damage shareholder interests?

The agency model argues that non-executive directors are an effective means of monitoring executive directors, Fama (1980) and Fama and Jensen (1983), and that they are able to change the behaviour of the executive directors so that shareholder interests are pursued. This perspective has led to the development of corporate governance codes of best practice in many countries, for example, the UK (the latest is the 2010 Corporate Governance Code), the US, Europe and the OECD code. The key responsibilities of non-executive directors, as set out in the various Codes, relate to advising and monitoring the executive directors.

The UK Combined Code on Corporate Governance (2003) states, in a supporting principle section, that non-executive directors should 'constructively challenge and help develop proposals on strategy'. This principle therefore highlights the importance of the advisory function of the non-executive directors. A number of later amendments to the Combined Code have been published, for example, the latest is the UK Corporate Governance Code (2010) but the data used in the analysis cover a period when the Combined Code was in place.

In addition, the agency model argues that non-executive directors are an effective means of monitoring executive directors, Fama (1980) and Fama and Jensen (1983), and that they are able to change the behavior of the executive directors so that shareholder interests are

pursued. This perspective has led to the development of corporate governance codes of best practice in many countries, for example, the UK, the US, Europe and the OECD code. In the Combined Code, this function is covered in the board's supporting principle section whereby non-executive directors are charged with scrutinizing the board's performance. This function includes ensuring that financial information is accurate, that risk management systems are robust and that executive remuneration is appropriate. The monitoring role is the one that has received the greater attention, partly as a consequence of the fact that financial problems are interpreted as being caused by a failure of monitoring rather than a failure of advice.

However, the empirical evidence does not always support the prediction that independent directors are associated with better corporate performance. On the one hand, Weisbach (1988) finds that boards with higher proportion of outside directors are more likely to replace a CEO in case of poor corporate performance. A positive relationship between board independence and firm performance is also reported in Rosenstein and Wyatt (1990) and Andres and Vallelado (2008). On the other hand, Agrawal and Knoeber (1996) show that outside directors are associated with poorer performance. Similar results are reported in Shivdasani and Yermack (1999) and Klein (1998). Bhagat and Black (2002) do not find any relationship between the presence of independent directors on the board and company's performance.

One consequence of these results is that the role of corporate boards and director independence has been reassessed. For example the monitoring role has traditionally been emphasized in the corporate finance and governance literature, however, there is a growing attention to the advisory role of boards and independent directors, for example, Bertrand and Schoar (2003) and Chen (2008). Moreover, a number of recent studies have raised the question how the effectiveness of independent directors depends on the characteristics of the companies where they sit on board (Coles et al. 2008). The latter study shows, for example, that the role of independent directors depends on the level of complexity in firms. In particular, the share of inside directors has a positive effect on Tobin's Q in "complex" (R&D-intensive) firms, where the firm-specific knowledge of insiders is more important as compared with "simple" firms.

The paper therefore makes a number of contributions to the literatures on human capital and corporate governance. First, to the best of our knowledge, it is the first UK paper to analyse the human capital implications for firms appointing an executive director as a non-executive director. Second, it applies a human capital perspective to the corporate

governance relationship. This paper analyses the role of industry specific human capital where the returns are to the appointing firm rather than to the individual director. As indicated above, most studies look at director returns as measured by remuneration. However, in the UK, the income received by a non-executive director relative to that received by an executive director is significantly lower. Given this, it is hypothesised that reputation is more likely to determine a director's actions. In this context, we test the industry specific returns to human capital. If these returns are positive, we expect that the appointing firm, for whom the executive director will be acting as a non-executive director, will benefit from better performance relative to firms that do not appoint executive directors as non-executive directors. The return to industry specific human capital in this case is therefore that firms with non-executive directors that are executive directors in other quoted companies in the same industry will perform better than companies that do not have this type of non-executive director.

Third, consistent with the thrust of corporate governance changes, we provide a test of the agency model's prediction that, in the presence of director fixed effects, the appointment of an executive director as non-executive director will have a negative impact on the company's performance. This prediction comes from the expectation that executive directors do not change their attitudes to business when becoming a non-executive director. Will the quality and advice of this type of non-executive director produce poorer performance? The paper therefore offers new insights into an important agency relationship.

Fourth, the paper distinguishes between the advisory and monitoring roles of non-executive directors. Most empirical work focuses on the monitoring role and does not specifically address the issue of advice.

Our analysis is based on two data sources. First, our firm-level data come from Extel Financial and include detailed financial information on British listed companies. Second, director-level information has been hand collected from Corporate Register books. We have linked companies and directors for about 900 firm-years.

We find first, that appointing a non-executive director who is already an executive director in another quoted company, has a significant and positive impact on accounting performance. However, there is no evidence that appointing an executive director from the same industry positively affects performance.

Second, the positive impact on the performance of the non-executive director's firm is stronger the better the performance of the firm where the person is also an executive director.

Third, we find that the interaction of relative performance and industry similarity has a positive effect on performance whereas it does not for the same industry. The insignificant result for the interaction with the same industry, and the negative result for the same industry, may be the result of competition effects whereby the director may offer poorer advice to a competitor.

Fourth, we find that, in the UK, there is a positive relationship between monitoring as measured by audit committee membership and performance, particularly when firms are from the same industry. The effectiveness of the monitoring may be because of a greater understanding of the particular issues associated with firms operating in the same sector.

Contrary to the findings by Chen (2008) who found that the positive advisory function outweighed the negative effects of poorer monitoring in the US, we find that the benefits of more effective monitoring outweighs any competition considerations associated with industry effects. UK governance codes have been in place for far longer than in the US and our results suggest it is likely that the experiences gained in the long post-Cadbury period has improved the quality of governance in general and of monitoring in particular.

The paper is organized as follows. Next section discusses the relevant literature and outlines the specific hypotheses to be tested. Section 3 sets out data and the econometrics modeling and Section IV presents the data. The main results are discussed in Section 5, and Section VI draws some conclusions.

## **2 Literature Review**

A number of studies have investigated the relationship between director characteristics and corporate decisions. For example, Bertrand and Schoar (2003) found that top manager fixed effects explained decisions in the areas of investment, finance and organizational practices. Richardson et al (2004) also find evidence of director fixed effects in relation to governance, finance, disclosure and strategic policies. Fahlenbrach et al (2008) and Chen (2008) also report a link between the policies of directors who sit on different boards. The similarity in policies raises some interesting agency related questions. This is because the agency model would have to predict that an individual would have one set of objectives when undertaking one role, that of an executive director, and another set when undertaking

the other, that of a non-executive director. Therefore, if an executive director sits on another board as a non-executive director, the agency model implies that there will be no change in the objectives pursued by that individual. In this case, we should see a conflict of interests present in both companies and therefore expect relatively poor performance for both companies.

However, Adams and Ferreira (2007) develop a model that analyses the consequences of the board's dual role as advisor and monitor of management. They show that a CEO may be less willing to share information with an independent board because it is more likely to undertake more effective monitoring. Chen (2008) reports a positive relationship between independent directors and performance and argues that the cause is the scarcity of independent directors in the US. The shortage was caused by the passing of the Sarbanes-Oxley Act (2002) which changed the governance regime such that the threat of legal action against directors made them less willing to sit on other boards. However, Chen (2008) also found that the benefits from advice outweigh the costs associated with poorer monitoring and overall resulted in better performance.

In the UK, governance reports from Cadbury (1992) through to Walker (2009) emphasize the control, risk assessment and monitoring functions of the non-executive director. Although the UK Corporate Governance Code (2010) is the latest iteration of the initial Cadbury Code of Best Practice, the Combined Code (2008) is the relevant one for this analysis. It devotes far more space to the monitoring function and states that non-executive directors should ensure that agreed targets are met; that appropriate systems of financial reporting and risk management are in place; that appropriate levels of compensation are set; and that they are involved in appointing and removing executive directors. The Code also mentions, in passing, that non-executive directors should help to develop strategy. However, this comment is very much the exception with the emphasis being explicitly placed on the monitoring function.

Since the Cadbury Report (1992), there have been significant changes to UK board structures in terms of increased non-executive director representation, Weir and Laing (1999), Young (2000) and Dayha et al (2003). If the changes meant that firms moved towards an optimal board structure, we would expect little relationship between performance and the appointment of non-executive directors who are already executive directors elsewhere. However, consistent with Chen (2008) a positive relationship may suggest that the advisory function performed by the non-executive director outweighs any costs incurred as a result of poorer monitoring. Given that the UK has had a relatively long



period of corporate governance regulation, the optimal board theory suggests that the appointment of non-executive directors should only occur when either monitoring or advice is required. If a board is operating optimally, the monitoring function is unlikely to diminish and therefore it is more likely that the board is reacting to changes in the operating environment. This will lead to the appointment of non-executive directors that have industry specific human capital.

These reports have led to recommendations concerning non-executive director representation and non-executive director independence. This perspective is consistent with Fama (1980) and Fama and Jensen (1983) who argue that reputation is important to non-executive directors, particularly if they are already employed as executive directors. Support for this comes from Kaplan and Reishus (1990) and Fich (2005) who find that executives in companies that perform well are more likely to be appointed non-executive directors in other companies.

Chen (2008) develops a model in which a positive relationship between independent directors and performance is partly explained by a change in the governance regime. In the US this change was the passing of the Sarbanes Oxley Act (2002). The Act introduced the threat of legal action against director and this reduced the supply of non-executive directors. However, the UK experienced a change in its governance regime much earlier than did the US, with the first report being Cadbury (1992). The long post-Cadbury period, during which a number of other reports were published, offers an opportunity to test the Demsetz and Lehn (1985) hypothesis that firms will behave optimally when constructing a board. Firms will select board structures that do not appear to affect performance but which maximize value (Coles et al., 2005; Boone et al., 2007; and McKnight and Weir, 2009).

If the post-Cadbury changes move firms towards optimal board structures, the Demsetz and Lehn (1985) hypothesis suggests that appointing a non-executive who is already an executive director should have no effect on performance. Two other possibilities exist. First, compliance leads to non-optimal board structures and therefore a negative relationship should be found. Second, that there is a positive relationship which, as Chen (2008) argues, depends on distinguishing between the advisory and monitoring functions. He finds that non-executive directors increase agency costs because they are poorer monitors but that their advisory function outweighs this and leads to an overall increase in performance. The conclusions offer some support for the “optimal” board theory because it appears that appointments are made when more advice is needed.

### 3 Empirical Modeling

Our basic hypothesis is that firm performance to a large extent depends on the human capital of its directors, including its non-executive directors. While human capital, which is a complex and elusive concept, is traditionally measured by education, experience, and tenure, we consider a particular proxy for non-executive directors' human capital – their work as executives in other firms. We assume that the very fact that a non-executive director works as executive in another firms testifies to her abilities and skills. Other things being equal, undertaking the role of an executive director implies the accumulation of managerial knowledge and skills, which may be useful in the firm where the person works as non-executive director (henceforth we will refer to these directors as “independent executives”). This human capital can enhance both the monitoring and advisory functions of corporate board and thus contribute positively to company performance.

This basic hypothesis motivates our first and simplest empirical model, in which we relate the performance of a company to variables characterizing the presence of independent executives on its board. In particular, we consider the following specification:

$$PERF_{it} = \beta IE_{it} + X_{it}\gamma + \delta_t + \xi_i + \varepsilon_{it} \quad (1)$$

where  $i$  is the firm index,  $t$  is the time index, and  $PERF_{it}$  stands for performance measures of company  $i$ .  $PERF_{it}$  measures company performance, variable  $IE_{it}$  is a dummy variable that takes the value 1 if the company has non-executive directors that are also executive directors in other firms (independent executives) and 0 if there are no independent executives on the board.  $X_{it}$  contains a set of control variables which are traditionally regarded among key determinants of firm performance,  $\delta_t$  is time specific effect,  $\xi_i$  is a firm specific effect, which encompasses all unobserved time-invariant characteristics of the firm potentially affecting its performance, and  $\varepsilon_{it}$  is the random error term. Of primary interest to us is the coefficient  $\beta$  on variable  $IE$  which indicates the presence of independent executives on the firm's board. In accordance with our basic hypothesis, we expect  $\beta$  to be positive.

In order to investigate the link between firm performance and of non-executive board members we use two forms of non-executive director relationships. First, we analyze the differences between firms with and without non-executive directors that are executive directors in other companies. Second, we investigate how far the performance and industry of the firm in which non-executive director holds an executive position affects the appointing firm's performance.

We employ two different measures of performance: return on equity (ROE) and Tobin's Q. The latter indicator is calculated as market value of firm divided by book value of firm assets. We analyse IE using three different definitions. First, we employ a dummy variable which has the value 1 if a non-executive director is also an executive director of another company and 0 if not. Second, IE is defined as the number of non-executive directors on a board who are executive directors in other companies. The third IE measure is the percentage of non-executive directors on the board that are also executive directors of other firms.

The elements of vector  $X_{it}$  control for firm-specific characteristics that influence performance. The choice of our control variables is motivated by earlier research which investigates performance in time series or panel data settings. To control for size, we include the natural log of number of employees ( $\log(Labour_{it})$ ). The financial strength of a firm is measured by two variables, its liquid asset holdings normalized by total assets ( $Cash_{it}/TA_{it}$ ) and *Leverage*, calculated as ratio of long term debt over total assets. To minimize the potential endogeneity problem all financial variables are lagged. Finally, to control for corporate governance characteristics we include in vector  $X_{it}$  the total number of executive and non-executive directors ( $BOARDSIZE_{it}$ ) and ratio of non-executive directors to total number of directors ( $SHARE_{it}$ ).<sup>2</sup>

The latter two variables are important determinants of board effectiveness. Indeed, starting with the influential papers by Jensen (1993) and Yermack (1996), there is an ongoing debate whether board size has an effect on corporate performance. On the one hand, larger boards may possess greater collective information about factors affecting the value of firm (such as product markets, technology, regulation, mergers and acquisitions, etc.) and may therefore be better able to perform both the advisory and monitoring functions. On the other hand, there may be larger coordination costs and free-rider problems associated with larger boards, Jensen (1993). Harris and Raviv (2008) model the trade-off between the benefits of greater expertise that additional outside directors bring versus the costs of an aggravated free-rider problem in order to come to an optimal number of outside directors on the board. Regarding the presence of non-executive directors, it has often been assumed, for example, that independent directors have fewer conflicts of interest while monitoring managers and therefore may be more effective in performing this key role. We therefore control for these factors in our empirical analysis.

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<sup>2</sup> We have also experimented with lagged values of corporate governance measures and received quantitatively similar results.

However, as discussed earlier, a portion of the human capital that an independent executive brings to company A, where she serves as non-executive director, may be specific to firm B, where she is already employed as an executive director. Alternatively, it may be specific to the industry to which firm B belongs. In other words, part of the human capital of independent executives may be of no value to company A. In this case only those directors who work, for example, as executives in the same or similar industry to that of firm A will enhance the performance of company A. Even the latter link is ambiguous as advice from an IE director whose main employment is a competitor company B (e.g. from the same industry) might not have any effect or could even decrease performance of company A.

We therefore investigate the impact of independent directors by taking account of industry effects. For the first industry effect we consider the impact of appointing an independent director who is also an executive director in a firm that operates in the same industry. We define same industries based on two digit SIC classification. In all other cases, companies A and B are regarded as belonging to different industries. The basic specification (1) therefore becomes:

$$PERF_{it} = X_{it}\gamma + S\_IND_{it}\phi + \delta_t + \xi_i + \varepsilon_{it} \quad (2)$$

where variable  $S\_IND_{it}$  is a vector of two variables. First,  $SAME\_IND_{it}$  a dummy variable which takes the value of 1 if at least one of non-executive directors of firm  $i$  has an executive position in the same industry and 0 if not. Second,  $NOT\_SAME\_IND_{it}$  is a dummy variable equals 1 if a firm has at least one IE director, but she works in different industry and 0 otherwise. All other variables are the same as in specification (1).

The second industry effect that is analyzed takes account of the fact that the human capital of independent executives can be proxied by the average performance of company B, where the non executive director of company A is employed as an executive director. We thus assume that executive directors play decisive roles in successes and failures of their companies and that this element of their human capital will be of benefit to the companies for whom they act as non-executive directors. The baseline specification therefore transforms into:

$$PERF_{it} = X_{it}\gamma + S\_IND_{it}\phi + \theta PERF\_B_{it} + \delta_t + \xi_i + \varepsilon_{it} \quad (3)$$

where variable  $PERF_{B_{it}}$  shows the average performance of  $j$ -companies as an explanatory variable for performance of company  $i$ . The other variables are the same as in model (2).

One particular issue with relating director quality to firm performance is that the latter may be influenced by a variety of factors beyond managerial control, such as an overall economic downturn or industry shock. Firm performance is therefore a very noisy measure of director quality. This issue is addressed in the literature by using relative performance indicators, which compare the performance of a company to the performance of firms in the same industry or market (e.g., Parrino 1997 and DeFond and Park 1999). This is also the approach adopted in our paper. We measure human capital, that is, the quality of an outside director, by the relative performance of the firm in which she is an executive director. More specifically, we define the relative performance of a firm as the difference between its reported performance and the median performance of all sampled firms belonging to the same industry and observed in the same year.

Previous literature (e.g. Chen, 2008) finds that the positive advisory effect of independent directors outweighs their negative reduced monitoring effects. We also explore the advisory-monitoring debate by investigating whether independent executives are members of the audit committee of the firm. The audit committee can be regarded as a proxy for the monitoring function of independent directors because its main responsibilities include monitoring the quality of the financial statements published by the company, monitoring the effectiveness of the company's internal auditing function and reviewing the company's internal financial controls. We define  $AUDIT_{it}$  as a dummy variable which takes the value of one if an IE director sits in the audit committee and zero otherwise. This audit committee variable is introduced into the econometric specification as an interaction term in combination with  $S\_IND_{it}$ . If there is a positive relationship between company performance and  $AUDIT \times S\_IND_{it}$ , this will show that the monitoring role of independent executives increases performance in the UK. The model specification therefore becomes:

$$PERF_{it} = \beta IE_{it} + X_{it}\gamma + S\_IND_{it}\phi + \theta PERF\_B_{it} + AUDIT \times S\_IND_{it} \psi + \delta_t + \xi_i + \varepsilon_{it} \quad (4)$$

Finally, we analyse the interaction of industry similarity and average relative performance. Industry similarity is based on the SIC classifications. Industries are categorized into six groups. The first group contains mining industries (10-14) and chemical and allied products (28). The second group consists of the manufacturing sector with SIC codes between 20 and 28. Remaining manufacturing firms (32-37) constitute the third group. The fourth

category contains retail trade services as well as transportation (40-59). The fifth group consists of financial services (60-67) while the remaining companies (70 and above) are in the sixth group.

We propose that the impact of an independent executive on performance will be greater if she comes from a firm belonging to a similar industry that is performing well. Our regression model takes the following form:

$$PERF_{it} = \beta I E_{it} + X_{it} \gamma + S\_IND_{it} \varphi + \theta PERF\_B_{it} + AUDIT \times S\_IND_{it} \psi + PERF\_B \times S\_IND_{it} \nu + \delta_i + \xi_i + \varepsilon_{it} \quad (5)$$

We expect that coefficients  $\varphi$  and  $\xi$   $\nu$  are positive since both the availability of industry specific human capital and the quality of human capital should have positive effects on company's performance.

#### 4 Data Description

The data has been collected from two major sources. First, the financial data are drawn from the Extel Financial database. The advantage of the database data is its use of consistent financial report information across a large number of industries. Our initial sample contains around 5,000 UK listed companies from 2002 through to 2008. Second, information about executive and non-executive directors has been hand collected from Corporate Register books. Overall, there are about 130,000 director-years over the seven years of data. The databases have been merged based on company names. While both database providers claim that they cover the population of listed companies, there is only 50 percent overlap for firms-year. Our initial sample links around 68,000 directors with financial information of companies.

A sample is compiled in the following way. First, we dropped all company-years that do not report either executive or non-executive boards. Second, we remove all firms that report either negative equity or negative total assets. At this point the data consisted of about 57,000 director-company-year observations pertaining to 8,506 firm-years. Third, to address the issue of firms in financial distress, we have dropped companies that report ROE less than -1. Fourth, to diminish effect of outliers we dropped top and bottom 1% of distribution of ROE and relative ROE. Fifth, we require companies to have at least one executive and at least one non-executive director. Finally, as we intend to make use of some lagged values in our regression specification, we require at least two years worth of data. Since our data are very unbalanced, the final estimation data set has been further reduced to about 3,990 firm-years. This considerable drop in the number of observations is

entirely due to the unavailability of data, which we believe is exogenous. In other words, there seems to be no systematic selection of firms in our sample that would be related to cross-directorships among British traded companies.

#### INSERT TABLE1

Table 1 summarizes variables used in the analysis and gives descriptive statistics. Among the sampled firms, the average board has about 7 directors, which is similar to the numbers reported in previous studies, Weir and Laing (2003) and Guest (2008). The average share of non-executive directors in the sample is 52%. This is similar to the figures reported in Guest (2008) and McKnight and Weir (2009). This provides support to the claim about no systematic selection bias in our sample of British companies. Table 1 also shows that 20% of firms have non-executive directors that are also executive directors in other firms. On average 6% of non-executive directors are also executive directors in other companies.

The performance measures of the companies from which the non-executive directors come are above average showing that they are good performers. For example the companies have an average one percentage point superior ROA relative to the sector. They also have an average six points superior performance in terms of ROE and a two point superiority for ROS. They also have a higher Q ratio, by 2.9% points. The average (median) firm holds 21% (16%) of their total assets as long term debt. *Cash to total assets* represents the total of all cash, deposits and notes and bills in the structure of total assets. Our data reveal that average (median) firms maintain 10% (6%) of their assets in term of cash. As expected, all firms report positive performance during the examined time period.

In relation to audit committee membership, we find that 10% of firms have a non-executive director who is also an executive director as a member. Two percent have a non-executive director who is an executive director of a firm in the same industry. We also find that 4% have someone who is an executive director in a similar industry.

Table 2 represents descriptive statistics for two subsamples: firms that have and do not have non-executive directors who are also executives in other firms. We find significant differences between the two types of company. For instance, on average firms with non-executive directors that are also executive directors in other firms use significantly more debt. In terms of employment, we find that these firms are significantly bigger. They also have significantly larger boards. They also have a significantly larger percentage of non-executive directors on the board. In terms of performance, ROE, ROA and ROS all show that firms that employ non-executive directors that are also executive directors are more

profitable. They also have significantly higher Tobin's Q ratios. However, there is no difference in liquidity ratios.

INSERT TABLE2

The pair-wise correlations among our key firm-specific variables are reported in Table 3. Overall, we do not observe correlations higher than 40% which signals that multicollinearity problem is unlikely.

INSERT TABLE 3

## **5 Results Discussion**

The results reported in Table 4 show the impact of appointing an executive director as a non-executive director on the appointing firm's performance, as measured by ROE and Tobin's Q. Models 1 and 2 show the results for the first IE measure, a dummy variable that has a value of 1 if a firm has a non-executive director who is also an executive director and zero if not. Models 3 and 4 report the results when the IE variable measures the number of non-executive directors that are also executive directors. Finally, models 5 and 6 give the results for the third IE measure, the percentage of non-executive directors on the boards that are also executive directors. All our results report fixed effects estimations.

The three ROE models show a positive and significant relationship between performance and all of the non-executive director affiliation measures whereas the Tobin's Q regressions reveal positive but statistically insignificant effects. This could be explained by nature of IE advising. It may be the case that improving accounting performance is priority for advising decisions. Overall, these results indicate support human capital hypothesis but contradict the optimal board model (Demsetz and Lehn, 1985)The estimates suggest that, in general terms, firms appointing an executive director as a non-executive director do benefit from the director's human capital.

INSERT TABLE4

Table 5 develops the analysis by evaluating the impact of industry characteristics on the performance of the appointing firms. This offers a test of the industry-specific human capital hypothesis. Model 7 reports evidence, at the 10% level, that having any non-executive directors who are also executive directors has a positive effect on the appointing firm's ROE if this director is not from the same industry. However, we find no evidence that having an IE director who is also an executive director in a company operating in the same



industry improves company performance. The respective coefficients, although positive and similar in magnitude to the coefficients on the variable indicating the presence of directors from other industries, are statistically insignificant for both measures of performance, models 7 and 8. This might be explained by competition effects in that executive directors of successful firms might not share valuable information to competitors.

In models 9 and 10 we add the industry-relative performance of the company where the non-executive director is an executive director. In each model the specification includes a relative performance measure which is based on the same variable as dependent variable. For example, since ROE is a dependent variable in model 9, the relative performance measure is also based on ROE.

We find a positive, significant relationship between ROE of the appointing firm and the relative performance of the executive director's firm's ROE. In terms of magnitude, two standard deviations increase in relative ROE in company where director holds an executive position increases ROE of company in which the same director takes a non-executive position by 0.04. This is a very substantial increase given that the average (median) ROE is 0.06 (0.09). This implies that the appointing firm gains some of the director's human capital returns in the form of better quality advice. Thus the advantages of being responsible for effective strategies and policies as an executive director produces benefits in the role of non-executive director. The result is consistent with Chen (2008) who finds a positive relationship between a non-executive director's advisory function and firm performance.

However, as discussed earlier, non-executive directors also perform a monitoring role. Chen (2008) argues that, by concentrating on the advisory role, monitoring will suffer and firms will incur agency costs. Poorer monitoring is measured mainly in terms of lower CEO turnover and higher CEO compensation. We test the monitoring role by means of membership of the audit committee. The responsibilities of the audit committee and its members have been set out in various reports, for example, The Combined Code of Corporate Governance (2003) and The UK Corporate Governance Code (2010). Audit committee members have a specific set of roles and responsibilities including monitoring the integrity of the company's financial statements, monitoring the effectiveness of the internal auditing systems, reviewing the company's internal financial controls and to ensure that possible financial problems are raised. These responsibilities should therefore result in better financial decision-making and better financial performance.

The recommendation that audit committees should consist of at least three independent non-executive directors indicates that independent non-executive directors in general, and

those that are also currently executive directors in another firm in particular, will undertake effective monitoring of the executive directors. Given the reputational issues involved, it is reasonable to expect that non-executive directors that are also executive directors will be particularly strong monitors of the board's actions. To test this we create two dummy variables. First, *AUDITxNOT SAME<sub>it</sub>* takes the value 1 if a company has non-executive director who is a member of the Audit Committee and is also an executive director in a firm in a different industry from that of the appointing company and 0 otherwise. Second, *AUDITxSAME<sub>it</sub>* takes the value 1 if an IE director on the Audit Committee is employed as an executive director by company in the same industry and 0 otherwise.

Table 5, Models 11 and 12 report the results for the two additional audit committee dummy variables. Model 11 shows that having independent non-executive directors that are executive directors with experience in other industries has no effect on performance as measured by ROE. However, there is also no evidence that they harm performance by poorer monitoring. Model 12 shows that IE directors have a positive effect on market performance, measured by Tobin's Q, if the IE director is employed by company from the same industry. This is an important result because it shows that, within the UK context, non-executive directors that are also executive directors produce positive returns on both the advisory and monitoring functions. The monitoring result is contrary to that of Chen (2008). However, it is argued that the analysis of the audit committee membership offers a better insight into the monitoring role of the board because it deals with the crucial issue of internal financial control.

#### INSERT TABLE 5

We develop the analysis by exploring the sensitivity of the performance of non-executive-executive companies by controlling for similarity of industries. Rather than employing a single dichotomous indicator where at least one non-executive director works in the same industry, we extend the analysis by creating four dummy variables with the reference category, equal to 0, being no independent non-executive directors that are also executive directors. The first, IE Not Same/Not Similar takes the value 1 if the non executive-director does not come from the same or similar industry and is not in audit committee. Second, IE Similar, takes the value 1 if the non-executives are executive directors in similarly defined industries and 0 if not. Third, *AUDITxNOT SAME/NOT SIMILAR<sub>it</sub>* has a value of 1 if there are non-executive directors who are executive in other companies, but none of them work in a company from the same industry or a similar group of industries. The fourth *AUDITxSIMILAR<sub>it</sub>* has a value of 1 if a company has links to other companies in similar

industries. The fifth,  $AUDIT \times SAME_{it}$ , is 1 if a company has relationship to other companies in the same industry.

Table 6 reports the results for a number of interaction terms. Models 13 and 14 show the interaction between the same industry and relative performance measures. Model 13 shows that the interaction of the higher the relative performance of the firm on which the non executive sits as an executive director and that director not being from the same industry will lead to better accounting performance, ROE. However, as model 14 shows, it does not affect the Q ratio. However, there is an insignificant result for the same industry measure for both ROE and Q. This means that appointing a non-executive director who is an executive director for another company in the same industry does not improve performance. This may be explained by competition issues. Executive directors that sit on the boards of competitors are in a difficult position in relation to the advice they give. Therefore they have a conflict between their reputational interests and their concerns about offering a competitor some advantage. We would therefore expect an insignificant relationship.

In terms of audit committee membership impacts, model 14 shows that having independent non-executive directors from the same industry on the audit committee raises Tobin's Q but does not affect ROE. These results suggest that the market regards appointing a non executive director who is an executive director in the same industry as a good thing but that this benefit is not reflected in better accounting performance.

Models 15 and 16, Table 6, report the results for industry similarity interactions. In terms of ROE, model 15, shows no significant effect for relative performance when non-executive directors are appointed from the same industry. This is consistent with the results in Models 13 and 14, which also report an insignificant result. This could be explained by competition effects, since the best executive directors are unlikely to provide valuable advice to competitors.

Model 16 reports a negative relationship between performance and a non-executive director working in a similar industry. However, relative to the reference group, the appointing firm's performance increases with the interaction between the relative performance of the company where the director is an executive director and the fact that they came from a similar industry. The estimates suggest that the effect of the relative performance of the "executive company" is different depending on the extent of the similarity of the industries. The effects are substantially stronger for the interaction between the similar industry indicator and relative performance. In terms of relative performance, we

report a positive significant relationship between relative performance and the similarity of industry. However, the result for the interaction of the same industry with relative performance is insignificant.

#### INSERT TABLE 6

Overall, the positive link between performances of two companies also suggests that the appointing firm is benefitting from the human capital accrued by the director. It may be regarded as a positive externality because, in the UK, non-executive director compensation is significantly lower than that of executive directors. In addition, it offers some support for the reputation hypothesis with the effect working through advice rather than monitoring. This would be particularly true if the effect was more pronounced if the appointing firm was in the similar but not the same industry.

## 5 Conclusions

In general, our estimates are consistent with the appointing firm benefitting from both the advisory and monitoring functions of a non-executive director and suggest that appointing inside directors as outside director benefits shareholders.

We therefore find that contrary to the agency model prediction, executive directors that are appointed as non-executive directors pursue policies consistent with shareholders' interests for both companies. The results also raise questions about the emphasis placed on the independence of non-executive directors and the extent to which they provide effective monitoring of the executive directors.

Our main focus, throughout the discussion, will be on the sign, size and significance of the coefficients associated with measures of presence of non-executive effects who are executive in other companies as well as industry similarities and relative performance of "executive companies".

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Table 1: Sample descriptive statistics.

*Leverage* is the ratio of long term debt to total assets. *Liquidity* is liquid assets divided by total assets. *Size* is the natural log of number of employees. *Board size* is the total number of directors on the board. *ShareNE* is the percentage of non-executive directors on the board. *IE Presence* is a dummy variable which has the value 1 if a non-executive director is also an executive director of another company and 0 if not. *Share of IE directors* is the percentage of non-executive directors on the board that are also executive directors of other firms. *Number of IE directors* is the number of non-executive directors on a board who are executive directors in other companies. The return on assets, *ROA*, is defined as... The return on equity, *ROE*, is defined as... *Tobin's Q* is the market value of firm divided by book value of the firm's assets. *Average Relative ROA of Exec Companies* is the average profitability of the firms where the non executive director is employed as an executive director. *Average Relative ROE of Exec Companies* is the average profitability of the firms where the non executive director is employed as an executive director. *Average Relative ROS of Exec Companies* is the average profitability of the firms where the non executive director is employed as an executive director. *Average Relative Tobin's Q of Exec Companies* is the average Q ratio of the firms where the non executive director is employed as an executive director. *AUDIT X IE* as a dummy variable which takes the value of 1 if an IE director sits in the audit committee and 0 otherwise. *AUDITxIE in SAME INDUSTRY* takes the value 1 if an IE director on the Audit Committee is employed as an executive director by company in the same industry and 0 otherwise. *AUDITxIE in SIMILAR INDUSTRY* takes the value 1 if an IE director on the Audit Committee is employed as an executive director by company in a similar industry and 0 otherwise.

Variable	Mean	Sd	Median	N
Leverage	0.21	0.16	0.19	3,811
Liquidity	0.10	0.12	0.06	3,814
Size	6.53	2.05	6.44	3,985
Board Size	7.23	2.67	7.00	3,979
ShareNE	0.52	0.14	0.50	3,979
IE presence	0.20	0.40	0.00	3,998
Share of IE directors	0.06	0.13	0.00	3,998
Number of IE directors	0.24	0.51	0.00	3,998
ROA	0.02	0.10	0.03	3,998
ROE	0.06	0.24	0.09	3,964
ROS	0.02	0.15	0.03	3,539
Tobin's Q	1.31	0.49	1.18	3,792
Average Relative ROA of Exec Companies	0.01	0.04	0.00	3,977
Average Relative ROE of Exec Companies	0.02	0.13	0.00	3,977
Average Relative ROS of Exec Companies	0.01	0.09	0.00	3,889
Average Relative TobinsQ of Exec Companies	0.29	0.67	0.00	3,973
Audit X IE	0.10	0.29	0.00	3,998
Audit X IE in Same Industry	0.02	0.13	0.00	3,998
Audit X IE in Similar Industry	0.04	0.19	0.00	3,998



Table 2: Univariate analysis of company characteristics of firms that have appointed executive directors as non executive directors and firms that do not.

*Leverage* is the ratio of long term debt to total assets. *Liquidity* is liquid assets divided by total assets. *Size* is the natural log of number of employees. *Board size* is the total number of directors on the board. *ShareNE* is the percentage of non-executive directors on the board. The return on assets, *ROA*, is defined as EBIT divided by book value of total assets. The return on equity, *ROE*, is defined as EBIT divided by book value of shareholders' equity. *Tobin's Q* is the market value of firm divided by book value of the firm's assets.

Variable	No IE		Yes IE		Mean	Sd	N	Diff
	Mean	Sd	Mean	Sd				
Leverage	0.20	0.16	0.24	0.16	0.24	0.16	779	-0.04***
Liquidity	0.10	0.12	0.10	0.11	0.10	0.11	773	0.00
Size	6.31	1.99	7.39	2.07	7.39	2.07	805	-1.08***
Board Size	6.94	2.57	8.36	2.73	8.36	2.73	802	-1.42 ***
Share NE	0.51	0.14	0.57	0.12	0.57	0.12	802	-0.06 ***
ROA	0.01	0.11	0.04	0.08	0.04	0.08	809	-0.02***
ROE	0.05	0.24	0.11	0.22	0.11	0.22	800	-0.06***
ROS	0.01	0.15	0.04	0.12	0.04	0.12	720	-0.03***
Tobin's Q	0.01	0.15	1.39	0.51	1.39	0.51	763	-0.10***

\*\*\* significant at 1%

Table 3: Correlation Matrix.

	ROE	Tobins Q	Relative ROE	Relative Tobin's Q	Board Size	Share NE	Leverag e
Tobins Q	0.137						
Relative ROE	0.112	0.025					
Relative Tobin'sQ	0.076	0.057	0.296				
Board Size	0.176	-0.017	0.113	0.167			
Share NE	0.004	-0.031	0.042	0.129	0.202		
Leverage	-0.009	-0.130	0.044	0.081	0.075	0.071	
Log (Labour)	0.265	-0.079	0.110	0.141	0.509	0.209	0.134

Table 4: Fixed Effects Regression Results for the basic specification about the impact of non executive directors that are also executive directors.

*Board size* is the total number of directors on the board. *ShareNE* is the percentage of non-executive directors on the board. *Lagged Leverage* is the ratio of long term debt to total assets lagged one year. *Lagged Size* is the natural log of number of employees lagged one year. *IE Presence* is a dummy variable which has the value 1 if a non-executive director is also an executive director of another company and 0 if not. *Number of IE directors* is the number of non-executive directors on a board who are executive directors in other companies. *Share of IE directors* is the percentage of non-executive directors on the board that are also executive directors of other firms.

Dependent Variable:						
	ROE	Tobins Q	ROE	Tobins Q	ROE	Tobins Q
	(1)	(2)	(3)	(4)	(5)	(6)
Board Size	0.004 (0.003)	0.002 (0.004)	0.004 (0.003)	0.002 (0.004)	0.004 (0.003)	0.002 (0.004)
ShareNE	-0.011 (0.059)	-0.114 (0.092)	-0.011 (0.059)	-0.115 (0.092)	-0.004 (0.059)	-0.108 (0.092)
Lagged Leverage	0.029 (0.063)	-0.301*** (0.093)	0.031 (0.063)	-0.299*** (0.093)	0.029 (0.063)	-0.298*** (0.093)
Lagged Size	-0.043*** (0.012)	-0.101*** (0.022)	-0.043*** (0.012)	-0.101*** (0.022)	-0.042*** (0.012)	-0.101*** (0.022)
IE Presence	0.026** (0.012)	0.026 (0.022)				
Number of IE Directors			0.016* (0.009)	0.019 (0.016)		
Share of IE directors					0.069** (0.034)	0.024 (0.070)
Firm-years	3,979	3,825	3,979	3,825	3,979	3,825
Firms	1,223	1,205	1,223	1,205	1,223	1,205
R <sup>2</sup>	0.06	0.28	0.06	0.28	0.06	1.28

Robust standard errors in parentheses. Constant and time dummy variables are included in regressions but not reported.

\* significant at 10%, \*\* significant at 5%, \*\*\* significant at 1%.

Table 5: Fixed Effects Regression Results: Specifications with relative performance, audit committee membership and industry similarities.

*Board size* is the total number of directors on the board. *ShareNE* is the percentage of non-executive directors on the board. *Lagged Leverage* is the ratio of long term debt to total assets lagged one year. *Lagged Size* is the natural log of number of employees lagged one year. *IE Presence* is a dummy variable which has the value 1 if a non-executive director is also an executive director of another company and 0 if not. *Number of IE directors* is the number of non-executive directors on a board who are executive directors in other companies. *Share of IE directors* is the percentage of non-executive directors on the board that are also executive directors of other firms.  $SAME_{IND_{it}} \times IE \times S_{IND_{it}} NOT SAME_{it}$  is a dummy variable equals 1 if a firm has at least one IE director, but she works in different industry and 0 otherwise.  $IE \times S_{IND_{it}} SAME_{it}$  is a dummy variable which takes the value of 1 if at least one of non-executive directors of firm *i* has an executive position in the same industry and 0 if not. *RelPerf* is the average performance of the companies in which the non-executive director acts as an executive director. *Audit X IE X not same* is a dummy variable which takes the value 1 if the IE on the audit committee is not an executive director in the same industry and 0 otherwise. *Audit X IE X same* is a dummy variable which takes the value 1 if the IE on the audit committee is an executive director in the same industry and 0 otherwise.

	Dependent Variable					
	ROE (7)	Tobins Q (8)	ROE (9)	Tobins Q (10)	ROE (11)	Tobins Q (12)
Board Size	0.004 (0.003)	0.003 (0.005)	0.004 (0.003)	0.002 (0.005)	0.004 (0.003)	0.003 (0.005)
Share NE	-0.012 (0.059)	-0.077 (0.108)	-0.012 (0.060)	-0.093 (0.109)	-0.013 (0.060)	-0.096 (0.110)
Lagged Leverage	0.029 (0.063)	-0.325** (0.130)	0.023 (0.064)	-0.316** (0.129)	0.023 (0.064)	-0.316** (0.129)
Lagged Size	-0.043*** (0.012)	-0.117*** (0.026)	-0.042*** (0.013)	-0.117*** (0.026)	-0.042*** (0.013)	-0.115*** (0.026)
IE X not same	0.026* (0.013)	0.003 (0.028)	0.013 (0.014)	-0.050 (0.052)	0.014 (0.015)	-0.066 (0.052)
IE X same	0.028 (0.022)	0.032 (0.060)	0.025 (0.022)	-0.021 (0.074)	0.015 (0.024)	-0.097 (0.080)
RelPerf			0.084*** (0.025)	0.035 (0.030)	0.084*** (0.025)	0.033 (0.029)
Audit X IE X not same					-0.003 (0.019)	0.043 (0.042)
Audit X IE X same					0.024 (0.042)	0.170** (0.071)
Firm-years	3,979	3,990	3,959	3,965	3,959	3,965
Firms	1,223	1,222	1,223	1,222	1,223	1,222
R <sup>2</sup>	0.06	0.23	0.06	0.24	0.06	0.24

Robust standard errors in parentheses. Constant and time dummy variables are included in the regressions but not reported.

\* significant at 10% \*\* significant at 5%, \*\*\* significant at 1%.

Table 6: Fixed Effects Regression Results: Specifications with relative performance, industry similarities and IE interactions

IE NOT SAME INDUSTRY takes the value 1 if the IE director is not an executive director in the same industry and 0 otherwise. IE NOT SAME/NOT SIMILAR is 1 if the IE director is not an executive director in the same or similar industry and 0 otherwise. IE SIMILAR is 1 if the IE director is an executive director in a company in a similar industry and 0 otherwise. IESAME is 1 if the IE director is also an executive director in a company in the same industry and 0 otherwise. RELATIVE PERFXNOT SAME is the interaction of the industry adjusted profitability of the company where the IE is an executive director and the IE director coming from not the same industry and 0 otherwise. RELATIVE PERFXNOT SAME/NOT SIMILAR is the interaction of the industry adjusted profitability of the company where the IE is an executive director and the IE director coming from neither the same nor similar industry and 0 otherwise. RELATIVE PERFX SIMILAR is the interaction of the industry adjusted profitability of the company where the IE is an executive director and the IE director coming from the same industry and 0 otherwise. RELATIVE PERFX SAME is the interaction of the industry adjusted profitability of the company where the IE is an executive director and the IE director coming from a similar industry and 0 otherwise. AUDITxNOT SAME is a dummy variable which equals 1 if there are audit committee members that are executive directors in other companies but none work for a company in a similar industry and 0 otherwise. AUDITxNOT SAME/NOT SIMILAR has a value of 1 if there are audit committee non-executive directors who are executive in other companies, but none of them work in a company from the same industry or a similar group of industries and 0 otherwise. AUDITxSIMILAR has a value of 1 if a company has an audit committee non executive director who is also an executive director in a similar industry or 0 otherwise. AUDITxSAME, is 1 if a company has a non-executive director who is an executive director in a company in the same industry and 0 otherwise.

Dependent Variable	ROE		Tobins Q	
	(13)	(14)	(15)	(16)
IE Not Same Industry	0.015 (0.015)	-0.040 (0.046)		
IE Not Same/Not Similar			0.019 (0.018)	-0.013 (0.048)
IE Similar Industry			-0.006 (0.025)	-0.168* (0.092)
IE Same Industry	0.012 (0.026)	-0.213 (0.158)	0.011 (0.025)	-0.209 (0.159)
Relative Perf X Not Same	0.077*** (0.026)	0.015 (0.025)		
Relative Perf X Not Same/Not Similar			0.078** (0.034)	-0.001 (0.025)
Relative Perf X Similar			0.071** (0.031)	0.128** (0.054)
Relative Perf X Same	0.124 (0.086)	0.107 (0.101)	0.118 (0.083)	0.107 (0.101)
Audit X Not Same Industry	-0.004 (0.019)	0.045 (0.042)		
Audit X Not Same/Not Similar			-0.011 (0.021)	0.021 (0.049)
Audit X Similar Industry			0.064* (0.033)	0.032 (0.049)
Audit X Same Industry	0.024 (0.042)	0.168** (0.071)	0.018 (0.040)	0.159** (0.071)
Firm-years	3,959	3,965	3,959	3,965
Firms	1,223	1,222	1,223	1,222
R2	0.06	0.24	0.06	0.24

Robust standard errors are in parentheses. Constant and time dummy, lagged leverage and lagged SIZE variables are included in specification but not reported. \* significant at 10% \*\* significant at 5%, \*\*\* significant at 1%.