Was Marshall Right? Managerial Failure and Corporate Ownership in Edwardian Britain

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The economist Alfred Marshall argued that the malaise of UK public companies in Edwardian Britain was due to the separation of ownership from control, and that the solution was to have U.S.-style CEOs. In this paper, we examine these claims by looking at the ownership and control of the largest c.1,700 British companies in 1911. We find that most public companies had a separation of ownership and control, but that this had little effect on their performance. We also find that managers were unlike their U.S. peers in that they were much less likely to be university educated, have extensive corporate networks, and deep business experience.

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1. Introduction

Writing in 1919, the economist Alfred Marshall opined that the performance of large British businesses was far behind that of the United States and Germany. For Marshall, the chief problem was that ownership had separated from control in public companies. As a result, they lacked vigour, which in turn had an adverse effect on national prosperity (Marshall, 1919, pp.316, 328). He goes on to suggest that the only solution to what he termed this 'evil' was to follow the U.S. example and have shareholders empower autocratic and appropriately educated and trained managers.

However, Marshall's view is not widely shared. The orthodox view among business and economic historians is that British management by the Edwardian era was amateurish chiefly because the ownership of public corporations was concentrated in the hands of families (Payne, 1967, 1984; Chandler, 1990, p.240; Wilson, 1995, p. 154).[1] This managerial failure contributed to the long-term decline of British business, and it being left behind by its American and German counterparts (Elbaum and Lazonick, 1984). According to this orthodox view, much of Britain's twentieth-century economic malaise can be traced back to this failure (Kindleberger, 1964, p.114; Payne, 1984).[2] This malaise may even have had deep-seated legal roots in that the investor protection necessary to facilitate the move away from concentrated family ownership was not available until well into the twentieth century (La Porta et al., 1998, 1999, 2008).

In this paper, we ask whether Marshall's or the orthodox view is the correct one by examining the ownership and control of circa 1,700 of the largest public companies listed on UK stock exchanges in 1911. Our sample covers a wide range of industries and is much more representative than those used by previous studies. The first thing we do is examine the

[1] See Church (1993) for a critique of this view.
[2] Paradoxically, family firms were a major driver of British economic growth during the Industrial Revolution and beyond (Habakkuk, 1956).

directorial ownership of these firms using a unique data source. We find that on average there was a separation of ownership from control and that the vast majority of companies had a separation of ownership from control. Nevertheless, there were circa 263 companies where directors owned more than one third of the capital and 125 where the directors owned more than 50 per cent of the capital.

We then examine the characteristics of those individuals who managed companies. We want to know how managers got to the top of their firms – was it family and social connections, business networks or professional experience? It is important to do this for three reasons. First, the separation of ownership from control means that the managers of companies were in influential positions. As Marshall recognised, this influence could have been detrimental for shareholders because of potential agency problems (Jensen and Meckling, 1976; Fama and Jensen, 1983).[3] However, managers with certain characteristics may have mitigated the agency problem. Second, according to upper echelons theory, the performance of firms reflects the observable characteristics of their top manager (Hambrick and Mason, 1984; Hambrick, 2007). Third, one of the charges levelled against family companies is that family members rather than competent professionals manage them. This can have a negative effect on performance because of nepotism (Pėrez-González, 2006) or because conflicts between family and non-family owners undermines performance (Villalonga and Amit, 2006). We want to see if this really was the case.

The final part of our analysis is to see whether ownership and control ultimately mattered for the performance of firms. Using profitability, stock-market and longevity data, we analyse whether the presence of diffuse ownership, concentrated ownership, and family ownership were correlates of poor performance for Edwardian public companies. We find very

[3] Notably, there is some evidence of managerial inefficiency in British railway companies at the turn of the twentieth century, which may have been partly due to their very diffuse ownership (Arnold and McCartney, 2005; Crafts et al., 2008; Mitchell et al., 2011).

little relationship between performance and ownership and control. We also examine whether the characteristics of the chief executive affected firm performance. Our main finding is that better performing firms were more likely to have a chief executive who had a university education and multiple directorships.

Overall, our evidence suggests that business and economic historians need to move away from the orthodox view of corporate and managerial malaise and look elsewhere for the roots of Britain's relative corporate demise. Most public companies had diffuse ownership, and where they did not, managers were far from amateurish. Furthermore, although our evidence supports Marshall's view that ownership was separated from control, we find little evidence that this ultimately mattered for firm performance.

This paper contributes to several interconnected strands of literature. First, it contributes to the rather sparse literature on who were the managers / CEOs of public companies in the Victorian, Edwardian and interwar eras. Apart from Stanworth and Giddens' (1974, 75) sociological study of company chairman and directors in the first seven decades of the twentieth century and Gourvish's (1973) study of the general managers of railways, there have been no systematic studies looking at the characteristics and backgrounds of the leaders of public companies. As well as addressing this lacuna, our study also contributes to modern debates about CEO characteristics, pathways to the top and the effect of CEOs on firm performance (Hambrick and Mason, 1984; Cappelli and Hamori, 2005; Wang et al., 2016).

Second, it contributes to the recent literature which has challenged the orthodox view. Foreman-Peck and Hannah (2012) show that ownership was divorced from control for the largest 300 British companies in 1911. Relatedly, Hannah (2007) has argued that diffuse ownership was commonplace by 1900 and Acheson et al. (2015) show that ownership was relatively diffuse among smaller public companies in the second half of the nineteenth century.

Finally, Acheson et al. (2019) find that weak investor protection was not a hindrance to diffuse ownership before 1900 because companies provided protection via their articles of association.

However, this challenge to the orthodox position is incomplete for several reasons. First, the companies that Foremen-Peck and Hannah (2012) looked at were the largest companies in 1911. Many of these companies were railways, financial and utility companies that had been around for several decades and that had diffuse ownership from their inception. This selection bias could give a false impression of the many new industrial companies that had formed since the late 1890s and that would go on to be the industrial giants in the interwar period. Indeed, by 1929 the largest public companies on the UK stock market were industrials, and financials and railways no longer dominated the list of the largest companies (Campbell et al., 2021). Second, Franks et al. (2009), Cheffins et al. (2013) and Acheson et al. (2015) find that companies formed in the 1890s, which would have formed the backbone of the Edwardian industrial corporate economy, had much more concentrated ownership than those formed in previous decades. Furthermore, many, if not the majority, of the 308 brewery companies which had securities quoted on the stock exchange in 1900 were under family control (Acheson et al., 2016a). In other words, smaller public companies in 1911 may well conform to the orthodox view in terms of having families as major owners. Our paper overcomes these issues by looking at nearly 1,700 public companies.

The third strand of literature that this paper contributes to is the debate surrounding when ownership separated from control in the UK. Much of the extant literature suggests that the separation of ownership from control in the UK happened at some point in the second half of the twentieth century (Florence, 1961; Nyman and Silberston, 1978; Scott, 1990; Leech and Leahy, 1991; Cheffins, 2001; Coffee, 2001; Franks et al., 2009). More recent empirical work suggests that ownership may have separated from control by c.1900 (Braggion and Moore, 2011; Foreman-Peck and Hannah, 2012; Acheson et al., 2015). Our paper speaks to this debate

by categorically showing that for most firms, ownership had separated from control by 1911, but that there was a rump of industrial companies where ownership was concentrated in the hands of families. Relatedly, our paper contributes to the debate as to whether ownership structure mattered for firm performance. Although Chandler (1990) opines that family ownership was detrimental for British businesses and Marshall (1919) opines that the separation of ownership from control was deleterious for performance, there has been limited empirical work in this area (Foreman-Peck and Hannah, 2013; Acheson et el., 2016b). Our paper suggests that ownership and control did not have much of a bearing on performance, which is consistent with Demsetz and Lehn (1985).

The next section of the paper explains our data sources. Section 3 analyses the ownership structure of our sample companies and some of the major correlates of ownership structure. Section 4 explores the characteristics of those who managed these companies. Section 5 examines whether ownership and control are correlates of corporate performance. Section 6 provides a summary and discusses the implications of our findings for future research.

2. Data

To examine ownership and control in the Edwardian era in a comprehensive fashion is only possible because of a publication called *The Investors' Four Shilling Yearbook*, which was published for four years before World War I. This yearbook was supplementary to and published for the *Financial Review of Reviews*, which was a monthly publication which provided investors with financial and accounting information on companies listed on the provincial and London stock exchanges. The object of the yearbook was "to provide a handy and accurate record of the position of every important corporate body or undertaking whose

securities are quoted in the United Kingdom", and it was aimed at investors "however inexpert in finance" (*The Investors' Four Shilling Yearbook,* 1912, p.v).

The 1912 edition of the yearbook reports, for most companies, the total amount of shares owned by the board of directors in terms of par value of common and preference shares in 1911. Unlike other information or figures reported in the yearbook, the computation of this figure would have required substantial effort to calculate and collate because the yearbook's researchers would have had to trawl through annual lists of shareholdings held at Somerset House and other registries to find out the share ownership of individual directors (Foreman-Peck and Hannah, 2012, p.1218). The researchers also estimated the number of shareholders in these lists, and the approximate number of shareholders in each company is reported to the nearest 100.

There are 1,693 companies reported in the 1912 *The Investors' Four Shilling Yearbook*. Foreman-Peck and Hannah (2012) suggest that the yearbook was comprehensive with very few notable omissions – the only sector which was omitted was foreign mining. These 1,693 companies would have been the largest reported in the *Stock Exchange Yearbook* and together comprised £1.807 billion of share capital. Thus, these companies would have represented over 50 per cent of share capital and c.45 per cent of all companies listed on UK stock markets in 1911.[4]

Because we want to know who had managerial control of these companies and the voting rights attached to shares, and these details were not reported in *The Investors' Four Shilling Yearbook,* we collected data on these from the 1912 *Stock Exchange Yearbook*. But who were the managers or CEOs (to use the modern parlance) of public companies in 1911? For Alfred Marshall, the chairman was the individual who had the most power in public

[4] Based on estimates reported in Coyle et al. (2019).

companies (Marshall, 1919, p.311). This was particularly the case if they combined the post with being a managing director (Foreman-Peck and Hannah, 2012, p.1223). In banks and insurance companies which had been around for decades, the most powerful individual in 1911, i.e., the person who had responsibility for overall strategic direction, was the managing director, who typically had risen through the ranks of the company. The rise of professional managers in banking and insurance by 1911 had been facilitated by the limitation of liability some decades earlier (Pownall, 1913, p.27 and Acheson and Turner, 2006). In terms of managerial control, we obtained the name of chairmen and/or managing director. We also collected board size and the number of peers and MPs on boards.

The next step in the data collection was to obtain biographies of the chairman and managing directors of our 1,694 companies. To do this, we used *Businessmen at Home and Aboard*, which was published in 1912 by Herbert Bassett (Bassett, 1912). This publication was a biographical dictionary of the directors and managers of the most important companies registered in UK. The book was an impartial and independent dictionary because those reported in it did not pay to be included and were not obligated to buy a copy. Furthermore, the directory appears to have no geographical bias because Bassett (1912, p. iii) used a nationwide network of associates to collect biographical information. This also was not Bassett's first foray into creating a biographical dictionary – he published his *Men of Note in Finance and Commerce* in 1900 (Bassett, 1900). Furthermore, he was intimately connected to the financial world – he had been on the editorial staff of the *Financial Times*, was the editor of the *Financial Review of Reviews*, *Bradshaw's Railway Manual*, and the *Investors' Four Shilling Yearbook*. In other words, *Businessmen at Home Aboard* can be viewed as being well-informed, comprehensive, and accurate.

We found biographical details for about 1,000 of our chairmen and managing directors. The biographical details reported in Bassett (1912) include year of birth, other directorships,

club membership, education, career prior to being a chairman/managing director, and whether they had been an officer in the military. We assume that when nothing is reported for several categories, then that means the individual had not been an officer in the military, did not receive a formal university or elite school education, was not and had not been an MP, was not a Justice of the Peace or Deputy Lieutenant, and was not a director at another company. In terms of career background, we are interested in whether the chairman or managing director had been an accountant, banker, engineer, lawyer or merchant. Unfortunately, career background is not reported for every chairman or director. We therefore make no assumptions about the career background of these individuals.

The final step was to collect data to test whether ownership structure and manager background were correlated with firm performance. In terms of accounting performance measures, the *The Investors' Four Shilling Yearbook*, because it was published by the *Financial Review of Reviews*, contains total asset figures and net profit figures for the majority of companies. In terms of market measures of performance, we obtained the end of December 1910 price of ordinary shares for just over 950 of our companies from the *Investor's Monthly Manual*. Finally, because we are interested in viewing performance in terms of survival (Alchian, 1950), we use the *Register of Defunct Companies* to determine when and why companies disappeared.

Appendix Table 1 describes all the variables used in this paper as well as the data source for each variable.

3. Ownership structure

The descriptive statistics in Table 1 reveal that of the 1,693 companies reported in *The Investors' Four Shilling Yearbook*, director ownership data was reported for 1,548 companies. Before looking at director ownership, we note several things about our sample. First, in terms

of company characteristics, there is a good spread in terms of company age and company size, which are potential determinants of ownership (Demsetz and Lehn, 1985). In addition, firm leverage, another potential covariate of ownership, is relatively low for most companies.

<<INSERT TABLE 1 HERE>>

Second, companies with foreign operations may have faced greater agency costs in the Edwardian era and therefore had more concentrated ownership. Notably, 31.7 per cent of companies have foreign operations, which is representative of the UK stock market at the time (Rogers et al., 2020).

Third, where shares are traded and listed may have influenced ownership for several reasons. Listing rules of the London stock exchange in this era required two-thirds of capital to be issued to the public (Melsheimer and Laurence, 1905; Hannah, 2007). In addition, an official listing on the London was a signal of firm quality which may have promoted diffuse ownership (Fjesme et al., 2021). Finally, shares listed on multiple exchanges may have been more liquid, which may have influenced ownership concentration (Rogers et al., 2020). From Table 1 we see that there is a good spread in our sample between companies listed on the London market and those listed on other UK stock exchanges. There is also a representative split between those listed on the Official List and those on supplementary lists. The low proportion of companies which are listed on multiple stock markets tallies with data reported by Rogers et al. (2020, p.509).

Table 1 shows that ownership was separated from control for most companies, with the median and mean being 8.9 and 17.2 per cent. These figures are much higher than those reported in Foreman-Peck and Hannah (2012) because they only focussed on the largest 337 companies in 1911, but is on a par with what Acheson et al. (2015) report for the Victorian era. However, there were companies where ownership was not separated from control - directors

owned a third or more of capital in 17.0 per cent of companies and they owned more than one half of capital in 8.1 per cent of companies.

The ownership figures reported in Table 1 are based on cash flow rights. Ideally, we would convert these into control rights, but our data sources do not allow us to do this because director ownership is not reported on an individual basis. However, as can be seen from Table 1, 86.4 per cent of companies had voting scales for ordinary shares which meant that cash flow rights were equivalent to voting rights for such shares. In addition, over 50 per cent of companies granted owners of preference shares similar voting rights to those attached to ordinary shares, which implies that the voting and cash flow rights for the directors of these companies would have been similar irrespective of the type of shares that they owned.

How much control did directors ultimately have even when ownership was relatively diffuse? Small board sizes (see Table 1) would have facilitated coordinated action by directors. However, working in the opposite direction was the small shareholder base in most companies (see Table 1), which would have made it much easier for shareholders to exercise voice in company affairs, particularly because the practice at AGMs was simply to use a poll by show of hands and only apply voting schemes if enough shareholders requested it (Acheson et al., 2019).

Table 2 reveals that there was a substantial variation in ownership structure across industries. Utilities and transportation industries had the most diffuse ownership, which was partly a function of their size and capital needs. At the other end of the spectrum were merchants, breweries, paper and printing, and engineering. These companies were typically smaller and younger. The only surprising result in Table 2 is that banks and insurance companies appear to have a lot of director ownership. However, this is because the boards of these companies were on average twice the size of other companies in the sample. Furthermore, these companies were far more likely to have voting structures such as graduated voting and

upper limits on votes, with the result that the concentration of voting rights was less than that of cash flow rights.

<<INSERT TABLE 2 HERE>>

We identify family firms by ascertaining if a director's name is also part of the company's name. Although this is likely to underestimate the number of family firms, circa 25 per cent of our sample consists of family firms (Table 1). Notably, the mean director ownership for family companies is 29.6 per cent versus 12.8 per cent for non-family companies.

To explore the covariates of director ownership, we use an OLS regression and regress our explanatory variables in Table 1 on the natural logarithm of director ownership. We also regress these variables on our two binary director ownership variables (i.e., Directors > 1/3 and Directors > 1/2) using a logit regression. We control for industry fixed effects in all specifications.

The regression results in Table 3 bear out the strong positive relationship between director ownership and being a family firm. Indeed, the variance decomposition of the specifications 1, 2, 5 and 6 reveals that family firms play the largest explanatory role, with 23 to 26 per cent of the variation being attributable to this variable alone. This implies that ownership was not separated from control for the average family firm.

<<INSERT TABLE 3 HERE>>

Table 3 reveals that board size is positively related to director ownership, whereas the number of shareholders is negatively related. These are likely to be mechanical relationships. The presence of MPs and peers on boards is unrelated to ownership structure. The presence of such individuals may have been viewed as providing independent reassurance to small investors, thus facilitating a separation of ownership from control. Alternatively, they may have been viewed as ornamental directors (Campbell and Turner, 2011). Our results support the latter.

In terms of firm attributes, larger firms had a greater separation of ownership from control as did older companies. The former had greater capital needs and therefore needed to draw from a wider pool of owners, and shares in older companies had had more time to diffuse. Leverage appears to be unrelated to director ownership apart from when director ownership exceeds one third and one half. Firms with high levels of director ownership were much less leveraged than their peers. This may reflect risk aversion on the part of directors, but it also may reflect a reluctance on the part of capital markets to lend to such companies.

The results in Table 3 suggest that companies with foreign operations were more likely to have diffuse ownership. This is somewhat counterintuitive because one would expect that firms with overseas operations may have faced greater agency costs because of distance and greater information asymmetries. However, such firms typically mitigated agency costs by offering shareholders greater protection in their articles of association (Acheson et al., 2019). Furthermore, the threat of expropriation by foreign governments may have discouraged directors from holding large stakes in such companies.

In terms of voting schemes, there is no indication that the voting rights of ordinary shares were related to director ownership, which would suggest that cash flow rights and voting rights were closely aligned. However, the results suggest that if preference shares have votes, then director ownership is lower. Notably, when we split our sample out into family and non-family, the coefficient on the preference share voting variable becomes insignificant in the sub-sample of family firms and loses much of its economic significance in the sub-sample of non-family firms. These results are consistent with family firms maintaining control by issuing non-voting preference shares (Acheson et al., 2016a).

With regards to where shares where listed and traded, the only variable of statistical significance is the Official list variable, which indicates that the listing requirement that two-thirds of capital be issued to the public were associated with lower levels of director ownership.

4. Who were the managers?

Alfred Marshall argued that by the Edwardian era, ownership had separated from control. Using director ownership data on circa 1,600 public companies, our evidence suggests that he was right. Ownership had separated from control for at least 75 per cent of public companies and those that had concentrated ownership were typically family firms. Marshall believed that the separation of ownership from control was a problem and implied that many of the leaders of such companies were unsuited to the task of managing large and complex organisations.

Who were the controllers of large public companies in 1911? What were their observable characteristics? Although some companies may have been run by a committee of directors, the main executive figures in most companies were the chairman of the board and the managing director. In terms of our 1,693 companies, 889 of them had just a chairman, 688 had a chairman and managing director, 58 had only a managing director, and only 58 appear to have been run by committee. Obtaining biographical information on chairmen and managing directors from 1911 was only possible thanks to Bassett (1912). However, this source reports biographical information for 51.0 per cent of the chairmen in our sample and 28.6 of the managing directors. The former were more prominent in society and important in terms of executive power and this explains why Bassett (1912) has more information on them. However, more fundamentally, we may be worried that our data has a selection bias that makes it non-representative. As can be seen from Appendix Table 2, our chairman sample is representative of our overall sample in terms of director ownership and family firms. However, in terms of firm size and some correlates of it (number of shareholders, board size and number of markets where shares are traded), the chairman sample contains slightly larger companies. This is unsurprising because those in charge of larger companies would have been more prominent in the business world.

From Table 4, we see that the average chairman was aged 61, which would suggest that they were towards the end of their careers. The average chairman also held 3.5 other directorships, which implies that chairmen were connected into the wider corporate network. Taken together, their age and number of other directorships suggest that the average chairman was, although making executive decisions, was not engaged full time in the running the company.

<<INSERT TABLE 4 HERE>>

Our chairmen in Table 4 appear to fall into two broad categories. The first category consists of those who have a business background and deep experience in engineering, law, accounting, banking or in mercantile trades. The second category consists of those from the social and political elite. Those in this category had attended elite public schools. Many of them were or had been MPs. Many also belonged to elite gentlemen's clubs. Finally, many also held honorific positions such as Justice of the Peace or Deputy Lieutenant. These positions were usually held by members of the gentry and the postholders were responsible for elements of local administration (Thomson, 1922; Trevelyan, 1931, pp.22-4). Holding such a post signalled social prominence and usually implied that the holder was a major landowner. The process of gentrification may have resulted in successful businesspeople becoming large landowners and therefore being given these honorific positions (Thompson, 1990). However, Nicholas (1999) suggests that there is little evidence based on probate records to suggest that successful businessmen became substantial landowners.

The average managing director was aged 53 and appears to have had no other directorships, which would suggest an ability and capacity to be actively involved in company management. They were much less likely to be part of the social elite and most of them had a business background and a deep commercial skillset in engineering, law, accounting, banking

or in mercantile trades. Interestingly, Gourvish (1973) finds something similar in his study of the general managers of British railways.

Table 5 suggests that chairmen of larger firms, firms with less director ownership and non-family firms tended to have more directorships. This implies that the chairmen of the largest companies and those with the most diffuse ownership were not engaged full time running those companies. A further notable finding in Table 5 is that non-family firms and firms with low levels of director ownership were more likely to have a chairman who had a professional or business background.

<<INSERT TABLE 5 HERE>>

Table 6 reveals that smaller firms and firms with more director ownership were less likely to have chairmen who had attended elite schools and university. They also were less likely to be peers, MPs, have honorific titles and be member of elite clubs. In other words, large public companies with diffuse ownership were much more likely to be run by the social elite compared to their smaller peers and peers with more concentrated ownership.

<<INSERT TABLE 6 HERE>>

Marshall's implicit critique of the managers of these large British public companies was that, unlike their American peers, they were not suitably equipped to manage large and complex organisations. This raises a question as to how much the managers and leadership of U.S. corporations differed from those in the UK in 1911. Unfortunately, there is no similar in-depth statistical analysis for 1911 in the United States.[5] However, there are several studies which touch on the characteristics of the leaders of the largest corporations in the United States in 1917 and in the first decade of the twentieth century. Tedlow et al. (2003) look at the CEOs of the largest 200 corporations in 1917. They find that the average CEO was 55 and typically

[5] See Friedman and Tedlow (2003) for a survey of statistical portraits of American business elites

came from the upper or upper middle classes. The average chairman in our sample also came from these classes but was slightly older (61).

Newcomer (1955) looks at circa 300 corporations. She finds that the typical CEO in 1900 held multiple directorships and had had extensive business experience. In addition, 39 per cent of them had a university education. The typical chairmen in our sample held fewer directorships than their U.S. counterparts, were much less likely to have had extensive business experience, and only 23 per cent of them had a university education. On the other hand, the typical managing director in our sample had had extensive business experience, but they had no other directorships and were not university educated.

Miller (1950) looks at the top 190 U.S. business leaders between 1900 and 1910. He finds that they had 16 directorships on average, whereas the chairmen of even the largest quartile of UK companies had on average only 4.4 other directorships. He also finds that CEOs typically came from higher status families and from the business elite. While this is the case for the chairmen in our sample in terms of social status, nearly 50 per cent of UK chairmen were from the political, aristocratic and landed gentry elite rather than the business elite.

In summary, Marshall's critique of the leaders of UK companies appears to have some justification. Many of them did not have deep business experience and had not been educated to a university level. Furthermore, U.S. CEOs were much better connected via director networks than their UK counterparts. These networks would have given U.S. CEOs better access to information, influence, and finance. Ultimately, however, we must ask whether this mattered for firm performance. Some UK companies had chairmen who were university educated and who had deep business experience and were well connected to the wider business world via directorships. In the next section, we use this variation in our data to explore whether manager characteristics were correlated with performance.

5. Does ownership and control matter?

Alfred Marshall believed that many large UK companies lacked vigour because ownership was separated from control. In this section, we explore whether diffuse ownership was correlated with firm performance. Marshall also implied that the solution to the lack of vigour was to have U.S.-style CEOs (i.e., well educated men with deep business experience) run companies in an autocratic manner. Therefore, in this section we also explore whether manager characteristics were correlated with firm outcomes.

In terms of firm outcomes, we use return on assets as our accounting measure of performance and Tobin's Q as our market-based measure of performance. The former measures the efficiency with which managers run the firm as well as the potential rents generated for managers. Tobin's Q, on the other hand, is a measure of how well the firm is run from the perspective of minority shareholders. We also use survival time as an additional performance measure. This measures how long the company remained an independent entity after 1911. In some senses, we can think of this as a Darwinian approach to firm performance (Alchian, 1950). If Marshall is correct, then diffusely owned firms would have shorter survival times. On the other hand, if the orthodox view about British business is correct then greater director ownership should have resulted in shorter survival times.

From Table 1, which shows the descriptive statistics for our performance variables, we can see that we only have Tobin's Q and survival time for a subset of our sample. Table 1 reveals that the average firm in our sample survived for more than 25 years as an independent entity. The table also reveals that Tobin's Q is skewed by some high values. To address this in our econometric analysis, we follow the usual practice in the literature and cap Tobin's Q at 10.

In order to assess how director ownership correlates with return on assets and Tobin's Q, we use an OLS regression and regress director ownership and control variables on the two

performance variables. We use industry fixed effects to address some of the omitted variable bias. Table 7 reports the regression results using our three different measures of director ownership.

<<INSERT TABLE 7 HERE>>

The results in Table 7 reveal that companies with higher director ownership had superior return on assets – a 1 per cent increase in director ownership resulted in a 3 per cent increase in return on assets. This result appears to be driven by those firms where directors own more than 50 per cent of the shares. Interestingly, the coefficient on the family firm variable is positive and statistically significant in specifications 1 to 3 in Table 7, which suggests that they were more efficiently run and were trusted more by minority shareholders. In Table 9, we interact the variable *Family firm* with each of the three ownership variables because we expect director ownership to be higher in such firms (see Table 3). When we do this, ownership and family firms are no longer correlates of return on assets.

On the other hand, we can also see from Table 7 that higher director ownership was associated with a lower Tobin's Q. However, this relationship does not exist for very high levels of director ownership. These results suggest that minority shareholders placed less value on companies with more director ownership, possibly because of fears of expropriation by large controlling shareholders. However, when director ownership was very high, this same fear did not exist, possibly because such companies were more likely to be family firms which were trusted by shareholders because the family had reputation to lose if they expropriated shareholders. The interaction term in specification 4 in Table 9 bears this out by showing that family firms with higher director ownership are more valued by minority shareholders.

In Table 8 we use a Cox proportional-hazards model to estimate the effect of director ownership on survival time. As we can see from the results, survival time and ownership are uncorrelated. We can also see that there is also no relationship between survival time and being

a family firm. In Table 9, the introduction of interaction terms into the regression specification do no change these results. In other words, companies with diffuse ownership in 1911 did not underperform those with concentrated ownership. One might argue that companies could have changed their ownership structure very quickly after 1911, with the result that doing this type of analysis tells us very little. However, given that ownership structure takes substantial time to change and is often path dependent (Bebchuk and Roe, 1999), one can reasonably expect that the ownership structure in 1911 persisted for quite some time afterwards. Thus, from this Darwinian and long-run perspective, neither Marshall nor the holders of the orthodox view were correct. Rather, the results in Table 8 suggest that ownership structure ultimately did not matter for firm performance, perhaps suggesting that it was endogenously determined (Demsetz and Lehn, 1984).

<<INSERT TABLE 8 HERE>>

Overall, our findings lend no support to Marshall's contention about the lack of vigour of UK companies. No matter how we measure performance, companies with a separation of ownership from control performed no differently than those with concentrated ownership. Thus, if UK firms did lack vigour, it was not because of their ownership structure or the involvement of families.

Maybe the lack of vigour in UK companies was due to the type of men who ultimately controlled the firms. To examine this possibility, we regress chairman characteristics on firm performance in the form of return on assets and Tobin's Q. Because chairmen would have turned over on a regular basis, we do not consider it appropriate to use firm survival time, our long-run measure of performance, for this analysis.

<<INSERT TABLES 10 & 11 HERE>>

From Tables 10 and 11, there are at least three things worthy of comment. First, in terms of human capital, the positive coefficients in Table 11 suggest that chairmen with university

and Oxbridge degrees were correlated with higher Tobin's Q, suggesting that this was valued by shareholders. In addition, the positive and significant coefficient on the elite public school variable in Table 10 suggests that companies run by chairmen educated at the best schools in the country were more highly valued by shareholders. However, somewhat nullifying this finding is the negative and significant coefficient on this same variable in Table 10, which suggests that companies with such chairmen were less efficiently run.

Second, the positive and statistically significant coefficient on the number of other directorships variable in Table 11 suggests that companies with chairmen that were well-connected into the business network were more valued by shareholders. Notably, the coefficient on this variable suggests that the economic effect of having an additional directorship was high.

Third, markers of elite social status such as being a peer, knight, or member of an elite gentleman's club, or having served as an officer in the military were unrelated to firm performance. On the other hand, being a deputy lieutenant or justice of the peace is associated with higher performance. This result may reflect a chairman's competency and trustworthiness to perform such roles rather than his social status.

Overall, these results lend some support to Marshall's contention about the need for British companies to have American-style managers. American chairmen (or presidents) at the time were typically university educated, well connected via other directorships and had become chairmen because of their extensive business experience. We find in our sample that companies with better educated and more connected chairmen outperformed their peers. Given the low levels of university education and interconnectedness in our sample, Marshall may have been correct to point westwards for exemplars. Nevertheless, the finding that social status of chairmen was largely unconnected to firm performance implies that the fact that many of the

chairmen in our sample were there because of their social status rather than their business experience ultimately did not matter.

6. Conclusions

For the majority of the top c.1,700 public companies in Edwardian Britain, ownership was separated from control. However, there is little evidence to suggest that ownership structure ultimately mattered for performance. What do these results imply for the orthodox view among business and economic historians of Edwardian companies? Our findings clearly demonstrate that concentrated family control was not common among public companies of all sizes. In addition, even where there were family owners, it does not appear to have affected firm performance. Is this the final nail in the coffin of the orthodox view? It would appear so, with the result Marshall (1919) and Foremen-Peck and Hannah (2015) were correct in their assertions. However, if we cannot blame family ownership for the malaise which affected British industry, where else can we look?

Alfred Marshall suggested that the agency problem which arose from the separation of ownership from control was the root cause of the malaise of British companies. He argued that U.S. companies had overcome these problems by having professional, experienced, and suitably empowered CEOs. Unlike their U.S. counterparts, the typical UK chairman of a public company was not university educated, did not have an extensive corporate network and did not have deep business experience. Notably, we find that those UK companies where the chairman had an extensive corporate network and was university educated typically performed better than their peers. However, lack of business experience was not correlated with performance. This suggests a rich research agenda. How did chairmen get to the top in Edwardian Britain and after? How long did the education gap with their U.S. peers persist? Why was Britain unlike the United States and other industrial economies at the time in that the controllers of

large companies had small corporate networks? And why did these networks matter? One possible answer to this question is that interlocking directorships facilitated the combination of businesses and ultimately industrial concentration, and that their relative absence in the UK meant that it fell behind other industrial nations in this regard (Stanworth and Giddens, 1975).

The other element that Marshall suggested was important was the presence of an autocratic professional at the helm rather than an amateur who was one among equals on the board and had to build consensus. Future research needs to examine how the role of managing director and CEO evolved in the UK and whether the perceived long-run malaise of British business can be traced back to the lack of autocratic dictators at the helm.

References

Acheson, G. G. and Turner, J. D. 2006. The impact of limited liability on ownership and control: Irish banking, 1877-1914. *Economic History Review*, 59: 320-46.

Acheson, G. G., Campbell, G., Turner, J. D. and Vanteeva, N. 2015. Corporate ownership and control in Victorian Britain. *Economic History Review*, 68: 911-936.

Acheson, G. G., Coyle, C. and Turner, J. D. 2016a. Happy hour followed by hangover: Financing the UK brewery industry, 1880-1913. *Business History*, 58: 725-51.

Acheson, G. G., G. Campbell, J. D. Turner and N. Vanteeva. 2016b. Corporate ownership, control and firm performance in Victorian Britain. *Journal of Economic History*, 76: 1-40.

Acheson, G. G., Campbell, G. and Turner, J. D. 2019. Private contracting, law and finance. *Review of Financial Studies*, 32: 4156-95.

Alchian, A. A. 1950. Uncertainty, evolution, and economic theory. *Journal of Political Economy*, 58: 211-221.

Arnold, A. J., and McCartney, S. 2005. Rates of return, concentration levels and strategic change in the British railway industry, 1830-1912. *Journal of Transport History*, 26: 41-60.

Bassett, H. H. 1900. *Men of Note in Finance and Commerce, With Which Is Incorporated Men of Office*. London: Effingham Wilson.

Bassett, H. H. 1912. *Businessmen at Home and Abroad: A Biographical Directory of Partners, Principals, Directors, and Managers of Important Business Firms and Institutions at Home and Abroad, 1912-13*. London: St Paul's Chambers.

Bebchuk, L. B. and Roe, M. J. 1999. A theory of path dependence in corporate ownership and governance. *Stanford Law Review*, 52: 127-70.

Braggion, F. and Moore, L. 2011. Dividend policies in an unregulated market: the London Stock Exchange 1895-1905. *Review of Financial Studies*, 24: 2935-73.

Campbell, G. and Turner, J. D. 2011. Substitutes for legal protection: corporate governance and dividends in Victorian Britain. *Economic History Review*, 64: 571-97.

Campbell, G., Grossman, R. and Turner, J. D. 2021. Before the cult of equity: The British stock market, 1829-1929. *European Review of Economic History*, forthcoming.

Cappelli, P. and Hamori, M. 2005. The new road to the top. *Harvard Business Review*, January: 1-11.

Chandler, A. D. 1990. *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, MA: Belknap Press.

Cheffins, B. R. 2001. History and the global corporate governance revolution: the UK perspective. *Business History*, 43: 87-118.

Cheffins, B. R., Chambers, D. and Koustas, D. K. 2013. Ownership dispersion and the London Stock Exchange's "two-thirds rule": an empirical test. *Business History*, 55: 670-93.

Church, R. 1993. The family firm in industrial capitalism: International perspectives on hypotheses and history. *Business History*, 35: 17-43.

Coffee, J. C. 2001. The rise of dispersed ownership: the roles of law and the state in the separation of ownership and control. *The Yale Law Journal*, 111: 1-82.

Coyle, C., Musacchio, A. and Turner, J. D. 2019. Law and finance in Britain c.1900. *Financial History Review*, 26: 267-93.

Crafts, N., Leunig, T. and Mulatu, A. 2008. Were British railway companies well managed in the early twentieth century? *Economic History Review*, 61: 842-66.

Demsetz, H. and Lehn, K. The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93: 1155-77.

Elbaum, B. and Lazonick, W. 1984. The decline of the British economy: an institutional perspective. *Journal of Economic History*, 44: 567-83.

Fama, E. F. and Jensen, M. C. 1983. Separation of ownership and control. *Journal of Law and Economics*, 24: 301-25.

Fjesme, S. L., Galpin, N. E. and Moore, L. 2021. Rejected stock exchange applicants. *Journal of Financial Economics*, 139: 502-21.

Florence, P. S. 1961. *Ownership, Control and Success of Large Corporations: An Analysis of English Industrial Structure and Policy, 1936-1951*. London: Sweet and Maxwell.

Foreman-Peck, J. and Hannah, L. 2012. Extreme divorce: The managerial revolution in UK companies before 1914. *Economic History Review*, 65: 1217-1238.

Franks, J., Mayer, C. and Rossi, S. 2009. Ownership: evolution and regulation. *Review of Financial Studies*, 22: 4009-56.

Freidman, W. and Tedlow, R. 2003. Statistical portraits of American business elites. *Business History*, 45: 89-113.

Gourvish, T. R. 1973. A British business elite: The chief executive managers of the railway industry, 1850-1922. *Business History Review*, 47: 289-316.

Habakkuk, H. J. 1955. The historical experience on the basic conditions of economic progress. In L. H. Dupriez (ed.), *Economic Progress*, Louvain: Institut de Recherches Economiques et Sociales.

Hambrick, D. C. and Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9: 193-206.

Hambrick, D. C. 2007. Upper echelons theory: An update. *Academy of Management Review*, 32: 334-43.

Hannah, L. 2007. The divorce of ownership from control from 1900: Re-calibrating imagined global historical trends. *Business History*, 49: 404-38.

Investor's Monthly Manual, Dec. 1910.

Kindleberger, C. P. 1964. *Economic Growth in France and Britain, 1851-1950*. London: Oxford University Press.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A. and Vishny, R. W. 1998. Law and finance. *Journal of Political Economy*, 106: 1113-55.

La Porta, R., Lopez-De-Silanes, F. and Shleifer, A. 1999. Corporate ownership around the world. *Journal of Finance*, 54: 471-517.

La Porta, R., Lopez-De-Silanes, F. and Shleifer, A. 2008. The economic consequences of legal origins. *Journal of Economic Literature*, 46: 285-332.

Leech, D. and Leahy, J. 1991. Ownership structure, control type classifications and the performance of large British companies. *Economic Journal*, 101: 1418-37.

Marshall, A. 1919. *Industry and Trade: A Study of Industrial Technique and Business Organization*, London: Macmillan.

Melsheimer, R. E. and Laurence, W. 1905. *The Law and Customs of the London Stock Exchange*. London: Sweet and Maxwell.

Miller, W. 1950. The recruitment of the American business elite. *Quarterly Journal of Economics*, 64: 242-53.

Mitchell, B. R., Chambers, D. and Crafts, N. F. R. 2011. How good was the profitability of British railways, 1870-1912? *Economic History Review*, 64: 798-831.

Newcomer, M. 1955. *The Big Business Executive: The Factors That Made Him, 1900-1950*. New York: Columbia University Press.

Nicholas, T. 1999. Businessmen and land ownership in the late nineteenth century. *Economic History Review*, 52: 27-44.

Nyman, S. and Silberston, A. 1978. The ownership and control of industry. *Oxford Economic Papers*, 30: 74-101.

Payne, P. L. 1967. The emergence of the large-scale company in Great Britain, 1870-1914. *Economic History Review*, 20: 519-42.

Payne, P. L. 1984. Family business in Britain: an historical and analytical survey. In Akio Okochi and Shigeaki Yasuoka (eds.), *Family Business in the Era of Industrial Growth*, Tokyo: University of Tokyo Press, 171-206.

Pérez-González, F. 2006. Inherited control and firm performance. *American Economic Review*, 96: 1559-1588.

Pownall, G. H. 1914. *English banking: its development and some practical problems it has to solve*. London: Blades, East & Blades.

Register of Defunct Companies, 1979.

Register of Defunct Companies, 1990.

Rogers, M., Campbell, G. and Turner, J. D. 2020. From complementary to competitive: The London and UK provincial stock markets. *Journal of Economic History*, 80: 501-30.

Scott, J. 1990. Corporate control and corporate rule: Britain in an international perspective. *British Journal of Sociology*, 41: 351-73.

Stanworth, P. and Giddens, A. 1974. An economic elite: A demographic profile of company chairmen. In P. Stanworth and A. Giddens (eds.) *Elites and Power in British Society*. Cambridge: Cambridge University Press.

Stanworth, P. and Giddens, A. 1975. The modern corporate economy: interlocking directorships in Britain, 1906-1970. *The Sociological Review*, 23: 5-28.

Stock Exchange Yearbook, 1912.

Tedlow, R. S., Bettcher, K. B. and Purrington, C. A. 2003. The chief executive officer of the large American industrial corporation. *Business History Review*, 77: 687-701.

Thompson, F. M. L. 1990. Life after death: How successful nineteenth-century businessmen disposed of their fortunes. *Economic History Review*, 43: 40-61.

Thomson, G. S. 1922. The origin and growth of the office of Deputy-Lieutenant. *Transactions of the Royal Historical Society*, 5: 150-66.

Trevelyan, G. M. 1937. *British History in the Nineteenth Century and After*, London: Longmans.

The Investors' Four Shilling Yearbook. 1912. London: Charles Letts and Co.

Villalonga, B. and Amit, R. 2006. How do family ownership, control and management affect firm value? *Journal of Financial Economics*, 80: 385-417.

Wang, G., Holmes, R. M., Oh, I-S. and Zhu, W. 2016. Do CEOs matter to firm strategic actions and firm performance? A meta-analytic investigation based on upper echelons theory. *Personnel Psychology*, 69: 775-862.

Wilson, J. F. 1995. *British Business History, 1720-1994*. Manchester: Manchester University Press.

Table 1. Descriptive statistics

Variable	N	mean	p50	p25	p75	Std. dev.
Director ownership	1,548	0.172	0.089	0.031	0.241	0.202
Directors > 1/3 (0/1)	1,548	0.170	0.000	0.000	0.000	0.376
Directors > 1/2 (0/1)	1,548	0.081	0.000	0.000	0.000	0.274
Family firm (0/1)	1,693	0.249	0.000	0.000	0.000	0.433
Number of shareholders	1,603	1,685	630	300	1,320	4,611
Board size	1,690	6.099	5.000	4.000	7.000	3.568
MPs on board	1,691	0.148	0.000	0.000	0.000	0.434
Peers on board	1,691	0.203	0.000	0.000	0.000	0.695
Multiple votes (0/1)	1,654	0.134	0.000	0.000	0.000	0.340
One vote per share (0/1)	1,654	0.730	1.000	0.000	1.000	0.444
Preference share voting (0/1)	1,654	0.516	1.000	0.000	1.000	0.500
Size (£m)	1,561	1.862	0.483	0.234	1.168	5,943
Age (years)	1,663	23.820	17.000	12.000	28.000	22.276
Leverage	1,561	0.199	0.142	0.000	0.336	0.287
Foreign (0/1)	1,693	0.317	0.000	0.000	1.000	0.466
Registered (0/1)	1,693	0.891	1.000	1.000	1.000	0.312
Official list (0/1)	1,693	0.697	1.000	0.000	1.000	0.460
Number of markets	1,693	0.686	1.000	0.000	1.000	0.680
Traded on multiple markets (0/1)	1,693	0.095	0.000	0.000	0.000	0.293
London market (0/1)	1,693	0.452	0.000	0.000	1.000	0.498
Return on assets	1,407	0.059	0.041	0.020	0.076	0.094
Tobin's Q	887	9.268	2.002	0.963	5.712	25.559
Survival time (years)	803	26.750	24.000	13.000	39.000	16.858

Sources: See text and Appendix Table 1.
Notes: See Appendix Table 1 for variable definitions.

Table 2. Director ownership by industry

Industry	N	Director ownership	Directors own more than 1/3	Directors own more than 1/2
Railways	76	0.037	0.019	0.019
Gas, Water & Electricity	98	0.050	0.000	0.000
Tramway & Omnibus	42	0.067	0.024	0.000
Plantations	59	0.076	0.000	0.000
Telegraph & Telephone	31	0.079	0.067	0.067
Investment Trusts	188	0.122	0.089	0.044
Iron, Coal & Steel	118	0.141	0.094	0.034
Storage	28	0.151	0.148	0.074
Food & Retail	46	0.163	0.196	0.022
Manufacturing	327	0.191	0.208	0.104
Miscellaneous	81	0.198	0.197	0.118
Shipping & Docks	82	0.212	0.227	0.091
Banks & Insurance	140	0.214	0.239	0.115
Merchants	54	0.223	0.275	0.039
Breweries	240	0.234	0.238	0.139
Paper & Printing	56	0.266	0.333	0.148
Engineering	27	0.290	0.333	0.185

Sources: See text and Appendix Table 1.
Notes: See Appendix Table 1 for variable definitions.

Table 3. Covariates of ownership structure

	OLS				Logit	
			Family firms	Non-family firms		
	(1)	(2)	(3)	(4)	(5)	(6)
Family firm	0.787***	0.787***			0.141***	0.087***
	(10.655)	(10.689)			(7.067)	(5.397)
Number of shareholders	-0.261***	-0.260***	-0.097***	-0.036***	-0.080***	-0.046***
	(-6.733)	(-6.810)	(-7.860)	(-4.603)	(-9.846)	(-8.302)
Board size	0.955***	0.952***	0.087**	0.105***	0.163***	0.057**
	(6.811)	(6.826)	(2.207)	(4.627)	(4.367)	(2.083)
MPs on board	-0.147	-0.151	0.080	-0.001	0.017	0.039
	(-1.106)	(-1.142)	(1.350)	(-0.038)	(0.431)	(1.446)
Peers on board	-0.236	-0.234	-0.050	-0.017	-0.001	-0.024
	(-1.554)	(-1.551)	(-0.745)	(-0.856)	(-0.034)	(-0.789)
Multiple votes	0.151	0.085	0.012	0.008	-0.013	-0.003
	(1.173)	(0.813)	(0.273)	(0.604)	(-0.334)	(-0.121)
One vote per share	0.077					
	(0.785)					
Preference share voting	-0.178***	-0.175***	-0.019	-0.029***	-0.053***	-0.037***
	(-2.770)	(-2.743)	(-0.813)	(-2.758)	(-2.901)	(-2.758)
Size	-0.102**	-0.099**	0.051***	-0.007	0.022**	0.022***
	(-2.462)	(-2.437)	(4.330)	(-0.899)	(2.225)	(2.851)
Age	-0.111**	-0.121**	-0.099***	-0.017**	-0.053***	-0.033***
	(-2.032)	(-2.417)	(-4.766)	(-2.013)	(-3.900)	(-3.127)
Leverage	-0.128	-0.128	-0.037	0.016	-0.196***	-0.123***
	(-1.250)	(-1.263)	(-0.987)	(0.700)	(-3.358)	(-2.722)
Foreign	-0.392***	-0.394***	-0.072*	-0.035***	-0.100***	-0.043**
	(-4.307)	(-4.358)	(-1.920)	(-2.680)	(-3.539)	(-2.094)
Registered	0.036					
	(0.289)					
Official list	-0.232***	-0.232***	-0.005	-0.030**	-0.007	0.002
	(-2.855)	(-2.910)	(-0.189)	(-2.017)	(-0.311)	(0.126)
Multiple markets	0.018					
	(0.123)					
London	-0.161	-0.146*	-0.034	-0.010	-0.029	-0.028
	(-1.504)	(-1.820)	(-1.376)	(-0.819)	(-1.207)	(-1.530)
Observations	1,383	1,383	371	1,012	1,383	1,383
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.354	0.353	0.359	0.203		
Pseudo R-squared					0.235	0.256
Adjusted R-squared	0.338	0.339	0.319	0.180		
Area under the curve					0.825	0.851

Notes: The dependent variable in specifications 1 to 4 is the natural logarithm of the percentage of director ownership. In specification 5, the dependent variable is a binary variable = 1 if director ownership is great than one third, 0 otherwise. In specification 6, the dependent variable is a binary variable = 1 if director ownership is great than one half, 0 otherwise. Robust standard errors are in parentheses. Significance is shown by *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Manager characteristics

	Chairman		Managing director	
	N	*Mean*	*N*	*Mean*
Peer	1577	5%	746	0%
Knight	1577	14%	746	1%
Age	573	61.06	83	53.69
Number of other directorships	806	3.55	213	0
Club membership	805	57%	212	28%
MP	805	21%	213	6%
Justice of the Peace / Deputy Lieutenant	805	35%	70	27%
Military officer	805	10%	213	6%
Elite public school	805	17%	213	2%
University degree	805	23%	213	8%
Oxbridge degree	805	16%	213	3%
Accountant	643	3%	101	8%
Engineer	643	10%	101	18%
Lawyer	643	10%	101	20%
Banker	643	5%	101	7%
Merchant	643	12%	101	23%

Sources: See text and Appendix Table 1.
Notes: See Appendix Table 1 for variable definitions.

Table 5. Chairmen - business background characteristics

	Age	Other directorships	Accountant	Engineer	Lawyer	Banker	Merchant
Panel A: Director ownership quartile							
Q1	60.000	4.396	0.066	0.150	0.132	0.030	0.126
Q2	62.368	3.655	0.037	0.110	0.081	0.096	0.199
Q3	60.765	3.771	0.022	0.066	0.118	0.044	0.140
Q4	60.380	2.445	0.007	0.080	0.065	0.029	0.058
Panel B: Firm size quartile							
Q1	59.791	2.459	0.020	0.071	0.081	0.051	0.121
Q2	59.732	3.356	0.033	0.157	0.116	0.017	0.107
Q3	61.906	3.531	0.039	0.071	0.084	0.039	0.149
Q4	61.487	4.121	0.043	0.087	0.077	0.072	0.135
Panel C: Family firm							
Non-family firm	61.396	3.918	0.047	0.093	0.101	0.066	0.156
Family firm	59.253	2.248	0.000	0.090	0.060	0.000	0.080
N	410	586	465	465	465	465	465

Sources: See text and Appendix Table 1.
Notes: See Appendix Table 1 for variable definitions.

Table 6. Chairman – social status characteristics

	Peer	Knight	Club membership	MP	Justice of peace / Deputy Lieutenant	Military officer	Elite public school	University degree	Oxbridge degree
Panel A: Director ownership quartile									
Q1	0.063	0.154	0.645	0.249	0.320	0.117	0.203	0.274	0.178
Q2	0.030	0.121	0.582	0.188	0.303	0.079	0.152	0.236	0.176
Q3	0.028	0.146	0.534	0.184	0.362	0.098	0.155	0.207	0.155
Q4	0.042	0.121	0.524	0.183	0.403	0.084	0.110	0.178	0.120
Panel B: Firm size quartile									
Q1	0.006	0.084	0.489	0.135	0.331	0.068	0.120	0.143	0.113
Q2	0.022	0.115	0.547	0.182	0.289	0.075	0.113	0.170	0.113
Q3	0.033	0.144	0.552	0.191	0.356	0.098	0.170	0.237	0.180
Q4	0.103	0.184	0.633	0.258	0.423	0.121	0.214	0.282	0.202
Panel C: Family firm									
Non-family firm	0.077	0.188	0.610	0.215	0.336	0.098	0.175	0.240	0.172
Family firm	0.014	0.234	0.441	0.145	0.421	0.090	0.083	0.145	0.103
N	586	586	586	586	586	586	586	586	586

Sources: See text and Appendix Table 1.
Notes: See Appendix Table 1 for variable definitions.

Table 7. OLS results for director ownership and firm performance

Dependent variable	Return on assets			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Director ownership	0.030**			-0.816***		
	(2.067)			(-2.745)		
Directors >1/3		0.009			0.007	
		(1.517)			(0.055)	
Directors >1/2			0.021**			-0.273
			(2.015)			(-1.089)
Return on assets				2.202***	2.047***	2.099***
				(5.328)	(4.861)	(5.081)
Family firm	0.008*	0.010**	0.009**	0.156*	0.108	0.122
	(1.861)	(2.128)	(2.045)	(1.734)	(1.205)	(1.374)
Number of shareholders	0.015***	0.014***	0.015***	-0.349***	-0.315***	-0.328***
	(4.583)	(4.633)	(4.728)	(-8.758)	(-8.254)	(-8.252)
Board size	0.020**	0.022**	0.022**	0.415***	0.319**	0.342**
	(2.021)	(2.143)	(2.162)	(2.952)	(2.305)	(2.499)
MPs on board	0.023	0.024	0.022	0.166	0.161	0.170
	(1.101)	(1.110)	(1.053)	(1.249)	(1.156)	(1.255)
Peers on board	0.036	0.035	0.036	0.006	0.035	0.018
	(1.634)	(1.601)	(1.641)	(0.051)	(0.269)	(0.136)
Multiple votes	0.006	0.006	0.006	0.491***	0.486***	0.488***
	(0.804)	(0.830)	(0.788)	(4.196)	(4.122)	(4.138)
Preference share voting	-0.003	-0.004	-0.003	0.141*	0.164**	0.157**
	(-0.533)	(-0.575)	(-0.554)	(1.956)	(2.258)	(2.166)
Size	-0.027***	-0.027***	-0.027***	0.167***	0.163***	0.168***
	(-4.810)	(-4.784)	(-4.853)	(3.719)	(3.591)	(3.657)
Age	-0.004	-0.004	-0.004	0.317***	0.342***	0.331***
	(-0.792)	(-0.871)	(-0.826)	(5.666)	(6.057)	(5.822)
Leverage	0.012	0.012	0.012	0.361*	0.390**	0.384**
	(0.854)	(0.852)	(0.859)	(1.874)	(2.022)	(1.987)
Foreign	0.023***	0.022***	0.022***	0.021	0.079	0.064
	(4.968)	(4.901)	(4.928)	(0.226)	(0.868)	(0.697)
Official list	-0.003	-0.003	-0.003	-0.214*	-0.197*	-0.195*
	(-0.351)	(-0.439)	(-0.464)	(-1.852)	(-1.707)	(-1.689)
London	0.003	0.003	0.003	0.044	0.056	0.056
	(0.574)	(0.507)	(0.532)	(0.445)	(0.573)	(0.571)
Observations	1,259	1,259	1,259	705	705	705
Industry fixed effects	YES	YES	YES	YES	YES	YES
R-squared	0.129	0.128	0.129	0.301	0.289	0.291
Adjusted R-squared	0.108	0.106	0.108	0.269	0.256	0.259

Notes: The dependent variable in specifications 1 to 3 is return on assets and in specifications 4 to 6 it is Tobin's Q. Robust standard errors are in parentheses. Significance is shown by *** p<0.01, ** p<0.05, * p<0.1. Because Tobin's Q is highly skewed, we follow the usual practice in the literature of capping it at 10.

Table 8. Cox hazard results for director ownership and survival time

	(1)	(2)	(3)
Director ownership	-0.032		
	(-0.112)		
Directors >1/3		0.007	
		(0.050)	
Directors >1/2			-0.025
			(-0.128)
Return on assets	-0.158	-0.163	-0.158
	(-1.306)	(-1.362)	(-1.348)
Family firm	0.055	0.057	0.055
	(1.185)	(1.246)	(1.184)
Number of shareholders	-0.150	-0.156	-0.153
	(-0.691)	(-0.720)	(-0.697)
Board size	0.419**	0.419**	0.420**
	(2.424)	(2.428)	(2.428)
MPs on board	-0.369**	-0.365**	-0.368**
	(-2.003)	(-1.990)	(-1.975)
Peers on board	-0.006	-0.008	-0.006
	(-0.044)	(-0.053)	(-0.043)
Multiple votes	-0.176**	-0.176**	-0.176**
	(-1.998)	(-2.000)	(-1.997)
Preference share voting	0.355	0.355	0.355
	(1.295)	(1.296)	(1.294)
Size	-0.177***	-0.177***	-0.176***
	(-3.019)	(-3.023)	(-2.993)
Age	0.006	0.006	0.006
	(0.081)	(0.087)	(0.079)
Leverage	-0.279	-0.277	-0.279
	(-1.076)	(-1.072)	(-1.077)
Foreign	0.211*	0.213*	0.211*
	(1.748)	(1.776)	(1.765)
Official list	0.215**	0.215**	0.217**
	(1.992)	(1.989)	(1.987)
London market	-0.019	-0.016	-0.019
	(-0.173)	(-0.152)	(-0.175)
Observations	575	575	575
Industry fixed effects	YES	YES	YES
Pseudo R-squared	0.125	0.125	0.125

Notes: The dependent variable in specifications 1 to 3 is survival time (years). Robust standard errors are in parentheses. Significance is shown by *** p<0.01, ** p<0.05, * p<0.1.

Table 9. Regression results with interaction between family firms and ownership

	Return on assets			Tobin's Q			Survival time		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Director ownership	0.019			-1.205***			-0.043		
	(1.010)			(-3.273)			(-0.118)		
Director ownership x Family firm	0.026			1.194**			0.029		
	(0.989)			(2.110)			(0.050)		
Directors >1/3		0.004			-0.047			-0.058	
		(0.494)			(-0.275)			(-0.272)	
Directors >1/3 x Family firm		0.011			0.155			0.134	
		(0.874)			(0.622)			(0.481)	
Directors >1/2			-0.002			-0.440			0.143
			(-0.144)			(-1.224)			(0.446)
Directors >1/2 x Family firm			0.037**			0.351			-0.263
			(1.965)			(0.754)			(-0.690)
Family firm	0.003	0.008	0.006	-0.045	0.086	0.105	-0.165	-0.187	-0.141
	(0.418)	(1.533)	(1.325)	(-0.366)	(0.899)	(1.168)	(-0.931)	(-1.440)	(-1.174)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,259	1,259	1,259	705	705	705	575	575	575
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.129	0.128	0.131	0.309	0.290	0.293	-	-	-
Pseudo R-squared	-	-	-	-	-	-	0.126	0.126	0.126

Notes: The dependent variable in specifications 1 to 3 is return on assets, in specifications 4 to 6 it is Tobin's Q, and in specifications 7 to 9 it is survival time (years). In regressions 1 to 6 OLS is used and in regressions 7 to 9 a Cox hazard model is used. Robust standard errors are in parentheses. Significance is shown by *** p<0.01, ** p<0.05, * p<0.1. Because Tobin's Q is highly skewed, we follow the usual practice in the literature of capping it at 10.

Table 10. OLS results for return on assets and chairman characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Peer	*0.075*								
	(1.150)								
Knight		*0.011*							
		(1.246)							
Number of other directorships			*-0.010*						
			(-0.961)						
Club membership				*0.014*					
				(1.557)					
Justice of Peace / Deputy Lieutenant					-0.018				
					(-1.414)				
Military officer						0.035			
						(0.944)			
Elite public school							-0.027**		
							(-2.562)		
University degree								0.011	
								(0.629)	
Oxbridge degree									0.012
									(0.590)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	586	586	586	586	586	586	586	586	586
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.156	0.145	0.147	0.147	0.148	0.150	0.150	0.145	0.145
Adjusted R-squared	0.109	0.097	0.099	0.099	0.100	0.103	0.102	0.098	0.098

Notes: The dependent variable is return on Significance is shown by *** p<0.01, ** p<0.05, * p<0.1. The control variables are as follows: director ownership, family firm, number of shareholders, board size, MPs on board, peers on board, multiple votes, preference share voting, size, age, leverage, foreign, Official list, and London.

Table 11. OLS results for Tobin's Q and chairman characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Peer	0.094								
	(0.427)								
Knight		0.164							
		(1.365)							
Number of other directorships			0.118*						
			(1.682)						
Club memberships				0.096					
				(0.935)					
Justice of Peace / Deputy Lieutenant					0.199**				
					(1.999)				
Military officer						0.128			
						(0.773)			
Elite public school							0.230*		
							(1.864)		
University degree								0.246**	
								(1.968)	
Oxbridge degree									0.265*
									(1.907)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	359	359	359	359	359	359	359	359	359
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.377	0.381	0.382	0.379	0.384	0.378	0.383	0.385	0.385
Adjusted R-squared	0.316	0.32	0.322	0.318	0.323	0.317	0.322	0.325	0.324

Notes: The dependent variable is return on Significance is shown by *** p<0.01, ** p<0.05, * p<0.1. The control variables are as follows: return on assets, director ownership, family firm, number of shareholders, board size, MPs on board, peers on board, multiple votes, preference share voting, size, age, leverage, foreign, Official list, and London.

Appendix Table 1: Variable definitions and sources

Variable	Description	Data sources
Ownership variables		
Director ownership	Percentage of capital controlled by all directors	IFSY
Directors > 1/3	Binary variable which = 1 if directors own more than 1/3 of capital, 0 otherwise	IFSY
Directors > 1/2	Binary variable which = 1 if directors own more than 1/3 of capital, 0 otherwise	IFSY
Number of shareholders	Natural logarithm of number of shareholders	IFSY
Biographical details of managers		
Two managers	Binary variable which = 1 if company has a chairman and managing director	SEY
Peer	Binary variable which = 1 if chairman or managing director is a peer, 0 otherwise	SEY
Knight	Binary variable which = 1 if chairman or managing director is a 'Sir', 0 otherwise	SEY
Age	Age (years) of chairman or managing director	Bassett (1912)
Number of other directorships	Number of other company directorships held by chairman or managing director	Bassett (1912)
Club membership	Binary variable which = 1 if chairman or managing director is a member of a club, 0 otherwise	Bassett (1912)
Military officer	Binary variable which = 1 if chairman or managing director was an officer in the military, 0 otherwise	Bassett (1912)
Elite public school	Binary variable which = 1 if chairman or managing director attended an elite public school, 0 otherwise	Bassett (1912)
University degree	Binary variable which = 1 if chairman or managing director attended university, 0 otherwise	Bassett (1912)
Oxbridge degree	Binary variable which = 1 if chairman or managing director attended university, 0 otherwise	Bassett (1912)
MP	Binary variable which = 1 if chairman or managing director was or had been an MP, 0 otherwise	Bassett (1912)
Accountant	Binary variable which = 1 if chairman or managing director was or had been an accountant, 0 otherwise	Bassett (1912)
Engineer	Binary variable which = 1 if chairman or managing director was or had been an engineer, 0 otherwise	Bassett (1912)
Lawyer	Binary variable which = 1 if chairman or managing director was or had been a lawyer, 0 otherwise	Bassett (1912)
Banker	Binary variable which = 1 if chairman or managing director was or had been a banker, 0 otherwise	Bassett (1912)
Merchant	Binary variable which = 1 if chairman or managing director was or had been a merchant, 0 otherwise	Bassett (1912)
Justice of the Peace / Deputy Lieutenant	Binary variable which = 1 if chairman or managing director was a JP or DL, 0 otherwise	Bassett (1912)
Performance data		
Return on assets	Profits / Total Assets	IFSY
Tobin's Q	[Market value of equity + Book value of preference shares + Book value of debentures] / Total assets	IMM, SEY, IFSY
Survival time	Number of years that the firm existed as an independent entity after 1911	RDC
Company variables		
Family firm	Binary variable which = 1 if a director's surname is also in company name	SEY
Company age	1910 – year of incorporation	IFSY
Foreign	Binary variable which = 1 if company's main operations are based outside UK	IFSY
Size	Natural logarithm of total assets	IFSY
Age	Natural logarithm of company age	SEY

Leverage	Ratio of book value of debentures to total assets	SEY, IFSY
Industry dummies	Industry as reported in *Stock Exchange Yearbook* and Bassett (1912)	SEY, Bassett (1912)
Registered	Binary variable = 1 if company is registered under the Companies Act, 0 otherwise	SEY
London	Binary variable which = 1 if traded on London stock exchange, 0 otherwise	SEY
Official List	Binary variable =1 if company is on the official list of the stock exchange, 0 otherwise	SEY
Number of markets	Binary variable = 1 if company's securities are traded on more than one stock exchange, 0 otherwise	IMM
Board size	Natural logarithm of number of directors on board	SEY
MPs on board	Natural logarithm of number of directors who are MPs	SEY
Peers on board	Natural logarithm of number of directors who are peers	SEY
One vote per share	Binary variable = 1 if company's voting scheme for ordinary shares is one vote per share, 0 otherwise	SEY
Multiple votes	Binary variable = 1 if company's voting scheme for ordinary shares is one vote per X shares (where X>1)	SEY
Preference share voting	Binary variable = 1 if company's voting scheme gives same voting rights to preference and ordinary shares.	SEY

Notes: IMM – *Investor's Monthly Manual*, ISFY – *The Investor's Four Shilling Yearbook*; RDC – Register of Defunct Companies; SEY – *Stock Exchange Yearbook*. An elite public school is defined as a school under the Public Schools Act of 1868 (31 & 32 Vict. C.118): the seven public schools were Charterhouse, Eton, Harrow, Rugby, Shrewsbury, Westminster, and Winchester.

Appendix Table 2: Sample selection bias for manager characteristics

	Full sample		Chairman data	
Variable	N	Mean	N	Mean
Director ownership	1383	0.174	586	0.168
Directors own more than 1/3 (0/1)	1383	0.173	586	0.16
Directors own more than 1/2 (0/1)	1383	0.082	586	0.077
Family firm (0/1)	1383	0.268	586	0.247
Number of shareholders	1383	6.372	586	6.677***
Board size	1383	1.844	586	1.899***
MPs on board	1383	0.086	586	0.13***
Peers on the board	1383	0.089	586	0.124**
Multiple votes (0/1)	1383	0.111	586	0.14*
One vote per share (0/1)	1383	0.777	586	0.741*
Preference share voting (0/1)	1383	0.522	586	0.519
Total assets (ln)	1383	13.189	586	13.509***
Firm age (ln)	1383	2.862	586	2.884
Leverage	1383	0.200	586	0.182
Foreign (0/1)	1383	0.304	586	0.331
Registered (0/1)	1383	0.944	586	0.932
Official list (0/1)	1383	0.684	586	0.712
Number of markets	1383	0.422	586	0.475***
Traded on multiple markets (0/1)	1383	0.085	586	0.099
London market (0/1)	1383	0.432	586	0.469

Notes: Significance from a difference in means test is shown by *** p<0.01, ** p<0.05, * p<0.1.