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CORPORATE OWNERSHIP AND CONTROL IN VICTORIAN BRITAIN

Graeme G. Acheson (University of Stirling)
Gareth Campbell (Queen's University Belfast)
John D. Turner (Queen's University Belfast)
Nadia Vanteeva (I-Shou University)

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Corporate Ownership and Control in Victorian Britain*

Graeme G. Acheson[1], Gareth Campbell[2], John D. Turner[2#] and Nadia Vanteeva[3]

Abstract
Using ownership and control data for 890 firm-years, this paper examines the concentration of capital and voting rights in British companies in the second half of the nineteenth century. We find that both capital and voting rights were diffuse by modern-day standards. This implies that ownership was separated from control in the UK much earlier than previously thought, and given that it occurred in an era with weak shareholder protection law, it undermines the influential law and finance hypothesis. We also find that diffuse ownership is correlated with large boards, a London head office, non-linear voting rights, and shares traded on multiple markets.

JEL classification: G32, K22, N24.

Keywords: Corporate ownership and control, law and finance hypothesis, shareholder protection law, British financial history.

[1] Stirling Management School, University of Stirling
[2] Queen's University Management School, Queen's University Belfast
[3] Department of International Finance, I-Shou University
[#] Corresponding author: Queen's University Management School and Queen's University Centre for Economic History, Queen's University of Belfast, 185 Stranmillis Rd, Belfast, BT9 5EE, Northern Ireland; Email: j.turner@qub.ac.uk

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1. Introduction

In the Victorian era, the public company in the UK came of age following the liberalisation of incorporation law, which culminated in the Companies Act of 1862. We know that this coming of age was accompanied by an expansion of the equity market and an increased democratisation of share ownership.[1] To date, however, the structure of corporate ownership and the degree to which ownership was separated from control in Victorian public companies has largely been a statistical dark hole. Using detailed corporate ownership records which were collected annually by the Registrar of Companies from 1856, this paper is the first to provide quantitative and systematic evidence on the structure of corporate ownership of publicly-traded companies in Victorian Britain. The main findings, based on our sample of 890 firm years, are that ownership, both in terms of capital and voting rights, was diffuse and that there was a divorce of ownership from control in Victorian Britain. Our analysis of the potential determinants of ownership structure suggest that diffuse ownership is correlated with large boards, having a London head office, restrictions on the voting rights of large shareholders, and shares being traded on multiple regional stock markets.

A study of ownership structure in Victorian Britain is important because there is some debate as to when dispersed ownership emerged in the UK. Berle and Means in their seminal study established that a separation of ownership and control had occurred in large American corporations before the 1920s.[2] Until recently, the majority of the extant literature has

[1] Grossman, 'New indices'; Rutterford et al., 'Who comprised the nation'.

[2] Berle and Means, *Modern Corporation*. Although there have been recent challenges to this view, the Berle and Means characterisation of corporate ownership in the US remains the orthodox view amongst economists and historians. See Cheffins and Bank, 'Myth'; Hannah, 'Divorce of ownership'; Holderness, 'Myth of diffuse ownership'; Lipartito and Morii, 'Rethinking the separation'.

suggested that dispersed ownership appeared in Britain much later than this.[3] However, Hannah has argued that diffuse ownership was commonplace by 1900, and Foreman-Peck and Hannah show that ownership was divorced from control for the largest British companies in 1911.[4] Our study complements and augments Foreman-Peck and Hannah in several ways. First, whereas Foreman-Peck and Hannah's analysis is based solely on director share ownership, our study is based on comprehensive ownership data for each company, which enables us to develop Herfindahl measures of ownership concentration as well as identify large owners who may not necessarily have been on the board of directors. Second, we find that dispersed ownership is commonplace at least half a century earlier than 1911. Third, we find that ownership is dispersed in medium-sized and small companies, and not just in the largest. Fourth, by analysing ownership structure over half a century, we are able to pick up trends. For example, we find that companies established in the 1890s had more concentrated ownership than companies established in earlier periods. This finding is consistent with Cheffins et al. and Franks et al. who find that companies established around 1900 tended to have concentrated ownership.[5]

This study is significant for at least a further two reasons. First, several business and economic historians have suggested that Britain's twentieth-century economic decline and managerial failure has some of its roots in the concentrated structure of corporate ownership

[3] Florence, *Ownership*; Nyman and Silberston, 'Ownership'; Scott, 'Corporate control'; Leech and Leahy, 'Ownership structure'; Cheffins, 'Does law matter', *Corporate Ownership*; Coffee, 'Rise'; Roe, 'Political preconditions'; Franks et al., 'Ownership'.

[4] Hannah, 'Divorce of ownership'; Foreman-Peck and Hannah, 'Extreme divorce'. Braggion and Moore, 'Dividend policies' also find that ownership was separated from control for a small sample of companies at the turn of the twentieth century.

[5] Cheffins et al., 'Ownership dispersion'; Franks et al., 'Ownership'.

which emerged out of the nineteenth century.[6] Second, if corporate ownership is path dependant, as some scholars believe, it is important that we know the structure of ownership in the UK at the origin of the modern public company.[7]

Our paper contributes to the debate regarding the preconditions for the emergence of the diffusely-owned corporation. The influential law and finance school argue that strong legal protection of minority shareholders is a precondition of dispersed ownership.[8] As Britain had a laissez-faire corporate law regime from the perspective of most minority shareholders in non-statutory companies in the nineteenth century, our finding that corporate ownership is dispersed is evidence against the law and finance hypothesis.[9] Coffee, on the other hand, argues that dispersed ownership arose not because of specific legal rules *per se*, but because of the emergence of a decentralized and pluralistic political regime, which resulted in a private sector relatively free from government interference and which permitted entrepreneurs to use private contracts to make credible commitments to small shareholders. As Britain had a pluralistic political regime by the second half of the nineteenth century, having abandoned patronage-based politics and enfranchised all property owners in the first half of the century, our discovery of many companies with dispersed ownership is consistent with Coffee's hypothesis.

Our findings on the preconditions for diffuse ownership concur with recent studies on corporate ownership in other economies. For example, Hilt finds that ownership was separated from control in early nineteenth-century U.S. corporations despite corporate law

[6] Chandler, *Scale and Scope*; Elbaum and Lazonick, 'Decline'.

[7] Bebchuk and Roe, 'Theory of path dependence'.

[8] La Porta et al. 'Law and finance', 'Corporate ownership'. See Musacchio, 'Law and finance' for an historical counterexample to the law and finance hypothesis.

[9] See Campbell and Turner, 'Substitutes'.

offering little in the way of shareholder protection.[10] Musacchio finds that ownership concentration in pre-1910 Brazil was relatively low, but became more concentrated in the twentieth century contemporaneously with an improvement in shareholder protection.[11] Similarly, Franks et al. find that corporate ownership in Japan in the first half of the twentieth century was relatively dispersed and that the increase in the concentration of ownership coincided with a significant enhancement of shareholder protection law.[12]

The next section of this paper examines the preconditions for the rise of diffuse ownership and the separation of ownership from control. Section three describes the gradual liberalisation of incorporation law in the UK and examines the ownership structure of several pre-1855 companies for which ownership data exists. Section four describes our ownership and control data sources. Section five presents our main findings on the structure of ownership in Victorian Britain. Section six analyses the determinants of ownership structure.

2. The preconditions for diffuse ownership

Prior to the liberalisation of incorporation law in the nineteenth century, most businesses constituted as common-law partnerships. Such partnerships have basic economic problems which can hinder the growth of the business. One of the key problems is that ownership is not separated from control, meaning that any owner can, independent of other owners, enter binding contracts and, in the process, hold-up co-owners.[13] Since the separation of ownership and control is part of the very essence of the corporation, we should not be surprised to find ownership being separated from control in the era just after incorporation law is liberalised.

[10] Hilt, 'When did ownership separate from control'.

[11] Musacchio, *Experiments*, p. 126; Musacchio, 'Laws versus contracts'.

[12] Franks et al., 'Equity markets'.

[13] Lamoreaux, 'Partnerships'.

However, as is well known, diffuse ownership and the separation of ownership from control give rise to agency problems and unless these can be ameliorated, ownership will not be diffuse.[14] This raises the following question: what are the preconditions for the rise of diffuse ownership and the separation of ownership from control?

According to the influential law and finance school, strong legal protection for minority shareholders enables ownership to separate from control.[15] The basic argument is that with strong investor protection laws, large shareholders have less fear of expropriation if they ever lose control, and are therefore more willing to sell some of their control rights to raise funds or diversify their wealth, with the result that corporate ownership becomes diffuse.[16] In their cross-country study, La Porta et al. find that public companies in countries with weak shareholder protection laws typically have concentrated ownership.[17]

Coffee, Cheffins, and Franks et al. point out that the separation of ownership from control in the UK, which they reckon occurred at some stage between the 1930s and 1970s, happened before shareholder protection law was strengthened.[18] The law and finance school has responded to this by arguing that shareholders were well protected in Britain for at least two reasons before the dispersion of ownership occurred.[19] First, the UK's commercial

[14] Jensen and Meckling, 'Theory of the firm'; Shleifer and Vishny, 'A survey'; La Porta et al., 'Corporate ownership'.

[15] La Porta et al., 'Law and finance', 'Corporate ownership'

[16] La Porta et al., 'Corporate ownership', p. 473.

[17] Even though their results no longer hold whenever their measure of shareholder protection is carefully recoded and even though others question the empirical basis of their work, the thesis of La Porta et al. regarding shareholder protection law as a precondition for diffuse ownership is still dominant. See Spamann, 'Antidirector rights index' and Holderness, 'Myth of diffuse ownership'.

[18] Cheffins, 'History', 'Does law matter?', *Corporate Ownership*; Coffee, 'Rise of dispersed ownership'; Franks et al., 'Ownership'.

[19] La Porta et al., "Economic consequences," p.319.

courts had a long history of precedents dealing with fraudulent behaviour and had a professional and trustworthy judiciary. Second, the Directors Liability Act of 1890 and the Companies Act of 1900 required significant disclosure in prospectuses and held directors liable for inaccuracies.

Although UK commercial courts may have had a long history of professional and incorrupt judges setting precedents, common-law judges in Victorian Britain were reluctant to interfere in what were perceived to be the internal affairs of companies in order to protect the interests of shareholders.[20] Indeed, judges were ideologically opposed to the notion of protecting shareholders because laissez-faire theory and the practice of partnerships taught that capitalists could look after themselves.[21] Such attitudes were clearly demonstrated in the precedent set in the famous case of *Foss vs. Harbottle*, whereby minority shareholders brought a case against their company's directors for alleged wrongdoing and misapplication of company resources.[22] The judge in this case ruled that when a company is allegedly wronged by its directors, only the company and not the shareholders have a right to sue. In addition, the judge ruled that when a wrong could be ratified by a majority of shareholders, the court would not interfere, implying that individual shareholders could not proceed with an action against the company. This important precedent strengthened the rights of directors and company insiders at the expense of minority shareholders.

As our sample companies were registered under the 1862 Companies Act and as the vast majority of our observations are from before the above-mentioned strengthening of shareholder protection legislation at the turn of the twentieth century, we are able to look at the dispersion of ownership in an environment with very weak (by modern-day standards)

[20] See Emden, *Shareholders' Legal Guide*, pp.77-80.

[21] Jefferys, *Business Organisation*, p.394.

[22] *Foss vs Harbottle* (1843) 2 Hare 461 (Chancery Division) Wigram V-C.

shareholder protection. It is a well-established fact that shareholder protection under the 1862 Act was minimal.[23] Until 1900, the anti-director rights index, which measures the extent to which company law protects minority shareholders, for companies registered under the 1862 Companies Act, was one out of a maximum of six.[24] In addition, the *ex post* control of self-dealing index, which measures the strength of regulation relating to company transactions which involve a director or other insider, was very low by modern-day standards.[25] Furthermore, insider trading was legal and the 1862 Act did not impose a compulsory audit upon companies.

In summary, Victorian Britain is an ideal laboratory to test the law and finance hypothesis regarding corporate ownership, since there was very little shareholder protection enshrined in legislation or offered by the commercial courts. Given this legal environment, we should not expect to find dispersed ownership if the law and finance hypothesis holds.

According to Coffee, an important precondition for diffuse ownership is the emergence of a decentralized and pluralistic political regime. Such a regime enables entrepreneurs to use private contracts to make credible commitments to minority

[23] Campbell and Turner, 'Substitutes'.

[24] Cheffins, *Corporate Ownership*, p. 36. See La Porta et al. 'Law and finance', pp.1126-8 for further information on the anti-director rights index. The 1862 Companies Act provided a list of default provisions for company constitutions in Table A of the Act, which correspond to three of the rights in the antidirector rights index (Companies Act 1862, Table A, s. 27, 32, 48). However, companies had complete discretion when it came to including or excluding these provisions from their constitution, with the majority choosing to ignore some or all (Campbell and Turner, 'Substitutes', p. 574).

[25] Cheffins, *Corporate Ownership*, p. 38; See Djankov et al., 'Law and economics' on the construction of the self-dealing index.

shareholders, free from government interference.[26] Well-functioning courts can simply ensure that companies do not deviate from their contracts with shareholders.

By the Victorian era, Britain had a decentralized and pluralistic political regime. The constitutional changes ushered in by the Glorious Revolution meant that political power was decentralised, and the Great Reform Act of 1832 enfranchised nearly all male property owners, thus signalling the beginning of the end for the aristocracy and patronage-based politics. This new regime, infused by Benthamite ideals, increasingly liberalised the law of business organisation, making it easier for businesspeople to form companies, but it left shareholder protection to private contracting between parties. If Coffee's thesis is correct, we should expect to see diffuse ownership in Victorian Britain.

3. The rise of the public company in the nineteenth century

Although the corporate form existed in Britain prior to the nineteenth century, the right to incorporate was controlled by Parliament and the Crown, with the common-law courts largely hostile to attempts by entrepreneurs to form unincorporated companies.[27] The liberalisation of British incorporation law commenced in the mid-1820s, with the repeal of the Bubble Act[28] and the passage of the Banking Copartnership Act, which enabled banks to incorporate freely as joint-stock companies with unlimited shareholder liability.[29] Parliament also dispensed corporate charters more liberally from the mid-1820s onwards in order to assist the growth of capital-intensive transportation and infrastructure projects which provided some sort of public good. Parliament also ended the monopoly in marine insurance

[26] Coffee, 'Rise of dispersed ownership'.

[27] Freeman et al., *Shareholder Democracies*; Harris, *Industrializing*.

[28] 6 Geo. IV, c.91.

[29] 7 Geo. IV, c.46.

in 1824, permitting other companies to incorporate.[30] As a result of this liberalisation, banks, insurance companies, and railways dominated the London equity market in 1850, accounting for 65.1 per cent of all issues and 80.1 per cent of market capitalisation.[31]

Railways typically had diffuse ownership due to their large capital requirements.[32] In addition, many banks and insurance companies had diffuse ownership as there were self-imposed restrictions, usually set at low levels, on the proportion of shares which one individual could own.[33] The diffuseness of share ownership in banks and railways is illustrated by the number of shareholders they had. The median number of shareholders amongst British joint-stock banks in 1855 was 400, with seven banks having more than 1,000 shareholders.[34] Similarly, railway companies quoted in the *Course of the Exchange* in 1855 had a median of 1,364 shareholders, with eight having between 3,000 and 10,000, and three having in excess of 10,000 owners.[35]

Although there are few surviving ownership records of banks, insurance companies, and railways from before 1855, the records which have survived suggest that ownership was diffuse. For example, the capital owned by the largest shareholder and top five shareholders for companies for which we were able to locate ownership records is as follows: 1.5 and 7.3 per cent for the Bradford Banking Company in 1827[36]; 1.6 and 5.8 per cent for the Great

[30] Harris, *Industrializing*, p.211.

[31] Acheson et al., 'Rule Britannia', p.1118.

[32] Cheffins, *Corporate Ownership*, pp. 157-9.

[33] See Acheson et al., 'Does limited liability matter?'; Campbell and Turner, 'Substitutes', p.576.

[34] Based on data from *Banking Almanac and Yearbook* (1855).

[35] *Returns of the Number of Proprietors in Each Railway Company in the United Kingdom* (P. P. 1856, CCXXXVIII).

[36] HSBC Archives, Deed of Copartnership of Bradford Banking Company.

Western Railway in 1843[37]; 4.4 and 18.9 per cent for the Hampshire Banking Company in 1835[38]; 0.3 and 1.3 for the Guardian Insurance Company in both 1821 and 1845;[39] 2.3 and 9.7 per cent for the Royal Exchange Assurance in 1838;[40] 2.0 and 9.8 per cent for the Sheffield and Hallamshire Bank in 1836[41]; 4.4 and 14.0 per cent for the Union Bank of Scotland in 1841[42]; 1.0 and 5.2 per cent for the Ulster Banking Company in 1836.[43]

Incorporation law was liberalised further with the passage of the Companies Act of 1844.[44] This legislation granted firms the freedom to incorporate as unlimited liability companies. Subsequently, the 1855 and 1856 Limited Liability Acts were passed which enabled companies, apart from banks and insurance companies, to incorporate with limited liability.[45] Limited liability was eventually extended to banking in 1858,[46] and insurance companies received this privilege due to their inclusion in the 1862 Companies Act,[47] which

[37] National Archives, RAIL 251/28, 38 and 50, Great Western Railway holders of £100, £50 and £20 shares 1843.

[38] Lloyds-TSB Archives, 1085, Hampshire Banking Company Shareholders' Register.

[39] London Metropolitan Archive, CLC/B/107/ms18093.01-03, Guardian Shareholder Register 1821, 1845.

[40] London Metropolitan Archive, CLC/B/107/MS16233/001-002, Royal Exchange Assurance Shareholder Register 1838.

[41] HSBC Archives, 598/1-2, Share Registers of Sheffield and Hallamshire Bank, volumes 1 and 2.

[42] HBOS Archive, NRA 1110/1/24/14, Union Banking Company, List of Shareholders, 1841.

[43] Public Record Office of Northern Ireland, D/3499/CA/1, Ulster Banking Company Register of Shareholders.

[44] 7 & 8 Vict., c.110. This Act liberalized incorporation law by permitting firms to incorporate without explicit State permission. See Taylor, *Creating Companies*, pp.135-175 for a comprehensive account of the liberalisation of incorporation law between 1844 and 1862.

[45] The 1855 Act (18 & 19 Vict., c.113) was repealed, but re-enacted in 1856 (19 & 20 Vict., c.47).

[46] 21 & 22 Vict. c.91.

[47] 25 & 26 Vict. c.89.

was effectively a consolidation of existing pieces of legislation. The companies incorporated under this legislation are the focus of this paper.

4. Ownership and control data

Our main sources of ownership data are located in the Companies Registration Office files held at the National Archives at Kew (BT31 series) and the National Archives of Scotland (BT2 series). Companies registered under the 1856 and 1862 Companies Acts were required annually to return a list of their shareholders to the Registrar of Companies. Up until 1970, whenever a company was dissolved either because it was reconstructed, merged or liquidated, its ownership records were placed within the Companies Registration Office files. As the vast majority of nineteenth-century companies registered under the 1856 and 1862 Companies Acts were subsequently dissolved, their ownership records, if they survived, are contained within these two BT series. Notably, as ownership data was not collected by the Registrar of Companies on statutory companies set up prior to 1862 (e.g., railways) and banks and insurance companies (unless they registered under the 1862 Companies Act), our dataset does not contain the largest publicly-traded companies in the Victorian era.

Our search of the catalogues of the two BT series for public companies which issued common stock quoted either in the *Course of the Exchange* between 1825 and 1870 or in the *Investor's Monthly Manual* in 1870, 1885, and 1899, returned records for 712 companies. On inspection of these records, 101 contained no ownership returns. Unfortunately, the ownership returns of English companies were extensively weeded by archivists in the past in

order to reduce the bulk of the files, with the result that only some annual returns have been preserved.[48]

We collected ownership returns for 1865, 1870, 1883, 1890, and 1900 or one year either side of these sample years if the return existed.[49] If they were available, 1880 or 1881 were collected in those cases where a company had no returns for 1882-1884. In addition, we collected all returns from the 1850s.[50] If a company had ownership returns which fell outside the selected sample years, we collected a return for each decade between 1860 and 1900, where available.

The ownership returns were usually completed by hand on Form E, a standardised return form, which gave a summary of capital and shares i.e., names and holdings of shareholders for both ordinary and preference shares. We photographed 999 returns of Form E, which were then inputted manually and verified by data-entry services. In total, after removing firm-years which have missing and unintelligible data, we have ownership returns for 890 firm-years, representing 488 unique firms.

As we are interested in control as well as cash-flow rights, we collected data on each company's voting scales for each year for which they are in our sample from their articles of association, *Burdett's Official Intelligence* (*BOI*) and *Stock Exchange Official Intelligence*

[48] In principle, every first, last and intermediate fifth annual ownership register has been preserved, but in a significant minority of cases, we found this not to be the case. The Scottish records have not been weeded to the same extent.

[49] 1883 was chosen as this was the year when the second edition of Burdett's Official Intelligence, which was the first stock exchange yearbook in the UK with near-comprehensive director, company data, and market information.

[50] Two shareholder returns for 1853 are included in our sample as these had been preserved in the archives. These were companies formed under the 1844 Companies Act which subsequently registered under the 1862 Companies Act.

(*SEOI*). These were then used to calculate each shareholder's voting rights. In total, we found the voting structures of 729 of the 890 firm-years of ownership returns.

As the ownership returns do not report the membership of the board of directors, we obtained the names of directors for the relevant years from articles of association, *BOI*, *SEOI*, and *Stock Exchange Year-book* (*SEY*). In total, we located director names for 575 out of the 890 firm-years in our sample. Each set of ownership returns was then manually scrutinized to ascertain the share ownership of each director.

We also collected data on firm age, total paid-up capital, location of head office, share qualifications for directors, and nominal and par values of shares from articles of association, *BOI*, and *SEOI*. The stock markets where shares were traded were obtained from *BOI* and *SEOI* for 1883 onwards, with the *Investor's Monthly Manual* (*IMM*) being used for the 1864-82 period.[51]

As the source of our ownership data is the files of companies which were dissolved before the 1970s, we may be introducing a bias into our sample in that the ownership structure of such companies may be different from companies which were not dissolved before the 1970s, particularly if dissolution occurred for performance reasons. Admittedly, very few companies established in the nineteenth century were still operating as independent entities by the 1970s. Nevertheless, we checked all our sample companies against the *Register of Defunct Companies*, which lists any company which delisted from the stock

[51] If data on certain variables that were unlikely to change over time (i.e., establishment date, head office, number of markets where shares were traded, and director qualifications) were missing for a particular time period, but were available for that company for another time, we assumed the value remained the same. We ran robustness checks without this assumption, which reduced the number of observations, but our regression results remained the same.

exchange from 1875 onwards as well as the reason for delisting.[52] The vast majority of sample companies were not dissolved for explicit performance reasons – 55.5 per cent reconstructed their capital or merged with another firm. Only 27.7 per cent of our sample companies delisted for explicit performance reasons i.e., they were wound-up voluntarily or by court order. Furthermore, for the sake of robustness, we partition our sample by the various reasons for firm dissolution to ensure that our results are not being driven by a performance bias.

<INSERT TABLE 1 HERE>

From Table 1 we observe the following about our sample. First, there is a good spread of companies across time, with slightly more observations in the 1880s and 1890s, which is unsurprising given the expansion of the stock market in these decades.[53] Second, average company size changes little over the sample period, albeit that it is slightly lower in the 1860s and slightly higher in the 1900s. Third, the average number of shareholders rises steadily over the sample period, which, taken with the fact that the average par value of firms changes little, suggests that ownership may have become more diffused over time. Fourth, the relative size of the companies in our sample compared to all non-railway companies traded on the stock market indicates that very few companies in our sample are in the top two deciles of companies by par value in any particular year.[54] As only a third of companies are in the top 50 per cent of the size distribution, our sample is mainly comprised of medium-

[52] The *Register of Defunct Companies*, published in 1979, contains notices of companies removed from the *Stock Exchange Yearbook* between 1875 and 1979. As a small number of companies were not covered by the *Register of Defunct Companies*, we used the London and Edinburgh Gazettes for these companies.

[53] Grossman, 'New indices'.

[54] As the many railways traded on British stock markets were large, their inclusion in Table 1 would mean that there would be fewer of our sample companies in the top two deciles or the top half of the size distribution of public companies.

sized and small public companies, which immediately biases our sample against finding diffuse ownership since such companies would be expected to have more concentrated ownership than the large firms examined by Foreman-Peck and Hannah.

<INSERT TABLE 2 HERE>

From Table 2, we see that there is a good spread of companies from different industries. The commercial and industrial sector is the largest in the sample, which is unsurprising as this was a growth sector in the stock market between 1860 and 1900.[55]

5. Ownership structure in Victorian Britain

The first thing worthy of note in Table 3, which contains statistics on the concentration of capital (cash-flow rights) and voting (control rights), is that ownership of Victorian companies was not concentrated either in terms of capital or voting. Insiders, defined as directors and owners of more than 10 per cent of capital, on average owned 18.5 per cent of capital and controlled 16.1 per cent of votes.[56] These results are being dominated by several highly concentrated companies since the median in both cases is substantially lower, being 12.2 and 9.0 per cent respectively. The mean (and median) percentage of capital and voting rights owned by the largest five investors is 26.6 (21.5) and 22.2 (17.3) per cent, which is a further indication that ownership in Victorian Britain was relatively diffuse. The Herfindahl Index of ownership and voting, which measures how dispersed ownership is across all

[55] Acheson et al., 'Rule Britannia', p.1118-9; Grossman, 'New indices', p.130.

[56] 10 per cent is chosen to define large shareholders following the usual convention in the extant literature (Cheffins et al., 'Ownership dispersion'; Faccio and Lang, 'The ultimate ownership'; La Porta et al, 'Corporate ownership').

shareholders, is low compared to similar measures for the twentieth century.[57] This further illustrates the diffuseness of ownership amongst Victorian public companies.

<INSERT TABLE 3 HERE>

A further thing worthy of note in Table 3 is that there is little difference between the concentration of capital and voting. If anything, voting is slightly less concentrated than capital. This finding is explained by the fact that many companies had voting regimes with caps which limited the total votes of each investor or which skewed the voting scale in favour of small investors and discriminated against large shareholders.

In terms of decomposing the concentration of capital and voting rights for insiders, Table 3 reveals that, on average, company directors (including directors who were large shareholders) owned 13.7 per cent of capital and 12.3 per cent of voting rights. In other words, there was a substantial separation of ownership from control in Victorian Britain. Even when we consider the subset of companies which had a large shareholder, we see that the average capital and voting concentration of insiders was only 37.2 per cent and 39.7 per cent respectively.

Table 4 gives a modern perspective to the concentration of ownership in Victorian Britain by comparing it to the capital concentration of constituents of leading stock-market indices in 2013. As can be seen from Table 4, on any measure of capital concentration, ownership in Victorian Britain was as diffuse as that in modern large US corporations which are in the Dow Jones or S&P 500 indices. Notably, ownership in Victorian Britain was slightly more diffuse than amongst FTSE 100 constituents in 2013. Given that the companies in our ownership sample were nearly all outside the largest 100 companies in Victorian Britain, a more meaningful comparison would be with those indices for the US and UK

[57] According to Franks et al., 'Ownership', pp.4025-6, the mean of the Herfindahl index for their sample of UK firms in 1920, 1950, and 1990 was 10.6, 6.3, and 6.3 per cent respectively.

which contain medium-sized companies i.e., S&P 400 MID, S&P 600 SMALL, and FTSE 250. Compared to companies in these indices, companies in Victorian Britain were much less likely to have a single owner holding more than 10 per cent of shares. The average proportion of capital held by the largest investor and largest five investors in Victorian Britain is smaller than in modern-day medium-sized US firms and is substantially smaller than in modern-day UK firms.

<INSERT TABLE 4 HERE>

The evidence in Table 4 reaffirms the well-established view that ownership is diffuse in the Anglo-Saxon world, but not elsewhere.[58] However, it also contradicts the view that ownership diffusion in the UK is a twentieth-century phenomenon.

Table 5 compares ownership concentration in the UK for the Victorian era with that for later periods. Comparability across various ownership studies is not straightforward as some report cash flow rights but not voting rights and vice versa. More fundamentally, however, studies which look at the twentieth century focus on the largest companies. To the extent that comparisons can be made, we see that mean capital held by the largest investor was slightly higher in the twentieth century, which indicates that corporate ownership became a bit more concentrated during the twentieth century. In terms of capital, directors in the first half of the twentieth century tended to own a smaller proportion of a company's capital than they did in the nineteenth century. However, the latter companies were larger and their voting was more concentrated than their capital.[59] Notably, the figures for director ownership for 1990 and 1995, which contain industrial companies of various sizes, are comparable to

[58] La Porta et al. 'Law and finance', 'Corporate ownership'; Faccio and Lang, 'The ultimate ownership'.

[59] For example, Hannah and Foreman-Peck, 'Extreme divorce' find that for the largest 337 British companies in 1911, the mean percentage of voting rights controlled by directors was 10.1, which is just slightly below the mean for our sample.

the Victorian era. Although ownership in our sample is more diffuse than the top 350 companies in 2013 in terms of the capital held by the largest and twenty largest investors, directors owned greater amounts of capital in the Victorian era than they did in 2013.

<INSERT TABLE 5 HERE>

As can be clearly seen from Table 6, the low concentration of ownership and voting in Victorian Britain is not being driven by one or two industries. All industries in Table 6 can be described more or less as having diffuse ownership. The most diffuse sector in terms of capital concentration is banking and in terms of voting concentration, banking is joined by insurance and finance companies as the least concentrated.

<INSERT TABLE 6 HERE>

Banking, finance, and insurance companies typically structured their articles of association to ensure that they had diffuse ownership by restricting the amount of shares any one investor could own and / or by skewing their voting scales in favour of small investors. One reason for doing so was that such companies usually had uncalled capital or extended liability, and depositors and policy-holders with these companies may have preferred to see the company's shares dispersed amongst many owners because there was less risk of many owners becoming bankrupt as compared to a few owners.[60] Another possible reason is that the existence of a blockholder might discourage others from investing as such an owner could use their dominance to expropriate minority shareholders in a sector which is characterised by high levels of information asymmetry. For example, such an owner could make loans or policies on preferential terms to themselves, family members, or other associates.

As can be seen from Table 6, breweries are at the other end of the ownership concentration spectrum. From 1870 onwards, breweries converted to public limited companies due to increased capital needs arising from technological changes which increased

[60] Acheson et al., 'Does limited liability matter?', p. 259.

the optimal size of breweries and the need for breweries to secure public houses following regulatory changes in the licensing of public houses which pushed up their cost.[61] Unlike many other sectors in Table 6, the breweries were well-established businesses before they came to market and their original owners had a desire to maintain as much control as possible once their firms went public.[62]

Table 7 enables us to see whether capital and voting concentration change over time and as companies mature. The first thing to note from Table 7 is that capital and voting concentration decline over time. This suggests that capital and voting rights become more diffuse as companies mature, indicating that the secondary trading of shares may have led to reduced ownership concentration.[63] As the finding of a decline in concentration could be driven by a cohort effect, Table 8 examines the changes in concentration of capital and voting for the 54 companies for which we have ownership census records before 1880 as well as after 1890. Every measure of concentration in Table 8 suggests that concentration of voting and capital rights fell slightly over time.

<INSERT TABLES 7 & 8 HERE>

The second point of note from Table 7 is that as the nineteenth century progresses, the initial concentration of ownership and voting rights increases so that by the 1890s, the five largest investors on average have 43.8 per cent of capital and 42.9 per cent of voting rights, whereas in the 1860s the equivalent figures were 33.0 and 22.8 respectively. The third thing to note is that voting rights are slightly less concentrated than capital over most of the sample period. However, companies established in the 1890s appear to have more concentrated voting rights than capital by the 1900s.

[61] Cottrell, *Industrial Finance*, p. 168.

[62] Jefferys, *Business Organisation*, p. 268.

[63] See Helwege et al., 'Why do firms' on this.

The question arises as to why ownership is much more concentrated for companies establishing in the final decade of our sample period. One possibility is that the companies establishing in the 1890s are smaller. However, the opposite is the case. Another possibility is that the cohort is dominated by one industry. No one industry dominates, but even if we remove the industry with the highest concentration (breweries), ownership is still much more concentrated for companies establishing in the 1890s. In the *SEOI* and *BOI*, the companies in our sample incorporated in the 1890s were mainly described as being "registered" whereas in previous decades in our sample, the vast majority of companies are described as "established". In other words, what is different about the companies going public in the 1890s is that they are conversions to public company status of established firms which were previously constituted as partnerships. Given this trend in the 1890s, it is perhaps unsurprising that Chandler viewed many British industrial companies at the turn of the twentieth century as being family-controlled enterprises which were "personally managed".[64]

Table 9 partitions our sample by the final status of the company to see whether our findings are being driven by a performance bias. Notably, there are no substantial differences in capital and voting concentration across the various reasons as to why companies became defunct, which suggests that our results are not being driven by a performance bias.

<INSERT TABLE 9 HERE>

We established above that for most of our sample period, capital was more concentrated than voting. As can be seen from Table 10, which shows how voting rights evolved over time, early in the sample period most companies had voting scales which penalised large investors, with the result that voting rights were more dispersed than capital. In other words, many companies had voting scales which placed a cap on the maximum number of votes which any one investor could have and / or had a graduated voting scale

[64] Chandler, *Scale and Scope*, p. 240.

skewed against large owners (e.g., 5-10 shares = 1 vote; 10-25 = 2 votes; 25-50 shares = 3 votes; 50-100 shares = 4 votes; 100-200 shares = 5 votes; and one vote for every additional 200 hundred shares). As can be seen from Table 10, these types of scale became less common amongst companies established in the 1870s and 1880s, and by the 1890s only 19.1 per cent of companies in our sample operated such voting scales. In other words, the majority of companies established in the second half of our sample period operated linear voting schemes i.e., one-share-one-vote schemes or x-shares-one-vote schemes.

<INSERT TABLE 10 HERE>

The existence of non-voting preference shares concentrates voting rights to ordinary shareholders, making voting rights relatively more concentrated than capital. As can be seen from Table 10, preference shares were not used much by companies established in the 1850s, 1860s, or 1870s, but they were increasingly popular amongst companies established in the 1880s, and were particularly popular with companies established in the 1890s. The popularity of preference shares amongst these companies explains why voting rights were more concentrated than capital for companies established in the latter part of our sample period.

Table 11, which partitions our sample by voting structure, shows that the presence of voting scales skewed against large owners meant that voting was much less concentrated than capital in those companies. For example, insiders in such companies had, on average, 17.3 per cent of capital, but only 10.2 per cent of votes. The presence of preference shares and regular voting scales meant that voting rights were much more concentrated than capital. For example, insiders in firms with linear voting scales and preference shares had, on average, 20.3 per cent of capital, but controlled 28.8 per cent of votes.

<INSERT TABLE 11 HERE>

In the Victorian era, it was extremely common for companies to have substantial directorial share ownership requirements included in their articles of association.[65] From Table 12, we see that average directorial qualifications were very low relative to the overall capital of the company, which suggests that they did not affect ownership concentration. Indeed, the average director in companies with share qualifications owned a slightly higher proportion of shares than required. Finally, from Table 12 we see that directorial requirements were set low enough that, on average, 29.3 per cent of shareholders had enough shares to become directors, which suggests that directorial qualifications were not a means for large shareholders to secure control without needing votes.

<INSERT TABLE 12 HERE>

6. Determinants of ownership structure

In general, ownership structure was diffuse in Victorian Britain, but there was a wide variation in ownership structure across sample firms, which raises the question as to the potential determinants of ownership structure.[66] In this section, we explore econometrically the potential determinants of ownership structure in our sample. In particular, we examine the relationship between concentration of capital and voting and firm-specific factors, industry, geography, voting structures, the size and incentives of boards of directors, and the stock markets where shares were traded. Even though we have more than one observation for some companies, causal inference is hampered by the fact that most variables of interest do not change, giving us no variation which could be exploited to overcome partially the

[65] Campbell and Turner, 'Substitutes', p. 582; Chadwyck-Healey, *Treatise*, p.134; Emden, *Shareholders' legal guide*, p.8.

[66] For the extant literature on this question, see Shleifer and Vishny, 'Large shareholders'; Demsetz and Lehn, 'Structure of corporate ownership'; Richter and Weiss, 'Determinants'.

exogeneity issue. For example, firms typically did not change over time their voting structures, the number of markets where their shares were traded, director incentives, and the location of their head office. Consequently, in our analysis we can only show correlations between variables. If anything, our evidence is consistent with the idea that ownership structure and many of these variables were codetermined when the company was initially established.

The dependent variables in our multivariate regressions are the logs of the percentage of capital and voting rights held by insiders, the percentage of capital and voting rights held by largest five shareholders, and the Herfindahl index of capital and voting rights. As well as the various independent variables mentioned above, we also control for the ultimate fate of the company to ensure that the results are not being driven by a performance bias. Variables descriptions and data sources are reported in Appendix Table 1. The results from Ordinary Least Squares regressions are reported in Table 13 and these results are robust to the use of panel specifications with random effects.

<INSERT TABLE 13>

The statistically significant positive coefficients on the *EstablishmentDate* variable in Table 13 confirms our earlier findings that older firms have lower capital and voting concentration. The statistically significant negative coefficients on the *OwnershipDate* variable indicate that ownership becomes less concentrated as the nineteenth century progresses.

Size is usually regarded as an important determinant of ownership structure.[67] Large firms have a need for larger capital resources, implying that the value of a given fraction of ownership will be higher, reducing capital concentration. This effect on ownership will be accentuated if investors are risk averse as they will want to diversify their wealth. As can be

[67] Demsetz and Lehn, 'Structure of corporate ownership'.

seen from Table 13, there is little statistical or economic relationship between ownership structure and firm size. One explanation for this finding is that as one of the main benefits of incorporating is that ownership can be separated from control, one should not expect firm size to be an important determinant of ownership structure. Another explanation is that the amount of capital or votes controlled by insiders was almost immaterial from the point of view of actual control of the company.

The presence of uncalled capital, whereby investors are liable for the debts of the company up to some fixed sum, could potentially result in more diffuse ownership as investors are reluctant to take large stakes because of the liability which is attached to share ownership or it could result in concentrated ownership as it lowers the costs of monitoring co-owners to ensure that they have adequate wealth to pay potential calls.[68] As can be seen from Table 13, the presence of uncalled capital is uncorrelated with ownership structure.

Some companies in Victorian Britain had their shares traded on more than one stock market, with listings in one or more of the many provincial stock exchanges and London commonplace right from the firm's establishment. As can be seen from the negative and statistically significant coefficient on the *NumMarkets* variable, the greater the number of markets a company's shares were traded on, the less concentrated was its capital and voting.

Hannah claims that the two-thirds listing rule of the London Stock Exchange, whereby companies wanting to have a prestigious Official Listing had to place at least two-thirds of their shares in the hands of the public, played an important role in separating ownership from control.[69] However, the regression results in Table 13 suggest that there is no correlation between being on the Official List and ownership concentration, which

[68] Acheson et al. 'The character and denomination'.

[69] See Hannah, 'Divorce of ownership', p. 414. See also Cheffins et al., 'Ownership dispersion' for an empirical test which rejects Hannah's hypothesis.

questions the role played by official listing requirements in separating ownership from control.[70]

The results in Table 13 reveal that companies with a head office in London tended to have less capital and voting concentrated in the hands of insiders. One possible explanation for this finding is that companies located in London had greater access to capital and were more attractive to investors with the result that there was less capital concentrated in the hands of insiders.

Three of the six coefficients on the *LocalMiles* variable, which measures the distance between a company's head office and the main stock exchange where its shares were traded, are statistically significant, and each of these coefficients is positive but very small in an economic sense. This finding suggests that the proximity of investors to a company is uncorrelated with ownership structure. This is inconsistent with the view that diffuse ownership is more likely whenever shareholders can easily monitor a company's directors. It is also inconsistent with the notion that trust may be higher amongst investors living in proximity to companies and their directors.[71]

Unsurprisingly, specifications 1 and 4 in Table 13 reveal that the greater the number of directors, the more concentrated is percentage of capital and votes controlled by insiders (i.e., directors and large shareholders). However, the results in the other four specifications of Table 13 reveal that the greater the number of board members, the lower is the concentration of capital and voting as measured by the percentage held by the largest five

[70] When a random effects specification is used, the coefficients on this variable in the three regressions where voting rights is the dependent variable are statistically significant and positive, which implies that an official listing is correlated with more concentrated ownership.

[71] Notably, Franks et al., 'Ownership' suggest that trust and the proximity of investors to company headquarters explains why control blocks unwound in the twentieth century in the absence of investor protection law. See Cheffins, *Corporate Ownership*, pp.41-43 for a critique of this view.

investors and the Herfindahl index. One possible explanation for this finding is that larger boards may alleviate the agency problems that are associated with diffuse ownership as the greater the number of directors, the greater the cost of collusion with executive directors and the greater the degree of mutual monitoring conducted by directors.[72] In addition, the existence of directorial share qualifications in most companies meant that the greater the number of directors, the greater the incentives of directors to monitor company executives.[73]

One would expect that the presence of directorial ownership requirements would be positively correlated with ownership concentration as directors have to own a certain amount of shares before they can qualify as directors. As can be seen from Table 13, the positive and statistically significant coefficient on *DirQualScale* suggests this is indeed the case.

The two variables which attempt to capture the voting structures of companies (*NonVotePreference* and *VotingNonLinear*) reveal that neither has an effect on capital concentration (specifications 1 to 3), but that the presence of voting schemes which discriminate against large investors results in less concentrated voting rights (specifications 4 to 6), which is consistent with the findings reported in the previous section.

According to Demsetz and Lehn, companies located in an industry where it is difficult to assess and monitor managerial performance should have more concentrated ownership.[74] Given the asymmetric information problems endemic in financial institutions, one might expect more concentrated ownership in this industry. In addition, the information asymmetries between managers and shareholders would be large in the mining industry given that many mines were located overseas or far away from stock markets. On the other hand, utilities, which were usually local monopolies characterised by stable prices, technology and

[72] Hermalin and Weisbach, 'Boards of directors', p. 10; Campbell and Turner, 'Substitutes', p.583

[73] Campbell and Turner, 'Substitutes', p.583.

[74] Demsetz and Lehn, 'Structure of corporate ownership'.

market share, should have more diffuse ownership. The industry binary variables in Table 13 reveal that none of these relationships hold in Victorian Britain. Indeed, financial institutions have much more diffuse ownership than other sectors, possibly arising from the fact that some banks and insurance companies limited the amount of shares that any one individual could own.

In summary, our regression results suggest that time was an important determinant of ownership structure, with concentration eroding within each cohort, but companies established later in the century began their corporate lives with higher levels of concentration. The diffusion of ownership was aided by not only having a head office in London, but also by the listing of shares on numerous regional stock exchanges. Boards of directors also seem to have played a role in facilitating the diffusion of ownership, possibly by taking on the monitoring functions of large shareholders, as evidenced by the negative relationship between board size and concentration. Non-linear voting rights, which penalised large investors, were also associated with lower levels of voting concentration.

7. Conclusion

The main findings of this paper are fivefold. First, relative to modern-day standards for large publicly-traded companies, never mind medium-sized and small companies, Victorian Britain had highly dispersed ownership, with ownership being separated from control. If one believes that separating ownership from control is one of the definitive features of the corporation, this finding is, in one sense, not that surprising. Second, given the limited shareholder protection afforded by the 1862 Companies Act, the dispersed nature of ownership in this period is evidence against the law and finance hypothesis, which argues that strong shareholder law is a prerequisite for dispersed ownership. Third, our findings of dispersed ownership in Victorian Britain are consistent with Coffee's thesis that having a

pluralistic and decentralised political regime is a major precondition for dispersed ownership. Fourth, we find that the variations in ownership structure were correlated with several other factors. A diffuse ownership structure was more likely to be found in companies which had larger boards and a head office in London, and whose shares were traded on a number of stock markets. Fifth, although concentration of ownership tended to erode within each cohort over time, companies formed in the 1890s had greater capital and voting concentration than those formed in earlier decades, and, unlike companies formed in earlier decades, the insiders in these companies were able to maintain their voting rights. Future research should focus on companies established from the 1890s onwards to understand why this change occurred and the long-run effect of it on the UK's corporate economy.

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Table 1: Sample Summary Statistics

Year	Relative size of companies compared to all non-railway companies in *Investor's Monthly Manual*: Top 10%	Top 20%	Top 50%	Bottom 50%	Total companies in sample	Average company size £(000)s	Average number of shareholders
1853-1868					144	154.1	312.4
1869-1879	7	16	52	79	131	211.0	333.5
1880-1889	12	25	104	159	263	210.4	373.4
1890-1899	1	14	77	139	216	220.3	464.7
1900-1902	2	9	34	84	118	244.3	594.9
Total 1869-1902	22	64	267	461	728	218.9	429.2
Total 1853-1902					872	208.2	409.9
Missing Par					18		458.0
Whole sample					890		410.9

Source: *Investor's Monthly Manual*, 1868-1902, which was available from International Center for Finance at Yale University. See text for sources of shareholder numbers.

Notes: The relative size of companies compared to non-railway companies is the average of the yearly figures. Company size is measured in terms of the par value of its equity. There are 18 of the 890 firm years for which we do not have accurate data on their par value.

Table 2: Industry Breakdown of Sample

	1850s	1860s	1870s	1880s	1890s	1900s	Total
Banks	1	30	25	46	26	14	142
Breweries	0	3	4	7	15	8	37
Commercial and Industrial	4	54	32	62	64	33	249
Docks	0	0	0	2	0	1	3
Finance	2	11	7	6	3	1	30
Gas and Light	4	9	4	9	9	6	41
Insurance	1	8	10	14	12	5	50
Iron, Coal and Steel	0	5	9	25	18	10	67
Mines	2	11	5	11	11	8	48
Mortgage and Finance	0	3	3	34	23	15	78
Spinning and Weaving	0	3	1	17	12	2	35
Steamships	0	8	4	12	5	8	37
Tea and Coffee	0	8	3	2	3	0	16
Telegraph	1	1	5	7	3	2	19
Tramways	0	0	2	9	9	4	24
Wagon	0	2	1	4	5	2	14
Total	15	156	115	267	218	119	890

Source: See text.
Notes: The industry classification used above is that used by contemporary stock exchange manuals such as the *Stock Exchange Official Intelligence*.

Table 3: Summary Statistics of Capital and Voting Concentration (%)

	Companies	Average no. per company	Mean	St. dev.	Min.	Median	Max.
Panel A: Capital Concentration							
Herfindahl	846		3.9	6.3	0.1	1.8	83.7
% held by largest							
Investor	846		10.5	10.7	0.4	6.8	91.3
5 investors	846		26.6	17.0	1.9	21.5	98.7
10 investors	846		36.8	19.4	3.9	32.4	100.0
20 investors	846		49.1	21.2	7.8	46.0	100.0
% held by insiders (all companies for which director and capital data available)							
just directors (a)	575	5.8	8.8	6.2	0.0	7.3	44.7
just large shareholder (b)	575	0.3	4.8	11.9	0.0	0.0	86.5
both director and large sh (c)	575	0.3	4.9	12.8	0.0	0.0	91.3
insider (a+b+c)	575	6.4	18.5	17.9	0.8	12.2	98.0
% held by insiders (for those companies which have a large shareholder)							
just director (a)	196	4.8	8.9	6.6	0.0	7.2	44.7
just large shareholder (b)	196	0.8	14.1	16.9	0.0	10.6	86.5
both director and large sh (c)	196	0.8	14.2	18.6	0.0	10.8	91.3
insider (a+b+c)	196	6.3	37.2	18.3	11.4	33.8	98.0
Panel B: Voting Concentration							
Herfindahl	729		3.5	8.1	0.0	1.4	100.0
% held by largest							
Investor	729		8.6	11.6	0.0	4.9	100.0
5 investors	729		22.2	18.2	0.2	17.3	100.0
10 investors	729		31.1	20.7	0.5	26.7	100.0
20 investors	729		42.6	22.6	1.0	40.5	100.0
% held by insiders (all companies for which director and voting data available)							
just director (a)	559	5.9	8.0	6.3	0.0	6.2	34.4
just large shareholder (b)	559	0.2	3.7	11.7	0.0	0.0	100.0
both director and large sh (c)	559	0.2	4.3	13.3	0.0	0.0	91.3
insider (a+b+c)	559	6.3	16.1	18.4	0.5	9.0	100.0
% held by insiders (for those companies which have a large shareholder)							
just director (a)	142	4.5	8.1	6.0	0.0	6.7	26.8
just large shareholder (b)	142	0.7	14.7	19.6	0.0	10.5	100.0
both director and large sh (c)	142	0.9	16.9	22.1	0.0	11.6	91.3
insider (a+b+c)	142	6.2	39.7	21.6	11.4	33.7	100.0

Source: see text.

Notes: 44 of our firm-years have multiple classes of shares (i.e., ordinary and preference shares) where it has proved impossible to match up shareholder names of different classes in order to work out capital concentration for all 890 firm-years. However, we can calculate the concentration of voting rights for such firms, provided we have the company's voting scale. The Herfindahl Index is the sum of the squared proportion of capital owned by each investor in a company. Large shareholders are defined as those who own more than 10 per cent of capital in a firm for capital data or 10 per cent of votes for voting data. Insiders are defined as directors plus owners with more than 10 per cent of capital.

Table 4: Capital Concentration of Companies in Market Indices in 2013

	% of companies with a single shareholder owning more than 10%	% held by largest investor		% held by 5 largest investors	
		Median	Mean	Median	Mean
Dow Jones	20.0	7.1	9.6	24.6	27.4
S&P 500	37.3	8.6	10.3	30.9	32.5
FTSE 100	50.5	10.0	16.0	28.9	35.5
DAX 30	51.7	10.9	16.2	30.8	32.0
S&P MidCap 400	51.8	10.2	11.3	34.1	35.7
CAC 40	57.9	11.7	18.7	31.0	33.7
S&P SmallCap 600	60.3	10.8	12.5	37.8	39.1
FTSE 250	75.1	14.1	18.1	40.3	43.8
S&P Asia	77.6	18.0	25.2	38.1	42.1
MDAX	79.2	25.8	32.9	45.4	49.3
Ibovespa	81.0	22.3	25.6	50.4	49.7
CAC Mid 60	88.3	29.8	33.6	54.1	50.5
Victorian Britain	35.6	6.8	10.5	21.5	26.6

Source: Bloomberg and authors' calculations.

Notes: The Dow Jones consists of 30 large US corporations. The S&P 500 is an index of 500 large US corporations, the S&P MidCap 400 is an index of 400 midcap US corporations, and the S&P SmallCap 600 is an index of 600 smallcap US corporations. The FTSE 100 is an index of the 100 largest companies traded on the London Stock Exchange, whereas the FTSE 250 consists of companies ranked 101 to 350 in terms on size on the London market. The DAX 30 consists of 30 major German companies trading on the Frankfurt Stock Exchange and the MDAX consists of 50 German companies (excluding technology companies) just outside the top 30 German companies. The CAC 40 consists of the 40 most significant companies traded on the Paris Bourse and the CAC Mid 60 is a midcap index for the Paris Bourse, which consists of the 60 largest companies outside of the top 60 companies. The S&P Asia consists of 50 large companies drawn from Hong Kong, Singapore, South Korea, and Taiwan. The IBovespa consists of the top 50 companies traded on the São Paulo Stock Exchange.

Table 5: Capital and Voting Concentration in Britain, 1855-2013

		% held by largest investor		% held by 20 largest investors		% held by directors	
Years	N	Mean	Median	Mean	Median	Mean	Median
1853-1880	95	12.17(c)	8.37(c)	56.20(c)	57.60(c)	18.22(c)	12.67(c)
1881-1902	480	10.14(c)	6.35(c)	45.51(c)	43.04(c)	12.78(c)	9.05(c)
1853-1902	575	10.48(c)	6.63(c)	47.27(c)	44.30(c)	13.68(c)	9.45(c)
1911	337	-	-	-	-	6.61(c)	2.45(c)
1936	92	16.27(v)	9.80(v)	40.47(v)	34.20(v)	9.83(c)	2.85(c)
1951	98	13.02(v)	5.50(v)	30.67(v)	21.00(v)	6.53(c)	1.15(c)
1983	470	15.86(c)	-	60.47(c)	-	-	-
1990	225	-	-	-	-	12.91(c)	6.27(c)
1995	802	18.82 (c)	-	-	-	13.02 (c)	-
2013	350	17.49(c)	13.26(c)	72.54(c)	73.36(c)	3.85(c)	0.41(c)

Sources: For the 1853-1902 data see text. The 1911 data consist of the largest 337 companies from that year and is from the online web appendix to Foreman-Peck and Hannah, 'Extreme divorce'. The 1936 and 1951 figures are based on data from the statistical appendix in Florence, *Ownership*, pp. 196-217. Florence's 1936 and 1951 samples contain all non-financial and non-conglomerate companies with an issued share capital in excess of £3m in 1951. The 1983 data are from Leech and Leahy, 'Ownership structure', 1428. Their sample consists of 470 UK-listed companies from a range of industries, with 325 coming from *The Times* 1000 largest industrial companies. The 1990 data are from Short and Keasey, 'Managerial ownership', p. 91. Their sample consists of 225 industrial companies on the London Stock Exchange official list. The 1995 data are from Davies et al., 'Ownership structure', p. 651. Their sample consists of 802 non-financial companies. The 2013 data are from authors' calculations based on data from Bloomberg for the largest 350 companies traded on the London Stock Exchange.

Notes: Capital (c) and voting (v) concentration. The sample size for the 1853-1902 data is limited to those companies where we have information on director ownership data.

Table 6: Average Capital and Voting Concentration by Industry

		Capital Concentration			Voting Concentration		
	N	% held by Insiders	% held by Largest 5 Investors	Herfindahl Index (%)	% held by Insiders	% held by Largest 5 Investors	Herfindahl Index (%)
Banks	140	11.7	16.1	1.3	9.3	11.6	1.1
Breweries	35	26.1	40.7	7.6	33.7	39.7	9.3
Commercial and Industrial	231	23.1	32.0	4.8	20.1	26.9	4.7
Docks	2	34.7	37.9	3.9	29.3	35.3	3.6
Finance	29	16.3	23.3	2.6	12.0	14.9	1.5
Gas and Light	36	15.4	22.9	3.0	14.3	19.0	3.2
Insurance	50	17.1	22.3	3.7	10.9	11.9	1.1
Iron, Coal and Steel	65	20.9	33.8	5.7	19.0	30.2	4.5
Mines	47	17.6	27.3	3.7	12.2	21.2	2.9
Mortgage and Finance	73	14.2	22.8	3.2	11.9	18.5	2.5
Spinning and Weaving	35	23.5	22.1	2.4	21.4	24.8	3.0
Steamships	37	19.1	26.5	4.7	20.5	26.0	5.3
Tea and Coffee	15	12.9	32.7	4.0	6.8	21.7	2.2
Telegraph	18	22.3	31.5	7.1	13.8	22.4	5.1
Tramways	19	14.8	23.4	4.9	11.6	20.3	3.9
Wagon	14	20.5	25.4	2.8	17.6	22.7	2.5
Total	846	18.5	26.6	3.9	16.1	22.2	3.5

Source: see text.
Notes: Number of observations varies per measure depending on data availability.

Table 7: Capital and Voting Concentration by Establishment Date and Ownership Census Date

Panel A: Capital Concentration

		% of Capital Owned by 5 Largest Investors								Number of Observations						
		Decade in which ownership census taken								Decade in which ownership census taken						
		1850s	1860s	1870s	1880s	1890s	1900s	Total		1850s	1860s	1870s	1880s	1890s	1900s	Total
Decade in which company established	<=1850s	20.1	20.4	20.2	17.8	10.5	12.1	16.2	<=1850s	8	15	13	38	21	20	115
	1860s	.	33.0	30.1	26.2	24.8	23.9	29.1	1860s	0	105	66	64	47	16	298
	1870s	.	.	33.5	26.9	25.0	19.9	25.9	1870s	0	0	16	72	47	24	159
	1880s	.	.	.	31.3	26.9	19.7	27.0	1880s	0	0	0	52	52	30	134
	1890s	.	.	.	.	43.8	32.7	38.5	1890s	0	0	0	0	23	21	44
	Overall	20.1	31.4	29.3	26.2	26.1	21.4	26.6	Overall	8	120	95	226	190	111	750

Panel B: Voting Concentration

		% of Voting Rights Controlled by 5 Largest Investors								Number of Observations						
		Decade in which ownership census taken								Decade in which ownership census taken						
		1850s	1860s	1870s	1880s	1890s	1900s	Total		1850s	1860s	1870s	1880s	1890s	1900s	Total
Decade in which company established	<=1850s	12.2	10.6	6.8	10.1	8.8	7.4	9.2	<=1850s	5	12	10	35	21	19	102
	1860s	.	22.8	23.5	21.0	19.3	21.4	21.9	1860s	0	98	61	68	46	15	288
	1870s	.	.	26.5	23.7	22.4	17.5	22.8	1870s	0	0	16	68	43	18	145
	1880s	.	.	.	29.4	24.7	20.8	25.5	1880s	0	0	0	50	50	32	132
	1890s	.	.	.	.	42.9	41.4	42.3	1890s	0	0	0	0	26	21	47
	Overall	12.2	21.5	22.2	22.0	23.6	22.0	22.3	Overall	5	110	87	221	186	105	714

Source: see text.

Table 8: Analysis of Change in Capital and Voting Concentration for those Companies with Ownership Data both before 1880 and after 1890

	Number of Companies	Mean Pre-1880	Mean Post-1890	Difference
Capital Concentration				
% held by Insiders	12	22.9	15.6	-7.2
% held by Largest 5 Investors	54	27.0	22.0	-5.0
Herfindahl Index (%)	54	3.2	2.5	-0.7
Voting Concentration				
% held by Insiders	12	19.8	10.2	-9.6
% held by Largest 5 Investors	50	20.1	17.3	-2.8
Herfindahl Index (%)	50	2.4	1.7	-0.7

Source: see text.
Notes: Insiders are defined as directors plus owners with more than 10 per cent of capital. The Herfindahl Index is the sum of the squared proportion of capital owned by each investor in a company.

Table 9: Capital and Voting Concentration by Final Status of the Company

Company's final status	N	Average Year in which became Defunct	% held by Insiders		% held by Largest 5 Investors		Herfindahl Index (%)	
			Capital	Votes	Capital	Votes	Capital	Votes
Merged	353	1913	17.9	17.2	24.7	21.5	3.8	4.0
Reconstructed	140	1903	15.7	13.9	25.6	21.5	3.6	2.9
Removed from SEY	150	1911	20.1	16.7	29.2	25.6	4.4	3.8
Court Winding Up	47	1902	22.2	14.2	28.1	22.2	3.7	2.5
Voluntary Winding Up	199	1906	19.5	15.2	28.4	21.4	3.9	3.1
Total	889	1909	18.5	16.1	26.6	22.2	3.9	3.5

Source: see text.
Notes: Number of observations varies per measure depending on data availability. Insiders are defined as directors or owners with more than 10 per cent of capital. The Herfindahl Index is the sum of the proportion of capital owned by each investor in a company. Removed from SEY are those firms which have been removed from the *Stock Exchange Yearbook* for some reason other than those listed above. The most likely explanation for their disappearance is that these companies went private.

Table 10: Percentage of Companies with Particular Voting Structures by Decade in which Company was Established

Decade in which firm established	N	Non-Linear Voting Rights (%)	Existence of Non-voting Preference Shares (%)
<=1850s	102	68.6	6.9
1860s	288	58.7	5.9
1870s	145	31.0	15.2
1880s	132	29.5	22.7
1890s	47	19.1	42.6
Total	714	46.5	13.4

Source: see text.
Notes: Non-Linear Voting Rights penalise large investors and make voting rights relatively more disperse than capital. The way in which this could be achieved would be to have a graduated voting scale or a cap on the maximum number of votes in the hands of any individual shareholder.

Table 11: Average Capital and Voting Concentrations by Voting Structures

Voting Structures		% held by Insiders			% held by Largest 5 Investors			Herfindahl Index (%)		
Voting Rights Non-Linear	Existence of Non-voting Preference Shares	N	Capital	Votes	N	Capital	Votes	N	Capital	Votes
No	No	236	19.0	19.4	307	27.6	27.8	307	4.3	4.4
Yes	No	223	17.3	10.2	313	25.5	14.4	313	3.6	1.9
No	Yes	50	20.3	28.8	52	28.6	37.0	52	4.3	9.9
Yes	Yes	11	13.2	14.0	13	19.4	17.0	13	2.2	2.9
	Overall	520	18.3	16.3	685	26.5	22.2	685	4.0	3.6

Source: see text.

Notes: The first row is usually a basic one-vote-per-share or x-votes-per-share arrangement with no preference shares. The small difference between capital and voting concentration is that for some companies it may have been one vote for five shares, so anyone holding four shares did not get a vote, those holding nine shares only got one vote etc.. Insiders are defined as directors, or owners with more than 10 per cent of capital. The Herfindahl Index is the sum of the squared proportion of capital owned by each investor in a company. The sample in this table is restricted to companies where both capital and voting data available.

Table 12: Directors' Qualifications and Holdings

	No. companies with:		Average director qualifications and holdings for companies with qualifications:		
	No qualifications	Qualifications	Qual. (% of firm)	Holdings (% of firm)	% of shareholders eligible to become directors
1850s	0	2	0.4	1.2	16.3
1860s	1	58	0.8	3.5	39.3
1870s	0	17	0.9	2.8	33.4
1880s	72	159	0.5	2.7	27.4
1890s	35	151	0.4	2.7	27.9
1900s	24	89	0.3	1.7	27.9
Total	132	476	0.5	2.6	29.3

Source: see text.
Notes: The sample in this table is restricted to those companies where directorial ownership and qualifications are known.

Table 13: Regression Results

	Capital Concentration			Voting Concentration		
	(1) % held by Insiders	(2) % held by 5 largest investors	(3) Herfindahl Index	(4) % held by Insiders	(5) % held by 5 largest investors	(6) Herfindahl Index
OwnershipDate	-0.019***	-0.014***	-0.023***	-0.016***	-0.015***	-0.019***
	(0.005)	(0.003)	(0.005)	(0.005)	(0.004)	(0.005)
EstablishmentDate	0.016***	0.014***	0.020***	0.019***	0.019***	0.022***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)
Size	0.057	0.039	0.042	0.060	0.003	0.019
	(0.053)	(0.032)	(0.057)	(0.055)	(0.038)	(0.058)
Uncalled	-0.000	-0.003	-0.002	0.001	-0.003	0.001
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
OfficialListing	0.137	0.019	0.163	0.099	0.118	0.208
	(0.174)	(0.094)	(0.160)	(0.145)	(0.099)	(0.144)
NumMarkets	-0.318***	-0.108***	-0.218***	-0.267***	-0.135***	-0.242***
	(0.056)	(0.032)	(0.057)	(0.052)	(0.040)	(0.057)
HeadLondon	-0.483***	-0.146*	-0.172	-0.447***	-0.235**	-0.180
	(0.156)	(0.085)	(0.145)	(0.134)	(0.097)	(0.130)
Scottish	-0.150	-0.163**	-0.147	-0.104	-0.208**	-0.051
	(0.119)	(0.077)	(0.137)	(0.131)	(0.102)	(0.137)
LocalMiles	0.002*	0.001	0.001	0.002**	-0.000	0.002*
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
NumDirectors	0.024*	-0.052***	-0.068***	0.033**	-0.054***	-0.067***
	(0.014)	(0.010)	(0.017)	(0.015)	(0.012)	(0.017)
DirectorQualScale	0.374***	0.229***	0.348***	0.436***	0.256***	0.377***
	(0.079)	(0.053)	(0.079)	(0.084)	(0.065)	(0.086)
NonVotePreference	-0.015	-0.125	-0.212	0.062	0.040	0.105
	(0.167)	(0.091)	(0.168)	(0.145)	(0.083)	(0.139)
VotingNonLinear	-0.034	-0.022	-0.015	-0.556***	-0.719***	-0.718***
	(0.092)	(0.054)	(0.093)	(0.091)	(0.070)	(0.095)
IndustryMines	0.113	0.042	-0.112	0.164	0.024	-0.088
	(0.248)	(0.129)	(0.214)	(0.234)	(0.145)	(0.213)
IndustryUtility	-0.111	-0.063	-0.145	0.215	0.103	0.041
	(0.196)	(0.122)	(0.224)	(0.167)	(0.114)	(0.197)
IndustryFinancial	-0.401***	-0.249***	-0.469***	-0.342***	-0.269***	-0.435***
	(0.100)	(0.066)	(0.117)	(0.106)	(0.078)	(0.110)
IndustryBreweries	-0.341	0.088	0.070	0.157	0.118	0.170
	(0.319)	(0.132)	(0.258)	(0.294)	(0.128)	(0.272)
Merged	0.248**	0.117*	0.209*	0.299***	0.137**	0.244**
	(0.102)	(0.060)	(0.109)	(0.102)	(0.067)	(0.106)
CourtWoundup	0.368*	0.209*	0.377*	0.448**	0.295*	0.368*
	(0.209)	(0.118)	(0.200)	(0.221)	(0.166)	(0.220)
DefunctYear	0.004*	0.002	0.005*	0.002	0.002	0.003
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-3.806	-4.999	-6.173	-13.408	-11.721	-15.360
	(11.192)	(6.853)	(11.446)	(11.189)	(8.329)	(11.412)
Observations	422	437	437	457	473	473
R-squared	0.277	0.434	0.377	0.337	0.565	0.463

Notes: The dependent variables are in log form so as to make them closer to being normally distributed. Robust standard errors are in parentheses, and *** p<0.01, ** p<0.05, * p<0.1. Firm-years where there were director qualifications but where less than 80% of directors held shares have been removed from columns (1) and (4).

Appendix Table 1: Variable Definitions

Variable	Description	Data sources
CourtWoundup	A binary variable which equals 1 if the final status of company was that it was wound up by a court, 0 otherwise	RDC, L&EG
DefunctYear	The year the company eventually became defunct	RDC, L&EG
DirectorQualScale	Shareholding requirement for directors scaled by total paid-up capital	AoA, SEOI, BOI
EstablishmentDate	Year in which company was established	AoA, SEOI, BOI
HeadLondon	A binary variable which equals 1 if company has a head office in London, 0 otherwise	AoA, SEOI, BOI
IndustryBreweries	A binary variable which equals 1 if company is a brewery, 0 otherwise	AoA, SEOI, BOI
IndustryFinancial	A binary variable which equals 1 if company is in financial sector, 0 otherwise	AoA, SEOI, BOI
IndustryMines	A binary variable which equals 1 if company is in mining industry, 0 otherwise	AoA, SEOI, BOI
IndustryUtility	A binary variable which equals 1 if company is a utility, 0 otherwise	AoA, SEOI, BOI
LocalMiles	The distance (in miles) between a company's head office and the main market where its shares are traded	AoA, IMM, SEOI, BOI, Google maps
Merged	A binary variable which equals 1 if the final status of company was that it merged, 0 otherwise	RDC
NonVotePreference	A binary variable which equals 1 if company has non-voting preference shares, 0 otherwise	AoA, SEOI, BOI
NumDirectors	The number of directors on the board	AoA, SEOI, BOI, SEY
NumMarkets	The number of stock markets where a company's shares are traded	IMM, SEOI, BOI
OfficialListing	A binary variable which equals 1 if company is listed on the Official List, 0 otherwise	SEOI, BOI
OwnershipDate	Year in which ownership census was taken	Form E ownership returns
Scottish	A binary variable which equals 1 if company is Scottish, 0 otherwise	Form E ownership returns
Size	Natural log of company par (paid-up) value	Form E ownership returns, SEOI, BOI
Uncalled	Difference between nominal capital and paid-up capital i.e., the amount of capital that a shareholder is liable for	IMM, SEOI, BOI
VotingNonLinear	A binary variable which equals 1 if company has non-linear voting scheme, 0 otherwise	AoA, SEOI, BOI

Notes: AoA = Articles of Association; BOI = Burdett's Official Intelligence; IMM = Investor's Monthly Manual; L&EG = London and Edinburgh Gazettes; RDC = Register of Defunct Companies; SEOI = Stock Exchange Official Intelligence; SEY = Stock Exchange Yearbook.