Ownership: Evolution and Regulation

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Abstract

This paper is the first study of long-run evolution of investor protection, equity financing and corporate ownership in the U.K. over the 20th century. Formal regulation only emerged in the second half of the century. We assess its influence on finance and ownership by comparing evolution of firms incorporating at different stages of the century. Regulation had little impact on equity issues or dispersion of ownership: even in the absence of regulation, there was a large amount of both, primarily associated with mergers. The main effect of regulation was on share trading and the market for corporate control. These results cast doubt on law and finance theories and suggest financial development in the U.K. relied more on informal relations of trust than on formal systems of regulation.

JEL Classification: G32, G34

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1. Introduction

One of the best-established stylised facts about corporate ownership is that ownership of large listed companies is dispersed in the U.K. and U.S. and concentrated in most other countries. For example, Becht and Mayer (2001) report that in more than 50% of European companies there is a single voting block of shareholders that commands a majority of shares. In contrast, in the U.K. and U.S. it is less than 3%.

There are two prominent theories of regulation and law that have been proposed to explain these differences. The first attributable to Mark Roe (1994) is that U.S. legislators responded to a populist agenda in the 1930's by limiting the power exercised by large financial conglomerates. This was accomplished by introducing legislation that restricted the control rights of large blockholders. The second, associated with La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), argues that concentrated ownership is a response to inadequate regulation. According to their view, in the absence of adequate protection, investors seek to protect their investments with the direct exercise of control through large share blocks. Concentrated ownership is therefore a response to deficient investor protection.

Both of these law and finance theories associate dispersed ownership with strong regulation. The difference in ownership concentrations in the U.K. and the U.S. on the one hand and Continental Europe on the other can be attributed to weak regulation in Continental Europe and strong regulation in the U.K. and U.S. La Porta et al (1998) produce data to support this conclusion. They distinguish between the common law systems of the U.K. and U.S. and the civil law systems in Continental Europe. They show that common law systems have strong minority investor protection and civil law systems have weak protection.

According to the law and finance literature, differences in legal structures are deep rooted with a long history. One would therefore expect differences in investor protection also to have a long history. But this is not the case. At the beginning of the century, the U.K. was devoid of anti-director rights provisions and protection of small investors. According to the La Porta et al (1998) measure of anti-director rights, the U.K. only scored one out of a possible maximum of six between 1900 and 1946 – on a par with Germany in the early 1990s.

Common law contributed to this: in 1843 there was a landmark case of unsuccessful litigation by an injured investor in the U.K. (Foss vs. Harbottle) that undermined the rights of minority investors to seek protection through the courts for more than a century. The leading British company law academic, Leonard Sealy, observed that, "the courts have made it very difficult, and in many cases impossible, for shareholders with grievances – sometimes, shareholders who are the victims of very real injustices – to obtain a legal remedy." (Sealy (1984, p. 53).

If investor protection at the beginning of the century in the U.K. was on a par with Germany today then this raises the question of whether capital markets in the U.K. bore closer resemblance to Germany than the U.K. today. The law and finance literature would predict that the U.K. would have relatively undeveloped financial markets, minority investor abuse and high concentrations of ownership in the first half of the century. As Cheffins (2002) has noted, unlike in the U.S., there was no legislation in the U.K. during the 20th century discouraging concentrations of shareholdings in the hands of financial institutions or other investors so that, if any law and finance theory is relevant to the U.K., it is the LLSV rather than the Mark Roe version.

A second interesting feature of investor protection in the U.K. is the degree to which it was strengthened during the century. By the end of the century, the LLSV measure of anti-director rights had increased from one to five out of the maximum of six. In addition, there were aspects of investor protection not captured by the LLSV that were introduced from the middle of the century, for example rules concerning removal of directors. According to the law and finance literature, we would therefore predict a significant increase in the rate of dispersion of ownership in the second half of the century.

We address these questions in this paper by looking at the evolution of ownership of 60 U.K. firms over the twentieth century. Several studies (for example, Berle and Means (1932), Florence (1961), Holderness, Kroszner and Sheehan (1999), Larner (1966) and Nyman and Silberston (1978)) report statistics on the ownership of cross-sections of firms in the U.K. and U.S. at different points in time. But no study to date has attempted to examine how ownership of a panel of firms has evolved over an extended period – a hundred years in the case of this study – and to establish what factors have contributed to that evolution.

That is precisely what this paper attempts to do. It has been made possible by the existence of an unusually rich source of data in the U.K. For more than a century, Parliament has required companies to deposit information, including accounts and a register of shareholders, at a central depository open to the public.

From this depository, we select three samples of firms, one from companies incorporated around the turn of the century that have been in continuous existence since then, a second from firms incorporated at the same time but which are no longer in existence today and a third from companies incorporated around 1960 and still in existence today. We trace their share ownership over time and analyze the influence of regulation on this.

We find that the U.K. had a vibrant capital market at the beginning of the century. There were a large number of companies actively traded on stock markets around the country. According to Rajan and Zingales (2003), measured by market capitalization relative to GDP, the U.K. had the second largest stock market in the world, surpassed only by Cuba!

Furthermore, there was a high level of equity issuance at the beginning of the century. The average rate of growth of issued equity in our sample of firms that were incorporated around 1900 was 10.8% per annum over the period 1900 to 1940. Most of that growth (87%) was associated with equity issued for share exchanges and cash raised specifically for acquisitions and mergers.

An obvious question that this raises is how large-scale equity issuance could have occurred in the absence of investor protection. We suggest that trust and informal relations played an important part and we illustrate their role in the process of issuing equity for acquisitions and mergers. In principle, bidding companies could have acquired targets at low cost by making discriminatory offers to selected shareholders and purchasing the minimum shareholding required to secure control. This was commonplace in Germany until recently (see Jenkinson and Ljungqvist (2001) and Franks and Mayer (2001)). But what was observed in the U.K. in the first half of the century was quite different. Offers were made without discrimination at equal prices to all shareholders. Directors of target firms played an important role in upholding this convention by stating publicly whether they intended to tender their own shareholdings at the offer price and making recommendations to their shareholders to follow their example.

Not only was the large amount of equity issuance an indicator of a thriving U.K. equity market, but it was also the underlying cause of another striking development. Ownership of the sample of U.K. firms incorporated around 1900 was rapidly dispersed with the shareholdings of inside directors more than halving over the 40 years to 1940. The differences in ownership concentration between the U.K. and Continental European countries today are not a recent phenomenon -

dispersed ownership emerged rapidly in the first half of the 20^{th} century, even in the absence of strong investor protection. The most significant cause of this was acquisitions and mergers. Shares issued in the process of equity exchanges diluted the ownership stakes of existing shareholders.

When investor protection was finally strengthened in the second half of the century, it had little effect on either equity issuance or rates of ownership dispersion. Ownership of well-established companies was already dispersed and rates of dispersion of newly incorporated firms, for example of the sample of firms incorporated around 1960, were no greater than those of firms incorporated at the start of the century.

Investor protection was not therefore a necessary condition for the emergence of active securities markets in the U.K. in the 20^{th} century. However, its introduction was associated with two developments. The first was a greater turnover of shareholdings. While rates of dispersion of ownership were similar in the first and second halves of the century, rates of turnover of large blocks of shareholdings by both insiders and outsiders were markedly higher in the second half. We measure this by looking at the composition of the smallest coalition of shareholders required to exercise control, and how the composition of that coalition changed over time. The average annual turnover of coalitions went up by a factor of about three between the first and second halves of the century for the samples of firms in this study. Stronger investor protection was associated with a more liquid market that allowed insiders to sell out to outside block holders. This in turn facilitated the rise of the institutional shareholdings that dominated the second half of the 20^{th} century.

The second and even more significant development was the emergence of a market in corporate control in the 1950's. The introduction of rules on accounting disclosure at the end of the 1940's provided the basis on which acquiring companies could for the first time estimate the value of target firms from publicly available sources of information. This allowed acquiring firms to bypass the board of directors and appeal directly to the target shareholders through a tender offer. This therefore upset the prevailing convention mentioned above whereby target directors controlled the takeover process and could ensure that all shareholders were offered equal prices for their shares. Instead, raiders accumulated blocks of shares at prices that discriminated between shareholders. The increase in liquidity and the emergence of a market for corporate control in the second half of the century may therefore have come at the expense of conventions based on trust.

Investor abuse became widespread and existing regulation was inadequate to deal with it. When the response came in the 1960's and 1970's, it was not in the form of statutory but self-regulation by the London Stock Exchange and City institutions. The London Stock Exchange discouraged firms with dual class shares from raising new equity and financial institutions introduced codes requiring tender offers to be made for all shares in acquisitions at equal prices. It was the threat of being denied access to equity finance, which we argue below was the basis of trust relations in the first half of the century, that also encouraged firms to uphold the interests of minority shareholders in the second half. Investor protection effected and in turn responded to the emergence of a market in corporate control and, ironically, established rules in the second half of the 20th century that had been followed by convention in the first half.

In sum, contrary to the law and finance view, the world's first common law system was not initially associated with strong formal investor protection. In many respects it was exceptionally weak. But this did not prevent it from having unusually large or active stock markets. In fact, the U.K. stock markets allowed firms to issue substantial amounts of equity to acquire and merge with other firms and thereby to set in motion the dispersion that distinguishes ownership in the U.K. today from other European countries.

Section 2 of the paper discusses the law and finance thesis that we examine in this paper, the data and the methodology that we employ to test it. Section 3 documents the development of investor protection and securities markets in the U.K. in the 20th century. Section 4 records the growth of issued equity in our sample of firms and how acquisitions contributed to it. Section 5 measures concentration of ownership of our sample of firms and the rates at which shareholdings were dispersed and shareholder coalitions changed at different points in the century. Section 6 concludes the paper.

2 Theory, data and methodology

2.1 Theory

According to La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) (LLSV) common law systems are associated with strong investor protection. Investor protection is a necessary condition for flourishing financial markets and is required to encourage a wide group of small investors to participate in stock markets. Without this, the external financing of companies is limited. In the absence of strong investor protection, there should have been little external equity financing in the first half of the 20th century and more in the tougher investor protection climate of the second half of the century. As Rossi and Volpin (2003) note this should also be reflected in the medium of exchange used in acquisitions, with equity exchange offers being more acceptable to target shareholders with stronger investor protection in the second half of the century.

The law and finance literature links investor protection to the avoidance of abuse of minority investors. There are numerous forms that such abuse might take but one that attracts the attention of regulators is discriminatory pricing between large and small investors in major equity transactions. One of the most significant equity transactions is the acquisition of one company by another. In the absence of strong investor protection, minorities might be abused by being offered lower prices for their shares than large investors.[1] Discriminatory pricing in takeovers is still a feature of many countries' takeover markets today. We might have expected it to feature in the takeover markets of the first half of the twentieth century when investor protection in the U.K. was weak. In addition, small investors might be expected to suffer in other equity issues if insiders or large outside investors can subscribe at below market prices.

According to LLSV, the threat of abuse discourages minority investors from participating in financial markets with poor investor protection. As a consequence, share ownership is highly concentrated in low investor protection regimes. Faced with weak investor protection at the beginning of the twentieth century, share ownership in the U.K. should therefore have been concentrated. This is clearly important in considering how the U.K. (and the U.S.) developed their distinctive patterns of dispersed share ownership. In the U.K., this should have been a relatively recent phenomenon coinciding with the emergence of strong investor protection in the second half of the 20th century, at least as measured by LLSV. Moreover, given that investor protection in England at least pre-1948 was on a par

[1] This is enforced in a variety of ways, including the mandatory bid rule described later, as part of the U.K. Takeover Panel Rules, and by company law restricting the voting rights of large block holders in decisions that affect prices paid to minority investors in transactions. These rules are given special emphasis in the 2002 report by a High Level Group of Company Law Experts appointed by the European Commission under the leadership of Professor Jaap Winter. They have also been included in drafts of the European Takeover Directive, see Berglof and Burkart (2003).

with Germany in 1990, according to the LLSV index, we might expect to observe similar levels of concentration of ownership and low rates of dispersion.

2.2 Data

Since the beginning of the 20th century, all U.K. firms have been required to file information at a central depository called Companies House in Cardiff, Wales. This is a remarkable and largely unique long-run source of data on firms. However, it suffers from one deficiency: Companies House retains complete records on all firms that are still in existence today but discards information on most but not all dead companies. There is also a second source of public information, the Public Records in Kew, Richmond (Surrey), which keeps some information on dead companies. We therefore supplemented data from Companies House with this second source.

We collected data for two time periods: companies incorporated around 1900 and 1960.[2] There were 20 firms that were incorporated or (re-) incorporated[3] between 1897 and 1903 and were still in existence in 2001 and 20 firms that were incorporated between 1958 and 1962 and were still in existence in 2001; we have collected data on all of these. To avoid the obvious bias that might arise from the greater longevity of the 1900 than the 1960 sample, we collected a second sample of firms incorporated around 1900 that are no longer in existence today. We impose a minimum life of 11 years on the non-surviving firms so that we have at least one complete decade of data on each. 5 of the dead companies come from Companies House and 15 from the Public Records Office. Panel A of Table A1 records that, of the 20 dead companies in the 1900 sample, three died before 1940, and 17 subsequently.

[2] There were many more incorporations around 1960 than 1900: 93,570 between 1959 and 1961 compared with 28,897 between 1897 and 1903. The difference is largely attributable to more small business incorporations around 1960 than 1900.

[3] An important feature of both sub-samples is that many firms were in existence well before their incorporation. For example, Cadbury Schweppes was established in 1783, incorporated in 1886 and reincorporated in 1900; REA incorporated in 1889 as Ceylon Tea Plantations and reincorporated in 1960. Some reincorporations reflected a new court judgment on limited liability following Salomon v. Salomon (1897) and the subsequent Companies Act of 1900. Although some companies existed prior to 1900, none had significant outside shareholdings, and thus 1900 was an important date since it marked the time at which they started selling equity to outside shareholders. Nevertheless, since there may have been an unusual amount of reincorporation around 1900 to take advantage of the judgement and Act, we examined a sample of four companies that were incorporated around 1910. We observe a similar pattern of reincorporation amongst these firms through amalgamation of private companies suggesting that reincorporation was not just an immediate response to the 1900 legislation.

We report results for the 1900 samples of survivors and non-survivors separately and for the two together. There are therefore three bases of comparison with the 1960 sample in the tables reported below: survivors, non-survivors and the combined sample, which provides an average of the two. Which is the most appropriate depends on what proportion of the 1960 firms is expected to survive for at least a hundred years. If all do then the surviving sample is the most relevant; if none do, then the non-surviving sample should be used and if 50% survive then the average is the closest benchmark.[4] Since we are not currently in a position to answer this question we report results from all samples.

Company filings (the "annual returns") include information on names, addresses of shareholders, the size of their stake, and their occupation (e.g. "director of the company", "gentleman", "civil engineer", "spinster"). We collected additional information from: (i) new issue prospectuses in the Guildhall Library in London, (ii) annual issues of the Stock Exchange Year Book, which lists names of directors and the sources of any changes in issued capital, and (iii) official lists of trading of securities from the British Library in London. In addition, we consulted the share registers, which form part of the company's "annual returns", to provide evidence of ownership changes that have taken place on an annual basis.

From these data, we collect names of directors, their shareholdings (including those of their families), the date and amounts of capital issued in acquisitions, new share issues raised through public and private placements, and other changes in share capital, such as capitalization of reserves. We trace the founding family ownership from incorporation until the last family member left the board. We take account of name changes across generations, when for example the daughter of a founder married. We limit the recording of outside shareholdings to stakes greater than 1% of ordinary capital. We use newspaper archives to document evidence of mergers and tender offers, trading in shares on provincial Stock Exchanges, especially in the early 1900s. We collect share prices pre-1955 from the Daily Official List, published by the stock exchanges, and post-1955 from the London Business School share price database. Finally, to establish the proximity of shareholders to directors, we computed the average distance of shareholders from the city of incorporation of one firm.

Appendix A1 lists the names of the companies, their city and date of incorporation, the date of their initial public offering (IPO), the stock exchanges on

[4] The t-statistics are based on arithmetic averages of rates of growth, dispersion and mutation.

which their shares were traded, and their status as of 2001. Table A1 records that many companies were traded prior to a formal IPO, frequently on provincial stock exchanges. This reflects the absence of listing requirements for companies traded on these exchanges and the London Stock Exchange (LSE) in the first half of the century. Six out of 22 formal IPOs in the 1900 sample occurred in anticipation, or just after the introduction of more rigorous listing requirements by the LSE in 1947.

2.3 *Methodology*

The approach taken in this paper is to test the above theories against long-run evidence on the evolution of ownership and control of corporations in the U.K. We begin by documenting how investor protection changed during the twentieth century. We report how rules relating to disclosure of information and trading of shares on the London Stock Exchange evolved over the century. In particular, we focus on anti-director rights. LLSV attribute a score of between 0 and 6, depending on the number of rights that are granted to shareholders in that country. These rights relate to proxy by mail, the blocking of voting rights before company meetings, cumulative voting provisions, oppressed minority mechanisms, the size of shareholding required to call an extraordinary meeting and the presence of pre-emptive rights in new equity issues.

We document when legislative changes associated with these anti-director rights were introduced. This allows us to report the LLSV score at any time during the twentieth century and we compare the U.K.'s anti-director rights score during the 20th century with Germany's towards the end of the century. Using this and other evidence on investor protection, we examine how regulation (both statutory and self-regulation) evolves during the century and how it influences growth in equity and dispersion in ownership.

We construct panels of firms that were incorporated at different points in the century. The two dates that we choose are 1900 and 1960. 1900 is the first date for which records on companies are available. 1960 corresponds to the date by which a regime shift has occurred and many of the legislative changes documented in this paper are in place. We trace levels of insider and outsider ownership and growth of issued equity at ten-yearly intervals and contrast patterns of development of the 1900 and 1960 samples. We analyze the influence of regulation on the rate of shareholder dispersion and turnover of blocks by inside and outside shareholders by performing panel regressions on our samples of firms.

In addition to reporting standard measures of concentration of ownership, such as size of directors' shareholdings, C3, C5 and Herfindahl indices, the paper records the minimum size of coalitions required to pass significant thresholds of ownership of 25 and 50%. Given the significance of these thresholds in initiating or vetoing corporate policies, they provide a particularly valuable picture of the way in which ownership changes over time. We compute two measures. The first is the rate at which ownership is dispersed, i.e. the change in the minimum number of shareholders required to cross the critical ownership threshold. The second is the change in the composition or membership of this smallest coalition, which we describe as "mutation" of ownership. It is the inverse of the stability of the membership of the smallest coalition. We report both measures at ten yearly intervals for three groups of investors: all shareholders, and inside and outside shareholders separately.

The annual rate of *dispersion*, d, from year t to t+T is defined as:

$$d = \{Y(t+T)/Y(t)\}^{1/T} - 1$$

where Y is ownership defined as the minimum number of shareholders required to pass the threshold of 25%, t is the calendar date and T is the length of the measurement interval (10 years in our analysis).[5]

Mutation of ownership from year t to t+T is defined as:

$$m = 1 - \{Z(t+T)/Z(t)\}^{1/T}$$

where Z(t+T)/Z(t) is the proportion of members of the ownership coalition in year t+T who were present in year t.[6]

We examine how rates of dispersion and mutation of ownership have been affected by investor protection and by equity issued for internal investment and acquisitions. We do so by regressing the dispersion and mutation variables on the LLSV measure of anti-directors rights at the beginning of the decade and on equity

[5] The rate of dispersion, d, for directors and outsiders is 100% if in period t they hold more than 25% and in period t+T their holding declines below this threshold.

[6] One way to think about the relation between dispersion and mutation of ownership is as follows. Let the control threshold be defined as x. The control group in period t is the smallest number of individuals i = 1 to I(t) such that:

$$\sum_{i=1}^{I(t)} \alpha(i,t) = x$$

where α(i,t) is shareholding of individual i in period t.

Let i = 1 be the founding family then we can define dilution of their ownership between t and t+1 as:

$$\alpha(1,t+1) - \alpha(1,t) = -\sum_{i=(I(t)+1)}^{I(t+1)} \alpha(i,t+1) - \left(\sum_{i=2}^{I(t)} \alpha(i,t+1) - \sum_{i=2}^{I(t)} \alpha(i,t)\right)$$

The first term is related to dispersion through broadening of the control group and the second to mutation of the existing control group. New issues or sales of shares to new and existing shareholders can therefore dilute the founding family's ownership.

issued during the decade. We control for the level of dispersion of ownership at the beginning of each decade and, in light of the potential endogeneity of the equity issuance measure, we instrument it using firm and time effects and company age. We undertake these regressions for the first four decades of our sample of 60 companies. We examine the robustness of the results to survivorship by repeating the regressions on the sub samples of 1900 survivors and non-survivors.

The approach taken in this paper differs from existing ones that examine cross-sections of firms at a particular point in time, or in some cases at various times, by creating a long-run panel of firms. Our approach has the advantage of allowing the evolution of ownership of firms to be traced and the impact of regulatory and other factors to be subject to standard panel econometric and statistical tests. It also differs from comparisons of cross-sections in so far as it abstracts from entry and exit of firms that occur between the dates of cross-sections. This makes the approach particularly well suited to establishing how and when current ownership patterns emerged.

3 Capital markets in the U.K. in the 20th century

In this section, we describe the development of regulation and the size and structure of stock markets in the U.K. during the 20th century.

3.1 Investor protection

There was a marked change in financial regulation and investor protection over the 20th century. Although limited liability was introduced into the U.K. in the Companies Act of 1856, it was not until the landmark case of Salomon v. Salomon in 1897 that it was made effective. Such was the enhanced protection that it offered shareholders in the event of financial failure that many companies, including several in our sample, reincorporated after the 1897 ruling and the subsequent Companies Act of 1900.

U.K. common law does not provide minorities with an automatic right of protection. A seminal case in the middle of the 19th century (Foss v. Harbottle (1843)) had exactly the opposite effect of seriously restricting minority shareholder rights for the next hundred years. The judge in the case made two important rulings. First, while the plaintiff in the case was an aggrieved shareholder, he found that the proper plaintiff in an action of an alleged wrong to a company was the company itself, i.e. a majority of the shareholders and not a minority. Secondly, he noted that, where a transaction could be made binding by a majority of the shareholders, no individual shareholder could sustain an action against the company.[7]

Lord Justice Hoffman (1999) observed that, "the emancipation of minority shareholders is a recent event in company law. For most of the twentieth century minority shareholders were virtually defenceless, kept in cowed submission by a fire-breathing and possibly multiple-headed dragon called Foss vs. Harbottle. Only in exceptional cases could they claim protection of the court." He goes on to say: "A statutory remedy was provided for the first time in 1948 but this proved relatively ineffectual. It was not until 1980 that Parliament forged the sword which is now section 459 of the Companies Act 1985 and which enables the unfairly treated minority shareholder to slay the dragon."[8] In marked contradiction of the process suggested by LLSV, it was legislation that eventually provided minority investors with the protection that common law had for so long denied them.

Table 1 documents important changes in investor protection categorized by minority protection rules, shareholder control thresholds, listing rules and disclosure rules.[9] Panel A reports minority protection rules and control thresholds. The Companies Act, 1948 was a defining piece of legislation: it introduced voting by proxy, provisions for shareholders to force an EGM with 10% of the voting equity capital, and special resolutions to make it easier for shareholders to remove directors. Two of these provisions are included in LLSV's index of anti director rights.

Panel B translates minority protection rules in Panel A into the LLSV score of anti-director rights. LLSV's (1998) score for the U.K. is 5 out of 6 by the end of the century with only rights for cumulative voting provisions being absent. But just prior to the 1948 Act the score for the U.K. was 1. The previous Companies Act of 1929 had been enacted during a long bull market and the Cohen Committee on Company Law was set up in 1945 as a delayed response to "the heavy losses which investors, many of whom subscribed for their shares on unsatisfactory prospectuses, suffered in the slump which followed the 1928-9 boom". It also reflected growing concern about "dispersion of capital among an increasing number of small

[7] In another case, Harben v. Phillips (1883), the judge found that there was no common law right on the part of a shareholder to vote by proxy.

[8] Cited in the foreword to Robin Hollington's *Minority Shareholders' Rights*, 1999, Sweet and Maxwell, London.

[9] For sources, see for example, Cairncross (1958 and 1953), Code Holland and Werry (1932), Davies (1979), Franks, Mayer and Renneboog (2002), Michie (1999), Morgan and Thomas (1962), Paish (1951), Sargant Florence (1947) and Schwabe and Branson (1913).

shareholders.....who are, in many cases, too numerous and too widely dispersed to be able to organise themselves" (Cohen Committee (1945), para. 7). Its conclusions were the basis for the fundamental reforms enshrined in the 1948 Companies Act. They included a recommendation that, since "there are no provisions in the Companies Act itself regarding proxies" (para. 132), "every member of a company shall be entitled to vote on a poll by proxy" (para. 138). The Companies Act of 1948 raised the LLSV score to 3 by introducing proxy voting and the right of 10% of shareholders to call an Extraordinary General Meeting (EGM). The score rose to 5 in the 1980s with the addition of pre-emption rights in 1980 and protection for oppressed minorities in 1985.

However, LLSV's measure cannot be regarded as a complete score card of investor rights. For example, it does not include any provision for supra-priority rules that protect minorities in particular transactions. In 1967 and thereafter, provisions were introduced for a minority of 25% of shareholders to block particular merger transactions (Panel A of Table 1).[10] Further legislation in 1980, required that pre-emption rights could only be waived by a 75% majority. Still more significantly, the City Code on Takeovers and Mergers introduced provisions in 1967 for a mandatory bid and an equal price rule in takeovers that effectively prevented discriminatory pricing and limited the formation of large blocks. The mandatory bid rule required an acquiring company, with 30% or more of the target's shares, to tender for all remaining shares at the highest price paid for any shares purchased over the previous twelve months.

Panel C describes changes to the LSE's listing rules. LSE registered market makers (called jobbers) frequently dealt in shares of companies that had not passed its listing requirements. This occurred when the shares of a company were issued on a provincial exchange, often without a prospectus, and then traded on the LSE, under a supplementary list. From 1947, the distinction between the official and supplementary lists was abolished and all companies were required to satisfy the LSE's listing rules, including an obligation to produce a ten years profit record and to have the support of two registered jobbers (i.e. market makers). The new rules also stipulated that funds raised in an issue had to be returned to subscribers if permission to deal was refused by the LSE. This had the effect of barring unlisted companies from gaining access to the new equity issue market. The listing rules

[10] These are called schemes of arrangement and account for about 15% of all takeovers (see Franks and Harris (1989).

had an important effect on the equity issuance process and reinforce the view that there was a discrete change in investor protection at the end of the 1940's.

Finally, Panel D describes important developments in disclosure rules. In the first half of the century, principles of *caveat emptor* were deeply embedded and, as captured in this statement by the Greene Committee (1925) which was the precursor to the 1929 Companies Act, it extended to disclosure of information: "The careless speculator who is willing to accept at their face value statements which are obviously insufficient and unsatisfactory cannot justly expect special protection when that would involve a serious and unwarranted interference with the honest person" (sec. 59). In 1900, the Companies Act required company information to be filed at a central depositary, Companies House, where it was available for public access.[11] Such a requirement does not exist in the U.S. and there is therefore no central depositary for company information. In 1929, another Companies Act required firms to keep both a profit and loss account and balance sheet and both had to be filed at Companies House. In 1939, there was legislation requiring directors to disclose contractual interests in their firms. But accounting disclosure in the first half of the century was guided by such views as those expressed by the Greene Committee in 1925: "We think it most undesirable to lay down hard and fast rules as to the form which a balance sheet should take…The matter of accounts is one in which we are satisfied that within reasonable limits companies should be left a free hand" (sec. 69).

By 1945, attitudes had changed. The Cohen Committee (1945) expressed concern about deficiencies in company reporting noting in particular that "there are no requirements as to the form of the profit and loss, or income and expenditure, account, nor does the Act in terms make the auditors' report cover the profit and loss account" (para 96). The 1948 Companies Act introduced disclosure rules for prospectuses and specific penalties for non-disclosure, detailed provisions regarding the content and form of both balance sheets and profit and loss accounts and a requirement that company accounts be prepared on a basis that gives a "true and fair" view of a company's financial position, a litmus test of company accounts that has been applied to the present day.

In many respects, 1948 was a defining date for minority investor protection. Shareholders were granted the right to replace incumbent directors, to vote by proxy, and to call an EGM by outside shareholders and, as a consequence, there was

[11] It is this Act that therefore made this study possible.

a marked increase in the LLSV measure of anti-director rights in this year. Whether 1948 was more significant than the 1980s when there was another leap in the LLSV score and, according to Lord Justice Hoffman, investors were finally provided with an effective remedy to minority abuse, is a moot point. The LSE had significantly tightened its listing rules in the previous year and, while many disclosure requirements relating to P&L accounts and balance sheets had been introduced earlier in the century, it was only with the detailed stipulation of their content and the requirement that they provided a "true and fair" view that they became a reliable source of information. For example, Roberts (1993) notes that until 1948 there was insufficient information on which predators could launch acquisitions without the co-operation of managers of the target firm. It is therefore no coincidence that with the passing of the 1948 Companies Act, Charles Clore was able to bypass the board of Sears Ltd and initiate the first hostile tender offer in the U.K. in 1953.[12]

It is not just relative to the second half of the 20th century that investor protection in the first half was weak. It was also weak relative to what we now regard as weak investor protection systems elsewhere in the world. The U.K.'s score of one on the LLSV measure for anti-director rights in the first half of the century is on a par with Germany's in the 1990s as reported by LLSV.[13] Furthermore, there are several features of investor protection that have been present in Germany throughout the twentieth century that were not and never have been present in the U.K. There has been an extensive system of non-executive oversight of corporate activities in Germany since the company law of 1884 required a separation of supervisory, i.e. non-executive, from management boards. A solution to the collective action problem that minority investors face in voting shares existed for much of the 20th century in Germany through proxy voting by banks[14], and minorities frequently enforce their rights through the courts in Germany (see, for example, Franks and Mayer (1998)), in a way in which they rarely do even today in the U.K.

Common law was not therefore a sufficient condition for strong investor protection in the U.K. by either today's U.K. or other countries' standards. The comparison of the U.K. in the first half of the century with Germany today raises

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[12] Roberts (1992) states that "Clore launched his attack on being informed by a partner in the estates agent Healey & Baker that Sears' balance sheet under-estimated the real estate value of the firm's 900 high street stores by £10 million" (page 186).

[13] The score of 1 for Germany reflects the provision of a 5% threshold for calling an EGM introduced by statute in 1965 (Aktiengesetz, Section 122).

[14] Nibler (1996) reports that in 1991 three German banks controlled almost 30% of the voting rights of 38 of the largest publicly quoted companies through proxy agreements.

the question of how two countries with similarly weak investor protection could produce such different capital markets. It casts doubt on whether formal investor protection can provide an adequate explanation.

3.2 Size and structure of U.K. stock markets

Rajan and Zingales (2003) examine the importance of stock markets around the world. They report the ratio of aggregate market value of equity of domestic companies to GDP for 26 countries between 1913 and 1999, at approximately ten-year intervals. Using their criterion, the U.K. has a stock market that ranks in first or second place in six of the nine decades and in the top five for the remaining three decades. The ratio of market capitalization to GDP in the UK was 2.42 in 1900 and 2.25 in 1999.

There is other evidence consistent with Rajan and Zingales' (2003) picture of a flourishing U.K. stock market during the century. Michie (1999) records an increase in the number of listed companies from 200 in 1853 to "many thousands" in 1914. Hart and Prais (1956) provide more precise estimates on industrial companies: they record 60 listed companies in 1885, 571 in 1907 and 1,712 in 1939. By number of listed companies, the most significant decline in the size of the London Stock Exchange has occurred in the last forty years with 4,409 listed companies in 1963 falling to 1,904[15] in 2000.

One striking feature of stock exchanges in the U.K. in the first half of the twentieth century was the importance of regional exchanges. Today there are just two exchanges in the U.K. but in the first half of the century there were 18 provincial stock exchanges, which collectively were as large as the London Stock Exchange.[16] According to *Phillips' Investors Manual* of 1885, 'the provincial exchanges are of almost greater importance in relation to home securities than London'. Thomas (1973) states that: "the number of commercial and industrial companies quoted in the Manchester stock exchange list increased from 70 in 1885 to nearly 220 in 1906. Most of these were small companies with capitals ranging from £50,000 to £200,000" and "by the mid 1880s Sheffield, along with Oldham,

[15] Excluding AIM where there are about another 800 small listed companies.

[16] The four largest in order of size were Manchester, Sheffield, Newcastle and Cardiff. Interestingly, the reopening of the Birmingham Stock Exchange has recently been proposed by a government agency as "a means of stimulating local economic growth" (Financial Times, 26 August 2003, p. 4) and the reopening of exchanges in Leeds and Manchester is expected to follow shortly thereafter in 2004.

was one of the two most important centres of joint stock in the country, with 44 companies, with a paid up capital of £12 million.'' (pages 133 and 124)

Provincial stock markets played an important role in promoting new issues. Writing in 1921 on new shares issues, Lavington notes that "local knowledge on the part of the investor both of the business reputation of the vendor and the prospects of his undertaking would do a good deal to eliminate dishonest promotion and ensure that securities were sold at fair prices fairly near their investment values." Concentrating ownership among local investors was recognized as a method of reducing information problems as well as fraud. Lavington (1921) cites the views of one broker: "the securities are rarely sold by means of a prospectus and are not underwritten, they are placed by private negotiation among local people who understand the [cotton] trade" (p. 280).[17] The Birmingham exchange was important for cycle and rubber tube stocks, Sheffield for iron, coal and steel and Bradford for wool. Securities were traded in the city in which most investors resided. For example, shareholders in Manchester were anxious that the shares of the Patent Nut and Bolt Co.[18] of Birmingham should be listed in Manchester where most of the shareholders lived (see Thomas (1973), p. 118).

Based on these observations, we formulate an alternative to the law and finance thesis namely that it was informal relations of trust between investors and firms rather than formal systems of regulation that allowed equity markets to flourish and ownership to become dispersed in the U.K. in the first half of the 20th century.

4. Equity Financing

In this section we examine equity issuance. In Section 4.1, we record growth in equity capital of our samples of firms and the use to which the finance is put. In Section 4.2, we examine the treatment of outside investors in new issues of equity for takeovers and cash in the first half of the century.

[17] Stock exchange introductions (the creation of markets in existing shares) enjoyed complete exemption from prospectus requirements, and lenient "statements in lieu of prospectus" could accompany private placements (Companies Act 1929, secs. 34, 35 and 355).

[18] Patent Nut & Bolt Co. was owned by the Keen family, and merged with Dowlais Iron Company owned by the Guests which in turn developed into Guest and Keen, incorporated in Birmingham in 1900. This is included in our sample.

4.1 Growth in equity capital

Companies in our samples issued three classes of securities: ordinary shares, preference shares and debentures. Ordinary shares accounted for just under 60% of issued securities in both 1920 and 1930 by face value. There was only one class of ordinary shares and, unlike Continental European companies, a complete absence of dual class shares with differential voting rights.[19] The absence of dual class shares was by choice rather than by law – the U.K. has never had regulation prohibiting dual class shares. However, widespread use was made of preference shares, around 30% of issued securities in our sample. In fact, several companies had more than one type of preference share. These shares in general do not carry voting rights and in return receive a preferential dividend. The remaining 10% of securities were debentures.

Table 2 describes the growth of issued ordinary equity of the 1900 sample in Panel A and of the 1960 sample in Panel B. The mean annual growth of issued equity was 10.6% over a hundred years for the 1900 sample and 22.1% for the 1960 sample over the remaining 40 years of the century. The mean growth rate in the first forty years of the 1900 sample was 10.8%.

The last four columns of Panel A record the percentage of equity issued for acquisition and internal investment. Acquisitions are broken down into those that used cash and equity as the medium of exchange. In a cash acquisition, equity is issued for cash in advance of the transaction with the stated intention of acquiring another firm while, in an equity offer, the acquiring company's shares are exchanged for those of the target at the time of the transaction.[20] Equity issued for internal investment is disaggregated into issues made to existing and new shareholders.

Panel A shows that in the first decade of the 1900 sample, equity was issued virtually exclusively for acquisitions. There was little or no equity issued for internal investment. During the century as a whole, cash and equity acquisitions together accounted for 71% of equity issued by the 1900 sample and 64% by the 1960 sample.

A majority of the equity issued for acquisitions was associated with equity exchanges rather than cash purchases. This is particularly pronounced in the 1900

[19] Florence (1953) refers to the existence of shares with differential voting rights in his sample of companies. Evidence on capital structure in our sample strongly suggests that these are primarily associated with preference shares. However, dual class shares did emerge in the U.K. after 1948 (see Franks, Mayer and Rossi (2003)).

[20] Cash acquisitions financed from debt and cash reserves are not shown.

sample. A higher percentage of equity was used to finance internal investment in the 1960 than the 1900 sample, particularly in the first decade after incorporation.

Panel C reports the statistical significance of the differences between Panels A and B in the first four decades after incorporation. The first column compares 1960-70 with 1900-10, the second 1970-80 with 1910-20 etc. The rows report t-statistics for differences in total growth, growth attributable to share acquisitions, cash acquisitions, and financing of internal investment. Panels D and E record the equivalent statistics for the comparison of the 1960 sample with the 1900 survivors and non-survivors respectively.

Row 1 of Panel C shows that growth rates of issued equity are significantly higher at the 5% level in the 1960 sample than in the complete 1900 sample. This is particularly pronounced in the first decade after incorporation and is entirely associated with the 1900 non-survivors (Panel E). There is no significant difference in the comparison of the 1960 sample with the 1900 survivors (Panel D). Rows 2 to 4 show that the difference in growth is associated with equity issued for internal investment rather than for acquisitions, particularly in the first and fourth decades after incorporation.[21]

In summary, the overwhelming use to which equity issuance was put in the first and second half of the century was the financing of acquisitions. Most was used in the direct exchange of shares rather than in cash purchases, particularly in the first half of the century. Equity issuance for internal investment was slightly greater in the second than the first half of the century but modest in both. Rates of growth of equity capital are similar in the 1900 and the 1960 sample and differences are restricted to comparisons of the 1960 sample with the sample of non-surviving 1900 firms.

The significance of acquisitions in our samples is consistent with Hannah's (1976) observations of a large amount of takeover activity in the U.K. during the 20th century, particularly in three merger waves during the first half of the century, around 1900, 1920 and 1930, and with Meeks and Whittington (1975) statements on the importance of equity in the takeover process: "in 1964-9, the giant (or mature) corporations …typically financed almost 70% of their growth by new issues; and even the rest of the sector financed more than half (56%) of their growth through the capital market in this period…more than half of these external funds

[21] These results continue to hold when the three companies in the 1900 sample that died within 40 years of incorporation are excluded.

were raised in the course of share for share exchanges on the acquisition of new subsidiaries" (p. 832).

One example of this is GKN, a company that was involved in a particularly large amount of acquisition activity in the 1920s. First, the company acquired John Lysaght Limited of Bristol (quoted in Bristol and London) in one of the largest tender offers of the decade. As a result, 99.8% of the shares in John Lysaght were tendered to GKN. The remaining minority shareholding continued to be quoted in Bristol and London until at least 1950 but little trade took place with just 4,140 ordinary shares publicly held.[22] GKN then undertook two other major tender offers in November 1923, acquiring D Davis and Sons and Consolidated Cambrian of Cardiff. In both cases 96% of the outstanding ordinary shares were exchanged. As a consequence of these acquisitions, there was a huge increase in the number of shareholders: GKN had about 1,000 shareholders before 1920, and more than 20,000 in 1924.

The results provide little support for the LLSV prediction of the importance of investor protection to external financing. There was a great deal of equity issuance in the first as well as the second half of the century in the absence of investor protection. Acquisitions were a primary use of new equity throughout. There is some evidence of more equity issuance to fund internal investment in the second half of the century but only when the 1960 sample of firms is compared with a sample of non-surviving firms in the first half. Furthermore extending the law and finance thesis to takeovers, improved investor protection should have encouraged target shareholders to accept equity as the medium of exchange in acquisitions in the second half of the century.[23] That is not what is observed here; on the contrary, exchanges of shares accounted for a higher proportion of acquisitions in the first than the second half of the century.

4.2 Discriminatory pricing in new equity issues

How did U.K. capital markets allow companies to issue equity for acquisitions in the first half of the century in the absence of regulation? We suggest that the answer is that at least some aspects of investor protection existed even in the absence of formal legal rules. As a result, features of minority abuse associated

[22] The 1948 squeeze out rule, allowing a compulsory purchase of minorities of less than 10% of the outstanding share capital at the original tender price, may have been used to take out the small minority.

[23] See Rossi and Volpin (2003) for a discussion of this.

with weak investor protection and observed in many countries today were not present in the U.K. in the first half of 20th century.

The clearest example of this is discriminatory pricing in new equity issues. Franks and Mayer (2001) document clear evidence of discriminatory pricing between large blockholders and small investors in takeovers in Germany during the 1990s.[24] That was not a feature of takeovers in the U.K. in the first half of the 20th century. We draw on merger activity in our sample of companies together with evidence cited by Hannah (1976).

During the first half of the century takeovers were negotiated between the boards of directors of the relevant companies. "An approach through the directors, followed by controlled stock transfers on the recommendations of the directors (rather than contested takeover raids) remained the norm in these years". (Hannah (1974b), p. 68). For example, in the acquisition of John Lysaght Limited mentioned above, the directors agreed the terms of the deal (i.e. an exchange ratio) and then wrote to their shareholders stating that "the offer has been unanimously accepted by the Directors of your company for the whole of their individual shares, and they have no hesitation in recommending its acceptance to the shareholders."[25] The same terms would be offered to outside shareholders as to the directors.

As Hannah (1974b) has noted, "the loyalty of shareholders to directors was strong, and the directors of other companies had a natural aversion to challenging it. Even if a direct bid were to be made, the directors of the victim firm remained in a strong position relative to their own shareholders. In practice the shareholders would recognize the superiority of the directors' information and tend to take their advice on the true value of the company in relation to the bid price." (p. 70-71) "Directors felt a responsibility to recommend offers to their shareholders when the bid price was pitched reasonably" (p. 68-69).[26] This may have reflected a concern on the part of directors to preserve their reputation amongst local investors so as to

[24] See also Dyck and Zingales (2001) for international evidence of private benefits of control arising from discriminatory pricing in block purchases.
[25] Quoted in *Financial Times*, Monday 19 January 1920.
[26] It was part of a wider role for trust in British financial affairs. In response to a suggestion of tightening regulation of the issuance of prospectuses, the *Economist* asked whether it "might not be wise to devote increased attention to the possibility of reforming public taste rather than the statute law. Many things which are perfectly legal in this country are not the acts of a gentleman" and are "just not cricket" (July 10, 1937, p. 86). Likewise May (1939) noted that "in England good practice is derived chiefly from the individual's strict, unwritten ethical code and self-imposed discipline and from his voluntary restriction of conduct well within the confines of the technical law. Etiquette compensates for the absence of legally accountable trusteeship" (p. 496).

sustain the value of their equity and thereby their ability to raise equity at low cost in the future.[27]

The significance of local investors is indicated by the degree of geographic concentration of shareholders. We collected comprehensive data on the shareholder records of GKN in 1910.[28] There were about 3000 entries from which we extracted the names, addresses and occupation of all shareholders. We then computed the distance of shareholders from GKN's city of incorporation, head office and centre of its operations, Birmingham. Of the 3000 shareholders 40.4% lived within 5 miles of the centre of Birmingham. On average, shareholders lived 69.5 miles from the centre (median 36.8 miles). Weighting distances by investors' shareholdings, the average distance was 45.8 miles from Birmingham. Despite the rapid dispersion of ownership amongst many investors, it remained geographically highly concentrated around Birmingham. By 1950, largely as a consequence of GKN's programme of acquisitions, dispersion of ownership had increased to the point that there were no shareholders with more than 3% of equity capital. This was accompanied by a significant increase in geographic dispersion, with the average distance of shareholders from Birmingham increasing from 69.5 to more than 150 miles.

Table A2 describes some characteristics of the takeover process in the U.K. in the first half of the century. Panel A lists all acquisitions undertaken by our sample of firms where equity was used as the medium of exchange. Twelve of the target companies are private and not listed on any stock exchange, although they frequently involved a large number of shareholders.[29] The other six targets are listed companies and in all cases there are no pre-bid toeholds and offers were made to all outside shareholders at the same price as that paid to directors for their holdings. The outcome was that between 96% and 100% of shares were acquired.

[27] Titled directors were frequently used as methods of upholding corporate reputations. Florence (1953) reports that there were 654 English peers as active members of city firms in 1932. Titled directors were particularly common in the largest companies. "At a rough estimate almost half the titled directors inherited their title or acquired it by prowess in the fighting services or sport and not in business" (Florence (1953), p 245). "One well-known insurance company in 1937 had among sixteen directors, three knights, one baron, one marquis, one earl and two dukes" (p 245). Likewise, May (1939) reports that of 654 British peers, 189 of them were directors of companies and held 562 directorates between them. "Sometimes a man with a "good name", knowing nothing about the business and even without residence in the country, is set up as chairman with the principal duty of reading the annual speech, which has been written out for him, to the shareholders" (May (1939), p. 145).

[28] Measures of geographic concentration are probably particularly relevant at the beginning of the century before modern systems of communication were widely available.

[29] For example, in the case of the acquisition of Lamert by De La Rue, the number of target shareholders exceeded 1000.

Panel B lists the 33 large tender offers in Hannah's (1976) sample. It records that in 27 cases the medium of exchange was at least part equity and that in 31 cases the outcome of the bids involved the acquisition of between 92% and 100% of outstanding shares.

We undertook an extensive search of the Financial Times (FT) to find mention of the terms on which acquisitions were made in the first half of the 20th century. Four of the acquisitions are in the 1900 sample as reported in Panel A of Table A2, 13 are in Hannah's (1976) sample as reported in Panel B of Table A2 (3 of which are also in our sample) and 8 are additional acquisitions that were found during the course of the exercise. Panel C of Table A2 quotes the precise public statements by the directors of the target company or the reference to the directors' recommendation reported in the FT. It records that in most cases there is a specific reference to equal terms for directors and outside shareholders, and in other cases equal terms can be inferred from the description. Thus, in terms of Barclay and Holderness' (1989) measure of private benefits, namely the difference between the price per share paid for a controlling block and the market price after the announcement of the change in control, private benefits were zero in the U.K. in the first half of the century. This compares with 4.2% in Germany at the end of the 20th century according to Franks and Mayer (2001) and 9.5% according to Dyck and Zingales (2001).

Finally, we examined other equity issues by companies in our sample. We find that where a company's equity is traded, shares are usually offered to existing shareholders pro rata. In the two exceptions, we compare the issue prices with market prices to determine if insiders received new shares at preferential prices. We found that in one case (Marconi) the insiders purchased shares at a 6% discount but that the issue represented less than 5% of outstanding equity. In the other case (Whitecroft) insiders paid a small premium.

While it is impossible to say whether insiders received benefits not reflected in transaction prices, it appears that the U.K. did not follow the Continental European practice of two-tier equity offerings, purchasing a block of shares at one price and leaving a substantial residual minority on the market at another. An equal price treatment of shareholders prevailed in the first half of the 20th century in the U.K., even in the absence of a formal regulatory rule to that effect.

5 Dynamics of ownership through the century

In this section we examine the evolution of ownership of our samples of firms over the 20th century. We begin in Section 5.1 by looking at concentration and the nature of share ownership. In Section 5.2 we examine the rate at which share ownership is dispersed and the rate of mutation of the controlling group of shareholders. In Section 5.3 we report the results of panel regressions on the determinants of dispersion and mutation of ownership.

5.1 Concentration and nature of share ownership

We report two sets of statistics on the concentration and nature of share ownership. The first records the minimum number of shareholders required to reach critical ownership thresholds and the second the (more conventional) total shareholdings owned by the largest shareholders.

Table 3 documents the smallest ownership coalition (including both insiders and outsiders) that passes a combined threshold of 25% at different stages during the century. Table A3 reproduces the same statistics for a 50% threshold. It records very similar results to Table 3. The remainder of the discussion will focus on the 25% threshold, since other measures cannot be reproduced for the higher threshold.

Panel A of Table 3 refers to the complete 1900 sample and Panel B to the 1960 sample. The variable "all shareholders" is the size of the smallest coalition of directors and outsiders combined that is required to pass a 25% cash-flow threshold. The mean minimum size of the coalition that is required to own 25% of cash flows rises from just above 2 in 1900 to about 7 in 1910 to 10 in 1930, peaking at 58 in 1980. There is therefore rapid dispersion of ownership from the start of the century. Median dispersion is lower reflecting the skewed nature of the distribution, a small number of firms having high levels of dispersion.

The remaining columns refer to the minimum average size of coalitions of directors and outsiders, respectively, which on their own cross the 25% threshold. To illustrate, in 1900 directors could on their own cross the 25% threshold in 39 of the 40 companies and on average it took 1.77 directors to do this. In the same year, in only 10 companies could outsiders on their own cross the 25% threshold and it took on average 15.40 shareholders; in the remaining 30 no such coalition could be formed from outsiders alone. By 1920 this position had been reversed. There were then more companies in which outsiders could cross the 25% threshold than insiders, 27 as against 26. By the end of the century there were just 3 companies in which directors could on their own cross the threshold compared with 19 for outsiders out of the 20 survivors.

We therefore observe steadily increasing dispersion of ownership through the century with outsiders progressively replacing insiders as the dominant shareholders. In 1900 it took 15 outsiders on average whereas by 1980 it took over 60. In contrast, while there were progressively fewer companies in which directors could pass the threshold, the number of directors required to do so remained fairly constant at between 1 and 3. The sample therefore bifurcates between those firms where insider ownership is being diluted and outsiders are progressively replacing them and a declining minority in which a small number of insiders continue to dominate.

Panel A also reveals another feature and that is a reversal of dispersion in the last two decades of the century. The mean number of shareholders in the 1900 sample required to pass the 25% threshold declined from 57.9 to 48.4 between 1980 and 2000 and the median from 8 to 3. The cause of this was the rise of institutional shareholdings that continued the transfer of ownership from insiders to outsiders and raised the concentration of outside shareholders. For example, the average size of share blocks held by financial institutions in the 1900 sample rose from 6.5% in 1980 to 12.8% in 2000.

In Panel B, the 1960 sample shows a similar pattern to the 1900 sample: the number of companies where directors can form a coalition steadily falls over the 40 years, while the number of companies with outsider coalitions rises sharply. However, the size of the coalition is generally lower for the 1960 than the 1900 sample, implying greater concentration in the 1960 sample.[30] In 1940 a coalition of about 15 shareholders is required to pass the 25% threshold compared with only about 4 for the 1960 sample in 2000. For directors in 1940, there are 13 cases where a coalition of 25% or more could be formed compared with only 5 cases in 2000. But the main difference is in the number of outside shareholders required to reach the 25% threshold. In 1940 on average 22 shareholders were required whereas in 2000 only just over 5. While there is therefore substitution of outside for director ownership in the 1960 as in the 1900 sample, concentration of outside and overall ownership remains higher in the 1960 sample.

[30] Our measures of dispersion reflect ownership at the first tier. Where there are institutional blocks the institutions are rarely the ultimate investors. If we took account of ultimate shareholdings, dispersion post 1960 would be much greater than that reported here.

In Panels C, D and E we report t-statistics comparing the size of the coalition in the 1960 sample with the full 1900 sample, the survivors in the 1900 sample only and the non-survivors, respectively. The only year in which there are significant differences is 2000 versus 1940 in the survivors sample in Panel D. The size of the coalition is then significantly smaller in the 1960 sample at the 5% level.

In Table A3, we repeat the analysis for a 50% instead of a 25% cash-flow threshold. The overall picture is very similar: a smaller coalition of all and, in particular, outside shareholders is required to cross this higher threshold in the 1960 sample than in the 1900 sample. For example, on average only 15 shareholders are needed to form a coalition in 2000 for the 1960 sample compared with about 37 in 1940 for the 1900 sample.

The main result to emerge thus far is that dispersion of ownership is at least as great in the 1900 as in the 1960 sample and possible slightly higher in some years. The threshold measures provide a particularly informative description of the control that shareholders can exert. However, for completeness, in Table 4 we examine more conventional measures of ownership concentration used in the literature, namely the size of the directors' holdings, the size of the largest three (C3) and five (C5) shareholdings, with the C3 measure broken down between insiders and outsiders, and a Herfindahl index. Concentration is significantly higher at the 1% level in 1960 than in 1900. It is also significantly higher (at the 1% level) for outsiders overall over the first 40 years in the 1960 than in the 1900 sample. As observed above in relation to Table 3, concentration amongst directors is lower in the 1960 than in the 1900 sample (significant at the 5% level overall). Panels D and E show that the lower level of concentration of outsiders in the 1960 sample holds in comparison with both the 1900 survivor and non-survivor samples. The higher concentration of outsiders in the second half of the century reflects the rise of institutional investors.

All of the measures of concentration of ownership paint a similar picture about the evolution of ownership. There is a steady decline in concentration of ownership over the lives of both the 1900 and the 1960 samples. This is associated with a switch from inside to outside ownership, which became more rapid as the century progressed. As institutional ownership increased, outside ownership became more concentrated. Despite the strengthening of investor protection, outside ownership was more concentrated in the second than in the first half of the century.

Table 5 reports the factors contributing to changes in directors' shareholdings. To illustrate our calculations, consider the decade between 1900 and 1910. Table 4 shows that directors' ownership declined by 39.15% from 92.76% in 1900 to 53.61% in 1910 (see Panel A of Table 4). Table 5 records that 39.06% of this decrease, referred to as 'impact', is associated with acquisitions. The 25 stock acquisitions between 1900 and 1910 therefore account for a decrease in directors' ownership of 15.34% (i.e. 39.15 x 39.06%). Similar computations for the 1960 sample show that the 27 acquisitions during the decade 1960-70 account for a decrease of 28.92% in directors' ownership.[31]

There are a number of striking features about Table 5. First, the decline of insider ownership is rapid in both the 1900 and the 1960 samples. Within ten years directors' shareholdings in both samples decline very significantly by 39.15% and 53.04% respectively. As described above, the rapidity of the decline is higher in the 1960 than in the 1900 sample. Second, the main reason for the decline is not sales of shares by directors in the secondary market, at least in the first half of the century for the 1900 sample. Instead, over the period 1900 to 1950, issues of shares associated with acquisitions, rights issues and placings account for 56.43% of the decline.[32] Third, of this decline through issues of shares, more than half (35.06% of the 56.43%) is associated with acquisitions. Issue of shares in takeovers is the single most important cause of the decline in director holdings. This raises the possibility, which we do not pursue here, that differences in takeover activity across countries explain differences in dispersion of ownership.

5.2 Dispersion and mutation

In this section we estimate measures of rates of dispersion and mutation of ownership of the two samples of firms. An analysis of rates of change has the advantage over levels of being less influenced by initial conditions. Panel A of Table 6 reports rates of dispersion of ownership for all shareholders in the 1900 sample, and for inside and outside shareholders separately. The rate of dispersion for all shareholders in the first decade is 5.93% per year. This tells us that the

[31] Note that the various factors do not sum to 100, the residual being primarily due to sales of shares by directors.

[32] 56.43% is the sum of the reductions in director shareholdings attributable to each of the three types over the total reduction in directors' shareholdings. For example, a reduction in shareholdings due to acquisitions in 1900-1910 is 39.15 x 39.06%. The sum of these reductions over all three classes over all five decades is the numerator of the fraction equalling 56.43%. The denominator is the total reduction in directors' shareholdings over the 5 decades.

number of shareholders required to form a coalition of at least a 25% shareholding increases at a rate of 5.93% per year over the decade. For example, if the number of shareholders required to meet the 25% threshold had been 5 in 1900 it would have been 8.9 in 1910.[33]

For the 1900 sample, rates of dispersion in the first half of the century are generally higher than in the second half. They are close to zero from 1960 onwards, and actually negative in the eighties, suggesting an increase in concentration arising from the formation of blocks, as reported in previous tables. Dispersion rates for directors are positive for all decades except two, and particularly high for the decades 1900 to 1940 and 1970 to 1990.

The rates of dispersion for the 1960 sample are shown in Panel B. In Panel C, we compare the dispersion rates of the two samples for the first four decades after incorporation. The evidence suggests that dispersion rates for the two samples are similar. Focusing initially on the comparison for 'all shareholders', we find that in two of the four decades dispersion rates are higher for the 1960 sample. Only in the second decade, is the difference statistically significant (at the 10% level) and then it is the 1900 sample that has the higher rate of dispersion. Overall, rates of dispersion over the first four decades are not statistically different in the two samples (3.65% for the 1900 sample and 3.63% for the 1960 sample).

For the first four decades after incorporation dispersion rates for 'outsiders' are greater in the 1960 sample, and the difference is statistically significant. This occurs in the first decade, 1960-1970, and reflects the relatively high number of IPOs in the 1960 sample (10 out of 20 companies). The fact that rates of dispersion do not differ for 'all shareholders' in the first decade for the two samples suggests that sales by directors in IPOs in the 1960 sample were purchased by large outside shareholders, i.e. there were high rates of mutation of ownership.[34]

Panels D and E report the t-tests for the comparison of 1960 sample with the survivors and non-survivors of 1900, respectively. The results are very similar to Panel C, and suggest that survivorship is not an issue for tests of dispersion of ownership.[35] One of the interesting implications is that, despite the fact that

[33] Note that it is not possible to relate these figures exactly back to those in Table 3, since numbers constructed from averages of growth rates are not the same as those derived from averaging across the firms themselves.

[34] Although the post IPO outside blocks must have been smaller than the pre IPO blocks as indicated by the increase in dispersion of outside shareholdings.

[35] In Table A4, we report results using a threshold of 50%. The picture is very similar with high rates of dispersion at the beginning of the century, and no significant difference of overall dispersion rates between the first four decades of the 1900 and 1960 sample.

survivors grew more rapidly than non-survivors, rates of dispersion of ownership were similar. The reason for this is that most of the difference in growth is due to internal investment and, as we will report in the next section, it is equity issuance for acquisition rather than internal investment that accounts for dispersion of ownership.

In Table 7 we describe mutation of ownership and control, a measure of the stability of the membership of the smallest coalition necessary to pass the 25% threshold. High rates of mutation are associated with rapid changes in the control of firms. Panel A reports much higher rates of mutation in the 1900 sample in the second than in the first half of the century. The average rate of mutation or turnover of the coalition is 26.52% per annum in the 1900 sample. The corresponding figure for the 1960 sample is 40.10% per annum. Another interpretation of these mutation measures is that the average length of membership of the ruling coalition is about 4 years in the 1900 sample compared with only 2.5 years in the 1960 sample.

Panel C reports results from t-tests comparing rates of mutation for the first four decades for both samples. The levels of significance reported in this table stand in marked contrast to those of the previous ones. The 1960 sample has strikingly higher rates of mutation than the 1900 sample, and the differences are statistically significant at the 1% level for all classes of shareholders. The higher rates of mutation are particularly pronounced in the third and fourth decades. Similarly, rates of mutation of the 1900 sample are much higher post 1940 than pre-1940 and particularly so after 1980. The same highly significant results are observed when comparing the 1960 sample with both the 1900 survivors and non-survivors in Panels D and E respectively.[36] As in the case of dispersion, comparisons of mutation rates are not particularly sensitive to survivorship. Intensification of regulation during the century therefore appears to have been associated with steadily higher rates of mutation rather than dispersion of ownership.

In summary, we observe that rates of dispersion of ownership were similar in the two halves of the century but rates of mutation of the coalition of shareholders were appreciably higher in the second half. The implication is that markets for corporate control were much more liquid in the second half of the century.

[36] The last row of Panels C, D and E of Table 7 record differences in mutation of board representation as well as director ownership. It records much higher levels of board turnover in the 1960 than the 1900 sample.

5.3 Regression results

In this section we report regression analyses of rates of dispersion and mutation to establish whether the results carry over to a multivariate setting. Thus far we have been unable to control for the numerous other factors that might influence dispersion and mutation rates. In this section we control for these by including time and firm effects and we provide a direct test of how dispersion and mutation relate to equity issuance and the LLSV anti-director rights index.

The dependent variables in Tables 8 and 9 are rates of dispersion and mutation for "all shareholders" as described in Tables 6 and 7 respectively. The first two columns include the anti-director rights variable at the beginning of the decade in question and a dummy for whether the observation relates to a company in the 1900 or 1960 sample (1900 equals one). The last four columns of Tables 8 and 9 report the results of including additional explanatory variables on equity issues for internal investment, equity issues for acquisitions and dispersion of equity at the beginning of the decade. Columns 3 and 4 report the results of including these three variables with and without decade time dummies and columns 5 and 6 report the results of instrumenting the two equity growth rate variables by firm and decade fixed effect dummies and company age.

The first two columns of Table 8 show little relation between dispersion and either the 1900 dummy variable or the measure of anti-director rights. If anything, there is a negative (though not statistically significant) relation of anti-director rights with rates of dispersion. Investor protection does not therefore explain dispersion of ownership in the U.K.

The next four columns record a significant negative relation of rates of dispersion during a decade with initial levels of dispersion measured at the beginning of the decade. Thus the higher the initial level, the lower the subsequent rate of dispersion. More interestingly, the results show a positive relation between rates of dispersion and equity growth rates resulting from stock acquisitions but not from equity issued to fund internal investment. This result continues to hold when the equity growth rate variables are instrumented. It is also robust to the inclusion of decade fixed effects and, splitting the samples into the 40 surviving and the 20 non-surviving companies, there is no significant difference in the estimated coefficients on the two sub-samples.

In contrast, there is a consistently significant relation between rates of mutation in Table 9 with LLSV's measure of anti-director rights. Anti-director rights are associated with significantly higher rates of mutation, confirming an earlier result that regulation made stock markets more liquid and facilitated the transfer of inside blocks to outside shareholders. As might be expected, mutation during the decade is directly related to dispersion of ownership at the beginning of the decade and there is some evidence that equity issued for internal investment is associated with higher mutation. The latter result is not, however, robust to instrumenting the growth rate variables.

Dispersion of ownership is therefore associated with growth of issued equity, particularly in acquisitions, not with changes in regulation. Regulation, on the other hand, is associated with greater liquidity of markets in controlling shareholding blocks. In the absence of investor protection, controlling shareholdings were comparatively stable and relations based on trust allowed firms to issue equity that dispersed ownership rapidly. The strengthening of regulation promoted markets in and for corporate control that undermined relations based on trust.

6 Conclusions

This paper reports the first long-run analysis of the evolution of ownership of firms. It takes advantage of a unique data set that exists of company accounts of U.K. corporations going back to the beginning of the 20th century. In this paper, we use these data to examine how regulation has affected evolution of ownership. The U.K. is a particularly interesting country to study on this score because, firstly, it is the country in which common law originated, secondly, there was exceptionally weak investor protection at the beginning of the century and, thirdly, there was a marked increase in regulation from the middle of the century. As a consequence, it provides a rich test-bed for evaluating the law and finance theses on the relation between regulation and capital market development.

We examine three relations suggested by this literature. The first is between common law and investor protection. We find contrary to its predictions that there is a weak relation between the two. The U.K. had low levels of investor protection even by the standards of what are regarded as weak systems today and common law judgements impeded rather than advanced investor protection. Notwithstanding this, we do not find evidence of minority investor abuse, at least in relation to the practice that is common in many low protection countries today of discriminating between different groups of investors in acquisitions and share issues. Instead, we observe that equal treatment of investors appears to have been upheld by convention rather than regulation.

The second relation that we examine is between investor protection and ownership concentration. The U.K. and U.S. are today distinguished from most other countries in having exceptionally dispersed ownership systems. It is therefore of interest to know when this originated and whether dispersed ownership has only emerged recently. This paper reports that this is not the case in the U.K. Ownership of, at least the sample of firms reported in this paper, became rapidly dispersed.

The main cause of this dispersion was acquisitions. In the process of acquiring other companies, firms issued equity that caused the ownership of inside directors to be rapidly diluted. This was made possible by the existence of active equity markets with a large number of firms traded on local exchanges as well as the London Stock Exchange. Thus stock markets in the U.K. flourished and ownership of firms became rapidly dispersed even in the absence of strong investor protection.

Against this background of active stock markets, the introduction of formal investor protection in the second half of the century had little impact on either equity issuance or rates of dispersion of ownership. However, it had a substantial impact on the composition of controlling shareholder coalitions. Rates of mutation of ownership increased appreciably in the second half of the century as stock markets became more liquid in response to increased investor protection.

The question that this raises is how did stock markets flourish and companies grow through acquisition in the absence of investor protection in the first half of the century. We believe that this is attributable to informal relations of trust between directors and shareholders. In the first half of the 20th century, equity was primarily issued to and traded by local shareholders with good knowledge of the firms in which they were investing. Directors were concerned to sustain their reputation and the value of their securities amongst these investors to retain access to them when they needed additional capital, particularly for acquisitions. One way in which they did this was by eschewing the use of discriminatory price offers in equity acquisitions and other new issues. Firms therefore upheld the interest of minorities by convention rather than regulation. This is consistent with Gomes' (2000) theory that managers may refrain from exploiting minority investors, even in the absence of governance mechanisms, to be able to sell their equity at higher prices.

This may provide an explanation for the international variations in ownership concentration reported at the start of the article. The strong reliance of firms in the U.K. on stock markets to fund growth helped them to sustain relations based on trust. Elsewhere in Europe, closer relations with banks made them less reliant on equity to fund growth and less concerned about the consequences of minority abuse for financing acquisitions. One explanation for the dominance of stock markets in the U.K. is that it reflected their high level of efficiency; an alternative is that it resulted from the deficiencies of the British banking system. Clearly normative assessments of the comparative merits of different systems hinge critically on the validity of these alternative interpretations.

As ownership became geographically dispersed through acquisitions during the century, relations based on trust were no longer sufficient to sustain stock market activity and more formal systems of regulation were required. However, even then the strengthening of regulation that occurred enhanced rather than substituted for these informal relations. The emphasis has been on disclosure and self-regulation rather than on shareholder enforcement through the courts, which has remained infrequent throughout the 20th century. When local knowledge on the part of investors was no longer adequate then responsibility for barring entry to the markets for inappropriate conduct fell to the London Stock Exchange. When directors of target firms were unable to uphold the principle of equal treatment of investors in the face of the emergence of a hostile market for corporate control then protection took the form of self-regulation through the Takeover Panel rather than through the courts. While investor protection may be relevant elsewhere, it does not explain the development of securities markets or the dispersion of ownership in the U.K. in the 20th century.

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Table 1 – Key developments in the regulation of U.K. capital markets

The table reports key developments in the regulation of capital markets in the U.K. Panel A reports minority protection rules and control thresholds, Panel B the evolution over time of the anti–director rights index defined by La Porta, Lopez–de–Silanes, Shleifer and Vishny (1998). "The index is formed by adding 1 when: (1) the country allows shareholders to mail their proxy vote to the firm; (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting; (3) cumulative voting or proportional representation of minorities in the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting is less than or equal to 10 percent (the sample median); or (6) shareholders have preemptive rights that can only be waived by a shareholders' vote. The index ranges from 0 to 6." (LLSV (1998) page 1123) Panel A reports the years when U.K. Company Law introduced particular provisions regarding shareholder rights, and Panel B reports the change in the "anti–director" index over time. Panel C reports listing rules, and Panel D reports disclosure rules.

Panel A: Minority protection rules and control thresholds

Year	Rule	Description	Source
1843	Absolute majority (50%+)	Majority of votes prevails in company law.	Rule in Foss v. Harbottle
1883	Proxy voting not permitted	No common law right on the part of a shareholder to vote by proxy.	Rule in Harben v. Phillips
1948	Squeeze out rule (90%)	Squeeze out rule: 90% shareholder can buy out minority at original bid price.	Companies Act, S 209
1948	Proxy voting introduced	Notice of meetings with minimum of 21 days. Allows voting by proxy (Anti director rule).	Companies Act, [S 136]
1948	Removal of directors	Made easier by special resolution.	Companies Act, S 184
1948	Min votes to force EGM	10% of shares can force an EGM (Anti director rule).	Company law, S 132
1967	Mandatory bid (30%)	Compulsory tender offer for remaining shares.	Takeover Code
1967	Supra majority (75%)	Min. votes required to approve a merger via a scheme of arrangement, and waive pre-emption rights for equity issues to new shareholders.	Company law
1980	Pre-emption rights	New share issues must be offered to existing shareholders first.	Companies Act, S 17
1985	Oppressed minorities	It allows court review of decisions 'on the grounds that the company's affairs are being or have been conducted in a manner which is unfairly prejudicial to the interests of its members generally or of some part of its members'.	Companies Act, S 459

Panel B – Index of anti–director rights over time using La Porta et al's classification

Score	Period	Description of anti director rights provisions
1	1843 – 1947	*Shares cannot be blocked before meeting* (always been in place).
3	1948 – 1979	*Proxy by mail allowed* and *Percentage of share capital to call an extraordinary shareholders meeting <= 10%,* Companies Act 1948, Sections 136 and 132, respectively.
4	1980 – 1984	*Preemptive Rights to new issues,* Companies Act 1980 Section 17.
5	1985 – today	*Oppressed minorities,* Section 459 of Companies Act 1985.

Panel C: Listing rules – London Stock Exchange

Year	Rule	Description	Source
1915	Recording rule	All trades to be recorded in Stock Exchange's Official List or Supplementary List. Former is for quoted companies on LSE, and latter is for companies without a quotation but where dealing is allowed.	Companies Act
1921	Non listed companies' rules	Stock exchange published stricter rules covering permission to deal in unquoted companies.	London Stock Exchange
Post 1928	New listing rules	Followed collapse of 1928 new issue boom, stricter rules introduced for admission to both Lists, including permission to deal.	London Stock Exchange
1947	New listing rules	Differences between Official List and Supplementary Lists (see above) are abolished. Conditions for granting an Official Quotation significantly tightened: 10 years profits record required compared with 5 under 1948 Companies Act and support of 2 exchange dealers. Also, if permission to deal is refused all funds raised in the issue must be returned to subscribers, making it impossible to raise money without permission to deal.	London Stock Exchange

Panel D: Disclosure rules

Year	Rule	Description	Source
1900	Prospectus filing	Required to be filed at Companies House. Must contain specific material.	Company law
1929	Book keeping and filing accounts	Company must keep proper books including a P&L account and Balance Sheet. Public companies must file a balance sheet with Registrar of Companies.	Companies Act, S 122-124.
1929	Notice of accounts	Balance sheets and P&L accounts must be sent out at least 7 days before AGM.	London Stock Exchange
1939	Directors' disclosure	Disclosure of contracts with directors.	Company law
1948	Penalties for non disclosure	Disclosure requirements in prospectus and penalties for non disclosure. Detailed provisions regarding the form and content of balance sheets and P&L accounts. Requirement that company accounts provide a "true and fair" view of a company's financial position.	Companies Act, S 38 & Fourth Schedule
1967	Block disclosure (10%)	Holders of blocks of 10% or more must be disclosed.	Companies Act, S 33.
1967	Disclosure of intention to bid	Holders of blocks of 15% or more must express intentions to bid.	City Code on Takeover & Mergers
1976	Block disclosure (5%)	Holders of blocks of 5% or more must be disclosed.	Companies Act, S 26.
1985	Block disclosure (3%)	Holders of blocks of 3% or more must be disclosed.	Companies Act, S 198.9

Table 2 – Annual growth in total equity capital

This table reports annual growth in total ordinary equity capital in the samples firms, and its use in financing acquisitions and internal investment. Total ordinary equity is the number of issued ordinary shares. Growth in total ordinary equity is normalized to exclude the influence of capitalization of reserves. Acquisitions are classified as being purchased with shares or cash raised from equity issues for this explicit purpose (as stated in the prospectus). Equity issued for internal investment is disaggregated into pro-rata equity offerings to existing shareholders and offers to new subscribers, including IPOs. Panel A refers to the complete 1900 sample, Panel B to the 1960 sample and Panel C reports t-statistics of differences in means between the two samples (1960 sample minus 1900 sample), comparing the first four decades of each. Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Annual growth in total ordinary capital and the factors contributing to this, complete1900 sample

	Annual growth in total ordinary capital (%)			Use of equity issues (%)			
				Acquisitions made with:		Internal investment:	
	Mean	Median	N. Obs.	Shares	Cash	From existing shareholders	From new shareholders
1900-1910	35.57	2.17	40	97.73	0.00	0.17	2.10
1910-1920	2.31	0.00	38	25.86	11.21	62.93	0.00
1920-1930	1.56	0.00	37	44.87	8.33	38.46	8.33
1930-1940	1.00	0.00	33	16.00	20.00	64.00	0.00
1940-1950	0.95	0.00	31	1.02	0.00	78.57	20.41
1950-1960	3.07	0.00	25	22.80	16.61	60.59	0.00
1960-1970	4.99	1.83	23	31.08	0.00	34.36	34.56
1970-1980	2.23	2.60	22	16.14	14.80	69.06	0.00
1980-1990	3.61	1.84	22	24.31	0.00	57.46	18.23
1990-2000	3.56	2.27	20	12.92	4.78	69.66	12.64
Mean	10.60			68.27	2.72	22.38	6.64

Panel B: Annual growth in total ordinary capital and the factors contributing to this, 1960 sample

	Annual growth in total ordinary capital (%)			Use of equity issues (%)			
				Acquisitions made with:		Internal investment:	
	Mean	Median	N. Obs.	Shares	Cash	From existing shareholders	From new shareholders
1960-1970	85.67	44.47	20	43.23	23.27	12.51	20.99
1970-1980	3.31	1.63	20	43.66	5.14	22.09	29.11
1980-1990	4.08	0.00	20	53.04	7.48	29.47	10.01
1990-2000	2.87	0.00	20	12.34	4.60	18.87	64.19
Mean	22.14			42.83	21.22	13.91	22.04

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
Growth	2.29[b]	0.63	1.33	1.65	1.99[b]
Shares Acquisitions	0.48	1.69[c]	1.18	0.73	0.46
Cash Acquisitions	1.61	–0.15	0.08	–0.25	1.52
Internal Investment	1.74[c]	–0.06	1.31	1.75[c]	1.75[c]

Panel D: 1960 vs. 1900 (survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
Growth	1.36	–0.36	0.66	0.84	1.22
Shares Acquisitions	–0.38	0.87	0.62	0.26	–0.26
Cash Acquisitions	1.13	–0.56	1.00	–0.57	1.10
Internal Investment	1.93[c]	–0.71	0.41	1.04	1.85[c]

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
Growth	2.36[b]	2.80[a]	1.31	1.98[c]	2.00[b]
Shares Acquisitions	1.48	2.30[b]	1.16	1.04	1.36
Cash Acquisitions	1.13	1.24	–0.45	0.80	1.05
Internal Investment	0.93	1.64	1.91[c]	1.94[c]	0.97

Table 3 – Evolution of ownership

This table reports the evolution of ownership over time for our sample. Ownership is defined as the minimum number of shareholders necessary to pass a threshold of 25% of cash flow rights, and is computed for all shareholders, for directors alone, and for outsiders. Frequency is the number of companies in which directors and outsiders pass the 25% threshold alone. Panel A refers to the complete 1900 sample, Panel B to the 1960 sample and Panel C to t-statistics of differences in means between the two samples (1960 minus 1900). Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Evolution of ownership – complete 1900 sample

	All shareholders		Directors		Outsiders		
	Mean	Median	Mean	Frequency	Mean	Frequency	N. Obs.
1900	2.35	1.00	1.77	39	15.40	10	40
1910	6.93	1.50	2.80	30	19.15	26	40
1920	9.92	2.00	1.96	26	23.93	27	37
1930	14.78	3.50	2.24	21	28.93	28	36
1940	14.84	5.00	2.00	13	22.00	23	32
1950	21.13	7.00	3.17	12	27.25	24	30
1960	24.83	10.00	4.00	8	31.65	20	24
1970	51.95	11.00	3.00	8	57.57	21	23
1980	57.86	8.00	1.80	5	61.24	21	22
1990	45.76	4.00	2.00	2	48.33	21	21
2000	48.45	3.00	1.67	3	53.58	19	20
Mean	22.49		2.33		35.12		

Panel B: Evolution of ownership – 1960 sample

	All shareholders		Directors		Outsiders		
	Mean	Median	Mean	Frequency	Mean	Frequency	N. Obs.
1960	1.10	1.00	1.10	20	0.00	0	20
1970	23.55	2.00	1.23	13	23.25	16	20
1980	15.05	1.00	2.08	13	20.12	17	20
1990	10.10	4.50	1.50	8	10.90	20	20
2000	3.85	3.00	1.40	5	5.25	20	20
Mean	9.09		1.42		14.40		

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	–1.29	0.95	0.50	–0.60	–1.59	–0.10

Panel D: 1960 vs. 1900 (survivors only) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	–1.53	0.55	0.23	–0.55	–2.04[b]	–0.23

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	–1.64	0.83	0.52	–0.50	–1.29	0.08

Table 4 – Alternative measures of ownership concentration

This table reports directors' shareholdings, and alternative measures of ownership concentration. The measures are C3, the aggregate holdings of the three largest shareholders, C3i, the aggregate holdings of the three largest inside shareholders (directors), C3o, the aggregate holdings of the three largest outside shareholders, C5, the aggregate holdings of the five largest shareholders, and the Herfindahl index. Panel A refers to the complete 1900 sample, Panel B refers to the 1960 sample and Panel C reports t-statistics of differences in means across the two samples (1960 minus 1900). Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Complete 1900 sample

	Directors	C3			C5	Herfindahl	N. Obs.
		C3	C3i	C3o			
1900	92.76	64.39	62.87	2.81	72.96	0.30827	40
1910	53.61	52.86	47.85	9.00	60.15	0.24839	40
1920	49.02	46.30	44.01	6.04	51.33	0.21858	37
1930	37.42	39.55	34.85	7.77	43.85	0.18591	36
1940	37.69	40.58	35.13	8.20	44.13	0.22584	32
1950	27.60	33.83	27.35	9.29	37.88	0.16831	30
1960	29.85	27.44	21.89	8.68	32.92	0.09678	24
1970	21.40	26.05	18.90	11.64	30.56	0.08344	23
1980	18.53	25.95	17.55	11.07	30.04	0.08649	22
1990	13.23	31.37	11.19	21.49	36.83	0.09853	21
1900	10.45	30.36	10.39	23.80	35.35	0.06684	20
Mean	42.40	40.72	33.99	9.73	46.11	0.18115	

Panel B: 1960 sample

	Directors	C3			C5	Herfindahl	N. Obs.
		C3	C3i	C3o			
1960	100.00	92.29	91.97	0.00	93.54	0.53588	20
1970	46.96	51.84	46.60	10.56	56.72	0.28105	20
1980	35.27	40.74	30.83	13.42	45.01	0.12425	20
1990	20.49	33.28	18.78	19.39	39.84	0.07155	20
2000	14.94	32.64	13.54	24.03	39.94	0.06734	20
Mean	43.53	50.16	40.34	13.56	55.01	0.21601	

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
Directors	1.46	–0.66	–1.42	–1.93[c]	–2.51[b]	–2.01[b]
C3	3.47[a]	–0.11	–0.64	–0.76	–0.94	0.20
C3i	3.52[a]	–0.13	–1.44	–1.86[c]	–2.38[b]	–1.15
C3o	–2.07[b]	0.42	2.96[a]	4.29[a]	5.20[a]	5.01[a]
C5	2.70[a]	–0.37	–0.71	–0.48	–0.49	–0.05
Herfindahl	2.83[a]	0.36	–1.29	–1.65	–1.97[c]	–0.62

Panel D: 1960 vs. 1900 (survivors only) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
Directors	1.44	–0.67	–1.32	–1.71[c]	–1.88[c]	–1.79[c]
C3	2.84[a]	–0.19	–0.80	–0.55	–0.18	0.33
C3i	3.33[a]	–0.28	–1.38	–1.55	–1.71[c]	–0.63
C3o	–2.96[a]	2.52[b]	2.85[a]	4.65[a]	4.60[a]	5.50[a]
C5	2.70[a]	–0.14	–0.61	–0.15	0.22	0.66
Herfindahl	1.88[c]	0.10	–1.25	–1.43	–1.27	–0.24

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
Directors	1.50	–0.46	–1.19	–1.92[c]	–3.28[a]	–2.41[b]
C3	3.44[a]	0.00	–0.30	–0.90	–1.96[c]	–0.01
C3i	3.07[a]	0.07	–1.17	–2.01[c]	–3.17[a]	–1.38
C3o	–0.92	–0.62	1.68	2.93[a]	3.65[a]	2.99[a]
C5	2.15[b]	–0.52	–0.67	–0.86	–1.53	–0.87
Herfindahl	3.28[a]	0.52	–1.18	–1.85[c]	–2.88[a]	–0.88

Table 5 – Factors contributing to changes in directors' shareholdings
This table reports the reduction of directors' shareholdings (computed from Table 4) in column 1 and the factors contributing to the reduction. Frequency is the number of occurrences of the event in question in the decade and impact is the percentage of the reduction attributable to each factor - IPOs, acquisitions, rights issues, and placings. Panel A refers to the complete 1900 sample, while Panel B considers the 1960 sample.

Panel A: Factors contributing to reduction in directors' shareholdings, complete1900 sample

	Reduction in directors' shareholdings (%)	Factors influencing reduction in directors' shareholdings							
		IPOs		Acquisitions		Rights issues		Placings	
	Mean	Freq.	Impact	Freq.	Impact	Freq.	Impact	Freq.	Impact
1900-1910	39.15	0	0.00	25	39.06	17	0.52	10	28.02
1910-1920	4.59	0	0.00	5	77.97	9	0.00	1	2.34
1920-1930	11.60	0	0.00	7	25.95	9	0.00	2	3.37
1930-1940	-0.27	3	0.00	3	0.00	11	0.00	0	0.00
1940-1950	10.09	6	0.24	1	0.00	4	1.24	0	0.00
1950-1960	-2.25	4	0.00	10	0.00	15	0.00	0	0.00
1960-1970	8.45	4	31.99	24	11.16	8	13.09	0	0.00
1970-1980	2.87	1	0.00	9	3.23	19	25.51	0	0.00
1980-1990	5.30	1	5.73	4	19.85	14	15.23	2	0.00
1990-2000	2.78	3	65.27	3	2.75	14	47.01	10	26.03
Mean	9.40	2.20	4.20	9.10	32.51	12.00	5.62	2.50	16.57

Panel B: Factors contributing to reduction in directors' shareholdings, 1960 sample

	Reduction in directors' shareholdings (%)	Factors influencing reduction in directors' shareholdings							
		IPOs		Acquisitions		Rights issues		Placings	
	Mean	Freq.	Impact	Freq.	Impact	Freq.	Impact	Freq.	Impact
1960-1970	53.04	10	11.42	27	54.52	17	4.61	6	21.35
1970-1980	11.69	3	17.42	23	6.32	6	4.97	1	6.74
1980-1990	14.78	2	34.22	4	12.99	10	4.85	2	9.93
1990-2000	5.55	4	4.28	4	12.73	4	22.49	4	78.34
Mean	21.27	5.00	16.84	14.50	21.64	9.25	9.23	3.25	29.09

Table 6 – Dispersion of ownership

This table reports the annual rates of dispersion of ownership over time. Ownership is defined as the minimum number of shareholders necessary to pass the threshold of 25% of cash flow rights, as reported in Table 2. Dispersion is defined as the change in ownership over the decade. The rates of dispersion are computed for all shareholders, directors alone, and outsiders alone using the formula described in the text. Panel A refers to the 1900 sample, Panel B to the 1960 sample and Panel C reports t-statistics of differences in means across the two samples (1960 minus 1900) for the first four decades of each. Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Annual rates of dispersion of ownership (%) – complete 1900 sample

	All shareholders	Directors	Outsiders	N. Obs.
1900-1910	5.93	21.12	36.66	40
1910-1920	3.49	12.38	11.65	38
1920-1930	4.07	14.83	4.69	37
1930-1940	0.52	15.80	–6.24	33
1940-1950	3.03	–2.90	8.81	31
1950-1960	1.79	4.29	1.37	25
1960-1970	0.42	–7.47	10.03	23
1970-1980	0.07	8.81	–0.02	22
1980-1990	–5.64	13.82	–6.57	22
1990-2000	0.24	5.00	3.99	20
Mean	1.97	10.29	1.22	

Panel B: Annual rates of dispersion of ownership – 1960 sample

	All shareholders	Directors	Outsiders	N. Obs.
1960-1970	12.36	36.08	70.21	20
1970-1980	-1.70	6.77	11.40	20
1980-1990	6.08	31.41	10.47	20
1990-2000	-2.22	14.67	-1.13	20
Mean	3.63	22.23	22.74	

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.45	–1.99[c]	0.73	–1.09	–0.01
Directors	1.27	–0.46	1.49	–0.11	1.06
Outsiders	2.48[b]	–0.03	0.62	1.14	1.72[c]

Panel D: 1960 vs. 1900 (survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	0.55	–1.67	0.38	–1.49	–0.39
Directors	1.06	0.01	0.78	–0.43	0.77
Outsiders	4.79[a]	0.08	–0.38	1.02	2.59[b]

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.79[c]	–1.93[c]	1.25	–0.10	0.46
Directors	1.06	–0.72	1.79[c]	0.47	0.99
Outsiders	0.32	–0.14	1.81[c]	1.30	0.39

Table 7 – Mutation of ownership

This table reports the annual rates of mutation of ownership over time. Ownership is defined as the number of shareholders necessary to pass the threshold of 25% of cash flow rights, as reported in Table 2. Mutation is defined as the change in the composition of ownership or turnover of the ruling coalition. The rates of mutation are computed for all shareholders, for directors alone (both in terms of cash flows rights and of simple board majority), and for outsiders, respectively, using the formula described in the text. Panel A refers to the 1900 sample, Panel B to the 1960 sample and Panel C reports t-statistics of differences in means across the two samples (1960 minus 1900) for the first four decades of each. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Annual rates of mutation of ownership – 1900 sample

	All shareholders	Directors	Outsiders	N. Obs.
1900-1910	3.25	3.33	41.97	40
1910-1920	10.45	7.10	20.15	38
1920-1930	16.79	13.19	23.27	37
1930-1940	20.67	19.75	22.92	33
1940-1950	25.03	26.78	21.01	31
1950-1960	23.56	7.78	24.24	25
1960-1970	21.86	23.17	40.57	23
1970-1980	33.97	26.56	24.13	22
1980-1990	55.03	26.84	60.04	22
1990-2000	42.03	30.74	42.09	20
Mean	26.52	21.45	37.92	

Panel B: Annual rates of mutation of ownership – 1960 sample

	All shareholders	Directors	Outsiders	N. Obs.
1960-1970	16.19	21.19	65.00	20
1970-1980	33.12	32.60	55.24	20
1980-1990	57.81	52.43	70.33	20
1990-2000	52.94	43.45	55.86	20
Mean	40.10	37.48	61.69	

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.93[b]	2.29[b]	3.70[a]	2.64[b]	5.35[a]
Directors	2.45[b]	2.74[a]	3.65[a]	1.95[c]	5.39[a]
Outsiders	1.74[c]	3.06[a]	4.22[a]	2.79[a]	5.66[a]
Directors (board)	2.88[a]	2.23[b]	1.71[c]	0.71	3.77[a]

Panel D: 1960 vs. 1900 (survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.06	1.60	2.40[b]	2.14[b]	3.60[a]
Directors	2.26[b]	1.61	2.55[b]	1.22	3.65[a]
Outsiders	2.95[a]	2.15[b]	3.04[a]	1.83[c]	5.05[a]
Directors (board)	2.54[b]	1.22	1.41[c]	0.53	2.82[a]

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of means (t-statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.95[c]	2.03[b]	3.81[a]	2.17[b]	5.11[a]
Directors	1.47	2.74[a]	3.33[a]	2.21[b]	5.05[a]
Outsiders	0.29	2.92[a]	4.26[a]	3.06[a]	4.48[a]
Directors (board)	1.79[c]	2.39[b]	1.25	0.65	3.09[a]

Table 8 – Determinants of dispersion of ownership

The dependent variable is the annual rate of dispersion of ownership by decade for the first four decades of the two samples. Independent variables are anti-director rights, the anti-director rights score described in Panel B of Table 1; 1900 sample, a dummy that equals one if the company belongs to the 1900 sample and 0 otherwise; equity growth rate for stock acquisitions and equity growth rate for internal investment; and initial dispersion, the size of the smallest coalition necessary to pass the 25% ownership threshold at the beginning of the decade in question. In Columns 5 and 6, equity growth rate for stock acquisitions and for internal investment are instrumented with firm fixed effects, decade fixed effects, 1900 sample and company age. Initial dispersion is computed at the beginning of each decade. Regressions (2), (4), and (6) include decade fixed effects (not reported). The standard errors reported in parenthesis are adjusted for heteroscedasticity using White's (1980) correction. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

	OLS				Instrumental Variables	
	(1)	(2)	(3)	(4)	(5)	(6)
Anti director rights	–0.017 (.016)	–0.007 (.006)	–0.005 (.015)	–0.008 (.006)	–0.001 (.013)	–0.007 (.006)
1900 Sample	–0.051 (.061)		–0.014 (.054)		–0.003 (.049)	
Equity growth rate from stock acquisitions			0.113[a] (.039)	0.097[b] (.039)	0.164[b] (.075)	0.137[c] (.079)
Equity growth rate used for internal investment			0.001 (.016)	–0.020 (.021)	–0.016 (.037)	–0.075 (.057)
Initial dispersion			–0.062[a] (.024)	–0.055[b] (.025)	–0.059[b] (.023)	–0.054[b] (.024)
Constant	0.104 (.076)	0.012 (.019)	0.051 (.067)	0.021 (.019)	0.033 (.058)	0.021 (.019)
Decade fixed effects?	NO	YES	NO	YES	NO	YES
R^2	0.007	0.105	0.135	0.192	0.112	0.167
N observations	225	225	224	224	224	224

Table 9 – Determinants of mutation of ownership

The dependent variable is the annual rate of mutation of ownership by decade, for the first four decades over the life cycle of the two samples. Independent variables are anti-director rights, the anti-director rights score described in Panel B of Table 1; 1900 sample, a dummy that equals one if the company belongs to the 1900 sample and 0 otherwise; equity growth rate for stock acquisitions and equity growth rate for internal investment; and initial dispersion, the size of the smallest coalition necessary to pass the 25% ownership threshold at the beginning of the decade in question. In Columns 5 and 6, equity growth rate for stock acquisitions and for internal investment are instrumented with firm fixed effects, decade fixed effects, 1900 sample and company age. Initial dispersion is computed at the beginning of each decade. Regressions (2), (4), and (6) include decade fixed effects (not reported). The standard errors reported in parenthesis are adjusted for heteroscedasticity using White's (1980) correction. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

	OLS				Instrumental Variables	
	(1)	(2)	(3)	(4)	(5)	(6)
Anti director rights	0.155[a] (.050)	0.081[b] (.032)	0.155[a] (.049)	0.082[a] (.032)	0.134[b] (.051)	0.083[a] (.032)
1900 Sample	0.188 (.155)		0.211 (.149)		0.131 (.155)	
Equity growth rate from stock acquisitions			–0.028 (.049)	0.047 (.048)	–0.056 (.093)	0.102 (.121)
Equity growth rate used for internal investment			0.203[c] (.116)	0.270[b] (.119)	–0.076 (.237)	0.083 (.216)
Initial dispersion			0.249[a] (.058)	0.212[a] (.058)	0.244[a] (.056)	0.216[a] (.058)
Constant	–0.220 (.202)	0.126 (.091)	–0.266 (.195)	0.090 (.091)	–0.155 (.206)	0.089 (.090)
Decade fixed effects?	NO	YES	NO	YES	NO	YES
R^2	0.169	0.196	0.210	0.238	0.180	0.222
N observations	224	224	223	223	223	223

Table A1 – Sample description

The table lists the companies in our sample, their cities of incorporation, incorporation date, IPO date, the earliest years for which we have evidence of the ordinary shares being traded at the London Stock Exchange and/or Provincial Exchanges, and their status (alive, liquidated or taken over) as of 2001. Panel A refers to the 1900 sample and Panel B to the 1960 sample.

Panel A: Incorporated between 1897 and 1903

Company Name	*City of Inc.*	*Inc. date*	*IPO date*	*Traded (LSE)*	*Traded (provincial)*	*Status*
Albert E. Reed and Co.	London	28/05/1903	21/04/1948	1930	-	Alive
Balkis	London	14/12/1898	-	1899	-	Liq. 1954
Bleachers Association	Manchester	07/06/1900	1927-1930	1907	1900 (Manchester, et al)	Liq. 1997
Broomhill Collieries	Newcastle on Tyne	01/11/1900	-	-	1903 (Newcastle)	Liq. 1955
Cadbury Brothers	Birmingham	13/06/1899	-	1968	1961 (Birmingham)	T.O. 1969
C and W Walker Ltd	Donnington, Newport	03/05/1899	17/08/1998	1899	1899 (Birmingham)	Alive
Chamberlin and Hill	Walsall	03/04/1903	25/03/1973	1973	1956 (Birmingham)	Alive
Charles Cammell and Co.	Sheffield	04/01/1898	23/06/1949	1904	1905 (Sheffield et al)	Alive
Dickson and Benson	Middlesbrough	06/03/1900	-	1920	-	Liq. 1964
General Electric Co.	London	27/09/1900	30/11/1999	1919	1921 (Birm., Manch.)	Alive
Gillard and Co.	Walthamstow, London	26/07/1898	-	-	-	Liq. 1977
Guest, Keen, and Co., Ltd	Birmingham	09/07/1900	14/06/1946	1900	1900 (Birmingham)	Alive
Henry Tate and Sons	London	27/02/1903	09/12/1938	1929	1928 (Liverpool)	Alive
Higgs and Hill	New Malden, Surrey	07/02/1898	11/07/1960	1960	-	Alive
Horace Cory, Ltd	London	18/04/1900	05/08/1956	1900	-	Alive
Johnson Brothers (Dyers)	Dewsbury, Yorkshire	08/12/1898	-	1937	-	Liq. 1957
John Williams and Sons	Cardiff, Wales	28/11/1899	Around 1950	1950	1950 (Midlands&West)	Liq.
Klanang Produce	London	01/05/1899	-	1923	-	Liq. 1961
Leeds and District Worsted Dyers	Leeds	21/11/1900	24/08/1965	1965	1921 (Leeds)	Alive
Manganese Bronze and Brass Co.	London	10/03/1899	24/04/1940	1899	1920 (Leeds, Manch.)	Alive
Midland Rubber	Birmingham	1900	-	-	1901 (Birmingham)	Liq. 1912
Mining and Industrial Corp.	London	1900	-	-	-	Liq. 1912
New Hucknall Collieries	Huthwark, Notthingham	28/12/1900	-	-	1930 (Notthingham, Sheff.)	Liq. 1957
Ocean Steam Ship Co.	Liverpool	06/06/1902	12/03/1965	1965	1963 (Northern)	Alive
Pease and Partners	Darlington, Durham	11/10/1898	-	1928	1920 (Birm., Bristol, et al.)	Liq. 1958
Queen Mill DU.K.infield	Stalybridge	23/07/1900	-	-	1938 (Oldham)	Liq. 1963
Reckitt and Sons	Hull	04/07/1899	-	1929	1911 (Leeds)	Liq. 1956
Rock Brewery	Brighton	03/04/1901	-	-	-	T.O. 1926
Schweppes, Ltd	London	06/05/1897	19/12/1942	1897	1897 (Manchester)	Alive
South Australian Dredging	London	19/04/1902	-	-	-	T.O. 1950
South Hetton Coal Co.	Sunderland	07/05/1898	-	1920	1899 (Newcastle)	Liq. 1956
Stewart and Wight	London	29/04/1898	25/03/1960	1921	-	Alive
Thomas De La Rue	London	01/07/1898	27/07/1947	1926	-	Alive
Thomas, Evans & John Dyer	Swansea, Wales	03/07/1900	-	-	1930 (Cardiff, Swansea)	Liq. 1964
Tilbury Contracting and Dredging	London	16/08/1902	12/10/1966	1928	-	Alive
Tuttle and Sons	London	22/01/1902	26/04/1996	1996	-	Alive
Weardale, Steel Coal & Coke	West Hartlepool, Durham	29/09/1899	-	1930	1926 (Newcastle, Sh., et al)	Liq. 1957
West Bromwich Spring	West Bromwich	14/11/1903	06/11/1989	1989	1967 (Midland&West)	Alive
Yang–Tse Corporation	London	14/09/1898	24/03/1958	1921	1898 (?)	Alive
Yorkshire Dye ware and Chemical	Huddersfield, Yorkshire	19/05/1900	08/09/1947	1921	1900 (Leeds)	Alive

Panel B: Incorporated between 1958 and 1962

Company Name	*City of Inc.*	*Inc. date*	*IPO date*	*Traded (LSE)*	*Traded (provincial)*	*Status*
Albert Fisher Group	Nelson, Lancashire	06/02/1961	21/09/1973	1973	1965 (Liverpool)	Alive
Blanes	London	01/05/1959	25/03/1974	1974	-	Alive
Block Holdings, Ltd	London	15/12/1959	09/07/1985	1985	-	Alive
Central Properties (Kensington)	London	20/06/1961	10/12/1985	1985	-	Alive
Ceylon Tea Plantation Holdings	London	27/09/1960	05/10/1960	1909	-	Alive
Countryside Properties	London	14/11/1958	15/11/1972	1972	-	Alive
Dalkeith (Ceylon) Holdings	Dalkeith	17/11/1960	05/01/1999	1999	-	Alive
Hill & Smith Holdings	Brierley Hill, Staffordshire	30/09/1960	26/03/1969	1969	-	Alive
Ind Coope Tetley Ansell	London	13/04/1961	13/05/1961	1961	1961 (Birmingham et al)	Alive
J H Haynes and Co.	Yeovil, Somerset	18/05/1960	07/11/1996	1996	-	Alive
Lowland Investment	London	20/09/1960	05/04/1966	1966	-	Alive
Mining Supplies	Doncaster, Yorkshire	24/03/1960	24/03/1965	1965	-	Alive
Nasmo Machinery	Wolverhampton	02/07/1959	11/11/1968	1968	1968 (Midlands & West)	Alive
Oldeani Developments Ltd	Birmingham	18/11/1960	29/11/1996	1996	-	Alive
Provident Clothing	Bradford, West Yorkshire	31/08/1960	16/03/1962	1962	-	Alive
Rankin Dyson	London	15/12/1958	27/09/2000	2000	-	Alive
Reeve Angel International	London	23/06/1959	17/11/1960	1960	-	Alive
Rem Products (Electrical)	Leigh-on-Sea, Essex	14/03/1961	29/02/1996	1996	-	Alive
Serapsoidar	London	22/01/1960	14/06/1967	1967	-	Alive
Town Centre Securities	Leeds	17/03/1959	21/09/1960	1960	-	Alive

Table A2 – The takeover process in the U.K., 1900–1950

The table describes the takeover process in the U.K. in the first half of the twentieth century. Panel A refers to stock acquisitions by companies in the 1900 sample over the period 1900 – 1950, the toehold, the percentage of the target owned after the acquisition and whether the acquisition was a tender offer or a merger. Panel B reports large tender offers from the sample in Hannah (1976), the toehold, the percentage of the target owned after the acquisition, and the means of payment. Panel C reproduces references in the Financial Times to the terms on which offers were made in 22 acquisitions in the first half of the century. This includes four cases from Panel A, 13 from Panel B, and 8 from other acquisitions.

Panel A: Stock acquisitions by companies in the 1900 sample, 1900 – 1950

Year	Acquirer	Target	Toehold	% after	Tender or Merger
1901	GKN Holdings	Nettlefolds	0.0	100.0	Merger
1902	Laird Group	The Mulliner Wigley Co. Ltd	0.0	100.0	Merger (Private)
1903	Laird Group	Laird	0.0	100.0	Merger (Private)
1909	Reed International	London Paper Mills Co.	0.0	99.9	Tender
1918	Marconi (G.E.)	Osram Lamp Works	0.0	100.0	Merger (Private)
1919	Laird Group	Midland Railway Carriage and Wagon Co. Ld	0.0	100.0	Merger (Private)
1919	Marconi (G.E.)	Peel Conner Telephone Works	0.0	100.0	Tender
1920	GKN Holdings	John Lysaght Ltd	0.0	99.8	Tender
1921	Tate & Lyle	Abram Lyle & Sons	0.0	100.0	Merger (Private)
1923	GKN Holdings	Consolidated Cambrian	0.0	96.0	Tender
1923	GKN Holdings	D Davis & Sons	0.0	96.0	Tender
1923	Laird Group	Leeds Forge Co. Ld	0.0	99.0	Tender
1925	De La Rue	Lamert	0.0	100.0	(Private)
1929	Tate & Lyle	Fairrie & Co.	0.0	100.0	Merger (Private)
1930	GKN Holdings	James Mills Ltd	0.0	100.0	Merger (Private)
1938	De La Rue	Davy Gravure	0.0	100.0	Merger (Private)
1938	Tate & Lyle	Macfie & Sons	0.0	100.0	Merger (Private)
1947	GKN Holdings	49% of Guest, Keen Williams (+ 51%)	0.0	100.0	Merger (Private)

Panel B: Large tender offers (Hannah's sample) 1919 – 1939

Year	Acquirer	Target	Toehold	% after	Means of payment
1919	Dorman Long	Carlton Iron and Mainsforth Colliery	N. A.	N. A.	
1919	Guest Keen and Nettlefolds	John Lysaght	0.0	99.8	Shares
1919	Lever Bros	Price's Patent Candle Co.	N. A.	N. A.	
1919	Vickers	Metropolitan Carriage Wagon and Finance	0.0	100.0	Shares
1920	Armstrong-Whitworth	Pearson and Knowles Coal and Iron	N. A.	N. A.	
1920	A. Darracq (S.T.D. Motors after deal)	Sunbeam Motor Car Company	0.0	100.0	Shares
1920	Stewarts and Lloyds	Alfred Hickman	0.0	99.9	Shares
1920	John Summers	Shelton Iron Steel and Coal Co.	0.0	100.0	Shares
1923	Guest Keen and Nettlefolds	D. Davis and Sons	0.0	96.0	Shares
		Consolidated Cambrian	0.0	96.0	Shares
1923	Richard Thomas	Grovesend Steel & Tinplate	0.0	100.0	Shares
1924	Amalgamated Dental Co.	De Trey	N. A.	N. A.	
1925	Distillers	Buchanan-Dewar	0.0	99.9	Shares
		John Walker & Sons	0.0	100.0	Shares
1925	Lever Bros	British Oil & Cake Mills	0.0	100.0	All Cash
1927	British Match Corporation	Bryant & May	0.0	99.0	Shares
1928	Associated Electrical Industries	British Thomson-Houston	0.0	100.0	Shares
	(International General Electric)	Metropolitan Vickers Electrical			
		Ferguson Pailin Ltd	0.0	100.0	All Cash
		Edison Swan Electric	0.0	92.7	All Cash
1928	Inveresk Paper	United Newspapers (Daily Chronicle Invt. Corp.)	N. A.	N. A.	
1928	J. Sears & Co (Trueform Boot Co)	Freeman Hardy & Willis	0.0	99.0	All Cash
1928	Turner & Newall	Bells United Asbestos	0.0	100.0	Shares
1928	Watney Combe Reid	Huggins & Co.	0.0	99.0	All Cash
1929	Barclay, Perkins and Co.	Style & Winch	0.0	99.0	Shares
1929	Unilever	Lever Bros	0.0	100.0	Shares
		Margarine Union			
1930	Barry & Staines Linoleum	Barry Ostlere & Shepherd	0.0	100.0	Shares
		Linoleum Manufacturing	0.0	100.0	Shares
1930	Taylor Walker	Cannon Brewery	0.0	98.0	Shares
1933	Charrington	Hoare & Co	0.0	100.0	Shares
1934	Ind Coope & Allsopp	Ind Coope			
		Allsopp & Co	0.0	100.0	Shares
1935	Hawker Siddeley	Hawker Aircraft	0.0	51.1	Shares
		Armstrong Whitworth Developments	0.0	100.0	Shares

1936	Stewarts and Lloyds (United Tube Holdings)	British Mannesmann Tube Co.	0.0	99.0	Shares
1937	Distillers	Booth's Distilleries	0.0	97.8	All Cash
1937	Imperial Chemical Industries	Salt Union	0.0	90.0	Shares
1938	Associated Portland Cement Manufacturers	Alpha Cement	0.0	74.0	Shares
1938	Beechams Pills	Eno Proprietaries	0.0	97.0	Shares
1939	Stewarts & Lloyds	Stanton Ironworks Co	0.0	100.0	Shares

Panel C: References in the Financial Times (FT) to acquisitions in the first half of the 20th century

Year	Acquirer	Target	Quote
1919	Vickers	W. T. Glover	"Shareholders of W. T. Glover and Company, Ltd., the electric wire and cable manufacturers, of Trafford Park, Manchester, have received a circular from the Chairman, accompanying the annual report, published in another column, in which an offer from Vickers, Ltd., to acquire the shares of Glover and Company is set out. The circular is as follows: 'The directors have recently been approached on behalf of Vickers, Ltd., with a view to that company acquiring the controlling interest in this company by means of an exchange of shares. As the result of negotiations, Vickers, Ltd., have now agreed with myself (as Chairman of the Board acting as trustee for the shareholders) to purchase the shares of this company from the respective holders such of them as think fit to adopt the agreement, at the following prices: For every Preference £1 share the sum of 17s 6d in cash; For every four £1 Ordinary shares five fully-paid £1 Ordinary shares of Vickers, Ltd. … Your directors (among whom are substantial holders of the company's Preference and Ordinary shares) are of the opinion that the terms of the sale are favourable to the shareholders, and will agree to sell their own shares accordingly. If you propose to take advantage of this offer it is necessary that you should sign … Yours faithfully, A. L. Ormrod, Chairman, W. T. Glover and Co., Ltd." FT Friday 2 May 1919
1920	GKN Holdings	John Lysaght Ltd	"To the ordinary shareholders of John Lysaght, Ltd. Dear Sir (or Madam), As you will have seen from the preliminary announcement published in the Press by the authority of your Directors, an offer has been received from Guest, Keen and Nettlefolds, Limited, for the purchase of the Ordinary shares in John Lysaght, Limited. The offer to the shareholders of your Company is of three Ordinary shares and four 5% Cumulative Second Preference shares (free of income tax) ranking *pari passu* with the present issue of this class of shares in Guest, Keen and Nettlefolds, Limited. … The offer has been unanimously accepted by the Directors of your company for the whole of their individual shares, and they have no hesitation in recommending its acceptance to the shareholders." FT Monday 19 January 1920
1920	Lever Brothers	Niger Company	"The Directors of the Niger Company have received an offer from Lever Brothers, Port Sunlight, to purchase all the issued Ordinary shares in the Company at £6 10s each, payable in cash on or before 1st July next, together with interest on the price at the rate of 7% per annum from 1st January, 1920. … The Niger Directors recommend the Ordinary shareholders to take advantage of this offer. It is subject to the following conditions … Lever Brothers has the right to take any shares in respect of which its offer may be accepted, but reserves the right to cancel the agreement altogether if acceptances for at least 75% of the issued Ordinary shares are not received within the stipulated time." FT Monday 26 January 1920
1920	A. Darracq (S.T.D. Motors after deal)	Sunbeam Motor Car Company	"The official announcement that the Directors of A. Darraq and Company (1903) and the Sunbeam Motor Car Company have concluded an agreement, subject to ratification by the respective shareholders, for an amalgamation of their extensive interests is of more than ordinary importance as presaging the materialisation of the greatest combine that has been negotiated in the motor industry in this country. … The proposed amalgamation will take the form of an exchange of shares on an equal basis – namely, that the Sunbeam shareholders will, in exchange for their present holding, receive an equal number of shares in the Darraq Company…" FT Wednesday 9 June 1920
1923	GKN Holdings	Consolidated Cambrian Collieries D Davis & Sons	"An important deal is involved in the offer of Guest Keen and Nettlefolds to the shareholders of D Davis and Sons and of the Consolidated Cambrian Collieries, both of which own extensive colliery undertakings in South Wales. For each five Ordinary £1 shares of the Consolidated Cambrian Guest Keen offer two Ordinary, and for every five 5s Ordinary shares in D Davis and Sons Guest Keen offer one Ordinary. … Acceptance of the offer is strongly recommended by both directorates, who have decided to accept it as regards their own individual holdings. 90% of the Ordinary shares of each company must accept the offer by 30th November or it may be withdrawn. If the deal should go through, as no doubt it will, Guest Keens will have a coal output of at least 7,000,000 tons per annum. The attraction to Davis and Cambrian shareholders is that they will secure an interest in an undertaking which by reason of its varied interests has achieved uniformly good results and has weathered the trade depression with conspicuous success." FT Thursday 15 November 1923
1923	London and Lancashire Insurance Co.	British Fire Insurance Company	"The directors of the British Fire Insurance Co. have issued a circular giving details of the offer made by the London and Lancashire Insurance Co. for the purchase of British Fire shares… Payment to be made as follows … All the directors of the British Fire have decided to accept the offer as concerns their own holdings, and they recommend the offer to the acceptance of all other shareholders. … the offer is conditional upon acceptance by the holders of at least 85 % of the issued share capital of British Fire" FT Friday 23 March 1923
1923	Laird Group	Leeds Forge Co. Ld	"An official intimation is made that a circular is about to be issued by the directors to the shareholders in the Leeds Forge Company recommending the acceptance of an offer which has been made by Cammell Laird and Co. to exchange one £1 Ordinary share of Cammell Laird for every two £` Ordinary in the Leeds Forge and one Ordinary of Cammell Laird for one £1 Seven % Cum. Preference of the Leeds Forge" FT Saturday 23 June 1923 p. 5

1923	Richard Thomas	Grovesend Steel & Tinplate	"Further particulars of the amalgamation in the tinplate trade, which was confirmed by our Swansea correspondent in yesterday's FT, show that Richard Thomas and Co. have offered to take over (a) 80% of the shares of the Grovesend Company, or (b) the whole of the shares of the Company. So far as the 80% is concerned it is certain that the deal will be completed. With regard to the other 20% it is regarded as a practical certainty that the holders will agree. Meanwhile, a circular has been issued to the 20% stating that the holders of 80% of the shares have accepted and recommending holders of the other 20% to accept. The terms are that the Ordinary shares of the Grovesend Company shall be exchanged for the Ordinary shares of Richard Thomas and Co., in part payment, plus a very substantial cash payment to the holders of Grovesend Company." FT Monday 15 October 1923
1925	Distillers	Buchanan-Dewar John Walker & Sons	"The Chairman (*of Distillers*) in proposing the special resolution, said: …. Before we can carry out the terms of the provisional agreements with the other two companies shareholders it will be necessary to amend our present articles of association Unfortunately, this cannot be done without obtaining the sanction of the court" … "If the necessary number of shareholders accept the offer, and we are asking for 90% of the shareholders of the other two companies to accept, but with power to accept a smaller number, not however less than 75%…" FT Monday 9 March 1923
1928	Union Cold Storage Company	London Central Markets Cold Storage Company	"Shareholders of London Central Markets Cold Storage Company are notified that a provisional agreement has been made for amalgamation… In a circular the directors … point out that they have agreed to take 6% Cumulative Preference shares in respect of their holdings in preference to the cash offer … and recommend shareholders to accept the offer" FT Friday 21 September 1928
1928	Amherst Estates	St. Ives Rubber Estates	"The directors of the St. Ives Rubber Estates announce that … after negotiations with the directors of the Amherst Estates (Selangor) Rubber Company, they have entered into a draft agreement with that company. The terms of the amalgamation, which is subject to the approval of the shareholders of both companies, are the issue of 250,000 fully paid 2s Amherst shares to the St. Ives shareholders. They have been mutually agreed upon by the directors of both companies as fair and equitable to all parties." FT Monday 24 September 1928
1928	Watney Combe Reid	Huggins & Co.	"Shareholders of Huggins and Co., the West End brewers, have been informed than an offer has been made by a well-known brewery company to purchase their holdings at £5 8s 6d per share. The offer is conditional upon acceptance by 76% of the holders… The directors intimate that they have accepted the offer and strongly recommend shareholders to accept" FT Saturday 13 October 1928
1928	J. Sears & Co	Freeman Hardy and Willis	"The Financial Times is officially informed that an offer for the purchase of Freeman Hardy and Willis Preferred Ordinary shares at the price of £3 6s and for the Deferred Ordinary at £7 7s 6d net per share has been received. The directors, who have themselves accepted the offer, recommend same to shareholders." FT Monday 15 October 1928
1928	Manchester Collieries	Andrew Knowles and Sons	"The terms are now available… In exchange for the issued share capital of 750,000 fully-paid £1 shares, Andrew Knowles and Sons will receive£706,500 in shares of the new company… The circular adds that in view of the satisfactory financial position and earning capacity… the directors are of opinion that the amalgamation will prove of advantage to all the parties concerned, and recommend the proposals which will be submitted at a meeting…" FT Tuesday 20 November 1928
1928	Scottish Drapery Corporation	J. R. Allan	"An offer has been made by the Scottish Drapery Corporation to purchase the Ordinary shares of J. and R. Allan, drapers and silk members of Edinburgh, at 27s per share… The offer is conditional upon acceptance by 90% of the holders… The Ordinary shares (*of J. R. Allan*) are quoted on Edinburgh at 25s." FT Saturday 24 November 1928
1928	Turner & Newall	Bells United Asbestos	"For each Bell's Ordinary held shareholders will receive in exchange one Turner and Newall Ordinary of £1…" FT Tuesday 27 November 1928 "Your directors are of the unanimous opinion that the offer made by Turner and Newall, Ltd., is equitable, and your Board have no hesitation in recommending it for acceptance… Your Board have been gratified by the receipt of an exceptionally large number of proxies, representing approximately 75% of the issued shares of the company, in support of the present recommendations." FT Friday 7 December 1928
1935	Allied Ironfounders	Aga Heat	"An offer has been made by the directors of Allied Ironfounders, of which Mr. A. W. Steven is chairman, for the whole of the issued share capital of Aga Heat, manufacturers of heat and cooking appliances. The terms offered are one fully paid £1 Ordinary of Allied Ironfounders for every five fully-paid 5s shares in Aga Heat… The offer, which is recommended by the directors, … is conditional upon acceptance by holders of not less than 90 % … Mr. J. E. V. Jobson, the chairman, has accepted a seat on the Board of Allied Ironfounders." FT Thursday 11 July 1935
1935	Hawker Siddeley	Hawker Aircraft Armstrong Whitworth Developments	"The subscription list will open and close on Tuesday next for the issue of Hawker Siddeley Aircraft Company of 1,000,000 Five % Cumulative Preference shares of £1 each at par and 1,000,000 Ordinary shares of 5s each at 15s per share. As previously reported in The Financial Times, the company is acquiring the whole of the issued Ordinary share capital of Armstrong Whitworth Developments and 50% of the issued share capital of Hawker Aircraft … The issue will be advertised at the coming weekend and prospectuses will be available after 3.30 today from the company's bankers" FT Friday 12 July 1935
1938	Beechams Pills	Eno Proprietaries	"Formal offer is now made by Beecham Pills to acquire the Ordinary shares of Eno Proprietaries. As announced bin The Financial Times last Wednesday, holders of Eno Ordinary are invited to exchange their shares on the basis of five 2s 6d Deferred of Beechams for every eight 5s shares held. The offer, which is unanimously recommended by the directors of Eno Proprietaries, is conditional upon acceptance by at least 90 %, or such lower percentage as Beechams may agree to accept." FT Saturday 8 October 1938

Table A3 – Evolution of ownership – 50% threshold

This table reports evolution of ownership. Ownership is defined as the minimum number of shareholders necessary to pass a threshold of 50% of cash flow rights, and is computed for all shareholders, for directors alone, and for outsiders. Frequency is the number of companies in which directors and outsiders pass the 50% threshold alone. Panel A refers to the complete 1900 sample, Panel B to the 1960 sample and Panel C to t-statistics of differences in means between the two samples (1960 minus 1900). Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Evolution of ownership, 50% threshold – complete1900 sample

	All shareholders		Directors		Outsiders		
	Mean	Median	Mean	Frequency	Mean	Frequency	N. Obs.
1900	7.02	2.50	3.15	33	45.43	7	40
1910	14.05	5.00	2.15	20	41.58	19	40
1920	19.81	10.00	2.38	16	47.35	20	37
1930	24.46	21.00	2.92	12	43.74	23	36
1940	36.84	16.50	3.40	10	60.95	22	32
1950	51.63	28.00	3.86	7	71.57	23	30
1960	31.67	34.00	4.80	5	43.37	19	24
1970	83.68	33.00	4.00	2	99.55	20	23
1980	87.00	29.00	2.00	1	97.85	20	22
1990	69.14	16.00	2.00	1	73.65	20	21
2000	71.75	16.50	1.50	2	79.61	18	20
mean	38.87		2.94		65.05		

Panel B: Evolution of ownership, 50% threshold – 1960 sample

	All shareholders		Directors		Outsiders		
	Mean	Median	Mean	Frequency	Mean	Frequency	N. Obs.
1960	15.85	1.00	1.28	18	0.00	0	20
1970	23.55	5.50	1.33	9	52.36	11	20
1980	23.11	8.00	1.83	6	46.62	13	20
1990	18.25	15.00	1.00	2	25.15	18	20
2000	15.35	10.00	0.00	0	20.25	20	20
Mean	19.18		1.37		32.90		

Panel C: 1960 vs. 1900 (complete sample) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	0.96	0.99	0.31	–1.06	–1.07	–0.09

Panel D: 1960 vs. 1900 (survivors alone) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	0.59	0.13	0.31	–1.51	–1.44	–0.80

Panel E: 1960 vs. 1900 (non-survivors alone) – Tests of means (t-statistics)

	1960 vs. 1900	1970 vs. 1910	1980 vs. 1920	1990 vs. 1930	2000 vs. 1940	Overall
All shareholders	0.68	0.85	0.34	–0.28	0.45	1.07

Table A4 – Dispersion of ownership – 50% threshold

This table reports the annual rates of dispersion of ownership over time. Ownership is defined as the minimum number of shareholders necessary to pass the threshold of 50% of cash flow rights. Dispersion is defined as the change in ownership over the decade. The rates of dispersion are computed for all shareholders, directors alone, and outsiders alone using the formula described in the text. Panel A refers to the 1900 sample, Panel B to the 1960 sample and Panel C reports t-statistics of differences in means across the two samples (1960 minus 1900) for the first four decades of each. Panels D and E report t-statistics of differences of the 1960 sample from the surviving and non-surviving companies in the 1900 sample, respectively. Superscript letters a, b, c indicate significance at 1, 5 and 10 percent levels, respectively.

Panel A: Annual rates of dispersion of ownership, 50% threshold – complete1900 sample

	All shareholders	Directors	Outsiders	N. Obs.
1900-1910	5.24	31.27	30.91	40
1910-1920	4.81	9.25	8.70	38
1920-1930	3.99	11.73	11.12	37
1930-1940	2.08	4.22	4.33	33
1940-1950	1.45	6.60	7.00	31
1950-1960	0.34	0.30	–0.25	25
1960-1970	3.58	5.07	8.11	23
1970-1980	–2.03	1.61	–1.03	22
1980-1990	–4.27	0.00	–6.72	22
1990-2000	1.50	0.00	0.77	20
Mean	2.19	8.79	8.19	

Panel B: Annual rates of dispersion of ownership, 50% threshold – 1960 sample

	All shareholders	Directors	Outsiders	N. Obs.
1960-1970	12.84	45.94	45.00	20
1970-1980	4.47	17.08	8.38	20
1980-1990	5.50	21.05	21.73	20
1990-2000	–0.07	0.10	6.96	20
Mean	5.70	23.63	20.66	

Panel C: 1960 vs. 1900 (full sample) – Tests of Means (t-Statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	2.42^{b}	–0.11	0.46	–0.85	1.02
Directors	1.12	0.75	0.91	0.65	1.56
Outsiders	1.06	–0.03	1.03	0.28	1.08

Panel D: 1960 vs. 1900 (survivors only) – Tests of Means (t-Statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	1.55	0.11	0.08	–1.47	0.39
Directors	1.27	0.92	0.40	0.41	1.56
Outsiders	1.21	0.22	0.50	–0.07	1.06

Panel E: 1960 vs. 1900 (non-survivors only) – Tests of Means (t-Statistics)

	First decade	Second decade	Third decade	Fourth decade	Overall
All shareholders	2.26[b]	–0.31	0.89	0.44	1.37
Directors	0.65	0.25	1.19	0.71	1.01
Outsiders	0.62	–0.27	1.29	0.59	0.72