Contractual Governance in the Absence of Law: Bylaws of Norwegian Firms in the Early 20th Century

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Abstract

We analyse a sample of 85 bylaws adopted by Norwegian corporations prior to the existence of corporate law in Norway. At that time, Norway had a free-contracting regime, granting individuals the right to freely found limited-liability companies and write their governance structures as they saw fit. All firms appoint a Board of Directors, which at the time, was more akin to a management board, but in a quarter of firms a co-existing Board of Representatives is established. Bylaws provisions display considerable heterogeneity, among others, in the extent to which firms allocate decision powers between the Board of Directors, the Board of Representatives, and the General Meeting. We find that the likelihood of delegating authority to the Board of Directors increases with the likelihood of having small owners. Furthermore, firms most likely to have dispersed ownership are more likely to mandate a Board of Representatives and allocate authority to it, at the expense of both the Board of Directors and the General Meeting.

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A fundamental issue for the governance of firms is how to allocate authority among the different corporate bodies. Clearly, the owners or shareholders will want to delegate some decision power to the board of directors or its management to avoid the cost of collective decision making, or simply because they lack the relevant information. Indeed, delegation—whether formal or informal—is commonly rationalized with costs of acquiring, processing, and communicating information (Bolton and Dewatripont (2013)).

At the same time, delegation of authority may expose shareholders to managerial opportunism. On the whole, economic theory has succeeded in identifying both costs and benefits of delegation, but it rarely provides clear-cut recommendations for whom to give the power over a specific decision. For instance, should shareholders, board of directors, or management decide on dividends? Or, should shareholders be able to initiate important corporate decisions such as mergers or merely approve them?

By contrast, corporate law tends to prescribe which constituency is given the authority over which decisions, although deviations through opt-outs or further-reaching charter provisions are permitted in some areas. There are, however, considerable differences in corporate law across jurisdictions, and national company codes frequently offer diverging answers to the same question, such as who should decide the dividends.[1]

Given that neither economic models nor legal codes deliver clear-cut guidelines, insights may be gained from examining how founders actually choose to allocate authority over corporate decisions. Since corporate law imposes severe limitations on firms' internal governance structures, the ideal environment to study contractual allocation of authority would therefore be one without corporate law.

This is precisely the setting of the present paper: It analyses how the bylaws of 85 Norwegian firms allocate authority over corporate decisions at the turn of the 20th century when no statutory corporate law or securities law existed in Norway. At the same time, Norwegian courts were well-developed in the area of contract law and recognized limited-liability corporations as legal persons. With no corporate law but contract enforcement, owners were free to choose governance structures as they saw fit (free-contracting).

[1] Unlike the US, France and Germany require shareholder votes on important routine decisions such as the distribution or reinvestment of earnings (Hansmann and Kraakman (2004)).

As we document, Norwegian owners took advantage of the contractual freedom available in the early 20th century: The bylaws display considerable heterogeneity in the rules they lay out, in the structure of governance, and in delegation of decision power to the different constituencies in the firms. Such wide cross-sectional variation within the same legal regime is uncommon in modern-day corporations, where variations in the by-laws tend to be limited to anti-takeover and directors' replacement provisions (e.g., Gompers, Ishii, and Metrick (2003) and La Porta, de Silanes, Shleifer, and Vishny (1998)).

At the time of our data, Boards of Directors (hereafter BoD) were essentially management boards. While all firms in our sample have a BoD, the General Meeting (hereafter GM) retains in a majority of firms the authority to take strategically important decisions. We consider five such decisions; purchases/sales of company assets, collateralized borrowing, dividends, equity issuance, and liquidation. In all firms, the GM controls at least one of these decisions, most frequently (90 percent) the decision to liquidate. A significant fraction of firms, however, delegate one or more of these strategic decisions to the BoD. Furthermore, a quarter of the firms install an additional third governance body, the Board of Representatives (hereafter BoR).

Since there is no ownership data available, we rely on nominal share values for a given firm size to make inferences about the ownership composition. In particular, we posit that small-denomination firms are likely to have retail investors and dispersed ownership, whereas large-denomination firms are likely to have active owners. To understand the allocation of authority, we construct authority indices and regress them on other governance provisions. The results should, however, not be given a causal interpretation as both authority allocation and other bylaw provisions are simultaneously chosen by the owners.

We first show that the probability of delegating formal authority to the BoD decreases markedly with share denomination, implying that firms which are likely to have dispersed owners are more likely to confer authority to the BoD. In the large-denomination firms, by contrast, the GM controls the majority of decisions.

We further find that small-denomination firms are much more likely to have a BoR, suggesting that BoRs emerge endogenously when coordination and collective action problems among owners become large. When a BoR exists, both the BoD and the GM have fewer

decision powers compared to firms without a BoR. Thus, BoRs seem to have a dual role: On the one hand, the BoR monitors the BoD and is involved in important strategic decisions above and beyond what (active) owners would be. On the other hand, the BoR replaces the GM as decision-maker over dividends, presumably because it is better placed to trade off the opportunity costs of dividends and the consumption needs of (small) investors.

Last, we examine the use of voting restrictions and find support for the minority shareholder hypothesis. Firms which are more likely to have small investors impose more restrictive voting caps. However, we also find that more than half of the largest-denomination firms cap voting. Thus, voting restrictions do not only serve to protect minority shareholders but also seem to play a role in firms with active owners.

Our paper is related to several strands of the literatures. A central issue, in light of the restrictions imposed by law, is how to achieve a credible delegation of authority to an agent. The literature identifies different mechanisms that circumvent the inability of parties to contract privately. The agent may trust the principal to relinquish authority because of reputation concerns (Baker, Gibbons, and Murphy (1999)); the principal may ensure he is less well informed than the agent or an agent whose preferences are congruent with his own (Aghion and Tirole (1997)). Also, the principal can make it less profitable to interfere, as in Burkart, Gromb, and Panunzi (1997), where the large shareholder commits not to overrule management by limiting the size of his equity stake. In such cases, although formal authority rests with the owners, they are unlikely to exercise it, conferring the real authority to the agent. In contrast, in our setting authority can be contractually allocated in a credible way due to the absence of law.

Numerous papers study the importance of statutory law for the practice of "good" corporate governance. Most notably, La Porta et al. (1998, 1998, 2000) argue that legal shareholder protection plays a central role in the development of financial markets and the evolution of dispersed ownership. Several papers use historical data from time periods similar to ours to dispute with this view, among others Coffee (2000), Cheffins (2006), Musacchio (2008), and Franks, Mayer, and Rossi (2009). While the bylaws of our sample firms also contain provisions that appear to protect minority shareholders, our focus is on how the ownership composition and other governance characteristics are related to the delegation of authority over important

decisions.

Our paper is also related to literature on governance role of boards. As point out in the survey by Adams, Hermalin, and Weisbach (2010), board structure and, more generally, governance structures, arise endogenously in response to the agency problems among different constituencies. This applies especially to our setting. Indeed, the aim of the paper is uncover and rationalize correlations between governance characteristics, as chosen from a range of possible alternatives.

Section 1 gives a brief account of the contemporary legal environment in Norway. Section 2 describes the data and collection procedure, and Section 3 provides a summary of the bylaws provisions. Sections 4–8 contains the empirical analysis. We first, in Section 4, discuss the governance structure and constructs authority indices. In Section 5, we analyse the delegation of authority to the BoD and identify the key provisions that are correlated with delegation. Those provisions are examined in details in Sections 6–8 which contains analysis of Share Denomination, the presence of a BoRs, and voting caps, respectively. The conclusions are in Section 9.

1 Legal and judicial situation in Norway prior to 1911

Prior to the 20th century, corporations, partnerships, and other similar business forms in Norway and Denmark could be created freely without regard to codified regulations or law. The companies were recognized by the judicial system as legal persons without government concession or charter. Originally, government concessions were deemed necessary only when a company asked for special (e.g., monopoly) privileges. This legal convention was carried over to limited liability companies when they started to emerge in numbers during the economic boom years of the 1840s (Villars-Dahl (1984); Dübeck (1991)).

Although prior to 1911 there was no statutory law which regulated the corporate form of business in Norway, a variety of legal precedents and standards existed that guided lawyers and judges through corporate legal disputes. This body of "unwritten" corporate law started with legal norms established through centuries of dispute—resolution, primarily in the areas of property rights and contract law. At their roots, these norms were probably influenced both by

Old Norse property rights traditions and the medieval Law Merchant (Lex Mercatoria) that prevailed in Hanseatic cities. Further guidance was provided by basic legal principles that evolved within the legal community, by and among the lawyers and judges who were engaged in private law during this period. Hallager (1879), for instance, produced a large and detailed volume detailing the basic legal principles behind the rights of parties in contractual disputes, in particular, disputes involving creditors and debtors.

Finally, legal precedents set in court contributed to the body of unwritten corporate law prior to 1911. While past court decisions in Norway did not take on the central role of creating common law as in the Anglo-Saxon countries, they were a valid input to current disputes, and could—in the absence of relevant written law—be used together with norms and principles to inform judicial decisions. Beyond the legal precedents and standards that prevailed at the end of the 19th century, Norwegian corporations were subject to one set of statutory regulations, so-called "registration laws". The precedent for registering businesses dates back to a 1681 Danish law that required judicial registration to make contracts legally binding vis-a-vis third parties. The law required all commercial entities, regardless of organizational form, to register their business into a legal court record and to disclose this registration to the public.

In 1874 the first business registration law ("Law of Firm Registry") was enacted in Norway, only to be replaced with a more extensive law in 1890 ("Law of Trade Registry, Firms, and Procura"). The 1890 law required a business to make a one-time disclosure that included the firm's the founding date, a brief description of the business, the county in which the company was headquartered, the amount of equity capital in the company, how the capital was divided among the owners, whether shares were registered or bearer shares, and whether issued shares were paid in full. The disclosure was also supposed to indicate whether the firm would make periodic disclosures, and if so, in which newspapers, and include the founding company manager's full name and address, and who holds the power of attorney (procura). Finally, the disclosure required that the company's by-laws or articles be submitted as an attachment, along with proof of identification of the founding managers (Beichmann (1890)). Disclosures were to be published in a timely fashion in an official government periodical, "Norwegian Journal of Announcements."

In sum, one can make several observations about the legal environment in Norway as

of 1900. First, there was no statutory corporate law in place. That is, no legislation had been enacted to regulate how a limited-liability, commercial entity should be organized; how it should be capitalized and managed, or how shareholders should be granted control rights over its assets. In virtually every peer country at the time, including Sweden, the U.K., the countries across the European continent, and the states of America, laws were in place to regulate and restrict the business form known as "corporation."

Second, Norwegian courts were well-developed in the area of contract law, and the central legal principles of limited liability and entity shielding had been recognized by the courts since the 1860s.[2] With no corporate law but contract enforcement by the courts, early 20th-century Norwegian corporations were operating, as one contemporary legal scholar put it, in a "free-contracting" environment (Platou (1906)).

2 Data collection

We draw on the first volume of Carl Kierulf's Handbook of Norwegian Bonds and Stocks (*Haandbog over Norske Obligationer og Aktier*) from 1900 and archives from Norwegian company registration service, *Brønnøysundregistrene*, to collect information from the by-laws of publicly traded Norwegian companies. The first volume of the Handbook, which was published in regular intervals for the next 100 years, includes the by-laws as well as accounting and market information about 145 companies, although the accounting information is not available for all firms. According to Kierulf, these companies regularly appeared on the price lists circulated by Oslo brokers, and thus were considered to be the most liquid. The shares of industrial corporations were traded over-the-counter and not listed on the official Oslo Stock Exchange.[3] The "broker's list" was published in business magazines and considered to be the definitive list of tradeable industrial companies.

We exclude banks, insurance companies, railroads, and shipping firms which leaves us with 64 industrial companies in the Handbook. In addition, we are able to augment Kierulf's initial

[2]The law stated that "anyone is bound to fulfill" contracts "promised and agreed to" by "mouth, hand and seal". This code applied to all "voluntary" contracts whether regarding "purchases, sales, gifts, exchange of property, liens, loans, rents, obligations, promises, and other that can be mentioned by name, which does not go against the law or decency", and dates back to the Law of King Christian the 5th from 1687. It is still part of today's Norwegian Laws.

[3]The first industrial firm was listed on the exchange in 1909, at the end of our sample.

1900 list with by-laws from 21 more industrial firms, that appeared in later volumes of the Kierulf Handbooks, found in the historical archives of the Brønnøysund registry. Our final sample therefore consists of 85 industrial firms and corresponding sets of by-laws. We use the by-laws that were in effect in the year 1900. While the frequency with which firms altered their by-laws seems to differ considerably, 62 percent of the by-laws were adopted in the period 1895-1900. One firm was incorporated in 1905 and we use the by-laws from that year. For two other firms we have by-laws from 1907 and 1908, and we use those in place of the 1900-by-laws.

For our sample companies we map all pertinent information from the firms' by-laws into a codable set of categorical and indicator variables, described in Section 3. For each of the 85 firms, we also collect accounting and financial information where available from additions of the Handbook through 1911. The typical Kierulf record contains rudimentary financial information, including year-end dividend payments and January stock prices dating back three to five years, as well information on the book value of the shares, the number of shares outstanding, and year-end earnings figures. Several of the records also contain detailed balance sheets and income statements. Because the firms were neither listed on a stock exchange nor required to disclose ownership information, we can—unfortunately—not observe the exact ownership structures. As we discuss below, other information allows us, however, to deduce information about the ownership structure indirectly. The bulk of information available is from 1900 and onwards, though a few instances have information dating back to 1896. The Appendix Section A.2 provides some basic facts about the sample firms.

3 The bylaws

The free-contracting environment in Norway in 1900 allowed for wide differences in the specification of the bylaws, although the basic format in our sample is fairly standard across firms: All bylaws are composed of a series of numbered paragraphs that start by defining the firm as a limited liability company, stating the value of paid-in equity capital, and the nominal size of the shares.[4]

The bylaws then typically go on to describe the rules for transferring shares and for new

[4]This basic information was required by the 1890 Firm Registration Law.

share issues, and specify how authority and decision-making should be allocated among the different members of the firm, that is, whether the firm has a Board of Directors, whether directors must be shareholders, whether a superintendent shall be hired, and whether a Board of Representatives should be elected. The bylaws also outline, in more or less detail, the size and the duties of these boards, that minutes are to be kept at board meetings, and may also prescribe who appoints superintendents and members to the board(s), and sometimes also specify salaries of board members and superintendents, or specify who determines those salaries, and whether they receive a bonus (tantiéme). Further, the bylaws may state that an auditor should be hired and by whom.

The ordinary general meeting is typically described carefully, including rules for announcing, conducting, and voting at the meeting, whether voting rights are restricted, and voting quorums for particular decisions. The ability of shareholders to call extraordinary meetings and the correct procedures for doing so are also typically described, and how shareholders may put issues on the agenda ahead of the ordinary general meeting. In addition, the bylaws specify the release of information such as the disclosure of pertinent financial information to investors and disclosed to investors in a timely fashion prior to the annual meeting.

While the bylaws are quite homogeneous in structure, there is ample heterogeneity in the details of the provisions contracts, notably with respect to the rights assigned to owners and shareholders. Importantly, not all bylaws describe all the above-mentioned aspects of governance, but may be silent on, e.g., who decides to purchase of substantial assets, whether shareholders may call extraordinary meetings, or on who hires and determines the compensation of board members and superintendents.

We know of few other studies that have collected and statistically examined individual provisions of company bylaws. Hilt (2008) collects charters from 126 New York State-incorporated firms from around 1825, relating firms' voting schemes to their ownership structure. His sample is mainly comprised of financial institutions, and the company bylaws appear to be quite rudimentary compared to the bylaws in our sample, containing mainly provisions for board size, whether dividend is mandatory, and whether annual financial statements are provided to shareholders. The relative simplicity of the bylaws may be an artifact of the early date of his

sample. [5] Guinnane, Harris, and Lamoreaux (2014) collect bylaws of unlisted British firms incorporated in 1892, 1912, and 1927 and study the protection offered to minority shareholders by the individual provisions in the bylaws. Their sample for 1892, the date most similar to that of the bylaws in our sample, comprises 46 firms. Graduated voting rules are common in their sample too, but, similar to us, they point out that the effect of elections depend on the operation of other rules. They find that several of the bylaw provisions empower directors, discussing provisions that effectively entrench directors, for example by allowing the BoD to block the transfer of shares, to exempt administrative directors from a director-rotation principle, and have fellow directors determine his salary. Many of the provisions they mention do not occur in our sample, but other aspects of our bylaws could work to empower directors, for example, only 10 percent of our firms prohibit related party transactions involving directors. Because our focus is not on minority shareholder protection, we stop short of a closer comparison of the provisions discussed in Guinnane et al. (2014) with ours.

4 Delegation of authority

4.1 Authority over assets and dividends

The governance structures of all sample firms always comprise a BoD and a GM, and in about a quarter of the firms also a so-called BoR, i.e. a two-tiered board structure. The bylaws mention a plethora of details regarding the types of authority allocated to these three bodies, ranging from the delegation of strategic decisions to operational decisions. Besides the BoD, the BoR and the GM, 88 percent of the bylaws mention the existence of a superintendent to whom some degree of daily management is delegated. The superintendent, though, is never delegated formal authority over the strategic decisions we consider in this section. The bylaws give the impression that the superintendent works directly under the BoD, and usually it is explicitly stated that the superintendent reports to the BoD.

We start by considering authority allocation over strategic aspects of the firm's business.

[5] Hilt (2008) reports about the handful of manufacturing firms in his data that they had "[...] essentially no small investors and did not bother with the requirements of producing accounting statements or mandatory dividend payments, or with graduated voting rights schemes." This is in stark contrast to the industrial firms in our sample, of which only two firms do not explicitly mention that financial accounts are produced at least once annually, and 56 firms explicitly mention that the account be made available to shareholder prior to the annual meeting. Also, as discussed in Section 8, graduated voting rights are very common among our firms.

(1) Acquisition and sales of firm's assets, (2) Borrowing against firm's assets, (3) New equity issuance, (4) Liquidation of the firm We think of these decisions as being strategic in nature because they concern the scope and scale of a firm's activities. In addition, we consider (5) Distribution of dividends. For brevity, we refer to decisions (1) through (4) as "asset-related decisions," keeping them separate from the dividend decisions for reasons discussed below.

Authority over asset-related decisions is specified in different ways in the bylaws. Many bylaws detail which decision is allocated to which body. For example, the bylaws of "Union", a fabricator of mineral water, specify (§10): The BoD meets at least once every two weeks. Negotiations and decisions must be protocolled. The Bod must: 1) carry out the necessary investigations and suggest building sites, determine the building plan, choose the master builder, and must carry these plans as determined together with the BoR; 2) decide and carry out everything deemed necessary for the management of the business, apply the company's credit to raise additional working capital, if such is needed, decide the price of the products, and in general manage the company and its operations (...)"

Several bylaws, however, employ what we term a "general" authority delegation-statement, where decisional power in general is conferred to a particular governance body with the exception of those decisions explicitly assigned to another body (29 firms). One example is Christiania Handle and Lock Factory: "The board of directors holds any authority that is not reserved to the general assembly." Importantly, in 8 of such general authority conferments, the receiver is the GM or the BoR, as opposed to the BoD.

To record delegation of authority over assets and dividends, we construct four indices that quantify the degree of authority delegation to each of the governance bodies. For each body, the indices record the number of decisions that are given to it exclusively, that is, the indices do not count decisions that are shared between bodies.

The first index, the asset authority index, records how many of the asset-related decisions are assigned to a body. The index records a value of one for each of four above decisions that are delegated to the BoD, and thus attains values between zero and four. If a company's bylaws do not specifically allocate authority over an asset-related decision, but contains a general delegation-statement to, e.g., the BoD, we record that decision as assigned to the BoD.

The second index records authority over distribution of dividends and takes the values zero and one. We code authority over dividends in a separate index because the dividend policy irrelevance result of Modigliani-Miller is unlikely to hold in financial markets pre-dating world war II, where high transaction costs and illiquidity of equity markets would have prevented shareholders from recreating desired cash flow by trading (see, e.g., and Baskin (1988), Michie (2000), and Cheffins (2006)). Hence, in our sample, dividend policies may have been partly determined by shareholders' consumption needs.

The third and fourth indices, record decisions that are shared between the BoD and another body (either the BoR or the GM), respectively over asset-related and dividend decisions. Each shared decision increases the index by one, so the asset related index attains values between zero and four, while the dividend index takes the value of zero or one.

Figure 1 depicts the asset authority index of each governance body. Overall, authority over assets is mostly allocated to the GM. It is never the case that the GM does not have authority over any asset decision, but about a quarter of the firms allocate one or more decisions to the BoD. No firm allocates all asset decisions to the BoD, but four firms allocate three of the asset decisions to the BoD. When a BoR exists, about 10 percent of firms allocate one or more decisions to it. It is also interesting to consider the extent to which the BoD shares asset decisions with either the GM or the BoR. This does not occur frequently, in 90 percent of the firms, authority over assets is not shared. Three firms, though, shares 1, 2, or 3 decisions, suggesting that in a few firms, decision rights are mainly shared.

Figure 2 depicts authority over the dividend which is most frequently, in almost 60 percent of firms, given to the GM, in about 20 percent of the firms to the BoR, and in only 10 percent of firms to the BoD. The BoD almost never shares authority over dividends with another body, except in 3 firms. Only one of these firms, also assign shared authority over asset decisions, reflecting the wide heterogeneity in the data.

Figure 3 shows the distribution of authority on the different types of decisions for each governance body. The BoD is virtually never (except in one case) assigned control over liquidation, whereas it controls remaining decisions in about equal proportion, in about 10-15 percent of the firms. The GM, in contrast, most frequently holds authority over the decision to liquidate the firm, in 89 percent of firms. Dividends is the second most important decision

for the GM (60 percent of firms), and the decisions concerning acquisitions and sales of assets, borrowing and issuance of equity are approximately equally frequent (40-50 percent of firms). When a BoR exists, it typically decides on dividends (19 percent of firms), and then on purhcases/sales and borrowing (almost 10 percent of firms). Only one firm assigns issuance of equity to the BoR, and it never decides on liquidation. Shared decisions between the BoD and either the BoR or the GM, most frequently occurs concerning acquisitions and sales, and borrowing (approximately 6 percent of firms), mirroring that these decisions are also amongst those most frequently exclusively distributed to the BoD. Notice that the frequencies do not add up to 100 percent, that is, is it not uncommon that a firm leaves authority over one or more decisions unspecified in the bylaws, except in the case of dividends where only one firms leaves authority over the dividend decision unspecified (six firms pay dividends according to rules pre-set in the charter). Summing up, the most important decisions for the GM is liquidation and issuance of equity, for the BoD acquisitions/sales, borrowing, and dividends, and for the BoR, dividends.

4.2 Authority over daily operations

Compared to today, the Board of Directors in early corporations had the character of a management board, see e.g. Hilt (2008). Whereas a the main task of a modern board of directors is to supervise the company's officers, who in turn run the firm, the board of directors in early 20th century Norwegian firms was closely involved with the daily operations of the firm, that is, the directors were essentially running the firm.

This is apparent from an inspection of companies' bylaws which have several way of allocating operational authority to the BoD. Some bylaws specifically detail each task assigned to the board of directors. For example, the bylaws of La Compania de Maderas, importer of processed wood from Spain, states "The board of directors hires and fires the superintendents in the Spanish branches and other required clerks, determines their salaries and assigns the necessary powers of attorney. The board itself carries out purchases and sales of timber, and what is otherwise required for the operations of the firm, carries out in all instances the interests of the company in accordance with its laws." The four type of decisions commonly mentioned are pricing of the firm's product(s), purchase of materials, i.e., inventory manage-

ment, responsibility for the contractual arrangements of transactions with counter parties, and the authority to borrow short term.

Other bylaws contain formulations of the form "the BoD must decide and carry out everything necessary to serve the interests of the firm" as it gives the BoD a general mandate to take actions and make decision of an operational nature. We will refer to such statements as "necessary-statements"[6] For example, in the case of Foss Brewery, a beer producing firm, the bylaws state that "[the board of directors] must decide and carry out everything that is deemed necessary to serve the interests of the company, to use the brewery's credit to procure further working capital, if such is needed, and overall, to supervise the operation of the business, including the hiring of bookkeeper, treasurer, and office clerks."

Finally, authority over operations may be assigned to the BoD though a general statement of authority of the form "The board of directors holds any authority that is not reserved to the general assembly," (Christiania Handle and Lock Factory).

The BoD typically comprises three to five members (85% of the firms) with a tenure of two to three years (almost 95% of the firms). BoD are usually staggered. Often the bylaws regulate some aspects of the BoD's activities. In particular, the bylaws typically require boards to meet monthly (25% of the firms), bi-weekly (25% of the firms) or weekly (45% of the firms). Also in 70% of the firms the bylaws mandate that the BoD keeps minutes of the meetings.

Figure 4 plots the frequency with which operational authority of the BoD is authorized through the specification of specific tasks, through "necessary"-statements, or "general authority"-statements respectively. As can be seen, the Board of Directors is most frequently allocated authority in the form of necessary and general statements, (35 and 25 percent of firms), and among the specific tasks, working capital management is the most frequently mentioned (21 percent of firms), then price setting (16 percent), and, finally, contracting and inventory management (13 percent each).

A priori, one would expect that decisions over assets, which are of a more strategic nature, would be a "stronger" delegation of authority, compared to decisions related to the daily

[6]In the bylaws, such *necessary tasks*-statements occur in paragraphs alongside examples of management tasks delegated to the board that are of a operational nature. Consequently, we do not consider necessary tasks-statements equivalent to a general delegation of authority, but instead we record it as a delegation of authority in matters of daily operations.

operations of the firm. Therefore, we examine whether delegation of operational decisions is a necessary condition for the delegation of authority over assets, i.e., a firm that delegates asset authority to the BoD, should also delegate authority over daily operations to it. Table 1 confirms this conjecture. Only one firm delegate asset decisions to the directors without giving them authority over daily decisions.[7]

5 Analysis of authority allocation over assets and dividends

We start by identifying fundamental relations between the observed heterogeneity in the delegation of decisions over assets and key bylaw provisions. We take an agnostic approach, in the sense that we do not impose prior conjectures on the empirical specification, but simply regress the delegation of asset authority on all the key variables listed in the variable appendix. In the reported tables, we display only the significant variables. The bylaws of a firm are written by its owners, which makes authority delegation and all the other bylaws' provisions endogenously determined. Alternatively, one can imagine situations without negotiation over the contents of the bylaws, e.g. where a small group of founders invite subscriptions to an equity issue and the bylaws are taken as given by outside investors, who then self-select whether to invest in the firm. Our estimates are, therefore, not to be interpreted as causal effects, but reduced form relations between key characteristics of firms that delegate versus those that do not.

The delegation indices increase incrementally by one for every decision delegated to the board of directors, hence we estimate relations between delegation and bylaw provisions using an ordered logit specification. With the indices assuming values from zero to J, we estimate the specification

$$ln\left(\frac{Pr(y \leq m|\mathrm{x})}{Pr(y > m|\mathrm{x})}\right) = \tau_m - \beta'\mathrm{x}_i - \delta'\mathrm{z}_i, m = 1, ..., J-1\,. \tag{1}$$

In (1), the left hand side is the log of the odds that the outcome of delegation is less than or equal to m versus greater than m, τ_m is the cutpoint between values $m-1$ and m, x_i contains the bylaw provisions of interest. z_i is a vector of control variables. All variables are

[7]The firm is Franklin, Baker and Co., a saw mill, which delegates the daily operational authority to the superintendent by the name of James Franklin.

defined in the variable appendix.

In all regressions, we include three control variables: the log of firm size, firm age in the year 1900, and the industry ratio of fixed-to-total assets. We think of this set of variables as semi-exogenous due to the fact that they are partly determined by aspects unrelated to the preferences of the firms' owners, such as technical dimensions of production. The limited size of our sample necessitates that we restrict the number of covariates in the regressions.[8]

Everything else equal, we expect larger firms to delegate more authority to the board of directors. Larger firms may have more owners, which increases the cost of collective decision-making, or larger firms may be more complex and the fixed costs of information acquisition and processing may be larger. Furthermore, we usually want to control for firm size in order to interpret the relation of particular bylaw provision to authority delegation. For example, it is necessary to hold hold firm size fixed to interpret the meaning of a positive relation between the a share's nominal value and delegation (see below). Firm size is measured by the book value of equity due to incomplete data on firm-level total assets. During the sample years, we have one or more observations on total assets for 44 of the firms, and the correlation coefficient between total assets and nominal equity is 0.89.

We further include firm age and the fixed asset ratio in the regressions in order to control for technological aspects of production that may impact the optimal delegation of authority. With respect to firm age, measured relative to the year of incorporation, we expect older firms to rely on more established and standardized production technologies whereas younger firms use newer, less tested technologies (everything else equal). In our sample, for example, telecommunications and the fabrication of sulfite cellulose relies on relatively new technologies, and firms has average ages of 8.3 and 11.4 respectively, compared to the technologies employed in mechanical (iron) workshops, that has an average age of 41.7 years. Younger firms will delegate more if newer technologies involves a need to give managers more discretion to better adapt production. The fixed asset ratio is computed at the industry-level due to incomplete firm-level data, and picks up industry-specific aspects of production. Production processes that require more tangible assets leave management with less discretion over corporate resources

[8]In preliminary investigations, we also included variables measuring the geographical location of firms, e.g. distance from Oslo, but since these variables were far from significant, we omit them from the regressions to preserve on the degrees of freedom.

and are less susceptible to managerial opportunism. Firms with high fixed costs, therefore, may choose to delegate more. Alternatively, if capital adjustments are larger in industries with higher fixed asset ratios, expansions require a larger outlay by incumbent owners wanting to avoid dilution. Owners may therefore wish to control decisions concerning the assets of the firm.

Figure 5 relates the degree of delegation to firm size. It shows, importantly, that delegation occurs in firms of varying size, although the overall relationship appears to be positive, as expected.

5.1 Determinants of directors' control over assets and dividends

We start by estimating univariate versions of (1) without control variables Z_i, letting X_i equal each of the key variable listed in the variable appendix in turn. Four variables have an independent and direct effect on delegation (at the 20 percent level or less). Three bylaw provisions: the denomination of the firm's ordinary stocks (stock size), the presence of a Board of Representatives (present in 26 percent of the firms), and the provision that a shareholder cannot exempt himself from election to the BoD, save for the number of years that have already served in that capacity (37 percent of firms). In addition, the variable Liquidity, which is measured as the fraction of the years that a firm January stock price is listed in Kierulf's Handbook, and proxies for the extent to which the firm's shares are being traded.

In Table 2, we show results from the full multivariate model (1) with these four variables. Except for Nonexemption from Election, the variables are highly significant and contain independent information, cf. column (5). They, therefore, capture different aspects of authority allocation. Given the small number of observations in our regressions, a wider margin of statistical uncertainty must be allowed for and we interpret a significance level of 10 and even 15 percent as indicative of a statistical relationship. The table provides a first impression of the determinants of authority allocation, and following a brief discussion, we proceed with more in-dept analysis of each variable in turn.

Considering first columns (1)-(5), Share Denomination is negatively related to delegation. This variable tell us what it cost to buy a stake in the firm. A notable feature of our sample is a wide variation in denominations of ordinary shares, ranging from 100 to 10,000 kr. As we

argue below, holding firm size constant, share denomination provides information about the ownership structure of the firms, because a large-denomination firm is unlikely to have retail investors and vice versa. The negative sign is therefore consistent with the hypothesis that firms more likely to have small shareholders, delegate less. The coefficient estimate of –0.74 implies that a one standard deviation increase in denomination around its mean makes a firm 19.7 percent less likely not to delegate any decisions to the BoD.

The presence of a BoR is negatively related to delegation, suggesting that in firms with a two-tiered board structure, decision-making authority is less likely to be with the BoD. Notice that it does not follow automatically that the authority instead rests with the BoR. It is perfectly possible that firms with a BoR may assign authority to the GM and the role of the BoR is to coordinate decision-making in the GM without having any decision-making authority of its own. The coefficient estimate of –1.56 implies that firms with a BoR are 20 percent more likely not to delegate any decisions to the BoD compared to firms without a BoR (holding other variables at their means), which is a large economic effect.

The variable Nonexemption from Election is borderline significant at 15 percent. This bylaw provision is remarkable and exists in about a third of the firms. At this point in our work, we do not have a well-developed sense of its particular function, but it is always negatively associated with the delegation of asset-related decisions.

For stock liquidity, the negative relation with delegation is a somewhat surprising result, given that liquidity provides dissatisfied owners with the opportunity of selling the stock, avoiding costly intervention in governance.[9] Delegation is therefore less costly for liquid stocks. It is possible that, at the time of our sample, liquidity was generally too low for this mechanism to work. It is also possible that the measure is not actually picking up liquidity, but regressions (not shown) reveal that liquidity is strongly positively correlated with firm size and and indicators for firms more likely to have small owners, both of which are consistent with higher volumes of trade. The coefficient estimates of –1.94 implies that a one standard deviation increase in liquidity around its mean makes a firm 8.7 percent less likely not to delegate any decisions to the BoD.

Importantly, we also want to note that a dummy variable for the existence of a superinten-

[9]See, e.g., Bhide (1993), Maug (1998), and Norli, Ostergaard, and Schindele (2014).

dent (which exists in 88 percent of the firms), has a coefficient value close to zero, 0.14, and a p-value of 0.9, that is, it is statistically indistinguishable from zero. In other words, in firms where a superintendent is added to the hierarchy of governance, it is without consequence for delegation of authority to the management board.[10]

Turning to the control variables, firm size is always positively related to delegation but only significant in model (5) where other effects are also controlled for. Firm age has the expected sign, but is generally insignificant. The fixed asset ratio borders on significance in some specifications, and is negatively related to delegation. Despite their insignificance, the controls helps improve the precision of other coefficient estimates and we include them throughout.[11] We also note that the control variables appear quite robust across the columns of the table and do not change sign when other variables are included in the regressions.

Only 10 percent of firms allocate the dividend decision to the BoD. Columns (6)-(10) shows that of the four variables, only share denomination has explanatory power for the delegation of the dividend decisions to the board of directors, suggesting that firms more likely to have small shareholders, are less likely to delegate the dividend decision to the BoD (other key variables, not displayed in the table, are also insignificant).

6 Share denomination

Figure 7 depicts the distribution of the nominal values of a single ordinary share of all firms. As mentioned above, share denominations vary considerably. Most firms (76 percent) have nominal share values which are smaller or equal to 1,000 Norwegian kroner. At the same time, nominal values of several thousand kroner are frequent, and the shares of one firm even has a nominal value of 10,000 kroner. In comparison, the monthly salary of a well-paid civil servant at the turn of the century was about 2,000 kroner. Thus, investing in firms whose shares are

[10] Although there are clear differences in the average degree of delegation across industries, there is also considerable variation in delegation within industries. The small sample size prevents us from conducting our analyses with industry fixed effects included everywhere, but we included industry dummies in the above regressions and the results indicate that industry-effects are unlikely to be driving our results. Although the variables are estimated with less precision, they retain their signs and are robust to the inclusion of industry effects.

[11] The reader may question the validity of the fixed asset ratio, given it is based on only the subsample of firms for which we have accounting information, but regressions (not shown) documents that regressions with a firm-level measure of fixed assets is very similar to that in Table 2. The latter, however, reduces the regression to only 57 observations, and we therefore prefer to use the industry-level measure in our regressions.

on the right hand side of the distribution must have been prohibitively costly for small retail investors.

We therefore argue that holding firm size constant, share denominations allow us to make inferences about the firms' ownership composition. In particular, large denomination shares are bound to be purchased and held by relatively wealthy investors. Furthermore, for a given firm size, large-denomination shares give investor a larger stake in the firm. This suggests that large-denomination firms have active owners, e.g., successful business men or families, but few, if any, retail investors. The reverse conclusion is, however, less compelling: Firms with small-denomination shares may not solely be owned by small, dispersed investors since some rich investor(s) may have accumulated a large stake.[12]

In support of the conjecture that investors in large-denomination firms are active owners, we find that these firms delegate less to the BoD (Table 2). To further investigate the effect of share denomination on delegation, we classify the firms according to their share denomination: We refer to firms whose share denomination is equal to or above the 70th percentile of the distribution, which is 1,000 kroner, as large denomination firms. Likewise, firms with a nominal share value below or equal to the 30th percentile of the distribution, which is 100 kroner, are small-denomination firms. Since there are many tied observations, there are 36 firms in the large denomination group and 40 firms in the small denomination group, and both groups are somewhat larger than the top, respectively, the bottom 30% of the sample.

As Table 3 shows, the impact of denomination on the delegation of asset decisions is symmetric. Large-denomination firms delegate less to the BoD, and small-denomination firms delegate more asset decisions to the BoD. The marginal effects are considerable, with 20 percent in both tails. Interestingly, there is no such relation for the dividend decision. In either tail of the share denomination distribution there are firms which delegate and other which do not

[12]We use the nominal share value as a proxy for the cost of acquiring a stake in the firm at the time of incorporation. In come cases, the bylaws in year 1900 post-date the year of incorporation, in which case a better proxy may be the market value of a share. Not all shares are traded, however, and for 90% of our sample, the year of incorporation is within ten years of year 1900,rendering the nominal value a reasonable proxy. In the cases where a firm has existed for many years prior to 1900 and has kept the initial nominal share value, what was once a relatively small denomination may no longer be "small" in year 1900, taking into account inflation. This would potentially interfere with our distinction between large and small denomination firms. However, we do not believe that this is a serious concern or limitation because there was little inflation in Norway around the turn of the century. The historical consumer price index, published by the Norwegian Central Bank, is at 55.96 in 1890 and at 54.85 in 1910, with a maximum of 63.11 during that 20 year period in 1897.

do so.[13]

7 The Board of Representatives

In this section we explore the role of the board of representatives (BoR) which exists in 25 percent of the sample (22 firms). Members of the BoR are elected by the GM, typically for a two-year term. Like the board of directors (BoD), BoRs are usually staggered. BoR members elect the chairman and vice chairman. Often the bylaws demand a minimum number of annual meetings, typically two or four, and additional meetings when deemed "necessary" by the chairman or when "requested by the BoD".The bylaws are mostly silent on remuneration for representatives, in contrast to directors' remuneration, which suggests that BoR members are not paid for their services.

The directives for the BoR vary substantially across firms. For some firms the bylaws provide detailed instructions, as for instance those of the Christiania Joint Stock Beer Brewery.[14] Other bylaws, e.g., those of the Christiania Swine Slaughterhouse, are kept more general[15], and yet others are very brief, e.g., those of the Christiania News and Advertisement Periodical.[16] The bylaws also differ considerably in the extent to which responsibilities and powers are bestowed upon the BoR. In 16 out of 22 firms with a BoR, the BoR elects the BoD. In the remaining firms, directors are chosen by the BoR, whose members are in turn elected by the GM. Furthermore, 75 percent of the BoR decide the salary of the directors, which corresponds

[13]The results remain similar if we use number of shares instead of share denomination in the regressions.

[14]The bylaws of the Christiana Brewery state (§20): "It is the responsibility of the BoR to a) elect directors and determine their salary, cf. §11, b) approbate the BoD's election of the officers mentioned in §16 and together with the BoD determine their salary, c) take a decision in questionable cases presented [to it] by the BoD, d) quarterly to make itself informed about the exact operation and situation of the brewery, e) several times a year and at random times and without warning, conduct examinations of the firm's books and cash holdings, f) together with BoD take decisions regarding acquisitions of land, building plans and builder, acquisitions of fixed assets and the brewery's assumption of collateralized debt, g) hire an auditor of the brewery's books and accounts and decide his salary, to accredit the accounts, i) annually present the GM with a complete summary of the brewery's business, k) together with BoD decide how much of the year's surplus should be paid out as dividend."

[15]§11 of Christiania Swine Slaughterhouse bylaws states that "The BoR must take a decision in cases presented to it by the BoD, take a decision about the distribution of the year's surplus, take a decision to convene the ordinary and extraordinary general meetings, the latter also when requested by the BoD or by shareholders representing a fifth of the equity capital, to take a decision about any disposition that involves the use of the company's reserve fund, arrange for auditing of the company's accounts by a paid auditor, whom it hires, to accredit vulnerable [sensitive] items."

[16]§6 of Christiania News bylaws merely demands that "The BoR takes a decision on the use of the surplus from operations. Its opinion should be obtained by the BoD in important cases."

to 20 percent of all firms. In about 40 percent of all firms director salaries are decided by the GM, and in the remaining firms they are set in the bylaws. In firms with a BoR, the GM is never involved in setting director salaries. The BoR also typically hires the auditor (85 percent of firms with an BoR), determines the auditor's salary, and ratifies the company's financial statements, a function performed by the GM in firms without a BoR. Several bylaws require the BoR to make random and unannounced inspections of company books and cash holdings.

Thus, the BoR appears to have several functions: It advises the BoD, brings the owners' opinions and interests to the attention of the BoD, and collects information by, e.g., conducting unexpected reviews of the company books and hiring auditors. Several provisions give the BoR direct leverage over directors, for example, by putting it in charge of directors' compensation. In addition, bylaws also assign to the BoR formal authority over important decisions, either sole or joint with the BoD.

We begin our analysis of the allocation of authority to the BoR by trying to uncover firm characteristics that are associated with the presence of a BoR. To this end, we run logit regressions of having a BoR on key firm variables. Table 4 presents the results for the (two) variables with significant explanatory power. The presence of a BoR is negatively related to share denomination, holding firm size fixed. This suggests that BoRs are most common in firms which are likely to have dispersed and small owners.[17] The marginal effect of share denomination is large: One standard deviation increase from the mean raises the likelihood of a BoR by 35 percentage points.Interestingly, also firms where owners cannot exempt themselves from serving as directors are more likely to have a BoR.

As regards the impact of share denomination, it is noteworthy that no large-denomination firm has a BoR. By contrast, there is a BoR in nearly half of the small-denomination firms, and these firms have significantly more shares outstanding and are larger than small-denomination firms without a BoR, as t-tests of the differences in the means reveal (Table 5).

These results suggest that BoRs emerge when coordination and collective action problems among owners become large. That is, firms with numerous and small owners seem to install a BoR to address free-riding problems in monitoring the BoD or to mediate conflicting interests among owners that impede decision-making by the GM.

[17]The results are similar when we use number of shares instead of share denomination in the regressions.

Turning to the decision power of BoRs, we already know from Table 2 that in firms with a BoR authority over asset-related decisions are less likely to be given to the BoD. This indicates that BoRs are not only meant to be remedy against collective action problems but also perform additional functions that are otherwise not given to the GM. Hence, it is of interest to learn whether the decision powers "taken from" the BoD are placed with the BoR, the GM, or shared between bodies.

We estimate how the likelihood of allocating decisions to the BoD and the GM differs between firms with and without a BoR. Table 6 shows the marginal effects at the means estimated from ordered logit regressions of the asset decision indices on a dummy for BoR and control variables. The left-hand panel shows that in firms with BoRs the BoD is 20 percent less likely to have authority over one, two, or three asset decisions (and correspondingly 20 percent more likely to no authority over any decisions). In other words, the BoD has less formal authority in firms with a BoR. In fact, the BoD has formal authority in only two firms with a BoR: In one firm the BoD has authority over dividends, purchases/sales of assets, and borrowing, in the other firm it can only decide on dividends. Hence, the general picture is that firms with a BoR do not delegate formal authority to the BoD.

But also the GM has fewer decision powers in firms with a BoR. According to our estimates, the GM is 38 percent less likely to control three or four asset decisions (and correspondingly more likely to control one or two decisions). The right-hand panel of Table 6 shows that the authority over dividends is less likely to be placed with the GM when a BoR exists. The decisions that the GM most frequently controls in firms with a BoR are liquidation and issuance of equity (approximately 20 and 10 percent of firms), and less often the decisions over purchases/sales of assets, borrowing, and dividends (two to six percent of firms). Overall, both the BoD and GM are given less formal authority over important decisions in firms with a BoR.

We next investigate whether the BoD's "lost" authority is placed with another body or shared. Table 7 presents the predicted probabilities of the extent to which authority is shared between the BoD and another body. The results reveal that firms with BoRs are more likely to have the BoD share decisions with either the BoR or the GM. The results are less significant than the effects in Table 6, which implies heterogeneity in the tendency to share authority

between bodies in firms with a BoR. The data further reveals that shared authority is most common between the BoD and the BoR, and most often involves purchases/sales of assets and borrowing (each in approximately five percent of all firms, corresponding to about a fifth of firms with a BoR). The GM never shares decisions with the BoR, but in a few instances the GM shares authority with the BoD.

Overall, the analysis establishes that when firms install a BoR, they endow it with considerable formal authority and seldom leave the control over assets or dividends with the BoD. Our interpretation is that the BoR is well-informed due to its central position in the corporate hierarchy and is therefore able to monitor the BoD or to take important strategic decisions above and beyond what owners would be even in the—hypothetical—absence of collective action and coordination problems. Therefore, formal authority is shifted from the BoD to the BoR. The BoD is the management body, and the bylaws do not stipulate BoR involvement in the daily operations of the firm.[18] Hence, the BoR also relies on information and cooperation on part of the BoD but has the option to overrule its suggestions. Obviously, the BoR may rubber stamp on occasions the suggestions of the BoD, thereby leaving some real authority to the BoD (Aghion and Tirole (1997)).

At the same time the BoR performs another role vis-a-vis the GM. In firms with a BoR the bylaws tend to allocate the control over dividends to the BoR (16 firms) as opposed to the GM (2 firms), and in more than half those cases explicitly require the BoD to make a suggestion to the BoR. It seems to us that the decision over dividends are moved from the GM to the BoR because the BoR is better informed to assess the firm's investment prospects and to strike the right balance between the opportunity cost of dividends and the consumption needs of (small) investors. Indeed, firms seem to be aware of this trade-off as provisions in several bylaws limit dividend payouts unless there are sufficient reserve funds.[19]

[18] A simple t-test of differences in means shows that the bylaws of 77 percent of firms with a BoR require the BoD to be involved in the daily management compared to the bylaws of 56 percent of firms without a BoR which is significantly different from zero at the 5 percent level.

[19] For example, Vestfold Brewery and Mineral Water Factory states that (§11): "The BoD presents the company's audited financial accounts to the GM, in which the necessary depreciations have been made, and a summary of the company's activities in the past year. A 5 percent dividend is distributed to shareholders; from the remainder, 25 percent is put aside in a reserve fund, until it has reached the sum of 50,000 kr., and the leftover amount is at the disposal of the GM."

7.1 Dispersed investors vs active owners

With the above results on the functions of BoRs in mind, we now re-examine in more detail the differences in delegation between large and small-denomination firms. We have argued earlier that shareholders of large-denomination firms are highly unlikely to be retail investors who—arguably—only invest in small-denomination firms. Obviously, we cannot know this for certain, since we do not have shareholders lists, that is, information about the ownership structures. To further substantiate this conjecture we compare two groups of firms, those most likely to be owned by active owners with those most likely to be held by many small retail investors.

The first group of firms is comprised of the intersection of large-denomination firms and the 30% smallest firms in the sample. Such firms cannot have many small investors and are most likely to have a high concentration of, possible equal-sized, owners. Accordingly, this is the group of firms in our sample which a priori is most likely to have active owners. There are eight such firms in the sample, which amounts to nine percent of the firms. The second group of firms is comprised of the intersection of small-denomination firms and the 30% largest firms in the sample. These firms are most likely to have many small investors and dispersed ownership, although, of course, we cannot rule out that there are shareholders owning substantial blocks. There are 11 such firms in the sample (13 percent).

To evaluate the governance characteristics of these two group of firms we would ideally run logit regressions similar to those in Table 3, including an interaction term between share denomination and firm size to control for the linear effects of denomination on each group. However, such regressions are not always possible due to the lack of variation in the data caused by the small subsample sizes. In these instances, we instead perform t-tests of the differences in the average delegation between the two groups without controlling for linear effects.

Column (1) in the top panel of Table 8 shows the predicted probability that asset decisions are delegated to the BoD, comparing the small-denomination/large size firms with the remaining small-denomination firms. The difference between the reported probabilities is therefore the marginal effect of being a large firm within the group of small-denomination firms. As can be seen, the probability of delegating asset decision to the BoD in the group

of small-denomination/large size firms is 0.189 percent and considerably smaller than the corresponding probability for the remaining small-denomination firms, although the difference is insignificant. Column (2) presents a t-test of the average dividend-delegation to the BoD in the two groups: small-denomination/large size firms never delegate the dividend decision to the BoD, whereas 13.8 percent of the remaining small-denomination firms do, and the difference is significant at the 15 percent level. These results reflect that the small-denomination/large size firms are significantly more likely to have a BoR. The marginal effect of the interaction terms in a logit regression similar to that in column (1) is 0.428 percent which is significant at the 5 percent level. That is, "most dispersedly held" firms are 43 percent more likely to have a BoR compared to other small-denomination firms. The remaining columns show that small-denomination/large size firms are significantly more likely to delegate the dividend decision to the BoR and to have shared authority over assets.

The bottom panel of Table 8 shows the corresponding results for large-denomination/small size firms. In these firms all authority reside with the GM, that is, the owners. The owners never delegate asset or dividend decisions the BoD or share any with to the BoD. Also, none of these firms have a BoR. This suggests that the owners involvement in the running of the firm is such that a BoR would add little, if any, value.

8 Voting caps

One notable feature of the bylaws are the restrictions on the votes that a single shareholder can exercise. Most firms (88 percent) impose a cap on the number of votes a single shareholder can exercise and/or adopt a graduated voting scheme where the exercisable votes increase less than proportionally with the number of shares.[20] Thus, many turn-of-the century Norwegian firms deviate from the one share-one vote principle by granting small shareholders relatively more voting power. Such restrictions on voting rights used to be common in other countries as well, as documented by e.g., Dunlavy (2004), Hannah (2007), Musacchio (2008), and Hilt (2008). For instance, Musacchio (2008) finds that the voting power of large owners in Brazilian

[20]For example, *Akers Mechanical Workshop*, a shipbuilding and ironwork firm, restricts the votes of a shareholder as follows: 1-2 shares have one vote, 3-5 shares have two votes, 6-10 shares have three votes, 11-15 shares have four votes, 16-20 shares have five votes. Thereafter, any additional 10 shares give one more vote, but no shareholder may have more than ten votes.

firms were severely restricted, exemplified by a brewery in which the controlling families held a 58% equity stake but had only 12% of the votes.[21] However, Norwegian firms appear to have maintained graduated voting schemes when firms in many other countries had abandoned them.[22]

Figure 8 plots the fraction of the firm a (single) shareholder may own at the vote capping threshold above which his votes comes void. The distribution is almost bimodal. A minority of firms does not cap the votes or has a one share-one vote structure, whereas 82 percent cap votes below a threshold of 40 percent with a third imposing a voting cap of 5 percent or less.[23]

Although vote capping has no direct statistically significant relation to authority delegation (Table 2), it seems nonetheless relevant for firm governance. For instance, (severe) voting caps discourage block formation which in turn is bound to affect the decision making (process) in the firm.We therefore seek to uncover possible functions of restricted voting rights.

The extant literature proposes different reasons for voting restrictions. Dunlavy (2004) argues that they reflect social preferences for an egalitarian governance structure. Hansmann and Pargendler (2014) posit that voting restrictions are a means to protect consumers who are at the same time also the owners of local monopolies. Though, the common economic explanation, e.g., Hilt (2008), is the protection of minority shareholders against expropriation when such protection has not (yet) been provided by statutory law. This argument implies that vote restrictions should be most pronounced in firms with many small shareholders. In its support, Musacchio (2008) and Hilt (2008) find that ownership concentration is lower in firms with restricted voting rights.

To examine consumer protection considerations we plot in Figure 9 the average fraction of shares a single shareholder may own at the voting cap threshold above which his shares become void. The utilities sector has one of the highest capping thresholds, which seems to conflict with the consumer protection hypothesis. More in line, though, is the low caps in

[21] According to Musacchio (2008), Brazilian firms limit the number of votes that can be delegated to a proxy and also require a minimum of shares to be eligible to vote. While the former restriction is common in our sample of Norwegian firms, none impose the latter requirement.

[22] Hannah (2007) reports that one share one vote is the standard in industrial firms in both Europe and the US around the turn of the century. In the earlier sample period in Hilt (2008) "one vote per share was nearly always chosen" by manufacturing firms.

[23] Voting caps have statistically stronger correlations than measures of graduated voting schemes which we omit here. Notice that our measure does not capture the concentration of voting rights, which would require ownership data.

telecommunications. Nonetheless, it does not seem that consumer protection is a primary driver of vote capping in our sample. This is not entirely surprising since the industries in our sample are quite different from those in Hansmann and Pargendler (2014).

We next explore whether the likely presence of small investors can account for the degree of vote capping. If minority protection is the rationale, we expect the fraction of shares owned at the vote capping threshold to be positively correlated with Share Denomination, holding firm size fixed. As Table 9 shows, Share Denomination is in fact insignificant although it has the expected positive sign. The significant negative coefficient of the BoR dummy seems more supportive for minority protection, as firms with a BoR are typically large small denomination firms with the biggest potential for conflicts between large and small shareholders.

To further investigate the issue, we run logit regressions of dummy variables for the degree of vote capping on dummy variables for large and small-denomination firms, respectively, to allow for asymmetries in the tails of the distribution. Table 10 presents the results: The figures without brackets are coefficient estimates, the figures in parentheses are the standard errors of the coefficient estimates, and the figures in square brackets are the marginal effects at the means. Columns (1)–(2) and (3)–(4) show that firms which cap their votes severely (at 5, respectively, 10 percent or below) are more likely to belong to the third of firms with the smallest share denominations, but less likely to be among the third of firms with the largest share denominations. The coefficients are significant and consistent with the notion that firms with many small shareholders impose stronger caps. Also, the marginal effects are economically large, around 40 percent for large-denomination firms and 25-30 percent for small-denomination firms.

However, as we increase the capping threshold (Columns (5)–(6)), the pattern becomes less significant and the explanatory power of the included regressors falls considerably. Columns (7)–(8) show that the share denomination dummies cannot explain whether or not firms restrict voting rights. This finding reflects that vote capping is, in fact, considerable in firms least likely to have small shareholders. Among the large denomination-firms, 28 percent impose voting caps at the 10% threshold or below, 58 percent impose caps at the 25% threshold or below, and a quarter does not restrict voting rights.[24]

[24]Using number of shares instead of share denomination yields the same picture: Among the small

Overall, we find evidence in support of the minority shareholder protection hypothesis. Firms more likely to have small shareholders do indeed impose stronger voting caps. At the same time, the likely presence or absence of small shareholders, as proxied by small, respectively, large share denominations, does not account for the use or lack of voting restrictions. Possibly, vote capping serves a different purpose in small than in large-denomination firms. In the latter, it may be a means to preserve the balance of power among active owners with potentially conflict interests, that is, it may prevent one owner from taking control against the will of others. Attempts to explore this hypothesis have, at least so far, failed due to the limited sample size.

9 Conclusion

We study how authority delegation covaries with ownership delegation and other governance characteristics of Norwegian firms around the turn on the 20th century. At that time, Norwegian limited liability firms were operating in a free-contracting environment without restrictions the structure of governance due to an absence of corporate law. We find evidence for the endogenous emergence of a monitoring board in firms more likely to have collective action problems. For future research, we leave analysis of the functions of frequently occuring bylaw provisions such a as the function of the capping of shareholders' voting rights, and requirements that directors must be shareholders, and had shareholders cannot exempt themselves from election as directors.

denomination-firms, 34 percent cap votes at the 10% threshold or below, 72 percent cap at the 25% threshold or below, while 14 percent do not restrict voting rights.

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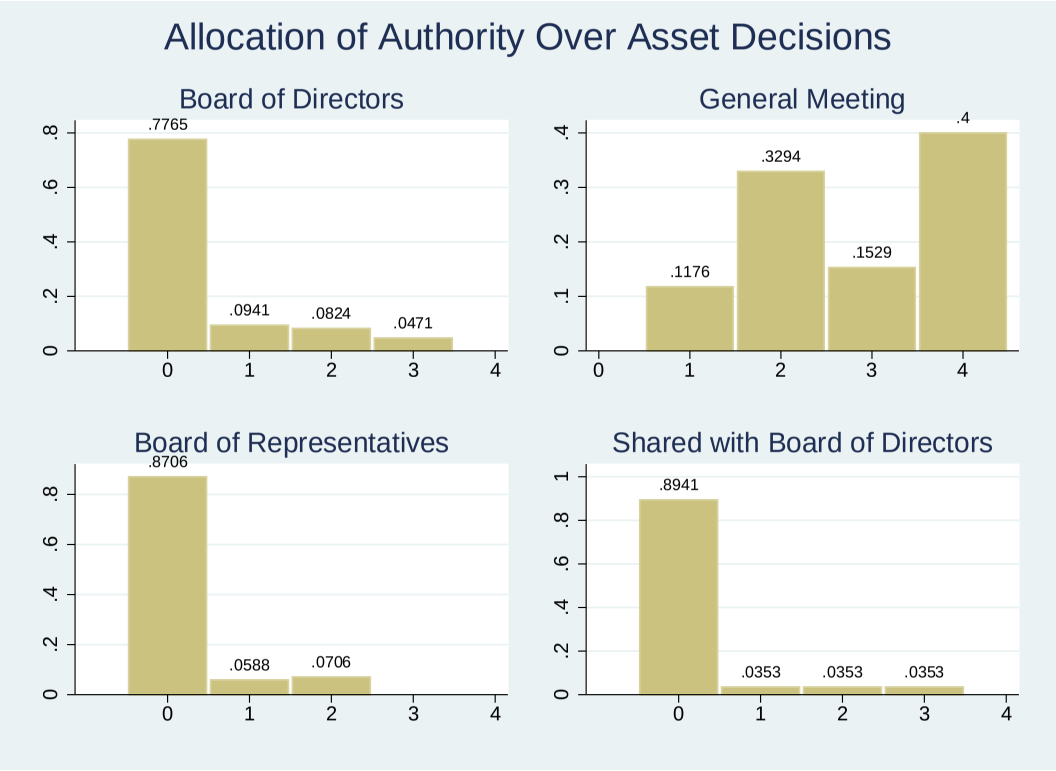
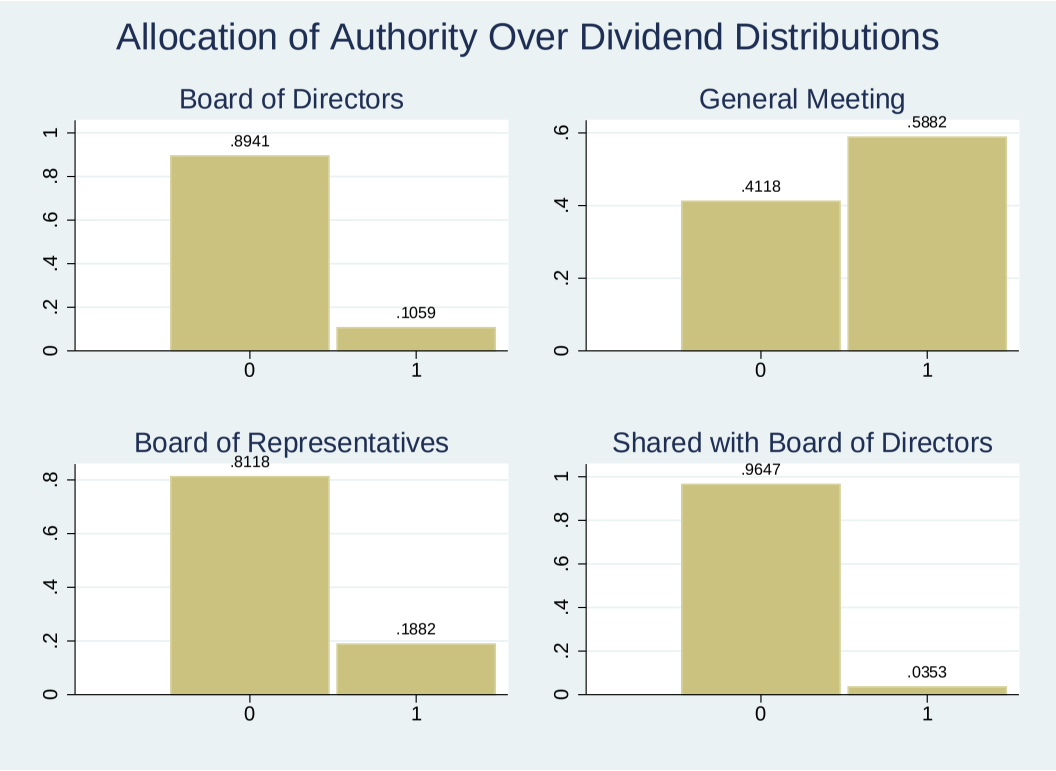
Figure 1: Allocation of Authority Over Asset Decisions



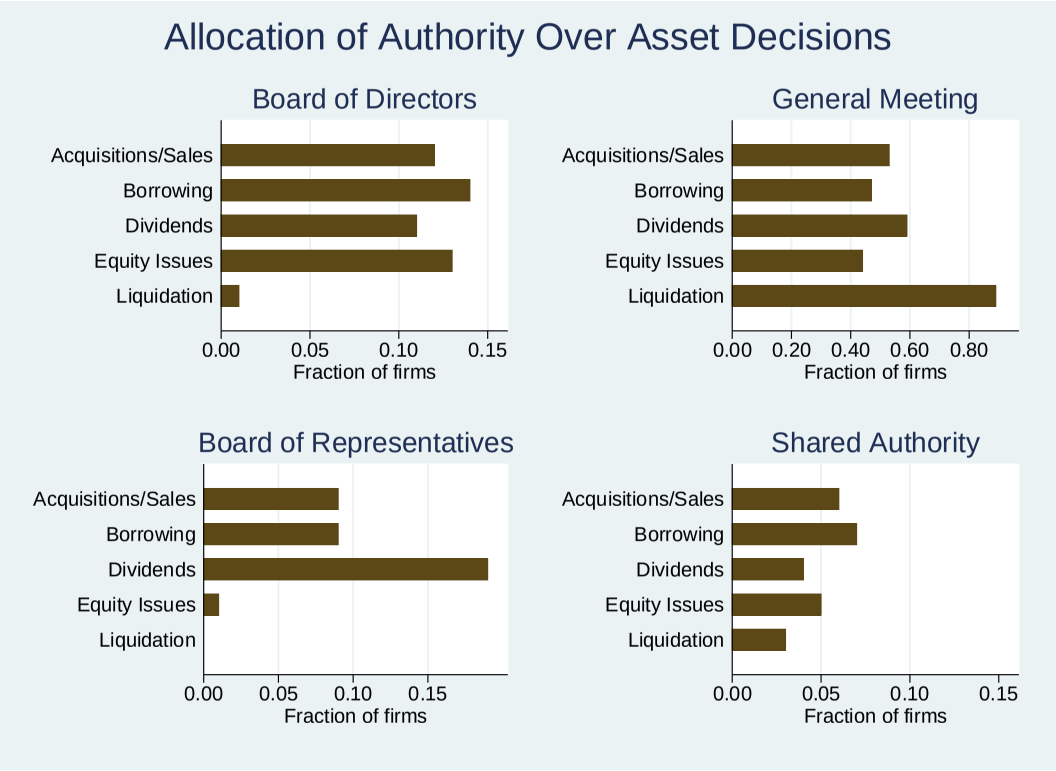
The figure reports the distribution across firms of the number of asset decisions allocated exclusively to each governance body and the distribution of the number of asset decisions that the BoD shares with another governance body.

Figure 2: Allocation of Authority Over Dividend Distributions



The figure reports how frequently the dividend decision is allocated exclusively to each governance body and how frequently the BoD shares the dividend decision with another governance body.

Figure 3: Allocation of Authority Over Asset Decisions

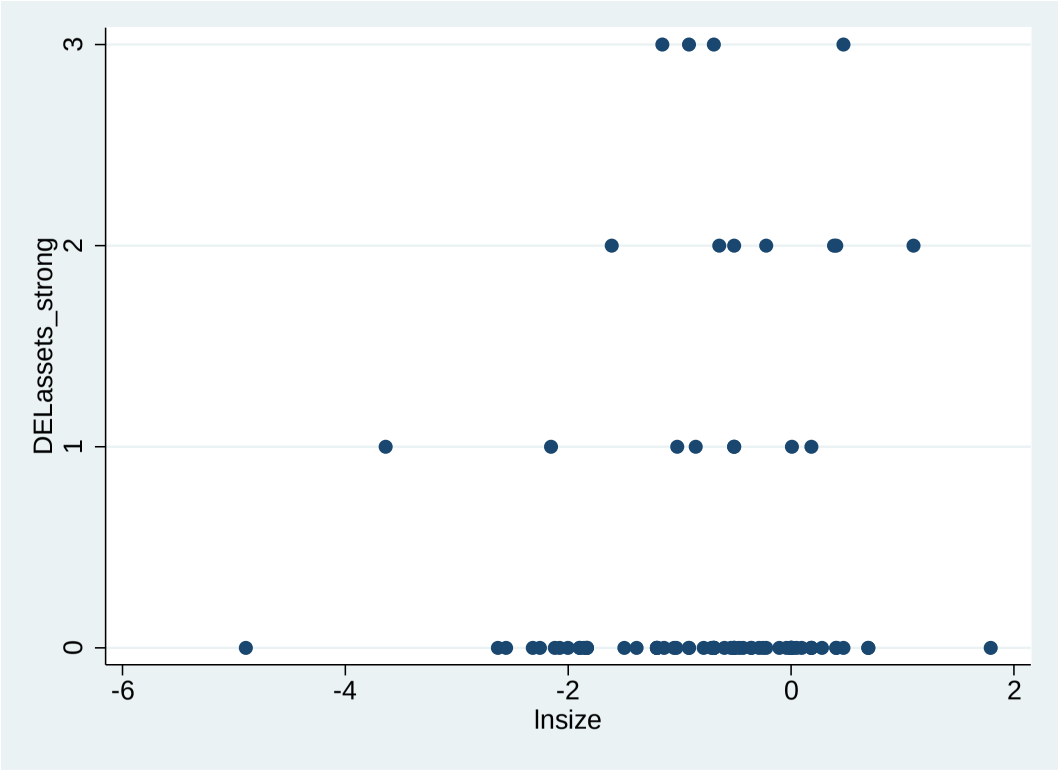


This figure reports the fraction of firms that allocate a given asset or dividend decision to each governance body, and the fraction of firms where a given asset or dividend decision is shared by the BoD with another governance body.

Figure 4: Operational Tasks Assigned to BoD

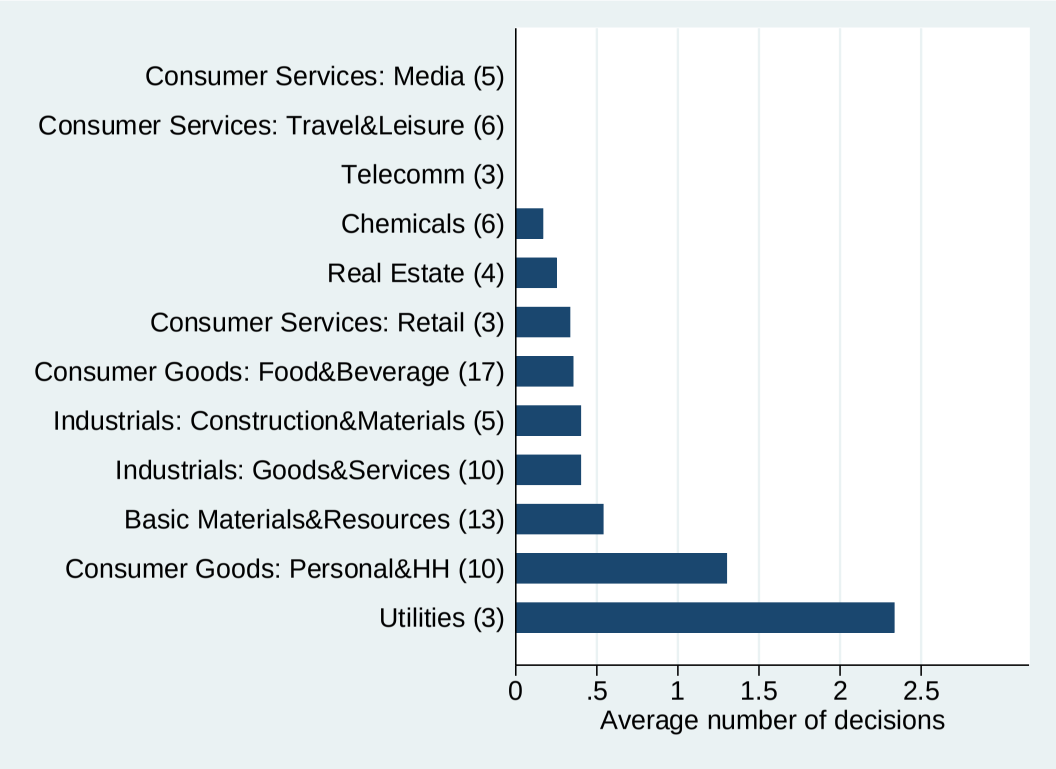
The figure reports the fraction of firms that allocate a particular operational decision, general authority to the BoD or have a necessary statement for the BoD.

Figure 5: Scatter plot of Firm Size and Asset Delegation



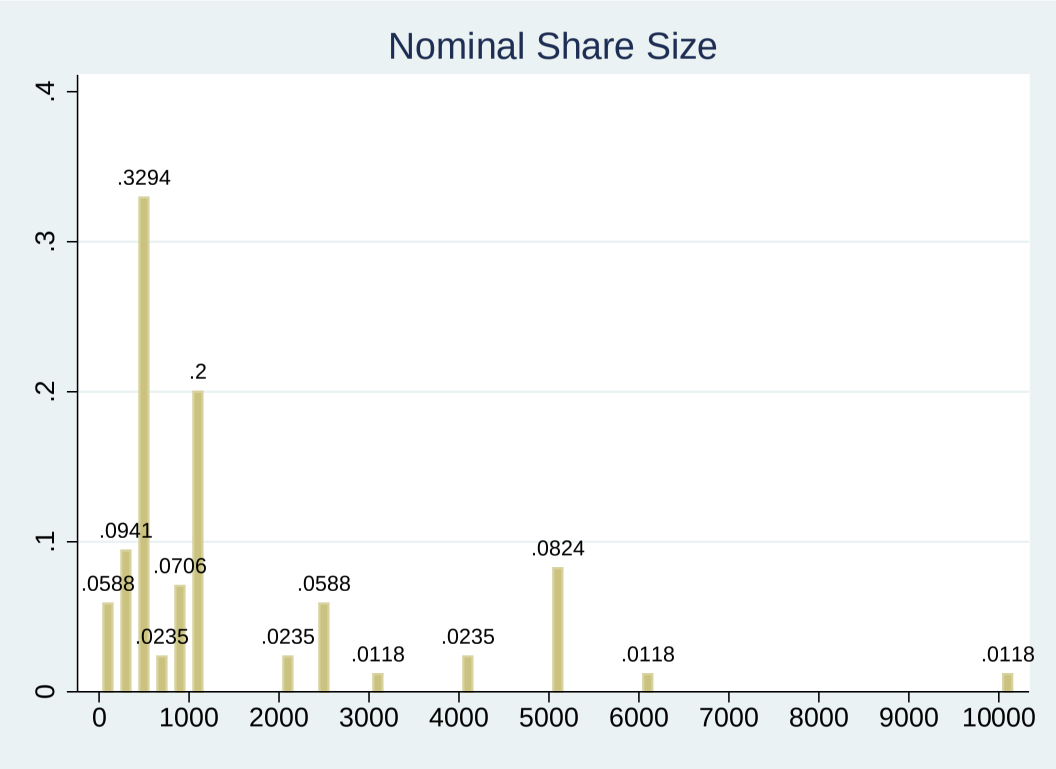
The horizontal axis reports the size of the firm computed by taking the natural logarithm of the book equity. The vertical axis reports the number of asset related decisions allocated to the BoD.

Figure 6: Average Delegation of Asset Decisions to Board of Directors by Industry



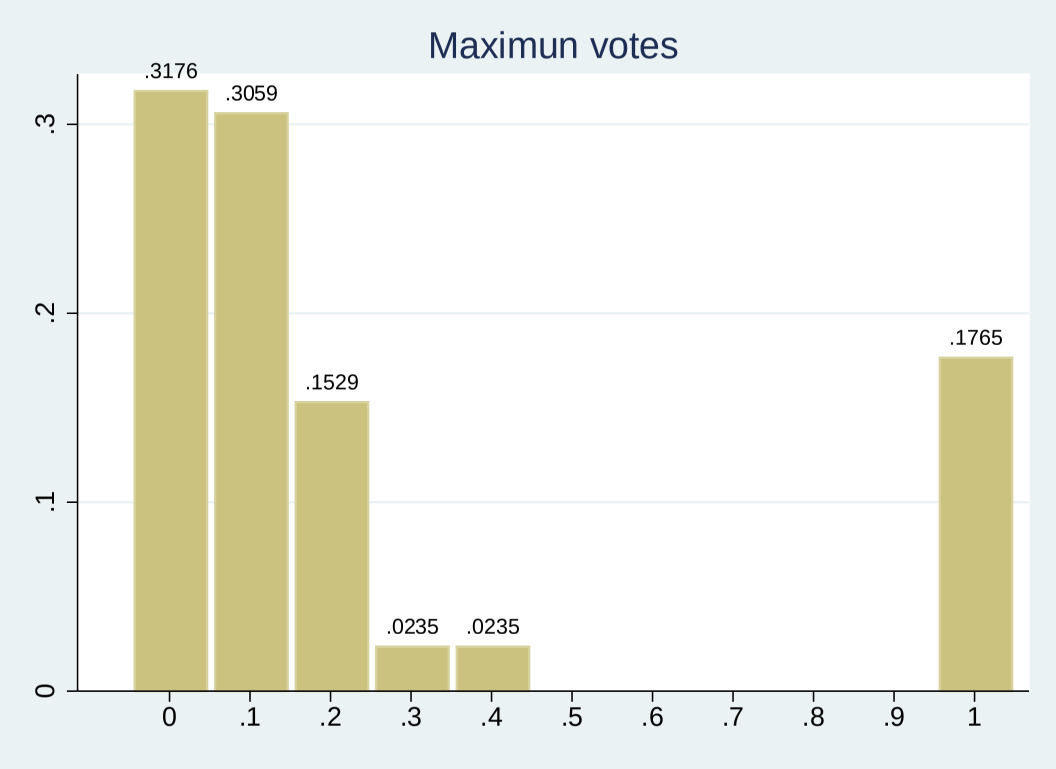
Average number of asset decisions delegated to the BoD. The number of firms in each industry is reported in parentheses.

Figure 7: Distribution of Share Denominations



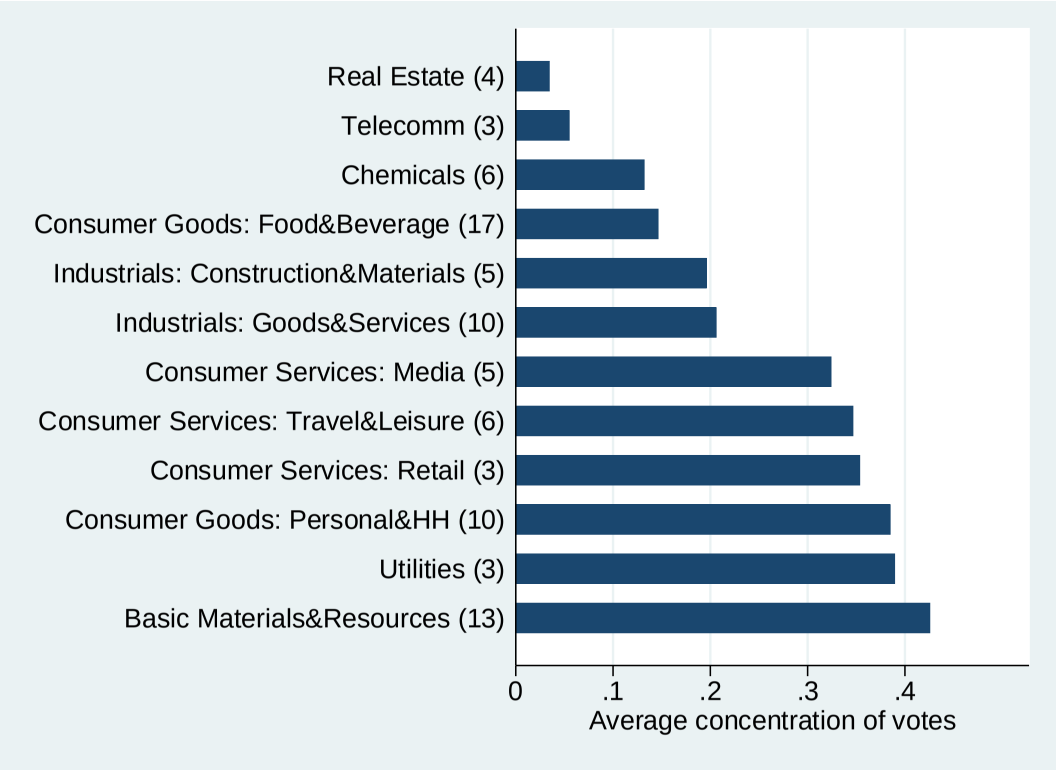
The figure reports the frequency distribution of the nominal share value across firms.

Figure 8: Distribution of maxratio



The figure shows the distribution of the cap to voting rights (in percentage of total equity) that a single shareholder can exercise.

Figure 9: Vote capping by industry



The table reports the average value of the cap to the votes a single shareholder can exercises by industry. The number of firms in each industry is reported in parentheses.

Table 1: Hierarchy in Delegation to Board of Directors

	Authority Over Daily Operations		
	no	yes	total
Authority over Assets			
no	28	38	66
yes	1	18	19
total	29	56	85

The table shows the number of firms whose bylaws assign authority over assets and daily operations to the BoD, respectively. Authority over assets takes the value "yes" if the asset authority index is larger than 0. Authority over daily operations takes the value "yes" if authority is assigned through a "necessary-statement" or a "general-statement", or if the bylaws delegates one or more of the following tasks: price setting, purchase of materials, working capital, and contracting. A "necessary-statement" is of the form: "the BoD must decide and carry out everything necessary to serve the interests of the firm." A "general-statement" is of the form: "The BoD holds any authority that is not reserved to another governance body."

Table 2: Determinants of Formal Delegation of Authority to the Board of Directors

	Decisions related to firms' assets					Decision to pay out dividend				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Share Denomination ('000)	-0.74*				-1.13*	0.25+				0.25
	(0.05)				(0.06)	(0.14)				(0.19)
Board of Representatives		-1.56*			-2.08**		-0.25			0.08
		(0.06)			(0.03)		(0.79)			(0.94)
Nonexemption from Election			-0.75		-0.68			0.40		0.33
			(0.18)		(0.21)			(0.57)		(0.63)
Liquidity				-1.94**	-2.12**				-1.12	-1.19
				(0.05)	(0.04)				(0.48)	(0.45)
Size (log)	0.31	0.33	0.18	0.43+	0.68**	0.01	0.13	0.12	0.23	0.16
	(0.30)	(0.23)	(0.55)	(0.14)	(0.03)	(0.98)	(0.74)	(0.71)	(0.57)	(0.70)
Firm age in 1900	-0.01	-0.03	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.45)	(0.18)	(0.19)	(0.32)	(0.69)	(0.55)	(0.68)	(0.72)	(0.75)	(0.59)
Fixed Assets Ratio	-3.67+	-0.14	-1.11	-1.19	-3.01	0.63	-0.48	-0.77	-0.71	0.50
	(0.12)	(0.93)	(0.48)	(0.48)	(0.19)	(0.80)	(0.83)	(0.74)	(0.74)	(0.84)
Obs.	85	85	85	85	85	85	85	85	85	85
p-value	0.22	0.31	0.55	0.20	0.01	0.51	0.94	0.90	0.86	0.81
Pseudo R-squared	0.07	0.05	0.03	0.05	0.18	0.04	0.01	0.01	0.02	0.05

Results from ordered logit regressions of authority delegation on firm characteristics (threshold constants not displayed). In columns (1)-(5), authority delegation is an index that adds one for every one decision allocated to the BoD regarding acquisitions/sales, collateralized borrowing, issuance of equity, and liquidation. In columns (6)-(10), authority delegation is a digital variable taking the value of one if the dividend decisions are allocated to the BoD. The variables are defined in the variable appendix. p-values based on robust standard errors are in parentheses. p-values are from a test of joint significance of the firm-varying explanatory variables. $^{+}$,*,**,*** = statistically significant at the 15, 10, 5, and 1 percent level.

Table 3: Formal Delegation of Authority to the Board of Directors: Relation to Share Denomination

	Decisions related to firms' assets				Decision to pay out dividend			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Large Denomination Dummy	-1.56*		-1.63**		0.66		0.60	
	(0.06)		(0.05)		(0.45)		(0.48)	
	[0.235]**		[0.234]**		[-0.063]		[-0.056]	
Small Denomination Dummy		1.37*		1.36*		-0.05		-0.05
		(0.09)		(0.09)		(0.95)		(0.94)
		[-0.228]*		[-0.217]*		[0.004]		[0.005]
Size (log)	0.27	0.36	0.54+	0.58*	0.08	0.10	0.19	0.22
	(0.35)	(0.25)	(0.10)	(0.08)	(0.81)	(0.74)	(0.61)	(0.55)
Firm age in 1900	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.34)	(0.34)	(0.48)	(0.46)	(0.60)	(0.69)	(0.65)	(0.75)
Fixed Assets Ratio	-3.58+	-2.98	-3.65+	-2.98	0.22	-0.64	0.06	-0.65
	(0.12)	(0.20)	(0.12)	(0.22)	(0.94)	(0.81)	(0.98)	(0.79)
Liquidity			-2.23**	-1.98*			-1.02	-1.12
			(0.04)	(0.05)			(0.51)	(0.47)
Obs.	85	85	85	85	85	85	85	85
p-value	0.23	0.19	0.19	0.17	0.80	0.94	0.82	0.93
Pseudo R-squared	0.06	0.06	0.10	0.09	0.02	0.01	0.03	0.02

Results from ordered logit regressions of authority delegation on firm characteristics (threshold constants not displayed). In columns (1)-(5), authority delegation is an index that adds one for every one decision allocated to the BoD regarding acquisitions/sales, collateralized borrowing, issuance of equity, and liquidation. In columns (6)-(10), authority delegation is a digital variable taking the value of one if the dividend decisions are allocated to the BoD. The remaining variables are defined in the variable appendix. Coefficient estimates are shown without brackets. Marginal effects are shown in square brackets and measure the impact on the likelihood of delegation of a one standard deviation increase in the covariate keeping all other variables at their mean. p-values based on robust standard errors are in parentheses. p-values are from a test of joint significance of the firm-varying explanatory variables. $^{+},^{\star},^{\star\star},^{\star\star\star}$ = statistically significant at the 15, 10, 5, and 1 percent level.

Table 4: Existence of a Board of Representatives

Share Denomination ('000)	-5.44***		-6.22***
	(0.00)		(0.00)
Nonexemption from Election		1.14*	1.72*
		(0.06)	(0.06)
Size (log)	1.18***	0.53*	1.46**
	(0.01)	(0.10)	(0.01)
Firm age in 1900	-0.01	-0.02	-0.02
	(0.66)	(0.29)	(0.41)
Fixed Assets Ratio	2.43	6.44***	1.90
	(0.24)	(0.00)	(0.41)
Constant	1.24	-5.50***	1.14
	(0.49)	(0.00)	(0.57)
Obs.	85	85	85
p-value	0.00	0.02	0.03
Pseudo R-squared	0.39	0.18	0.45

Results from logit regressions of the existence of a BoR on firm characteristics. The variables are defined in the variable appendix. p-values based on robust standard errors are in parentheses. p-values are from a test of joint significance of the firm-varying explanatory variables. $^{+},^{\star},^{\star\star},^{\star\star\star}$ = statistically significant at the 15, 10, 5, and 1 percent level.

Table 5: Characteristics of Small-Denomination Firms with Boards of Representatives

	Small-Denomination Firms		
	Average in firms with a board	Average in firms without a board	t-test of difference (p-value)
Number of Shares ('000)	2.544	0.846	2.981***
	(0.550)	(0.149)	(0.008)
Size ('000,000)	0.777	0.408	2.153**
	(0.122)	(0.078)	(0.016)

Difference between the Average number of shares and the average size of the firm between small-denomination firms that have a BoR and small-denomination firms that do not have a BoR. Small-denomination firms are those for which the Small Denomination Dummyvariable described in the variable appendix takes a value of one. The last column reports the two-tailed t-test of the difference in means with unequal variances. The standard errors are reported in parentheses for the means, p-values are reported in parentheses for the t-test.

Table 6: Change in Probabilities of Delegation to Board of Directors and General Meeting when Board of Representatives Exist

	Change in Probability of Delegating Asset Decisions To Body		Change in Probability of Delegating Dividend Decision To Body	
	Board of Directors	General Meeting	Board of Directors	General Meeting
	(1)	(2)	(3)	(4)
0 decisions	0.20		0.02	0.67
	(0.01)		(0.77)	(0.00)
1 decisions	–0.08	0.20	–0.02	–0.67
	(0.05)	(0.02)	(0.77)	(0.00)
2 decisions	–0.08	0.19		
	(0.04)	(0.00)		
3 decisions	–0.04	–0.05		
	(0.08)	(0.11)		
4 decisions		–0.33		
		(0.00)		

Column (1) and (2) report the change in the probability that a given number of asset decisions are given to the BoD or the GM if a firm has a BoR. Column (3) and (4) report the change in the probability that the dividend decision is given to the BoD or the GM if a firm has a BoR. The probability change is computed from an ordered logit regression where the delegation measure is regressed on a dummy variable taking the value of one if the firm has a BoR, and three controls: Size (log), Firm age in 1900and Fixed Assets Ratio. The change in probability is then computed by assigning the value of 1 to the dummy variable BoR and keeping the controls at their mean value. P-values are reported in parentheses.

Table 7: Change in Probabilities of Shared Delegation between Board of Directors and Other Body when Board of Representatives Exist

	Change in Probability of Shared Authority over Asset Decisions	Change in Probability of Shared Authority over Dividend Decision
	(1)	(2)
0 decisions	–0.30	0.01
	(0.05)	(0.78)
1 decisions	0.13	–0.01
	(0.13)	(0.78)
2 decisions	0.11	
	(0.17)	
3 decisions	0.06	
	(0.21)	

Column (1) reports the change in the probability that a given number of asset decisions are shared by the BoD with another body if a firm has a BoR. Column (2) reports the change in the probability that the dividend decision is shared by the BoD with another body if a firm has a BoR. The probability change is computed from an ordered logit regression where the delegation measure is regressed on a dummy variable taking the value of one if the firm has a BoR, and three controls: Size (log), Firm age in 1900and Fixed Assets Ratio. The change in probability is then computed by assigning the value of 1 to the dummy variable BoR and keeping the control variables at their mean value. P-values are reported in parentheses.

Table 8: Delegation of Authority in Small-Denomination Firms of Large Size and Large-Denomination Firms of Small Size

	Delegation to Board of Directors		Delegation to Board of Representatives		Shared Delegation	
	Asset decisions	Dividend decision	Asset decisions	Dividend decisions	Asset decisions	Dividend decisions
	(1)	(2)	(3)	(4)	(5)	(6)
	(logit)	(t-test)	(t-test)	(t-test)	(t-test)	(t-test)
Small Denomination × Large firm	0.189*	0	0.636	0.818**	0.818*	0
	(0.081)	(0)	(0.924)	(0.404)	(0.423)	(0)
Rest of Small-Denomination Firms	0.358***	0.138	0.310	0.241	0.034	0.034
	(0.000)	(0.351)	(0.660)	(0.435)	(0.034)	(0.034)
Difference	-0.168	-0.138+	0.326	0.577**	0.784*	-0.034
p-value	(0.279)	(0.146)	(0.301)	(0.047)	(0.094)	(0.326)
	(t-test)	(t-test)			(t-test)	(t-test)
Large Denomination × Small firm	0	0	–	–	0	0
	(0)	(0)	–	–	(0)	(0)
Rest of Large-Denomination Firms	0.286	0.179	–	–	0.071	0.036
	(0.713)	(0.390)	–	–	(0.050)	(0.036)
Difference	-0.286+	-0.179+	–	–	0.071	-0.036
p-value	(0.145)	(0.112)	–	–	(0.161)	(0.326)

Table compares the average degree of delegation to the Board of Directors, the Board of Representative, and shared with the Board of Directors respectively, across subgroups of firms. In the top panel, small denomination-firms of large size are compared with small denomination firms that are not of large size, where large size is defined as the top 30% of the distribution of nominal equity. In the bottom panel, large denomination-firms of small size are compared with large denomination firms that are not of small size, where small size is defined as the bottom 30% of the distribution of nominal equity. In Column (1), denoted "logit", the reported figures are the predicted probabilities from an logit regression of a dummy equal to one if any asset decision is delegated to the Board of Directors on a dummy for small-denomination firms, a dummy for large firm size, an interaction term between the two, and the control variables defined in Table 2. Figures in parenthesis are p-values associated with robust standard errors. All other columns, denoted "t-test", are t-tests of differences in the average degree of delegation between the respective subgroups of firms. t-tests are performed in cases where the data does not exhibit enough variation for estimation of a logit specification. Figures in parenthesis are standard errors of the means. p-values indicating the level of significance for the difference in value are in parentheses. $^{+}$,*,**,*** = statistically significant at the 15, 10, 5, and 1 percent level.

Table 9: Determinants of the Degree of Vote Capping

	(1)	(2)	(3)
Share Denomination ('000)	0.02		0.01
	(0.39)		(0.71)
Board of Representatives		-0.19*	-0.18+
		(0.07)	(0.12)
Size (log)	0.02	0.04	0.04
	(0.61)	(0.33)	(0.40)
Firm age in 1900	-0.00	-0.00	-0.00
	(0.92)	(0.89)	(0.85)
Fixed Assets Ratio	0.01	0.07	0.12
	(0.97)	(0.77)	(0.68)
Constant	0.24	0.30**	0.26+
	(0.19)	(0.02)	(0.15)
Obs.	85	85	85
p-value	0.79	0.39	0.49
R-squared	0.02	0.06	0.06

Results from OLS regressions of share of ownership at the vote capping threshold on firm characteristics. Share ownership at the vote capping threshold is the fraction of the firm a (single) shareholder may own at the vote capping threshold above which his votes comes void. The variables are defined in the variable appendix. p-values based on robust standard errors are in parentheses. p-values are from a test of joint significance of the firm-varying explanatory variables. $^{+},^{\star},^{\star\star},^{\star\star\star}$ = statistically significant at the 15, 10, 5, and 1 percent level.

Table 10: Voting Caps in Small and Large Denomination Firms

	Vote Capping at 5% or less		Vote Capping at 10% or less		Vote Capping at 25% or less		No Vote Capping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Large Denomination Dummy	-2.26***		-1.69***		-1.54**		0.61	
	(0.01)		(0.00)		(0.02)		(0.36)	
	[-38.4]***		[-42.2]***		[-24.8]**		[8.55]	
Small Denomination Dummy		1.22**		1.16**		1.09*		-0.27
		(0.03)		(0.03)		(0.09)		(0.69)
		[25.0]**		[29.0]**		[18.2]*		[-3.80]
Size (log)	-0.05	-0.01	0.07	0.11	-0.11	-0.05	0.22	0.21
	(0.83)	(0.96)	(0.77)	(0.62)	(0.70)	(0.87)	(0.54)	(0.54)
Firm age in 1900	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00
	(0.19)	(0.28)	(0.31)	(0.45)	(0.49)	(0.55)	(0.94)	(0.88)
Fixed Assets Ratio	2.20	3.40**	2.52+	3.47**	-2.77	-1.81	0.96	0.40
	(0.24)	(0.04)	(0.14)	(0.03)	(0.15)	(0.31)	(0.62)	(0.83)
Constant	1.73	3.68***	-0.75	-2.48***	3.31**	1.62+	-2.26*	-1.56+
	(0.18)	(0.00)	(0.47)	(0.01)	(0.02)	(0.11)	(0.10)	(0.14)
Obs.	85	85	85	85	85	85	85	85
p-value	0.02	0.02	0.00	0.01	0.22	0.51	0.86	0.95
Pseudo R-squared	0.19	0.12	0.16	0.12	0.08	0.04	0.02	0.01

Results from logit regressions on firm characteristics, of a dummy variable taking the value one if the maximum voting rights a single shareholder can exercise are smaller or equal to a threshold percentage. In regressions (1) and (2) the threshold percentage is 5 percent, in regressions (3) and (4) it is 10 percent, in regressions (5) and (6) it is 25 percent, in regressions (7) and (8) it is 100 percent. The variables are defined in the variable appendix. p-values based on robust standard errors are in parentheses. p-values are from a test of joint significance of the firm-varying explanatory variables. $^{+,\star,\star\star,\star\star\star}$ = statistically significant at the 15, 10, 5, and 1 percent level. Logits.

A Variable appendix

A.1 List of variables

Our data sources are Kierulfs Handbooks and information from the historical archives of the Brønnøysund registry as described in Section 2.

Firm size: Firm size is nominal equity measured in million kr. in the year of their bylaws. That is, if the bylaws that applied in year 1900 for a given firm were approved in 1896, firm size is measured in 1896. For the firms whose bylaws were approved prior to 1896, we use the equity-value in that year (1896 is the earlier year for which equity data exists). Source: Kierulf's Handbook, misc. editions.

Firm age in 1900: The firm's age in year 1900, measured from the time of incorporation as a stock company. Source: Kierulf's Handbook, misc. editions and historical archives.

Stock liquidity: Liquidity is a constant equal to the fraction of the years the firm appears in Kierulf's Handbook, for which the Handbook lists a stock price. Source: Kierulf's Handbook, misc. editions.

Fixed assets ratio in industry: The average ratio of tangible assets to total assets for firm in each of the 12 industries. The variable is measured on industry-basis because we only have accounting data allowing the construction of this ratio for 57 of the firms. In addition, tangible assets and total assets are not available in every year of Kierulf's Handbook, so the average is taken over the time period 1876-1920 to employ all information available. We would prefer to compute the ratio using data from the pre-law period 1896-1910, but in this case, for two industries, the fixed asset ratio cannot be computed due to lack of data. We therefore employ accounting data up to 1920, which allows us to include these two industries. If the cross-sectional distribution of fixed asset ratios do not change much over over time, this should not cause any systematic error in our regressions. Source: Kierulf's Handbook, misc. editions. Table A1 concisely describes the variables used in the analysis.

A.2 Basic facts about the sample firms

Table A2 contains a breakdown of the 85 firms by industry. The sample provides a fair spread of companies across different industries. The dominating category is Consumer Goods with 27

firms comprising 32 percent of the sample, followed by Industrials (15 firms and 18 percent), and Consumer Services (14 firms and 16 percent). Producers of Consumer Goods encompasses a wide variety of firms, including breweries (mostly beer), corn mills, textile mills, and otherwise manufacturers of products as diverse as shoes, tobacco, furniture, locks, matches, sailcloth, and crackers. Industrials encompasses ironworks and shipbuilders, firms involved in commercial maritime transportation, and producers of marble, nails, horse shoe nails, and rifles. Consumer services includes steam ship companies, hotels, and rail transportation companies in Travel&Leisure, printing companies, and a steam-operated cafeteria. Basic Resources mostly comprises forestry and saw mills, and Chemicals is dominated by firms converting wood products to paper including companies using sulfite-based technologies for converting cellulose to paper pulp. The Telecommunication industry consists of one manufacturer of telephone equipment and two telephone exchanges, and Utilities are producers of hydroelectricity. Finally, the firms in the Real Estate sector are akin to today's Real Estate Investment Trusts, earning revenue through the rents generated from land and building holdings.

Table A1:
Variable Description

1.	Liquidity	Number of years the share price is reported in the Kierulf book divided by the number of years the book was available
2.	Share Denomination ('000)	Nominal value of one firm's share in Nok/000
3.	Board of Representatives	Dummy variable taking the value of 1 if a BoR exists
4.	Nonexemption from Election	Dummy variable taking a value of 1 if owners cannot refuse appointment to directorship
5.	Size (log)	Natural logarithm of book equity value
6.	Firm age in 1900	Number of year the firm has been in place in 1900
7.	Fixed Assets Ratio	Industry average of the ratio between fixed asset and total assets
8.	Large Denomination Dummy	Dummy variable taking a value of 1 if the nominal share size is larger or equal to 1000 NOK
9.	Small Denomination Dummy	Dummy variable taking a value of 1 if the nominal share size is smaller or equal to 100 NOK
10.	Number of Shares ('000)	Book equity value divided by the nominal share value $\times$ 1000
11.	Large Firm Dummy	Dummy variable taking a value of 1 if the equity size of the firm is in the largest 30%
12.	Small Firm Dummy	Dummy variable taking a value of 1 if the equity size of the firm is in the smallest 30%

Table A2:
Distribution of Sample Firms by Industry

	Number	Percent
Chemicals	6	7.06
Basic Resources	13	15.29
Industrials		
Construction & Materials	5	5.88
Industrial Goods & Services	10	11.76
Consumer Goods		
Food & Beverage	17	20.00
Personal & Household Goods	10	11.76
Consumer Services		
Retail	3	3.53
Media	5	5.88
Travel & Leisure	6	7.06
Telecommunications	3	3.53
Utilities	3	3.53
Real Estate	4	4.71
Total	85	100.0

The table shows the distribution of firms according to industry sectors. Industry sectors are classified according to the FTSE/DJI Industry Classification Benchmark (ICB).