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Reforming Corporate Governance: Evidence from the Choice between Unitary versus Dual Boards of Directors

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Abstract

Contemporary governance reform proposals focus on strengthening board monitoring but recent theoretical models find that a passive board is often optimal. We examine board structure choice in France where for 45 years firms have been free to choose between a unitary board and a dual board structure. Our evidence indicates that dual boards are more monitoring intensive and that firms with greater asymmetric information adopt unitary boards, while those with a high potential for private benefit extraction adopt dual boards. Our results imply that freedom of contract about board structure is valuable for shareholders, and run counter to the thesis of convergence to the Anglo-American standard of unitary board structure.

Keywords: Board of directors, dual board, unitary board, corporate governance, monitoring, supervisory board, management board

JEL Classification: G32; G34

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Abstract

Contemporary governance reform proposals focus on strengthening board monitoring but recent theoretical models find that a passive board is often optimal. We examine board structure choice in France where for 45 years firms have been free to choose between a unitary board and a dual board structure. Our evidence indicates that dual boards are more monitoring intensive and that firms with greater asymmetric information adopt unitary boards, while those with a high potential for private benefit extraction adopt dual boards. Our results imply that freedom of contract about board structure is valuable for shareholders, and run counter to the thesis of convergence to the Anglo-American standard of unitary board structure.

Reforming Corporate Governance: Evidence from the Choice between Unitary versus Dual Boards of Directors

One mechanism for resolving the collective action problem intrinsic to corporate governance is the delegation of control by shareholders to a board of directors, an entity charged with overseeing the firm's activities. In recent years, there have been proposals for reforming corporate governance to strengthen monitoring by the board of directors,¹ partly in reaction to corporate scandals (such as Enron and WorldCom) and the collapse of major financial firms (such as Lehman Brothers). Specific reforms have been proposed amidst a fundamental debate among academics and practitioners as to whether corporate governance in the global arena is converging to an Anglo-American model, characterized by dispersed share ownership and a one-tier (unitary) board of directors that is passive with respect to top management. The alternative model, common in continental Europe, is characterized by greater ownership concentration and a two-tier (dual) board of directors that typically includes representation for non-shareholder stakeholders (e.g., employees). Hansmann and Kraakman (2002), among others, argue that global convergence to the Anglo-American model is ongoing and pervasive, reflecting the power of global competition, improved technology, and market liberalization that allow business activities and pools of investment to quickly and easily flow across national borders.² Other scholars, such as Bebchuk and Roe (1999), are skeptical about convergence, arguing that national differences in corporate governance structures are likely to persist.

Within the context of board structure, the unitary board is universal in the U.S., reflecting both state (particularly Delaware) corporation statutes and a body of common law precedents.

¹ Among the best known reports are the Cadbury Report (1992) in the UK, and in France the Vienot Reports (1995, 1999) and the Bouton Report (2002). There have been similar reports in other countries.

² As examples of evidence for convergence, researchers cite factors such as the growing importance of equity markets and global institutional investors (Coffee, 1999), the broad-based adoption of market-based managerial compensation schemes (Murphy, 2000), and a widespread increase in leverage (Warner, 1998).

Other countries (e.g., Germany) mandate a dual board structure that consists of a management board and a supervisory board, which excludes corporate managers. A key difference between these systems is the comingling (in a unitary structure) versus the separation (in a dual structure) of the advisory and monitoring functions intrinsic to board responsibilities. In this paper we consider what economic factors determine the choice of board structure by examining the case of France, which has a 45 year history as the only major economy that allows firms to adopt either a unitary or a dual board and to reverse the decision over time.³ French equity markets have seen a substantial increase in international ownership in recent decades and among French-listed firms there are large entities with global presence. These developments can be viewed as consistent with the convergence hypothesis and imply that the choice of board structure in France should reflect competitive advantage rather than cultural heritage. Thus, France provides a natural experiment to test whether or not the corporate governance of its firms is converging to the unitary board structure of the Anglo-American model of corporate governance. Overall, our results are contrary to this convergence hypothesis and provide support for the freedom of contract view that by allowing corporate flexibility about the choice of board structure firms can more efficiently respond to the evolution of the business environment.

We examine a large sample of French public firms and analyze how the choice of board structure relates to characteristics of the firm and its environment. This work builds on the finance literature about corporate boards and firm value. Within the context of a unitary board structure, models developed by Adams and Ferreira (2007) and Harris and Raviv (2008) imply

³ Austria and Denmark mandate dual boards. The UK, Ireland, Spain, and Sweden require unitary boards. In Germany, firms with over 2,000 employees have a management board composed of full-time corporate executives that meet frequently and a supervisory board that meets several times a year. Half of the members of the supervisory board represent employees and half represent shareholders. Until May 2011 for large, publicly traded firms the Netherlands mandated a two-tiered board except in certain limited circumstances (largely to facilitate entities that are units of groups with a majority of employees abroad). This legislation is to take effect as of early 2012 (see Appendix A.2). In Germany, depending on firm size, from one-third to one-half of the members of the supervisory board represent the employees (see Appendix A.1 for further information).

that maximization of shareholder value generally entails a management-friendly (passive) board. However, Adams and Ferreira also show that when there is a substantial potential for managerial private benefits, efficiency calls for the more intensive board monitoring that is the comparative advantage of a dual board structure, which separates the advisory and monitoring functions. Each board is then able to adapt to its distinct role, alleviating the problematic tradeoff between the two functions inherent in a unitary board structure. The general conclusion that management-friendly boards are efficient runs counter to many regulatory proposals that are oriented toward strengthening board monitoring. In an empirical study of U.S. firms, Faleye et al. (2011) argue that monitoring intensity of boards is driven by legal constraints and that within such a regulatory environment more intensive monitoring lowers firm value, reduces innovation, and results in poor acquisition performance.⁴ Their evidence is consistent with the importance of the tradeoff between board monitoring and advising.⁵

Adams and Ferreira (2007), Harris and Raviv (2008), and Hermalin and Weisbach (1998) argue that corporate governance arises as a solution to the firm's value optimization problem, within the bounds of corporation law. As a result, given freedom of contract with respect to board structure in France, the choice between a unitary and a dual board should be an efficient response to the environment in which the firm expects to operate. In France, all of the members of the board are elected by shareholders, consistent with the Adams and Ferreira framework in which it is assumed that the preferences of shareholders and the optimal board are aligned.⁶

An additional aspect of corporate governance is ownership structure. La Porta et al. (1999) report that among the world's major stock markets, including France and most European

⁴ An example of such regulatory forces is the fact that the New York Stock Exchange requires that boards of listed companies have a majority of independent members.

⁵ Faleye et al. (2011) define a monitoring intensive board as one in which a majority of independent directors serve on at least two of three principal oversight committees: audit, compensation, and nominating.

⁶ In Harris and Raviv (2008) it is assumed that outside directors perfectly represent the firm's shareholders. Since a German supervisory board includes employee representatives, it cannot be fully aligned with shareholder interests.

countries, many large public firms have dominant shareholders who are likely to influence decision-making. They conclude that such systems are less protective of investors, relative to the more market-based Anglo-American model. Most studies of boards and corporate governance focus on the U.S., where stock markets are highly liquid and firms typically have dispersed ownership structures (reflecting the prevalence of passive institutional investors) that foster the dominance of professional managers, but may also facilitate the extraction of private benefits. As a result, conventional wisdom in the U.S. is that boards are captive to managers, reflecting their informational advantage, their role in selecting directors, and the inability of most directors to devote the time and effort required to make well-informed decisions on complex business matters. Absent deteriorating firm performance, these factors lead to friendly (passive) boards that focus on advising and incentivizing executives, behavior that Adams and Ferreira (2007) and Harris and Raviv (2008) conclude is efficient. Because our study uses sample data that encompass a large set of French firms with a broad range of ownership structures, it provides a tableau about board structure choice and analyzes the factors that influence this choice. The pattern of our results supports the Adams and Ferreira view that a dual board structure fosters monitoring. Our work offers new perspective about the gains from allowing freedom of contract for shareholders regarding board structure rather than having a statute that imposes uniformity on all firms.

We find that when asymmetric information is severe, i.e., information costs are high, French firms adopt a management-friendly unitary board structure. However, when the potential for private benefit extraction is high, French firms adopt dual boards, which foster greater board monitoring. We show that the sensitivity of CEO turnover to firm performance is significantly greater with a dual board, confirming the greater monitoring intensity of this type of board structure. Among closely held firms, a unitary board structure is more likely when the CEO is a

member of the control group, while a dual board is more likely when there are professional managers, implying that more intensive board monitoring is efficient. There is no evidence that the separation of the positions of CEO and Chairman within a unitary board structure is a substitute for the greater monitoring intensity of a dual board. Over time, French firms have increased their usage of dual boards, so there is no evidence of convergence to the Anglo-American model of unitary board structure.

The remainder of the paper is organized as follows. In Section I, freedom of contract in relation to choice of board structure is discussed. In Section II, hypotheses and predictions are developed. In Section III, data collection is explained. Empirical results are reported in Section IV. Section V provides conclusions.

I. Freedom of Contract: The Choice of a Board Structure in France

Despite the differences in legal mandates about board structure, there is no empirical work on the choice of unitary versus dual board structures. Moreover, this issue has become more policy relevant given the EU's recent initiative to permit some firms to incorporate (or reincorporate) as a European company (SE) under EU (non-country-specific) law, with the option of choosing either a single or a dual board.⁷ Since 1966, French firms have been allowed to choose the type of board structure when first established and to subsequently alter the structure at any time through an amendment to the Articles of Association (corporate charter), which requires a two-thirds vote of shareholders at an Extraordinary General Meeting.⁸ It is the responsibility of the board to submit such an amendment; if there is a dual board structure, both

⁷ For a description of the European company structure, see the report commissioned by the former French Minister of Justice, Noëlle Lenoir (2007). The advantages and disadvantages of SE entities are addressed in Appendix A.3.

⁸ Prior to this, the Works Council and the governance committee (if it exists) must be consulted. Under French law, there are two types of general meetings. Decisions by ordinary meetings, which approve the accounts, appoint and dismiss directors, and decide bond issues, require a 50% majority vote. Extraordinary meetings pertain to decisions amending the charter or issuing shares, actions that require a two-thirds majority vote.

the management and supervisory boards must approve the change to a unitary structure.⁹ For firms with a dual board structure, the supervisory board nominates the members of the management board (including the CEO), controls the management board, and can veto relevant decisions. For firms with unitary boards, managers can be board members, but in a dual board structure, managers are excluded from the supervisory board. (See Appendix A.1 for more specific information about French boards and comparisons with German boards). There has been a global trend in recent years toward separating the positions of CEO and Chairman (especially in the U.K. and to some extent in the U.S.), that is typically viewed as enhancing board monitoring.¹⁰ French firms with a unitary board structure have been allowed the flexibility of separating these positions, but only after 2000. This regulatory change in France allows us to test the issue of whether separating the positions of CEO and Chairman is a substitute for the enhanced monitoring associated with a dual board structure.

II. Literature, Hypotheses, and Predictions

A. Theory on Boards

Our empirical work draws on two approaches to boards: the agency approach (Berle and Means (1932), Jensen and Meckling (1976) and Fama and Jensen (1983)) and the managerial hegemony approach (Mace (1971) and Bebchuk and Fried (2004)). In the agency approach, a separation of ownership from control results from the dispersed ownership of corporations, leading to conflicts of interest between executives and shareholders that reflect factors such as managerial risk aversion (due to their firm-specific capital). To counter agency difficulties, governance mechanisms have emerged, both external (e.g., monitoring institutions) and internal

⁹ The number of directors is also established by charter, but it must be between three and 18 (before 2001 between three and 24). The length of a director's electoral term cannot exceed 6 years (renewable without limit). Staggered boards are permitted.

¹⁰ See for example Brickley et al. (1997), and Dey et al. (2011).

(e.g., incentive compensation schemes). In this view, to maximize value, boards monitor managerial activities and reduce agency costs, taking into account the tradeoff between managerial discretion and board monitoring; i.e., managers are opportunistic, but over-monitoring can be harmful to managerial initiative.

In the managerial hegemony approach the board is a management-friendly body that lacks *de facto* authority over the CEO, reflecting dispersed shareholder ownership. Since managers have operational authority, their knowledge about the firm and its environment is more precise than that of directors, and thus in effect managers control the firm and have considerable discretion. A friendly board passively approves managerial decisions, unless the firm sustains reverses or financial distress.¹¹ Moreover, managers often select board members, encouraging their loyalty, and directors have outside responsibilities, limiting their ability to monitor or to challenge CEO actions.¹²

Adams and Ferreira (2007), Fluck and Khanna (2008), and Harris and Raviv (2008) develop formal information-based governance models that explain why shareholder interests are best served by a passive board. Fluck and Khanna argue that passivity is efficient due to the severity of the board's free rider problem, reflecting the costs of collecting information and decision making in a group context. They argue that shareholders are better off by inducing optimal effort by managers (such as via compensation policies), and having a passive unitary board (with low, fixed director compensation), given the severity of the free rider problem intrinsic to group decision making. Harris and Raviv examine the tradeoff between agency costs and the value of insiders' information and conclude that if insiders have important information relative to outsiders, shareholders will prefer an insider-controlled board to a more monitoring-

¹¹ Vafeas (1999) reports evidence that boards become more active when there is a decline in the firm's share price.

¹² In the U.S. most corporate charters limit director liability to breaches of duty and firms routinely purchase insurance policies for directors and officers, largely eliminating their vulnerability to shareholder lawsuits.

intensive board. Adams and Ferreira model the board as an entity that has a role in advising managers but also in monitoring them. Given the intrinsic conflict between these functions and the board's dependence on CEO-supplied information, Adams and Ferreira conclude that a management friendly board is efficient except when managers can extract substantial private benefits at a cost to dispersed shareholders. In the latter case, it is optimal for the monitoring and advising functions to be separated, such as through a dual board structure.¹³ Since the diversity of activities and characteristics across firms implies different levels of asymmetric information, private benefits, and external monitoring, the usefulness of the active monitoring intrinsic to dual boards should vary across firms. This perspective is consistent with the tradeoff analyzed by Harris and Raviv.

B. Board Structure Choice: Asymmetry of Information and Private Benefits

Board members are more reliant on the CEO when information asymmetry is high. Duchin et al. (2010) find that the effectiveness of outside directors depends on the cost of acquiring firm information; i.e., when the cost is low, adding outsiders improves performance, but when it is high, adding outsiders worsens performance. Raheja (2005) and Masulis and Mobbs (2011) argue that inside directors facilitate information flow, so a management friendly board is efficient because it strengthens the incentive for insiders to reveal their private information. Thus, firms with considerable information asymmetry should have friendly boards with a higher proportion of insiders. Coles et al. (2008) find that insiders are valuable in high R&D firms, where private information is important. Linck et al. (2008) find that firms with high growth opportunities, high R&D expenditures, and high stock return volatility, all measures of asymmetric information, have smaller and less independent (i.e., friendlier) boards.

¹³ Adams and Ferreira (2007) extend these results by explicitly analyzing the impact of CEO ownership and private benefits on the incentive of the CEO to share information with the board. They derive implications for the optimal amount of board monitoring as a function of these factors.

These studies argue that a decrease in the severity of asymmetric information increases the probability that board members can usefully monitor, implying for our study a greater likelihood of a dual board that is more conducive to director information collection and monitoring. As a result, we specify variables that proxy asymmetric information as determinants of board structure choice. To measure a firm's investment alternatives, which are likely to be correlated with asymmetric information, we specify a qualitative variable for firms in the high tech sector and a quantitative variable, research and development expenditures scaled by total assets. We also test a lagged (by one year) value of Tobin's Q (firm market value to replacement cost) to measure growth options, and both the standard deviation of firm share price and the relative bid-ask spread, to measure risk and asymmetric information.

Private benefits (such as insufficient effort, empire building, and self-dealing), while difficult for shareholders to evaluate (Grossman and Hart, 1988), play a key factor role in the Adams and Ferreira (2007) and Harris and Raviv (2008) models. Thus, we specify a variable for firms with eponymous names, based on the Gompers et al. (2010) view that insiders place a high value on private benefits at firms named for an individual in the control group.¹⁴ Using ICB (Industry Classification Benchmark) codes, we specify a qualitative variable for media or entertainment-oriented firms, given the Demsetz and Lehn (1985) view that control of such firms provides non-pecuniary income (e.g., influence over public opinion and visibility for their executives). Based on work by Gompers et al. (2010), we test a qualitative geographic variable that takes on the value of unity for a firm with a ratio of its sales to aggregate sales of listed firms located in the same locality that is greater than 10%, suggesting that such firms have a greater potential for private benefits extraction.

Prior literature finds that a multiple share class voting structure fosters managerial

¹⁴ Roosenboom and Schramade (2006) show that owner-managers of IPO firms tend to maintain a stronger hold on control when the firm carries their own name.

entrenchment and facilitates extraction of private benefits, since insiders bear only a fraction of the cost of private benefits literature (DeAngelo and Rice (1983), Jarrell and Poulsen (1988), Ruback (1988), and Gompers et al. 2010)). We specify a qualitative variable for firms with a multiple class share structure to test the hypothesis that a differential voting structure implies a greater need for monitoring, and thus an increased likelihood of a dual board structure.

C. Substitutes for Board Monitoring: Leverage, Blockholders, and Foreign Listing

Jensen (1986) contends that debt mitigates private information problems and lessens extraction of managerial private benefits. Diamond (1984) and Dewatripont and Tirole (1994) argue that creditors are monitors that wield the threat of terminating managers (such as through bankruptcy or liquidation) when performance is poor, with control shifted to fixed claimants. As a result, firms with considerable leverage are likely to be closely monitored by creditors, reducing the gain from intensive board monitoring, and lessening the likelihood of a dual board structure. Thus, we specify a variable that measures firm leverage.

Grossman and Hart (1980), Shleifer and Vishny (1986), Admati et al. (1994), and Bolton and von Thadden (1998), argue that blockholders have an incentive to produce information about the firm and to actively monitor managers, thus reducing rent-seeking managerial activities. From this perspective, a large shareholder serves as a substitute for board monitoring.

Blockholders are more common in France than the U.S. where institutional investors, such as pension funds, mutual funds, hedge funds, and related entities, hold the preponderance of U.S. corporate stock, and for shorter periods than French investors (Kojima, 1997). Also, U.S. institutions face legal restrictions on their ability to influence corporate practices,¹⁵ so they are

¹⁵ There are some exceptions; e.g., CALPERS, at times has actively pressured managers. Black (1990) details federal regulations and restrictions that discourage shareholder actions and limit the ability of institutions and other blockholders to influence corporate outcomes. These restrictions discourage monitoring and are thought to lead institutions to prefer to sell their holdings in a poorly managed firm rather than attempt to influence management, a

generally not considered an important force for disciplining management.¹⁶ We specify a variable for the ratio of shares held by the largest shareholder to total shares as a potential source of monitoring. If a large shareholder is an effective substitute for board monitoring, it could lessen the likelihood of a dual board structure, whereas firms with dispersed structures could be more likely to adopt a dual board structure to provide more effective monitoring.

Prior research shows that a listing on a foreign market whose disclosure rules are stronger than the home country provides greater protection to minority shareholders, strengthens firm reputation, broadens the investor base, and improves the terms on which firms can issue securities, thus lowering the cost of capital. This bonding hypothesis (Coffee, 2002) suggests that cross-listing in the U.S is a positive signal to dispersed shareholders and investors. French firms with U.S. ADRs must register with the SEC, generate financial statements consistent with U.S. accounting standards, and are exposed to potential shareholder litigation. Such listings entail greater monitoring and lessen the likelihood of a dual board. We test this effect by specifying a qualitative variable for firms that have a listing on a U.S. exchange.

D. Concentrated Ownership in Generational Firms

A considerable proportion of listed firms in France are closely held, reflecting ownership by multiple family branches and generations that typically persists for decades (La Porta et al., 1999). Such control groups may value the option to pursue activities that do not enhance firm value or avoid profitable expansion that weakens their control. In some cases control group members have managerial positions and/or board seats, while others employ professional

practice that is commonly referred to as the “Wall Street Rule.” However, some researchers (e.g., Edmans (2009)) argue that stock liquidity facilitates a threat of exit by large (passive) shareholders that can also serve as mechanism for disciplining managers.

¹⁶ There is a large theoretical literature beginning with the work of Diamond (1984) that analyzes the role of financial intermediaries as delegated monitors that have the incentive and the authority to control management. For a survey of this literature, see Boot (2000).

managers. Family-based firms in France are a greater proportion of listed firms and typically have longer histories than such firms in U.S., where they are typically smaller and founder-based (Anderson and Reeb (2003) and Perez-Gonzalez (2006)).

Closely held firms could perform better than other firms because they can generate non-monetary rewards to group members, but they could also underperform since group members may pursue personal goals rather than the interests of dispersed shareholders. Moreover, CEOs drawn from the control group are not selected from the full set of available CEOs. Villalonga and Amit (2006) find that closely held firms create greater value while the founder is the CEO, but minority shareholders are worse off at firms managed by a descendant (even if the founder remains as non-executive Chairman). Bennedsen et al. (2007) find that CEOs drawn from the control group generally underperform relative to professional CEOs, especially at larger firms or firms in high growth industries. Adams et al. (2009) identify a positive effect of founder CEOs on firm performance, but Anderson et al. (2009) find that founder and descendent-controlled firms exhibit negative performance except when ownership is dispersed. Anderson and Reeb (2004) find that firms with continued founding-family-related ownership and relatively few independent directors, perform significantly worse than non-family firms, but moderate family-related board presence benefits the firm. In their view, minority interests are best protected when independent directors monitor closely held firms. This research implies that the choice of board structure should be sensitive to whether a firm is closely held and whether members of the control group play an active role in management. Thus, we examine the effect of being a closely held French firm on the likelihood of having a dual board structure and assess whether the presence of professional management in such firms is a factor associated with the type of board structure.

III. Sample

Our sample consists of French corporate board structure from 1998 through 2008 for all firms in the SBF250 index, which encompasses the 250 firms with the largest market capitalizations and that are the most actively traded on the Paris stock exchange. Their aggregate market value represents on average (median) 92.5% (93.0%) of the market capitalization of all public firms in France. The sample of 415 firms is an unbalanced panel since some firms are delisted, while others enter the index. We exclude 39 firms: 16 are incorporated outside of France and operate pursuant to another country's corporation laws, 13 are "sociétés en commandite par actions" that by law must have a dual board, and 10 lack required data. Yearly data are collected as of year end, December 31. The sample consists of 376 firms and 3048 firm-years. Ownership structure is collected from annual reports since some of the required data are not available in commercial databases. Accounting data are from WorldScope; stock market data are from DataStream. The definitions of all variables are reported in the Index.

In Panel A of Table I, the data show a gradual rise in the proportion of firms with dual boards; the maximum is 28.8% in 2005. Thus, instead of a trend toward convergence with the Anglo-American standard of unitary boards, French firms appear to be modestly increasing their usage of dual boards. Among firms with unitary boards, there is also a trend toward separating the CEO and Chairman after this separation was permitted in 2001; by 2008, 20.9% of the firms utilize this option. In Panel B, means (medians) of firm characteristics are reported for the full sample and disaggregated by unitary and dual boards. There are significant differences in these characteristics, except for leverage and the stake of the largest shareholder. Firms with values of variables that indicate severity of asymmetric information tend to have unitary boards. Firms characterized by high potential for private benefits tend to have dual boards. Among the subset of firms that are closely held, for the period that they are managed by first generation members

there is a tendency to have unitary boards; during the period they are managed by descendants or professional managers they tend to have dual boards.

IV. Empirical Results

We estimate a binomial logit model of the choice of board structure using the maximum likelihood method where the value function for the logit is specified as a linear function of firm-specific variables that serve as proxies for asymmetric information, the potential for private benefits of control, and the presence of external monitoring. The coefficients, reported in Table II, provide estimates of how an increase in a specified variable affects the marginal likelihood that a firm utilizes a dual rather than a unitary board structure. Since changes in board structure occur infrequently at most firms, there may be clustering effects that could potentially bias the statistical significance of the results. Thus, we apply procedures described in Petersen (2009) to adjust standard errors for clustering by firm and time for results reported in the tables.

A. Information Asymmetry, Private Benefits, and Sources of Monitoring

The Adams and Ferreira (2007) and Harris and Raviv (2008) theories imply that the greater the information asymmetry the greater the benefit to the firm when board members are passive and permit management to pursue its informational advantage. Thus, the likelihood of a dual board structure should be negatively related to the severity of information asymmetry. In Table II the coefficients are significant for several information asymmetry proxies and the signs are consistent with the theoretical models. The R&D and high tech variables are each significant, suggesting a greater likelihood of unitary boards in these industries where managers are likely to possess an important informational advantage. While the coefficients of firm age, volatility, liquidity, and lagged Tobin's Q have the correct signs, they are not significant. In general, the results suggest that firms whose value is derived from growth options or intangible

assets are more likely to utilize a unitary board, implying an inverse relationship between a dual board and information asymmetry.

In 2001, French firms with a unitary board structure gained the right to separate the positions of CEO and Chairman. We assess whether this flexibility about leadership positions reduces the likelihood of adopting a dual board structure by specifying a post-2001 variable. However, we find that the coefficient is positive and significant, indicating that the likelihood of having a dual board increases after 2000. This evidence indicates that the option to separate the two positions within a unitary board structure has not reduced the likelihood of a dual board structure.

Several proxy variables support the Adams and Ferreira conclusion that a high potential for private benefit extraction implies that a dual board is more efficient than a unitary structure. One, the coefficient for the qualitative variable for firms in the media and entertainment industry implies that firms in these sectors are more likely to adopt a dual board structure. Two, the geographical variable for firms with an important role in the local economy, is strongly positive. Three, the variable for multiple classes of voting rights suggests that firms with differential voting rights have a greater likelihood of adopting a dual board structure. Each variable is statistically significant and has the expected positive sign, suggesting the importance of the potential for private benefit extraction on the choice of board structure. A qualitative variable for eponymous firms (Gompers et al. (2010)) is not significant.

We specify variables to reflect external monitoring of the firm's activities, which could lessen the potential for private benefit extraction and lower the likelihood of a dual board structure. The variable for a U.S. stock exchange listing has a negative and statistically significant coefficient, suggesting an increased likelihood of a unitary board structure. Both leverage and the proportion of shares held by the largest shareholder obtain negative coefficients,

but neither variable is statistically significant. The variable that controls for firm size (specifically the logarithm of total assets) indicates that the size of the firm has little influence on board structure.

Overall, the evidence supports the view that firm characteristics have an important influence on board structure and the intensity of monitoring.¹⁷ Greater severity of asymmetric information is associated with a greater likelihood of a unitary board, with its associated propensity for board passivity, whereas when the potential for private benefit extraction is important, there is a greater likelihood of having a dual board structure.

B. Board Structure in Closely held Firms

We examine the effects of closely held firms, a salient element of business in France, and of many other countries' corporate structures (La Porta et al., 1999). We define these firms as having an individual or group of related individuals holding at least 10% of shares outstanding. Members of the control group have an incentive to be monitors, but private benefit issues also arise.

In Table III, the qualitative variable for closely held firms has a positive and statistically significantly coefficient, indicating a greater likelihood of a dual board structure for firms with a highly concentrated ownership structure. However, several logit regressions that include variables to distinguish between closely held firms where members of the control group participate in management versus those managed by professionals indicate that this differentiation is an important factor affecting board structure at closely held firms. We also distinguish between firms where the founder or a member of the first generation is the CEO versus firms managed by their descendants. The results indicate that professional management at

¹⁷ This evidence for French firms stands in contrast to findings reported by Faleye et al. (2011) that the intensity of board monitoring (measured by committee assignments of independent directors) by U.S. firms reflects regulatory constraints rather than corporate choice-making.

a closely held firm has a significantly positive effect, implying a greater likelihood of a dual board structure. In such a case, members of the control group typically have representation on the supervisory board, which monitors the firm's activities. When the management variable is further disaggregated by generation, we find that a closely held firm managed by a descendant or inheritor is also more likely to have a dual board structure, as is the case for professional management. In contrast, when there is a first generation CEO, a closely held firm is more likely to adopt a single board structure, indicating that passive board behavior is a characteristic of founder-run firms.

Overall, the results indicate that professional management or management by subsequent generations increases the likelihood of a dual board at a closely held firm. Our results imply that an expectation of a transfer of management away from a founder of a closely held firm is likely to be associated with a change in the firm's governance structure from a unitary to a dual board, suggesting that more active board monitoring becomes efficient for such firms. From a policy perspective, this reasoning implies that freedom of contract about board structure is valuable for closely held firms because it gives shareholders the flexibility to alter the choice of board structure as conditions evolve over time, facilitating the transfer of managerial responsibilities between generations or to professional managers.¹⁸

C. Dual Boards versus Split Leadership Positions at Unitary Boards

We further analyze the 2001 option to allow French firms with a unitary board structure to separate the positions of CEO and Chairman to test if this separation is a substitute for a dual board. Since board structure is a charter action requiring a shareholder vote, while leadership

¹⁸ To provide some indication of the gain that can arise from facilitating transitions at closely held firms, we conducted an event study of decisions by such French firms to hire a professional manager as CEO during the period 1998 to 2009. Consistent with results reported by Villalonga and Amit (2006) for the U.S., we find a positive two-day return of 1.30% ($p=0.18$) and a buy and hold return for the subsequent three years of 60.15%, suggesting that the move to professional management has important valuation effects for closely held firms.

choices are a board responsibility, the decision of a unitary board to appoint a single person or different individuals can be viewed as a second stage of governance. Since these choices are sequential, we estimate a sequential logit regression for the post-2000 period, which consists of a logit regression that estimates the likelihood of splitting the leadership positions, conditional on the firm having a unitary board structure.¹⁹ Thus, the sequential logit model estimates the unconditional sensitivity of the likelihood of choosing a (dual) board structure as a function of firm and environmental characteristics, and also the likelihood, conditional on a unitary board structure being chosen, of separating or consolidating the leadership positions of CEO and Chairman. Given our focus on board monitoring, we test whether variables that explain the choice of board structure also explain the leadership decision, based on the hypothesis that a separate chairman position could be expected to encourage greater board monitoring while a combined position may encourage board passivity.²⁰

In Table IV, the results for the first stage of the sequential logit (explaining the likelihood of a unitary versus dual board structure) closely parallel the earlier results and are consistent with the Adams and Ferreira model. Thus, severe asymmetric information increases the likelihood of a unitary board, while a greater potential for the extraction of private benefits increases the likelihood of a dual board. However, in the second stage the choice with respect to the separation of leadership is not explained by these variables. Among the asymmetric information

¹⁹ It is not appropriate to estimate a multinomial logit since it assumes that the random errors for each choice are independent, i.e., the independence of irrelevant alternatives assumption. This assumption implies that the choice between two alternatives is independent of other choices, so that if one of the alternatives is removed the other alternatives will sustain a proportionate increase in their probability of being chosen. This assumption is not tenable in the French circumstances we are examining since the choice of a dual board structure necessarily separates the two positions. Nevertheless, we also estimated a simultaneous choice multinomial model. The estimated coefficients (not included in the tables but available from the authors) suggest conclusions that are broadly similar to the sequential logit.

²⁰ There have been numerous empirical studies about the effectiveness of alternative leadership structures, but the consensus in the literature suggests that there is little systematic difference in performance between firms that separate the two positions from firms in which a single individual holds the two positions. For a review of such studies, see Dalton et al. (1998).

variables, both the R&D and high tech firm variables have the incorrect sign, suggesting that high tech firms with a unitary board structure separate the leadership positions. None of the variables that measure the potential for private benefits is significant, suggesting that among firms with a unitary structure, the presence of a high potential for private benefit extraction does not increase the likelihood of splitting the leadership positions. Likewise, none of the variables that gauge external monitoring has a significant effect on leadership choice. Among closely held firms, those with professional managers tend to split the leadership positions, while firms controlled by the founder or a member of the first generation tend to unify the positions. Among the set of firms with a unitary board structure, the smaller firms among the SBF250 tend to unify the leadership positions, while larger firms tend to separate them. Overall, there is little evidence that separating leadership positions within a unitary board structure is a substitute for a dual board structure.

D. Evidence that Dual Board Structure Fosters Intensive CEO Monitoring

We test whether French firms with a dual board structure provide more intensive monitoring than firms with a unitary board structure, based on the well-established result that there is a higher probability of CEO turnover following periods of weak market-adjusted returns (Coughlan and Schmidt (1985) and Warner et al. (1988)). Given our findings about the determinants of board structure and the Adams and Ferreira proposition that a dual board has a comparative advantage at monitoring managerial performance, we expect CEO turnover to be more closely related to performance for firms that have a dual board structure.

Logit regressions in Table V assess whether a dual board structure increases (decreases) the probability of CEO turnover in response to poor (superior) performance. The dependent variable is a binary variable that equals one for a firm year in which there is CEO turnover in the

following year (296 cases), and zero otherwise. Consistent with prior literature we do not differentiate forced versus voluntary turnover. The results indicate that prior performance has a significantly negative effect on CEO turnover, consistent with prior findings in the literature. As expected, we find that CEO age has a positive effect on turnover and that there is significantly lower CEO turnover at closely held firms.

When we include a variable for a dual board structure, its coefficient is not significant. However, the monitoring intensity of a dual board structure is tested by specifying an interaction variable for firm prior share price performance and the presence of a dual board. This interaction term consistently has a significantly negative coefficient that is approximately twice the size of the coefficient of the performance variable. This finding implies that the sensitivity of CEO turnover to firm performance is approximately three times greater for firms with dual boards than for firms with unitary boards. This evidence is consistent with the Adams and Ferreira (2007) contention that a dual board structure fosters more active monitoring.

The specification of an interaction variable for a unitary board structure and the separation of the CEO and Chairman positions, indicates little effect on the sensitivity of CEO turnover to firm performance. Thus, the separation of the top leadership positions does not alter the sensitivity of CEO turnover to performance. This result is consistent with our prior evidence that the separation of leadership positions within a unitary board structure is not a substitute for the more intensive monitoring conducted by a dual board. We also find that an interaction variable between share price performance and closely held firms is not significant. Overall, we find that a poorly performing firm with a dual board structure has a significantly greater likelihood of sustaining CEO turnover, confirming the greater monitoring intensity of a dual board structure.

E. Evidence on Board Structure and Firm Valuation

Faleye et al. (2011) argue that the intensity of board monitoring by U.S. firms is largely driven by regulatory constraints, and they conclude that the more intensive board monitoring induced by these changes reduces firm value. In contrast to U.S. firms, French firms can voluntarily chose to adopt a dual board structure that fosters more intensive monitoring if it is appropriate for the characteristics of their business operations and environment, or alternatively to adopt the less monitoring intensive unitary board structure emblematic of the Anglo-American model. Since board structure in France is a matter of firm choice, in equilibrium, for our panel of firms the greater intensity of monitoring that is characteristic of a dual board structure should not have a significant effect (either positive or negative) on firm value.

To test whether there is a relation between board monitoring and firm valuation, we estimate several regressions for our panel of data that explain firm value (specified as the natural logarithm of Tobin's Q), as function of a set of control variables plus a qualitative variable that indicates a dual board structure (or its predicted value from an instrumental variable regression). Among the various control variables in this panel regression, we include firm leverage, tangible assets, capital expenditures (relative to assets), firm age, and the size of the largest blockholder. The results, reported in Table VI, indicate that board structure does not have a significant effect on value regardless of the specification or the method of estimation that is employed. Thus, for French firms the greater monitoring intensity of a dual board structure is not associated with a lower firm value. This lack of effect of board structure on firm value is in contrast to the negative impact of monitoring intensity on value for U.S. firms reported by Faleye et al. (2011).

We also conducted event studies of public announcements of proposed changes in board structure and consistently found excess returns that were small and insignificant. For the 38 events with identifiable announcement dates, the 3-day average excess return is 0.53% ($p =$

0.63). We note that the finding of no significant share price effect may in part reflect the fact that in some cases it is difficult to determine the exact date for the first public announcement of proposed changes in board structure. In other cases the initial public announcement includes information on a number of other (typically routine) agenda items for the required shareholder meeting, so the announcement return may reflect factors other than the proposed change in board structure. Nevertheless, the absence of an effect on firm value in the panel regressions in combination with an insignificant share price effect in event studies indicates that the greater monitoring intensity of dual boards is not associated with lower firm value.

E. Robustness

We conduct several robustness checks. In broad terms, the results, reported in Table VII, parallel our earlier results. First, we estimate the logit regression when yearly dummy variables are used rather than a single dummy variable for the years after 2000. There is also little effect on the results when the regression is estimated only over the subperiod after 2000, the period when firms with a unitary structure have had the flexibility to split the top leadership positions. We also estimate a logit regression that excludes financial firms (13% of the sample) and find results that are similar to the earlier results.

Finally, we estimate the effect on the choice of board structure when the French government is a shareholder in a firm. Share ownership gives the government direct access to precise information about the firm and its management, but the government also has political and economic interests that may induce it to pressure the firm to act in ways that are not in the interests of other shareholders (Bortolotti and Faccio (2009) and Faccio (2006)). We specify a qualitative variable when the French government is the largest shareholder in the firm or its parent, which occurs in 6% of the sample. The coefficient is not statistically significant at the

usual confidence levels; the pattern of the other results remains the same.

V. Conclusions

Scholars argue that there is global convergence to the Anglo-American model of corporate governance with its unitary board structure, reflecting the strength of global competition and market liberalization. Others contend that important differences in corporate governance structures around the world are likely to persist. The theoretical model of Adams and Ferreira (2007) concludes that maximization of shareholder value generally entails a management friendly (passive) board that is a logical consequence of a unitary board structure, except when there is a private benefits problem, so a more monitoring intensive dual board structure becomes optimal. By analyzing the case of France, which has permitted a free choice between these structures for 45 years, we find that the firm's choice of a unitary versus a dual board structure is well explained by the Adams and Ferreira (2007) model. Firms that have a severe asymmetric information problem are likely to opt for a unitary board structure, while firms with a potential for private benefits extraction tend to utilize a dual board structure. Closely held firms controlled by the founders or other first generation individuals tend to have a unitary board structure while those managed by professional managers tend to have a dual board structure. We show that there is enhanced sensitivity of CEO turnover to firm performance when there is a dual board, indicating the greater monitoring intensity of a dual board structure. Our evidence indicates that the separation of leadership positions within a unitary board structure is not a substitute for the monitoring intensity of a dual board.

From a policy perspective, our results imply that freedom of contract about board structure is valuable and that shareholders benefit from having the flexibility to choose the corporation's board structure and to alter its structure as conditions evolve over time. As such,

the recent initiative to allow a European firm to be registered in the countries of the European Economic Area provides a firm with a valuable option about its governance by offering the freedom to choose between a unitary or dual board, thus averting the potential costs of a one size fits all home country requirement about board structure.

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Index: Variable Definitions

Variable	Definition
%SALES > 10%	Dummy variable : equals 1 if the ratio (Sales of firm i in year t / total sales of the companies incorporated in firm i's <i>département</i> in year t) is larger than 10% (Source: Worldscope)
AGE	Number of years since firm's IPO (Source: Annual reports)
ASSETS	Total assets at the end of the fiscal year (in euros millions) (Source: Worldscope)
CAPEX/ASSETS	Capital expenditures / Total assets (Source: Worldscope)
CEO AGE	CEO age (Source: Annual reports)
CEO TENURE	CEO tenure in years (Source: Annual reports)
CHF	Dummy variable: equals 1 when (1) the largest shareholder owns at least 10% of the voting rights; (2) this shareholder is a member of the control group (direct ownership) or is a closely-held company (ultimate ownership, at the 20% threshold) (Source: Annual reports)
CHF.MGT	Dummy variable: equals 1 if the firm is closely-held and the CEO is a member of the control group (Source: Annual reports)
CHF.MGT.GEN1	Dummy variable: equals 1 if the firm is closely-held and the CEO is a 1 st generation member of the control group (Source: Annual reports)
CHF.MGT.HEIRS	Dummy variable: equals 1 if the the firm is closely-held and the CEO is a 2nd, third ... generation member of the control group (Source: Annual reports)
DS	Dummy variable: equals 1 if the firm has a two-tiered board structure (Source: Annual reports)
DUAL CLASS	Dummy variable: equals 1 if the company has issued non-voting shares or investment/voting certificates (Source: Annual reports)
EPONYMOUS	Dummy variable: equals 1 for an eponymous firm (Source: Annual reports)
HIGHTECH	Dummy variable: equals 1 when the firm belongs to the High Tech sector (as defined by Faccio and Masulis, 2005) (Source: Worldscope)
INDUSTRY	Industry dummies, based on the 1-digit SIC code (Source: Worldscope)
LEVERAGE	Ratio (financial debts / total assets) (Source : Worldscope)
LISTING USA	Dummy variable: equals 1 when the company is listed on the NYSE, NASDAQ or AMEX (Source: Datastream)
LN(AGE)	Ln (number of years since firm's IPO + 1) (Source: Annual reports)
LN(CEO AGE)	Ln(CEO AGE) (Source: Annual reports)
LN(CEO TENURE)	Ln(CEO TENURE + 1) (Source: Annual reports)
LOG(ASSETS)	Log (Total assets) (Source: Worldscope)
PB INDUSTRY	Dummy variable: equals 1 when the ICBSSC code of the company is 5500 (Media) or when the primary SIC code is 7911, 7922, 7929, 7933, 7941, 7948, 7991-3, 7996-7 and 7999 (Sport and Entertainment) (Source: Datastream)
PERF	Stock return – SBF250 index return for the year (Source: Datastream)
PRO.MGT	Dummy variable: equals 1 if the firm is closely-held and the CEO is a professional manager (Source: Annual reports)
RD/ASSETS	R&D expenses / Total assets (Source: Worldscope)
REL.SPREAD	[Ask-Bid]/[(Ask+Bid)/2]*100 (annual average) (Source: Datastream)
S1 CFR	Direct cash-flow rights of the largest owner (in %) (Source : Annual reports)
STATE	Dummy variable: equals 1 when (1) the largest shareholder owns at least 10% of the voting rights; (2) this shareholder is a government (direct ownership) or a government-owned company (ultimate ownership, at the 20% threshold) (Source: Annual reports)
TANGIBLE ASSETS	Property, plants and equipment / Total assets (Source: Worldscope)
TOBIN'S Q	(Total assets – book value of common equity + market capitalization) / total assets (Source: Worldscope)
TOBIN'S Q(t-1)	Lagged value of Tobin's Q (Source: Worldscope)
VOLAT	Stock price volatility over the year, computed with monthly returns (Source: Datastream)
Y>2000	Dummy variable: equals 1 for the years 2001 to 2008

Table I.
Descriptive Statistics of Sample Firms

The sample comprises 3,048 firm-year observations from 376 SBF250 listed in France from 1998-2008

Panel A: Board Structures

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Sample
Firm-years	202	242	280	306	306	297	285	281	286	285	278	3048
DUAL	19.3%	19.0%	20.0%	24.8%	27.5%	27.9%	28.1%	28.8%	26.6%	25.3%	24.8%	25.0%
UNITARY	80.7%	81.0%	80.0%	75.2%	72.5%	72.1%	71.9%	71.2%	73.4%	74.7%	75.2%	75.0%
CEO+COB	80.7%	81.0%	80.0%	74.2%	64.1%	62.0%	58.9%	56.2%	58.7%	55.8%	54.3%	65.4%
CEO/COB	0.0%	0.0%	0.0%	1.0%	8.5%	10.1%	13.0%	14.9%	14.7%	18.9%	20.9%	9.6%

Panel B: Accounting, Financial and Ownership Characteristics

This panel provides mean and median values of firm characteristics. ***, **, * denote statistical significance based on two-sided tests at the 1%, 5% and 10% level, respectively. Variable definitions are in the Index. Student t-statistics and Wilcoxon Z-statistics test for the difference in means and medians.

B.1. Total Sample (3048 observations)

Firm-years	Full Sample 3048			Unitary Board 2286		Dual Board 762		Tests for Differences in				
	Mean	Median	St Dev	Mean	Median	Mean	Median	Means	Medians			
ASSETS	18161	585	105586	18227	571.5	17964	621	0.06				
LOG(ASSETS)	2.94	2.77	0.95	2.91	2.76	3.02	2.79	-2.77	***	-3.19	***	
<i>Asymmetric Information</i>												
RD/ASSETS	0.02	0.00	0.06	0.02	0.00	0.01	0.00	5.92	***	6.76	***	
HIGHTECH	0.15	0.00	0.35	0.17	0.00	0.07	0.00	7.10	***	7.04	***	
VOLAT	0.11	0.08	0.09	0.11	0.09	0.09	0.08	4.45	***	4.84	***	
AGE	18.02	1.00	2.57	1.69	11.00	2.98	13.00	-6.19	***	-5.30	***	
LN(AGE)	2.55	2.48	0.86	2.50	2.48	2.71	2.64	-5.89	***	-5.30	***	
TOBIN'S Q	1.69	1.30	1.65	1.75	1.31	1.48	1.29	3.93	***	2.28	**	
TOBIN'S Q(t-1)	1.81	1.34	1.93	1.89	1.35	1.58	1.32	3.81	***	3.08	***	
REL.SPREAD	1.54	1.04	3.28	1.59	1.04	1.40	1.05	1.42				
<i>Private Benefits</i>												
PB INDUSTRY	0.07	0.00	0.25	0.05	0.00	0.12	0.00	-7.09	***	-7.04	***	
%SALES>10%	0.22	0.00	0.41	0.19	0.00	0.31	0.00	-6.79	***	-6.75	***	
DUAL CLASS	0.02	0.00	0.15	0.01	0.00	0.05	0.00	-5.47	***	-5.45	***	
EPONYMOUS	0.24	0.00	0.43	0.22	0.00	0.29	0.00	-3.89	***	-3.89	***	
<i>Monitoring</i>												
LISTING USA	0.07	0.00	0.26	0.09	0.00	0.04	0.00	4.56	***	4.55	***	
LEVERAGE	0.25	0.23	0.22	0.25	0.23	0.25	0.23	0.25				
S1 CFR	0.43	0.46	0.25	0.43	0.46	0.43	0.46	-0.01				
<i>Closely held firms</i>												
CHF	0.64	1.00	0.48	0.63	1.00	0.69	1.00	-3.37	***	-3.36	***	
PRO.MGT	0.24	0.00	0.43	0.18	0.00	0.43	0.00	-14.19	***	-13.74	***	
CHF.MGT	0.40	0.00	0.49	0.45	0.00	0.27	0.00	8.81	***	8.70	***	
CHF.MGT.GEN1	0.27	0.00	0.45	0.34	0.00	0.08	0.00	14.46	***	13.99	***	
CHF.MGT.HEIRS	0.13	0.00	0.34	0.11	0.00	0.19	0.00	-5.88	***	-5.85	***	
STATE	0.06	0.00	0.24	0.06	0.00	0.07	0.00	-0.75				

B. 2. Variables used in the CEO Turnover Analysis (2932 observations)

Number of firm- years	Full Sample 2932			Unitary Board 2198		Dual Board 734		Tests for Differences in			
	Mean	<i>Median</i>	St Dev	Mean	<i>Median</i>	Mean	<i>Median</i>	Means	<i>Medians</i>		
PERF	0.08	<i>0.01</i>	0.63	0.09	<i>0.01</i>	0.06	<i>0.02</i>	1.28		<i>-0.87</i>	
CEO AGE	53.89	<i>54.00</i>	8.26	54.51	<i>55.00</i>	52.03	<i>52.00</i>	7.10	***	<i>7.33</i>	***
LN(CEO AGE)	3.97	<i>3.99</i>	0.16	3.99	<i>4.01</i>	3.94	<i>3.95</i>	6.58	***	<i>7.33</i>	***
CEO TENURE	8.78	<i>6.00</i>	8.79	10.07	<i>7.00</i>	4.90	<i>3.00</i>	14.26	***	<i>14.12</i>	***
LN(CEO TENURE)	1.85	<i>1.95</i>	1.00	1.99	<i>2.08</i>	1.42	<i>1.39</i>	13.87	***	<i>14.12</i>	***

B. 3. Variables used in the Valuation Analysis (2943 observations)

Number of firm- years	Full Sample 2943			Unitary Board 2204		Dual Board 739		Tests for Differences in			
	Mean	<i>Median</i>	St Dev	Mean	<i>Median</i>	Mean	<i>Median</i>	Means	<i>Medians</i>		
CAPEX/ASSETS TANGIBLE	0.05	<i>0.04</i>	0.06	0.05	<i>0.04</i>	0.05	<i>0.04</i>	-1.33		<i>-2.36</i>	**
ASSETS	0.21	<i>0.15</i>	0.20	0.20	<i>0.14</i>	0.21	<i>0.17</i>	-0.71		<i>-1.98</i>	**

Table II.
The Choice of Board Structure

This table presents a logit regression analysis of the choice of a dual board structure. The dependent variable equals 1 when the firm has a dual board structure. The sample contains 3,048 observations. Variable definitions are in the Index. Standard errors are corrected using Petersen's (2009) double clustering approach (firm and year); z-statistics are reported in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level, respectively.

	(1)	(2)	(3)	(4)	(5)
LOG(ASSETS)	0.0913 (0.72)	0.0142 (0.10)	0.154 (1.26)	0.262** (2.10)	0.139 (1.00)
<i>Asymmetric Information</i>					
RD/ASSETS	-10.90** (-2.35)	-10.81** (-2.26)			-8.530* (-1.88)
HIGHTECH	-1.225*** (-2.63)	-1.162** (-2.45)			-0.976** (-1.97)
VOLAT	-2.154** (-2.20)	-1.544 (-1.52)			-1.246 (-1.45)
LN(AGE)		0.156 (1.22)			
TOBIN'S Q(t-1)		-0.0438 (-0.69)			
REL.SPREAD		-0.0433 (-1.00)			
<i>Private benefits</i>					
PB INDUSTRY			1.426*** (3.01)		1.091** (2.25)
% SALES>10%			0.753*** (3.01)		0.634** (2.46)
DUAL CLASS			1.166** (2.30)		1.031** (2.00)
EPONYMOUS			0.316 (1.21)		0.173 (0.63)
<i>Monitoring</i>					
LISTING USA				-1.104** (-2.22)	-0.951* (-1.80)
LEVERAGE				-0.286 (-0.58)	-0.621 (-1.10)
S1 CFR				-0.0981 (-0.24)	-0.583 (-1.29)
Y>2000	0.457*** (5.63)	0.407*** (4.60)	0.455*** (5.12)	0.394*** (4.63)	0.501*** (5.25)
CONSTANT	-2.618*** (-3.34)	-2.707*** (-3.24)	-3.403*** (-4.03)	-3.124*** (-3.89)	-2.702*** (-3.02)
INDUSTRY DUMMIES	Y	Y	Y	Y	Y
Observations	3048	3023	3048	3048	3048
Pseudo R ²	0.062	0.065	0.065	0.030	0.094
% Concordant	0.751	0.752	0.758	0.750	0.762

Table III.
Board Structure and Closely Held Firms

This table presents a logit regression analysis of the choice of a dual board structure. The dependent variable equals 1 when the firm has a dual board structure. The total sample contains 3,048 observations. Variable definitions are in the Index. Standard errors are corrected using Petersen's (2009) double clustering approach (firm and year); z-statistics are reported in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level, respectively.

	(1)	(2)	(3)	(4)	(5)
LOG(ASSETS)	0.238*	0.151	0.0758	0.0927	0.0390
	(1.93)	(1.22)	(0.58)	(0.62)	(0.26)
<i>Closely Held Firm Attributes</i>					
CHF	0.420*				
	(1.78)				
CHF.MGT		-0.263		-0.622*	
		(-0.96)		(-1.95)	
PRO.MGT		1.146***	1.166***	1.037***	1.064***
		(4.14)	(4.23)	(3.59)	(3.76)
CHF.MGT.GEN1			-1.432***		-1.537***
			(-4.11)		(-3.81)
CHF.MGT.HEIRS			0.976***		0.438
			(3.06)		(1.13)
<i>Asymmetric Information</i>					
RD/ASSETS				-9.830**	-10.59**
				(-2.01)	(-2.27)
HIGHTECH				-0.918*	-0.738
				(-1.74)	(-1.28)
VOLAT				-0.960	-0.587
				(-1.43)	(-1.03)
<i>Private Benefits</i>					
PB INDUSTRY				1.047**	0.938*
				(2.14)	(1.82)
% SALES>10%				0.791***	0.677**
				(2.96)	(2.47)
DUAL CLASS				1.354**	0.901
				(2.16)	(1.40)
EPONYMOUS				0.279	0.152
				(0.93)	(0.51)
<i>Monitoring</i>					
LISTING USA				-0.839	-0.688
				(-1.46)	(-1.16)
LEVERAGE				-0.757	-0.436
				(-1.25)	(-0.87)
S1 CFR				-0.292	-0.289
				(-0.59)	(-0.57)
Y>2000	0.408***	0.383***	0.412***	0.495***	0.503***
	(5.04)	(4.14)	(4.05)	(4.48)	(4.47)
CONSTANT	-3.506***	-3.135***	-3.005***	-2.678***	-2.634***
	(-4.71)	(-4.53)	(-3.96)	(-3.20)	(-2.97)
INDUSTRY DUMMIES	Y	Y	Y	Y	Y
Observations	3048	3048	3048	3048	3048
Pseudo R ²	0.027	0.075	0.133	0.153	0.187
% Concordant	0.750	0.744	0.765	0.773	0.789

Table IV.**Board Structure: Dual Board versus Unitary Board with Split Positions**

This table presents a sequential logit regression analysis of the choice of board structure. In the first step, the dependent variable equals 1 when the firm has a dual board structure; in the second step, the dependent variable equals 1 when the CEO and Chairman positions are split. Since the separation of the CEO and Chairman positions became permissible in 2001, the sample is restricted to the period 2001 to 2008. Variable definitions are in the Index. Firm-clustered z-statistics are reported in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level, respectively.

	(1)		(2)		(3)	
	Dual vs. Unitary	Split vs. Not Split	Dual vs. Unitary	Split vs. Not Split	Dual vs. Unitary	Split vs. Not Split
LOG(ASSETS)	0.0641 (0.45)	0.585*** (3.63)	0.0717 (0.50)	0.583*** (3.62)	-0.0483 (-0.32)	0.442*** (2.65)
<i>Asymmetric Information</i>						
RD/ASSETS	-10.98** (-2.26)	3.349** (2.49)	-10.82** (-2.24)	3.346** (2.47)	-12.72** (-2.55)	2.717 (1.64)
HIGHTECH	-0.781 (-1.52)	1.012** (2.12)	-0.779 (-1.51)	1.012** (2.12)	-0.567 (-0.93)	1.228** (2.39)
VOLAT	(1.08) (-1.16)	(1.45) (-0.59)	(1.09) (-1.15)	(1.45) (-0.59)	(0.68) (-0.98)	(0.49) (-0.35)
<i>Private Benefits</i>						
PB INDUSTRY	1.269** (2.51)	0.0204 (0.04)	1.269** (2.50)	0.0208 (0.04)	1.050** (1.98)	-0.445 (-0.69)
% SALES>10%	0.552** (1.98)	-0.627 (-1.51)	0.552** (1.97)	-0.628 (-1.54)	0.606** (2.03)	-0.378 (-0.85)
DUAL CLASS	1.321* (1.84)	0.669 (0.76)	1.316* (1.79)	0.68 (0.77)	1.292 (1.61)	0.776 (0.77)
EPONYMOUS	0.184 (0.63)	0.273 (0.81)	0.165 (0.55)	0.28 (0.83)	0.157 (0.49)	0.565 (1.39)
<i>Monitoring</i>						
LISTING USA	-0.949* (-1.69)	0.0811 (0.20)	-0.938* (-1.67)	0.0778 (0.19)	-0.691 (-1.13)	0.085 (0.18)
LEVERAGE	-0.715 (-1.16)	0.346 (0.69)	-0.711 (-1.15)	0.344 (0.68)	-0.523 (-0.99)	0.424 (1.14)
S1 CFR	-0.603 (-1.24)	0.553 (0.96)	-0.637 (-1.26)	0.566 (0.91)	-0.258 (-0.47)	0.772 (1.29)
<i>Closely Held Firm Attributes</i>						
CHF			0.0893 (0.34)	-0.0278 (-0.08)		
CHF.MGT.GEN1					-1.710*** (-3.64)	-2.868*** (-3.01)
CHF.MGT.HEIRS					0.348 (0.82)	-0.288 (-0.43)
PRO.MGT					0.891*** (3.19)	1.341*** (3.67)
CONSTANT	-2.044** (-2.21)	-4.276*** (-4.47)	-2.103** (-2.29)	-4.263*** (-4.54)	-1.801* (-1.89)	-3.962*** (-4.37)
INDUSTRY DUMMIES	Y	Y	Y	Y	Y	Y
Observations	2324		2324		2324	
Wald statistic	45.45***		46.13***		78.00***	

Table VI.
Board Structure and Firm Valuation

This table presents the results of a multivariate regression analysis. The dependent variable is the natural logarithm of Tobin's Q. Variable definitions are in the Index. Equation (1) includes both year and industry dummies and standard errors are corrected using Petersen's (2009) double clustering approach (firm and year). Equation (2) uses firm fixed effects (FE). Equation (3) uses two stage least squares in which the variable for a dual board structure consists of the fitted values obtained from a logit regression in Table II. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level, respectively.

	(1)	(2) (FE)	(3) (2SLS)
DS	-0.0375 (-1.31)	0.0388 (1.02)	0.0607 (0.30)
LOG(ASSETS)	-0.0868*** (-3.75)	-0.340*** (-4.73)	-0.0773*** (-3.81)
LEVERAGE	-0.275 (-1.46)	-0.143 (-1.40)	-0.220 (-1.25)
TANGIBLE ASSETS	-0.152 (-1.57)	0.262 (1.58)	-0.121 (-1.23)
CAPEX/ASSETS	0.608** (2.31)	0.554*** (2.87)	0.635** (2.37)
LN(AGE)	-0.0809*** (-3.52)	-0.262*** (-3.97)	-0.0675*** (-3.30)
S1 CFR	-0.0817 (-1.06)	-0.00207 (-0.03)	0.00963 (0.14)
RD/ASSETS			1.365*** (4.71)
HIGHTECH			0.0787 (1.12)
VOLAT			0.319** (2.19)
LISTING USA			0.0924 (1.36)
CONSTANT	0.992*** (7.75)	1.900*** (8.32)	0.828*** (7.82)
YEAR DUMMIES	Y	Y	Y
INDUS. DUMMIES	Y	N	Y
Observations	2943	2943	2943
R^2	0.246	0.713	0.282
Adjusted R^2	0.240	0.669	0.275

Table VII.
Robustness Checks

This table presents a logit regression analysis of the choice of a dual board structure. The dependent variable equals 1 when the firm has a dual board structure. The total sample contains 3,048 observations. Each equation incorporates yearly dummy variables rather than a single dummy variable for years after 2000. In equation (3), the sample is restricted to the period 2001-2008. In (4), financial companies are excluded. Variable definitions are in the Index. Standard errors are corrected using Petersen's (2009) double clustering approach (firm and year); z-statistics are reported in parentheses and asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level, respectively.

	(1)	(2)	(3)	(4)
Sample	Total	Total	Year>2000	Non-Financial Firms
LOG(ASSETS)	0.105 (0.69)	0.0637 (0.42)	0.0176 (0.12)	-0.0595 (-0.34)
<i>Asymmetric Information</i>				
RD/ASSETS	-9.548* (-1.95)	-10.01** (-1.98)	-11.70** (-2.25)	-9.355* (-1.95)
HIGHTECH	-0.914* (-1.73)	-0.936* (-1.75)	-0.730 (-1.40)	-1.051** (-1.97)
VOLAT	-1.022 (-1.35)	-1.101 (-1.36)	-0.933 (-1.44)	-1.317 (-1.59)
<i>Private Benefits</i>				
PB INDUSTRY	1.051** (2.13)	1.073** (2.16)	1.203** (2.43)	1.084** (2.17)
% SALES>10%	0.797*** (2.97)	0.796*** (2.98)	0.729*** (2.68)	0.710** (2.52)
DUAL CLASS	1.348** (2.14)	1.290** (2.16)	1.658** (2.27)	1.467** (2.09)
EPONYMOUS	0.278 (0.93)	0.305 (1.01)	0.314 (1.05)	0.322 (1.08)
<i>Monitoring</i>				
LISTING USA	-0.892 (-1.53)	-0.841 (-1.44)	-0.904 (-1.52)	-1.290** (-2.15)
LEVERAGE	-0.778 (-1.28)	-0.768 (-1.28)	-0.822 (-1.39)	-1.066 (-1.61)
S1 CFR	-0.301 (-0.60)	-0.427 (-0.82)	-0.258 (-0.52)	-0.560 (-1.03)
<i>Closely Held Firms Attributes</i>				
CHF.MGT	-0.620* (-1.94)	-0.486 (-1.42)	-0.792** (-2.48)	-0.700** (-2.06)
PRO.MGT	1.051*** (3.61)	1.184*** (3.66)	0.854*** (2.93)	1.009*** (3.17)
<i>Others</i>				
STATE		0.708 (1.56)		
CONSTANT	-2.815*** (-3.42)	-2.774*** (-3.37)	-2.027** (-2.50)	-1.908** (-2.21)
YEAR DUMMIES	Y	Y	Y	Y
INDUSTRY DUMMIES	Y	Y	Y	Y
Observations	3048	3048	2324	2644
Pseudo R ²	0.154	0.157	0.152	0.173
% Concordant	0.774	0.773	0.769	0.775

Appendix

A.1. Characteristics of Unitary versus Dual Board of Directors

	France – Unitary Board	France – Dual Board	Germany – Dual Board
Legislation	Law 16 November 1940 Current shape Law July 24, 1966	Law July 24, 1966	July 11, 1870 (amended 1937, 1965)
Board structure	A board of directors is headed by an individual who is chairman and CEO and runs the company. In 2001 Law n° 2001-420 on May 15, 2001 authorized the separation of the position of chairman and CEO.	There is a management board that conducts the firm's daily business and a supervisory board that advises and supervises the management board. The supervisory board consists of board members that are strictly separate from the management board.	
Management	The CEO is appointed by the board and manages the company. There may be one or several deputy CEOs, also appointed by the board.	The management board carries out the day-to-day management.	The management board manages the company and conducts its daily business with full authority that is not subject to instructions by any third party, in particular, the shareholders.
Number of members	3 to 18 (set in bylaw/charter).	The management board consists of up to seven for a listed company. The supervisory board members is set in bylaws and must be between three and 18.	For large companies (capital > EUR3 million) the management board has at least two members; no maximum defined. The minimum number on supervisory boards is three up to 21, depending on capital size and, for co-determined companies, on the number of employees.
Employee representation	When employees hold more than 3% of the shares, one or more employee representatives must be elected to the board by the shareholders. These directors have the same status, obligations and liabilities as other directors. For former state owned firms, there are two or three (according to the size of the board) representatives of labor as a whole. The latter employee-elected representatives are added to the total number of directors.	In companies with 500 or more employees, one-third of the supervisory board consists of employees' representatives. If there are more than 2,000 employees, the supervisory board has an equal number of employee and shareholder representatives.	
Age restriction	Except if stated in the bylaws, directors over 70 cannot exceed one-third of the total. The age limit for chairman and CEO is 65.	Except if stated in the bylaws, directors over 70 cannot exceed one-third of the total. The age limit on the management board is 65.	There is no maximum age limit in law. Age restrictions between 60 and 65 years for the management board and between 70 and 75 years for the supervisory board are common practice.
Gender restrictions	As of January 28, 2011, if one gender is not represented on the board, one person of this gender must be appointed at the next general meeting. By January 2014, each gender's representation must be at least 20% and by January 2017, 40%.		
Independence	While there are no obligations as to independent directors, corporate governance codes of best practice recommend sufficient appointment to guarantee the overall independence of the board. In practice, most listed companies have appointed independent directors in recent years. Independence is not defined by the law. The code definition is someone having no relationship of any kind with the company, its group, or its management that could compromise freedom of judgment. It is recommended that at least one-third of the board (one half in widely-held companies with no controlling shareholder) should be independent directors.		Recently, efforts were made to strengthen the independence of supervisory board members. As of 2009, a financial expert must be among the independent members of the supervisory board. A "sufficient amount" of independent supervisory board members is recommended by the German corporate governance code to ensure objective advice to, and supervision of the management board. Independence

			means an absence of any business, financial or personal relationship with the firm or its management board, which could cause a conflict of interest, but there is no specific test for independence.
Directors' power	The board determines the company's strategic direction and supervises its implementation. The CEO has all powers to act in the firm's name under all circumstances and represents the company in its relations with third parties.	The management board has the power to act in the company's name under all circumstances. Its chairman represents the firm in its relations with third parties. The supervisory board conducts permanent supervision over the management board. Members of the management board are executive directors. Members of the supervisory board are all non-executive directors.	The management board is responsible for management of the firm's business and can exercise all powers of the firm to that end. The supervisory board is not involved in the day-to-day management of the firm; its duties focus on the supervision of, and consulting with, the management board. The supervisory board has approval rights in relation to certain transactions as specified in the articles of association or determined by the supervisory board.
Appointment of directors	Directors are appointed by a shareholders' meeting and can be individuals or legal entities (which designate a permanent representative, subject to the same obligations and liabilities as an individual). The statutory auditor attends board meetings when the board approves the accounts; otherwise its attendance is optional.	The management board consists only of individual persons elected by the supervisory board. They can be dismissed "ad nutum" by the shareholders' meeting. The supervisory board consists of individuals or legal entities (except for the chairman) appointed by a shareholders' meeting.	The supervisory board elects the members of the management board. They can be dismissed only for a serious reason. Supervisory board members are elected by a shareholders' meeting unless they are appointed by certain shareholders named in the charter (e.g., founding shareholders) – limited to one third of the board. The employee directors are elected by employees.
Term of appointment	Unless bylaws otherwise stipulate, the maximum term is six years. Directors can be reappointed. The charter also specifies a staggered board (rolling renewal), usually with three renewal cohorts.	Term of appointment of supervisory board members is the same as for directors. Also renewal by one third. Management board members are appointed for terms between two and six years, determined by the bylaws and renewal for all the members (rolling renewal not allowed).	Management and supervisory board members can be appointed for a maximum term of five years and can be reappointed.

Employment contract	A director is prohibited from entering into an employment contract. An employee can, under certain circumstances, be appointed as director. The number of directors employed by the company is limited to one-third of the total.	An employee can be a member of the management board and vice versa. The employment contract must correspond to an actual position and specify non-managerial duties in which the person is subordinate to the firm. Up a third of the supervisory board can hold employment contracts. A supervisory board member can enter into an employment agreement before or after becoming a member.	Management board members generally have a service contract with the company in addition to being appointed to the management board. Supervisory board members elected or appointed by the shareholders generally do not have service contracts apart from their appointment to the supervisory board. Employee representatives serving as members of the supervisory board generally continue with their regular employment agreements.
Compensation of directors	Lump-sum fees for the board, approved yearly by the shareholders' meeting, are divided among members who cannot receive any compensation for other board activity. The board may allocate exceptional remuneration to directors for special assignments.	The remuneration of management board members is set by the supervisory board. The fees payable to supervisory board members are allocated in a similar manner to directors' fees.	The supervisory board determines the remuneration of the management board. The remuneration of the supervisory board members is determined by the articles of association and the shareholders' meeting.
Shareholder approval of directors' compensation	Fees paid to directors and supervisory board members are approved each year by the general shareholders' meeting. Bonuses and golden parachutes for officers and board members must comply with the procedure applicable to related-party agreements and be approved by the board and ratified by shareholders.	Shareholder approval of remuneration of the management board is not legally required. In listed firms, the shareholders' meeting has an advisory right to vote on the remuneration system but approval or refusal has no legal effect.	
Board meetings	Convening board meetings are defined in the bylaws and frequency is not determined by law. Directors can agree to meet at regular intervals or allow the chairman to call meetings as necessary. A quorum of half is required. Decisions are adopted on the basis of a majority present, although a super-majority can be stipulated. In France there is no tradition of non-executive Board of Director sessions.	The supervisory board must meet at least four times per year to examine the management board's quarterly report. A quorum of at least half of the members of the supervisory board is required. The quorum of the management board is determined in the bylaws.	If the management board consists of more than one member, a unanimous decision is required in relation to all issues, unless the articles of association or bylaws provide different requirements. The German corporate governance code recommends the supervisory board meets six times per year.
Committees	The board of directors and supervisory board can delegate responsibility for specific issues to specially-created committees whose members may or may not be directors or supervisory board members. These committees cannot be involved in the firm's management or indirectly limit the statutory powers of the relevant board or CEO. In accord with corporate governance codes of conduct, many listed firms have created such committees (e.g., audit and compensation committees). The shareholder meeting appoints auditors on the proposal of the Board of Directors (recommendation by Audit Committee).	Bylaws give broad powers of delegation to the management committee, allowing it to delegate any of its powers to individual members or committees. However, supervisory board committees (audit, nomination) play a more important role. The nomination committee can also prepare remuneration recommendations, but the final decision is taken by the full supervisory board	

A.2. *The Case of The Netherlands Board Structure*

Until 2012 January 1, most large, publicly traded Dutch firms were subject to a mandatory two-tier board structure, unless they met the classification as an exempted regime, defined below as a firm operating primarily outside of The Netherlands. Legislation to enact this change was passed by the Dutch Parliament on May 31, 2011.

The formal structure of Dutch corporations, regulated by the Civil Code, provides a distinction between:

- Private corporations with limited liability (BV) issue only registered shares.
- Dutch public corporations (NV), whether or not listed on the Amsterdam Exchanges, can issue and freely transfer registered and bearer shares. Not all public corporations are listed.

Regardless of the corporate form of the firm (public or limited by shares), the Civil Code provides for specific legal regimes that determine the governance structure of corporations.

- The structure regime: applicable to corporations that meet criteria related to the number of employees (>100) and the amount of subscribed capital (the issued share capital plus reserves is at least €17 million). Corporations incorporated under the rules of the structure regime (the so-called structure corporations) must adopt a two-tier board structure. The supervisory board is entirely composed of supervisory directors with a legal minimum of three directors. Unlike the co-determined German supervisory board, the Dutch supervisory board has no labor seats and employees of a corporation or its dependent corporations cannot be members of the supervisory board.

- The mitigated structure regime: applicable to corporations when at least fifty percent of a corporation's shares are held by a holding or a joint venture (a group of parent companies) and when the holding, parent company or joint venture employs a majority of its employees outside the Netherlands. Two-tier board mandatory.

- The exempted regime: applies for a holding company belonging to an international group of corporations, provided that the majority of the employees of the entire group are employed outside the Netherlands, and/or acts exclusively as a service corporation for affiliated corporations. Two-tier board not mandatory. For example: Reed Elsevier, Shell, Unilever.

For smaller corporations, the Civil Code provides for the following governance structure.

- The common regime: applicable to small and medium-sized corporations, provides a choice between a governance structure with only a management board entirely composed of managing directors and a two-tier board model with an executive management board and an additional supervisory board comprised entirely of (non-executive) supervisory directors.

A.3. European Corporations: SEs

Since October 2004, companies are allowed to incorporate under the statutes of the European company, called “Societas Europaea” (SE), a company registered for the 30 countries of the European Economic Area (EEA) (the EU and three neighbouring countries) at once, rather than in one particular country. All companies incorporating as a SE have the choice of unitary or dual board.

There are several obstacles to an empirical study of these new European entities. One, only a third of the 30 qualifying states transposed the SE regulation into national company law by October 2004, with the remainder including the largest of the EU countries transposing the regulation between 2004 through 2008. Thus, the effective period of study is limited. Two, as of December 2011 there is no central data base of registration; instead SE companies register in the country of domicile. Three, there are various types of SE classifications. Of the approximately 900 entities using the SE designation, only 20% are identified as a Normal SE, defined as having operations with more than five employees, 10% have operations but no employees (Empty SE), 18% have neither operations nor employees (defined as Shelf SE), and for the majority, there is insufficient information to afford a classification (“UFO” SE): 75% of these entities are in the Czech Republic. Moreover, there is evidence that firms set up SE shelf or UFO entities to facilitate the buying, selling, or trading of these entities among firms that may want to set up cross-border operations quickly. Four, few SE entities are listed on exchanges with the exception of a small set of firms (Allianz, BASF, and MAN that have adopted this designation changed during the past few years). Also, many SE entities are private or wholly owned subsidiaries rather than public firms. Five, although the SE regulation allows the entity to choose its board structure, it appears the common practice has been to use the board structure mandated in the country of domicile.