

SUBSTITUTION EFFECTS OF INTERNAL GOVERNANCE MECHANISMS: EVIDENCE FROM SWITZERLAND

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Abstract

This paper explores the substitution effects among three governance mechanisms, board monitoring potential, incentives and ownership structure, in a sample of 176 publicly listed companies in Switzerland, a country characterised by bank-centred governance system and high degree of ownership concentration. Our results suggest that whereas ownership concentration per se does not substitute for monitoring by the board, shareholdings held by board and top management and presence of a shareholder on the board act as substitutes for board independence. Moreover, we found that substitution effects differ with the identity of the largest shareholder. Firms owned by financial institutions exhibit a negative relationship between board independence and shareholder representation on board, whereas in family controlled firms board and managerial ownership is the main substitute for board monitoring.

Keywords: governance mechanisms, ownership structure, director independence, incentives

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1. Introduction

Agency theory suggests that separation of ownership and control creates principal-agent situations and proposes a number of internal and external governance mechanisms as a solution to the agency problems (Fama & Jensen, 1983; Jensen & Meckling, 1976). The principal foci have been on institutions of the board of directors, incentive alignment, off-board committees and external factors such as the market for corporate control and debt provision. This has led to commentators focusing on the efficacy of these mechanisms and effects on corporate performance. Studies investigating the effects of key internal governance controls have resulted in fairly inconclusive findings (e.g Daily, Dalton and Cannella, 2003) and lead others to suggest the underlying failure of these mechanisms to 'work' (Jensen, 1993). Reasons for this failure to isolate performance effects reflect a number of factors, such as the mediating effects that may exist between governance and performance (Wiseman and Gomez-Mejia, 1998). A complementary approach appreciates that whilst different governance mechanisms are associated with the reduction of latent agency costs, they also involve certain direct costs and, furthermore, substitution effects among the different solutions might need to be considered. In the absence of such thinking, policy (and indeed empirical work) may be directed towards thinking that 'more' governance is always better. This view of corporate governance is essentially linearly additive, and regards mechanisms as complementary. This has also arguably been the

focus of most corporate governance reforms around the globe advocating various structural changes or guidelines for good governance (OECD, 1999).

The notion that governance mechanisms may be substitutes rather than complements is not new; Williamson (1985) notes that the efficacy of any firm governance is contingent on the practices currently in place. Nevertheless, most studies do not examine this and prefer to focus on one mechanism (or a small number) in isolation. Only rarely are substitution effects among different governance mechanisms explicitly discussed in a single study; Walsh and Seward (1990) provide a conceptual framework for analyzing the interplay between internal and external control mechanisms. A small number of studies have empirically explored the issue (Beatty & Zajac, 1994; Coles, McWilliams & Senn, 2001; Rediker & Seth, 1995; Sundaramurthy, Mahoney & Mahoney, 2001) and provide some evidence that internal and external governance mechanisms are not independent from each other and need to be considered simultaneously. As Demb and Neubauer (1992) note, identifying the paradoxes that exist between multiple governance mechanisms is important for gaining a deeper understanding of contradictory or inconclusive findings. Much previous research has focused on the key internal mechanism of the board of directors and as part of this, suggested director 'independence' as an important means to monitor firm management (Daily, Dalton & Cannella, 2003; Dalton, Daily, Ellstrand & Johnson, 1998). We follow this approach but explicitly look for substitution, rather than purely additive effects when we consider the board in

relation to other governance institutions. Thus this paper attempts to bridge an empirical gap in the growing realization of the importance of substitution effects between board monitoring, incentives and ownership structures in a sample of all publicly listed companies in Switzerland. Furthermore, as most previous research has been conducted on companies in countries characterized by ‘dispersed’ ownership of company equity (Daily, Dalton & Rajagopalan, 2003), we provide evidence from an institutional context different from the Anglo-American countries, namely Switzerland, a continental European country characterised by bank-centred governance system and high degree of ownership concentration (La Porta, Lopez-de-Silanes & Schleifer, 1999).

Furthermore, we look beyond ownership concentration per se in an attempt to explore how shareholders actually monitor management. Much of the governance literature has rather downplayed the role of informal (over formal) governance mechanisms. For instance, involving large shareholders in discussions (e.g. Conyon, Peck, Sadler and Read (1999) provide evidence of how compensation committees often engage with large shareholders before changing compensation plans in order to “avoid surprises”). Here, however, we suggest that shareholder representation on the board is also one possible solution to the principal-agent problem that allow owners to monitor management activities on a regular basis (beyond the annual shareholder meetings) and to influence important company decisions by shareholders' participation in important board committees. Previous research suggests that in the European context, ownership identity influences the effects of ownership structure on firm value (Pedersen & Thomsen, 2003). Relatedly, we recognise that ‘owners’ are not a homogeneous group and look closer at the identity of the owners in question; namely family controlled firms and companies owned by banks and financial institutions and explore to what extent the substitution effects among the different governance mechanisms hold in the two sub-samples of different ownership identities. This paper structure is as follows. First, based on agency theory we develop hypotheses for the substitution effects among of the three internal governance mechanisms. Second, we describe our sample and data analysis methods. We then proceed to report our results and finally discuss them in the light of previous governance research.

2. Theory and hypotheses

The empirical reality of the separation of ownership of and control in modern corporations had lead to theorizing about the nature of the modern corporation (Berle & Means, 1932; Fama, 1980; Jensen & Meckling, 1976). As managers – based on their own risk and preference functions and the latent information asymmetry that exists between the two groups - might be more likely to pursue their own

interests ahead of the interests of the firm owners. The solution to this problem is the adoption of a number of governance mechanisms to reduce the owner’s risk of manager enriching themselves at their expense (or termed associated agency costs). Some of these institutions are external to the firm; efficient capital markets and market for corporate control, product market competition and managerial labour markets are all constraints on managerial self-serving behaviour and have been subject to a range of empirical testing. Firm owners can also employ a number of internal control mechanisms to align managers’ behaviour with their own interests (Fama & Jensen, 1983). The key mechanism is the board of directors and the underlying separation of decision management from decision control or rather the use of board of directors as direct means to monitor managerial decisions. Another potentially powerful mechanism commonly employed in modern corporations is to make managers participants in the residual claims of the organisation or practically, provide managers with incentives (via shares and performance based compensation) in order to motivate them to behave as firm owners. We explore and develop propositions on these governance institutions below.

2.1. Board independence

In order to effectively perform their monitoring role, the board of directors needs to be ‘independent’ from a firm’s management. Early governance research distinguished between inside and outside directors and suggested that board with higher proportion of outside directors are better monitors (Barnhart, Marr & Rosenstein, 1994; Baysinger & Butler, 1985). The proportion of outside directors was found to be positively associated with shareholder wealth (Rosenstein & Wyatt, 1990). Yet, outside directors - defined as those that are not full-time executive employees of the firms - are not a homogenous groups; they can also be influenced by firm management if certain ties exist such as interlocking directorships, material business relationships with the firm etc. Boards with higher ratios of so-called “grey directors” were found to be less effective monitors and prone to approve managerial decisions that are not necessarily in the interest of the company's shareholders (Kosnik, 1987). As a result the independence of corporate directors emerged as an important criterion for board monitoring potential and policy.

2.2. Incentive effects of share ownership

Board equity ownership is another important internal control mechanism (Jensen, 1993) which can be used to increase board monitoring potential. Even if affiliated to firm management, directors who own equity in the firm will have motivation to effectively monitor managerial decisions. According to agency

theoretic reasoning, if board members own equity in the firm they will act as owners and will be actively involved in board monitoring and control activities (Hambrick and Jackson, 2000). Directors' stock ownership was found to be positively related to organisational performance (Kesner, 1987). With the increasing practice of equity-based compensation for board members (Daily & Dalton, 2001) the importance of board equity ownership as a governance mechanism may also increase in the future. Use of share ownership as incentive to increase board monitoring potential can reduce the costs related to recruiting independent board members who will have sufficient motivation to monitor firm management. Greater managerial ownership of equity will reduce the latent agency problem by making management behave like shareholders – or increase the costs of not doing so (Jensen & Meckling, 1976) and therefore decrease the need to control managerial decisions by independent outside directors. Previous research provides evidence that managerial share ownership is negatively related to board monitoring potential (Beatty & Zajac, 1994; Rediker & Seth, 1995). Hence, it can be argued that combined managerial and board ownership will act as a substitute for director independence. Thus we suggest the following hypothesis.

Hypothesis 1: High degrees of managerial/board share ownership will be associated with lower degrees of board independence.

2.3. Monitoring by large outside shareholders

Agency theoretic reasoning is based on an assumption of prevalent ownership dispersion in modern corporations (Berle & Means, 1932). In a situation of dispersed ownership, measures need to be taken to protect the interests of minority shareholders. However, whereas a large number of small owners may experience difficulties to monitor managers, in a situation of concentrated ownership large shareholders are more likely to exercise direct control over managerial decisions and behaviour. Therefore, ownership concentration is regarded as a solution to the agency problems and useful internal governance mechanism (Schleifer & Vishny, 1997). Yet, firm governance choices are made by evaluating and deciding among different mechanisms. As the selection and retention of independent board members is a costly activity, in the presence of a large shareholder the independence of corporate directors will be less commonly used governance mechanism. Rediker and Seth (1995) found that the percentage of total outstanding equity controlled by the five largest shareholders is negatively related to the percentage of outside directors on board. Taken together we suggest the following hypothesis.

Hypothesis 2a: Higher levels of ownership concentration will be associated with lower levels of board independence.

Previous research suggests that large shareholders (block-holders) are directly involved in and exert influence on managerial decisions (Holderness & Sheehan, 1988). Yet, owners can also monitor and influence management behaviour through the means of board membership. If a large shareholder is also a member of the board of directors and serves on board committees, he/she would have a direct influence on approving important managerial decisions. Some empirical work has examined the influence of venture capitalist on the board and suggests being on the board allows for a direct influence on managerial direction (Kaplan and Stromberg, 2001). Moreover, as the annual stockholders meeting takes place only once an year, membership on the corporate board is a more frequent mechanisms allowing large shareholders to receive timely information and as a result to follow and influence managerial decisions throughout the year. The direct effect of being physically on the board places less emphasis on the need for the board to provide the same level of protection for such large shareholders. Thus we propose:

Hypothesis 2b: Major shareholder representation on board will be associated with lower levels of board independence.

The identity of corporate owners was found to have important implications for firm strategy and performance (Thomsen & Pedersen, 2000; Pedersen & Thomsen, 2003). In the European context, where a variety of ownership identity exists it is important to consider shareholder identity's implications for the substitution of governance mechanisms. As Jensen (1993) suggests, it is the primary function of the board to "hire, fire and compensate the CEO". A shareholder who is member of the founding family may exercise different type of control than an institutional investor. Evidence suggests that family-run companies were found to be less likely to turnover their management (Morck, Schleifer & Vishny, 2000). Similarly, incentives in family owned firms differ from managerial incentives in a firm owned by another company or by a financial institution. The degree of independence of directors may also depend on the identity of the largest shareholder. We argue that different types of owners use different internal governance mechanisms and these isolated effects will also have implications for the substitution effects among board independence, incentives and ownership structure. Hence, in a country characterised by high ownership concentration and a mixture of identities of the largest owners it is vital to differentiate between different types of owners.

Family-controlled firms are a common phenomenon among Swiss publicly listed companies and founding families are regarded as an important factor in corporate Switzerland (Beiner, Drobetz, Schmid & Zimmermann, 2003). The prevalent private ownership of Swiss publicly listed companies reduces the effectiveness of external governance mechanisms and hence increases the significance of

internal control mechanisms. However, internal governance mechanisms are not equally useful. In a family controlled firm, monitoring managers occurs on a more regular basis compared to non-family own firms. Therefore, it can be expected that the importance of board monitoring potential will be lower at the expense of direct control of managerial decisions. Managerial incentives, however, will still play an important role in aligning managers with shareholders interests and thus reducing agency costs.

Institutional ownership is another form of ownership identity discussed widely in the governance literature (Daily, Dalton & Rajagopalan, 2003). Switzerland has a bank-centred governance system and banks and financial institutions own large shares in publicly listed companies. Not only are Swiss banks allowed by law to have shares in publicly traded companies but it is also often the case that bank representatives are board members of the respective company, and this can have real effects on board behaviour (see Ruigrok, Peck and Keller (2006) for evidence of their influence on the strategy making function of boards). Hence, control over managerial behaviour might be expected to be exercised through the means of shareholder participation on board and less so through board share ownership incentive. Taken together, the proceeding suggests that we therefore expect that the relative importance of internal governance mechanisms may alter with the identity of the largest shareholder being family or bank/financial institution.

Hypothesis 3: The substitution effects between internal governance mechanisms will vary with the identity of the largest shareholders.

3. Data and variables

3.1. Sample

The initial sample of the study consists of all 269 companies that were listed on the SWX in September 2004. In a first step we excluded (1) investment trusts, (2) companies without websites and investor relations contacts and (3) companies with no annual reports available to the public. Subsequently we excluded local banks (*Kantonalbank*) and state-owned energy companies for which board composition is regulated by special laws. Finally, we excluded companies for which no data was available for one of the years of observations 2002 or 2003. This procedure generated a sample of 176 companies. Data on board composition were obtained from companies' annual reports and websites. Ownership structure, ownership identity and board/managerial ownership data were collected from the annual editions of the Swiss Stock Guide. Industry variables data was obtained from Thomson ONE Banker.

3.2. Variables

Board composition is recorded as the directors in place at the end of the calendar year. In the case that

a board member was present on a board for less than one year and was no longer director at a year-end reporting date, this board member would not appear in the board composition variables for this particular year. Directors were defined as independent if they had no formal professional or personal relationship to the company over the past three years. Whereas previous research mostly uses a five-year period for definition of director independence (Daily & Dalton, 1994; Pearce & Zahra, 1991), our measure is based on the Swiss (Stock) Exchange guidelines that require companies to disclose directors' affiliations to the company for the last three years only.

Directors who have served as inside directors of the firm during the last three years were coded as former inside directors. Individuals who were founders of the company or are members of the family of the founders were defined as having a family affiliation. If two directors served on the board of another Swiss listed company during a particular year, we coded this connection as interlocking directorship affiliation. We only recorded cross-involvements in publicly listed companies in Switzerland and excluded cross-involvements in all other types of organisations such as not publicly listed companies, state and governmental institutions etc. or cross-involvements in companies outside Switzerland. Further, we created a business affiliation category which reflects any type of material business relationship between the director and the firm such as consulting or auditing services, legal advice etc. *Our other affiliation measure* includes cross-board involvements in publicly listed companies outside Switzerland and any other type of material connection to the company stated in the annual report that does not fit with any of the other affiliation variables as defined above. For all affiliation categories we used dummy variables equal to one if a director was affiliated to a company and zero otherwise. Director independence was also coded as a dummy variable that is equal to one if a director has zero values for all categories of company affiliations in a certain year and to zero otherwise.

Number of independent directors is a count variable referring to the number of independent directors sitting on a board in a particular year. Similar to Hermalin and Weisbach (1988) and Sanders and Carpenter (1998), we use count variables instead of ratios. In a study looking at CEO and shareholder presence on board use of ratios would bias our results as the presence of a CEO would be reflected in the board outsider ratio and the presence of a shareholder would be counted in the board independence ratio. Instead, we decided to use count variables for independent directors and shareholders on board and control for the overall number of directors on board as board size is also likely to affect the number of executive, shareholder and independent directors sitting on a board. *Board size* was measured as the number of directors serving on the board in the end of a calendar year.

By law, Swiss companies need to establish one board (*Verwaltungsrat*) that needs to contain a representative of the company's executive management. However, many Swiss listed firms have adopted a two-tier board structure, somewhat similar to the German governance system, consisting of a management board (*Geschäftsleitung*) comprising inside directors only, and a supervisory board (*Verwaltungsrat*) consisting mainly of outside directors. The exception tends to be the CEO, who is often a member of both boards. However, CEO duality, where the CEO is also Chairman of the Board, is a much less frequently occurring phenomenon among Swiss firms than *e.g.* in the U.S (Ruigrok et al., 2006). Therefore, unlike most previous studies on board - CEO dynamics (Daily & Dalton, 1994; Sanders & Carpenter, 1998; Westphal & Zajac, 1995) that use the construct of CEO duality, in this paper we use CEO presence on board, a variable that captures more precisely the reality of Swiss corporate boards. *CEO presence on board* is defined as a dummy variable equal to one if the CEO of a company is also member of the board. We control for CEO presence on board as large body of literature provides evidence that board independence is influenced by the CEO power (Lorsch & McIver, 1989; Mace, 1971; Monks & Minow, 2001).

We recorded the shareholdings and the identity of the shareholders holding more than 5 per cent of firm equity in each particular year. As a measure of *ownership concentration*, we used the sum of the percentages of equity held by the three largest individuals or institutions. Further, we used the percentage of equity held by the *largest shareholder* as an alternative measure of ownership concentration as previously used by Conyon and Peck (1998). We coded *ownership identity* in six different categories: companies, banks and other financial institutions, founders and family members, the state or *Kantons*, board members and other individuals. The sub-samples of family-controlled firms and companies owned by banks or other financial institutions were created based on the identity of the largest shareholder. *Board/managerial ownership* was measured as the percentage of firm equity held by members of the company's executive or supervisory board (inside and outside corporate directors).

As this study uses a cross section of companies over two year period, we control for *year effects*. Furthermore, our sample consists of all companies listed on the Swiss Stock Exchange and represents a wide range of industries. As industry has significant influence on board composition (Finkelstein & Hambrick, 1996) we control for *industry effects* by using the first-digit of the primary SIC codes from Thomson One Banker.

3.3. Method of analysis

Following the approach of Rediker and Seth (1995) we first conducted correlation analysis. A negative

correlation between the different governance mechanisms is interpreted as evidence for substitution effects among the governance constructs. Further, we used Poisson regression techniques to estimate the relationship of certain governance factors to board composition in terms of director independence. Poisson regression is recommended where the dependent measures are non-negative count variables with a limited range, as count variables violate the assumptions of ordinary least squares (OLS) regression. Finally, we used two sub-samples according to ownership identity and performed the regression analysis separated for the family and institutionally owned companies.

4. Results

Table 1 present the summary statistics and a correlation matrix of the study variables. Our results are based on observation of 176 Swiss publicly listed companies over a two-year period (2002-2003). On average the boards of Swiss publicly listed companies have 6.77 members, 3.54 of which are independent and 0.81 are inside directors. In 55 percent of the companies the CEO is also member of the board. Similarly to the results reported by Beiner et al. (2003), the mean for ownership concentration of Swiss publicly listed companies is 34.5 per cent and the largest shareholder stake is on average 25.95 per cent. Top management and board members hold on average 16.62 per cent of firm equity, a slight increase over the 12.10 per cent reported in the Beiner et al. (2003) study. Swiss publicly listed firms have on average about one shareholder serving on their boards. In terms of key board committee representation however, only 3 per cent of the firms have a shareholder on their nomination committee, 4 per cent have a shareholder on the audit committee and 7 per cent of the companies have shareholder as a member of the board remuneration committee.

**** Insert Table 1 about here ****

The number of independent board members was found to be negatively correlated to all alternative governance mechanisms, namely, the degree of ownership concentration, the percentage of firm equity held by the largest shareholder, the shareholdings of top management and board members and the presence of a shareholder on the board. Further, as predicted, board size was positively correlated with the number of independent board members and CEO presence on board was negatively correlated with board independence.

**** Insert Table 2 about here ****

The results of our regression analysis are presented in Table 2. Support was found for a negative relationship between board member's independence and the equity held by top management

team and board (H1) and the participation of shareholders on Swiss corporate boards (H2b). However, no support was found for our hypothesis regarding substitution effects between board independence and ownership structure (H2a). Nor do we find evidence for such a link regardless of the measures used (the equity held by the single largest shareholder or the equity held by the three largest owners). Finally, evidence was found for our hypothesis 3 regarding difference in substitution effects according to the identity of the largest owner. In the sub-sample of family owned companies, we isolate some evidence for a positive relationship between ownership concentration and board member independence at the 10 per cent level. Further, the presence of a shareholder and the CEO on board was not related to the degree of board independence. Only the negative relationship between board/managerial ownership and the number of independent board members was consistent with the results we found for the entire sample of this study. At the same time, in the sub-sample of firms owned by banks and other financial institutions, we found no evidence for a link between board/managerial ownership and board member independence. However, board membership of a shareholder was negatively related to the number of independent board members. No link was found between board independence and ownership concentration consistent with the results for the entire sample. Our control variables board size and CEO presence on board were consistently and significantly related to board independence in the hypothesized direction in all models and sub-samples of our analysis.

5. Discussion

This paper has made a modest contribution to the evidence surrounding the notion that corporate governance mechanisms ought to be treated as substitute mechanisms, rather than purely complementary. Whilst commentators have appreciated this fact for some time, the vast majority of studies do not explicitly model the relationships as such. Treating governance institutions as substitution mechanisms may help shed some light on some of the rather inconclusive evidence emerging from e.g. meta-analysis of certain governance mechanisms on performance. Unlike previous research on substitution of governance mechanisms (Rediker & Seth, 1995), we found no evidence for a link between ownership concentration and board monitoring potential, as measured by the influence of independent directors on the main board. A possible reason for the divergence of our results from previous findings may be down to the institutional setting of our study. Our sample, from Switzerland, consists of firms with relatively high degree of ownership concentration, at least compared to prior studies centred on the US or UK. Hence, ownership concentration per se appears to have less importance as an internal control

mechanism, and rather is a feature of the governance landscape. Instead, we found evidence that in the context of a dual board structure (separate management board and board of directors) large owners exercise direct control and monitor management through board membership. Our results suggest that the presence of a shareholder on the board of directors is significantly and negatively correlated to the number of independent directors. The negative relationship (substitution) between shareholder representation on boards and board independence was found to be stronger in non-family owned firms (firms with institutional, corporate, state or individual ownership). These results are in accordance with the governance literature suggesting that private family ownership reduces agency costs. This also has important implications for policy; the idea that a 'one-size fits all' approach (or namely one based on the ownership scene in the US or UK) may not be entirely transferable to a scene such as Switzerland.

Surprising, though weak, evidence was found for a positive link between ownership concentration and board independence in the sub-sample of family owned firms. Yet, these results are consistent with previous evidence from Swiss companies (Beiner et al, 2003) who found that ownership concentration is positively related to the outsider ratio of Swiss corporate boards and has no effects on firm value measured as Tobin's Q (whereas in the same study board equity ownership was found to have positive effects on firm value).

6. Limitations and future research

One of the obvious limitations of this paper is the small study sample which is due to the limited population of Swiss publicly listed companies. The period of study could be extended to a larger number of years for future research. Going back in time, however, is not possible as information on governance related issues was rarely disclosed in Switzerland before the introduction of Directive for Information on Corporate Governance by the Swiss Stock Exchange (SWX) in July 2002.

Theoretically distinct agency arguments exist for the effects of managerial and board ownership. However, we were unable to test these arguments separately as data on board and managerial ownership is reported as one figure. Further, an important internal governance mechanism, namely self-monitoring by managers (Rediker & Seth, 1995), remained unaddressed in this paper due to current unavailability of data. Future research can also look closely at concrete mechanisms through which owners monitor managers, for example by recording voting and decisions made at the annual general meeting. Shareholders presence on corporate board is an indication of actual controlling behaviour of owners, however, does not provide an explanation of whether and how shareholder representatives protect the

interests of the owner (being family, company or the state) at annual general meetings or at board and board committee meetings. More generally, this work also begs the questions of whether one should also consider the efficiency of more informal mechanisms; policy is almost always directed towards codifying governance arrangements (via regulatory frameworks), whereas in certain environments, more informal mechanisms may be effective.

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Appendix

Table 1. Descriptive Statistics: Means, Standard Deviations and Correlations ^a

Variable	2002 - 2003	1	2	3	4	5	6	7	8	9	10
1. Number of independent directors	3.54 (2.31)	1									
2. Number of shareholders on board	0.99 (1.43)	-0.16*	1								
3. CEO presence on board	0.55 (0.50)	-0.21*	-0.10	1							
4. Ownership concentration	34.50 (25.11)	-0.14*	0.25*	-0.08	1						
5. Largest shareholder	25.95 (23.26)	-0.16*	0.19*	-0.07	0.91*	1					
6. Board/managerial ownership	16.62 (22.47)	-0.30*	0.04	0.09	0.10	0.10	1				
7. Shareholders on nomination committee	0.03 (0.18)	-0.06	0.23*	-0.02	0.13*	0.12*	0.01	1			
8. Shareholders on remuneration committee	0.07 (0.26)	-0.16*	0.28*	0.06	0.10	0.10	-0.00	0.66	1		
9. Shareholders on audit committee	0.04 (0.20)	-0.10	0.26*	-0.05	0.08	0.06	0.03	0.44	0.55*	1	
10. Board size	6.77 (2.41)	0.60*	0.27*	-0.11*	-0.01	-0.06	-0.13	0.02	-0.04	0.04	1

^a Standard deviations are in parentheses. ^b n = 352.

Table 2. Poisson regression explaining the number of independent directors

		Family controlled	Financial institution
Ownership concentration	0.000 (0.001)	0.007+ (0.004)	0.002 (0.003)
Largest shareholder		0.000 (0.002)	
Shareholder on board	-0.143*** (0.026)	-0.140*** (0.026)	-0.160* (0.074)
Board/management ownership	-0.006** (0.002)	-0.006** (0.002)	-0.003 (0.005)
CEO presence on board	-0.234*** (0.066)	-0.234*** (0.066)	-0.124 (0.144)
Board size	0.161*** (0.013)	0.161*** (0.013)	0.098** (0.036)
Year 2003	0.041 (0.062)	0.041 (0.062)	0.077 (0.134)
Industry controls	Yes	Yes	Yes
Log likelihood	-557.43	-540.96	-140.67
Chi ²	209.19	242.12	35.41
R ²	15.80	18.29	11.18
N	292	292	78
			99

Huber heteroscedastic robust standard errors in parentheses.

+p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001