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**Do family firms learn more from other family firms than from non-family firms?  
Adoption of the board reform**

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**ABSTRACT**

Family firms differ from non-family firms because their owners are often motivated not only by economic incentives but also by non-economic considerations. This study investigates the effects of such non-economic motivation, especially the extent of family involvement and family legacy, on the adoption of a new practice, i.e., board reform that was newly introduced in the Japanese context in the late 1990s. Our empirical results show that while family firms are less likely to implement the board reform than non-family firms, board interlocks with other family firms facilitate the adoption. We also found that such factors as large family ownership and family legacy influence the impact of such board interlocks on family firms' decision to reform their boards.

Key words: family firms, board interlocks, practice diffusion, organizational learning, board reform

## INTRODUCTION

There is a growing research interest in family business and family firms in the management field. Indeed, the number of studies on family firms has been increasing. One of the key dimensions that differentiate family firms from non-family firms is that managerial decisions and choices in family firms are often influenced not only by financial incentives but also by non-economic goals of family owners (Gomez-Mejia, Cruz, Berrone, & Castro, 2011). In prior corporate governance research based on agency theory, managers are assumed to pursue their self-interests that often diverge from the interests of shareholders (Fama, 1980; Jensen & Meckling, 1976). Key assumptions in this theory are that there is a conflict of interest between managers and shareholders, and that the latter are mainly interested in financial gain. In family firms, however, these assumptions do not always hold as family owners often occupy managerial positions or have significant influence over non-family managers while their interests tend to be more than just financial (Gomez-Mejia *et al.*, 2011; Le Breton Miller & Miller, 2006).

Extant research indeed indicates that family owners are driven by incentives to preserve and enhance not only their financial gain but also their non-financial goals. For instance, large family owners have been shown to use the board to strengthen their control over top managers to protect and enhance the family's interests and to legitimize the appointment of directors and executives whose strategic choices foster the family's non-economic goals or socioemotional wealth (Jones, Makri, & Gomez-Mejia, 2008). Prior studies on managerial incentives show that family executives tend to receive lower compensation because they are willing to sacrifice higher pay for greater job security and for emotional rewards from their position (Gomez-Mejia, Larraza-Kintana, & Makri, 2003). This suggests that financial incentives are likely less important than other rewards related to non-financial goals to family executives. Other studies reveal that family firms tend to value

employees' loyalty and long-term focus, which enhance those employees' identification with the firm and promote shared values with family owners (Davis & Harveston, 2001; Harris & Reid, 2008). Family firms' governance practices, hence, reflect the objective of enhancing non-economic goals of family owners through loyal employees who share family values and visions.

While those studies inform us that attainment of non-economic goals often drives family firms' governance choices, some practices have mixed implications for such goals. Specifically, this study analyzes the adoption of board reform – i.e., a clearer separation of decision-making rights from monitoring – right after its introduction in Japan in 1996. By trying to maintain strong family control over the board, a firm may risk losing legitimacy in the eyes of external stakeholders if the board is dominated by family members or other non-family directors under strong family influence. In contrast, the board reform which aims to enhance the board's monitoring function may not be favorably perceived by family owners, but it might enhance the firm's external legitimacy especially in the eyes of investors, leading to potential conflict between different dimensions of non-economic objectives (Vardaman & Gondo, 2014; Wright, Chrisman, Chua, & Steier, 2014). We aim to examine the effects of family control on the adoption of this newly introduced practice which has conflicting implications on family owners' non-economic goals.

Our main objective is to examine the impact of board interlocks that are theorized to facilitate the transfer of information in prior research (Beckman & Haunschild, 2002; Davis, 1991; Palmer, Zhou, Barber, & Soysal, 1995). In a firm's decision to adopt a new practice, access to relevant information is likely to be critical. In this study, we specifically investigate the effects of board interlocks formed by executives and outside directors of the focal firm on the adoption decision of board reform (Davis, 1991; Haunschild, 1993). We specifically examine the effects of board interlocks with other family firms on the adoption of board

reform. It is theorized that family firms not only seek to establish board interlocks with other family firms (Cannella, Jones, & Withers, 2015), but also learn from other family firms that tend to share common values, interests and relevant experiences (Kraatz, 1998). We also investigate the effects of such factors as family ownership and the strength of family legacy on the impact of board interlocks on the decision to reform the board. We expect that these factors reflect the degree of the family's control and unique identity, which influence the extent of family firms' reliance on other family firms for information about new practices. Our empirical analyses largely support our argument that these factors affect the impact of board interlocks with other family firms on the adoption decision.

This study makes several theoretical contributions. First, it contributes to the family business literature by showing how family firms assess a new managerial practice and examine how such practice fosters or hinders the family owners' non-economic goals, which in turn influences their adoption decision. Second, by incorporating the board interlock research into the family business research, this study illustrates that while information transferred through board interlocks is important for family firms when they make an adoption decision, the sources of the information are also important. We show that, in general, board interlocks with other family firms significantly influence the adoption decision. Third, we also contribute to research on organizational learning by showing board interlocks with other family firms have varying effects among family firms depending upon such factors as family ownership and family legacy. In other words, family firms are heterogeneous and hence, how they learn from other seemingly similar firms also varies.

## **THEORY**

### **Family Firms and Their Non-Economic Goals**

The presence of family owners is a widespread phenomenon in many contexts (La Porta, *et al.*, 1999), including Japan. Among publicly-listed Japanese firms, 58 percent have

family owners (Okamuro, Shim & Wiwattanakantang, 2008). Since these owners often have the power to influence or, if they also hold managerial positions, to make key managerial decisions, it is important to understand their interest and incentives to implement new practices. Prior research suggests that family owners are different from other types of owners such as institutional investors because they have economic as well as non-economic interests such as maintaining the family control and passing their firm to the next generation, or preserving socioemotional wealth (Gomez-Mejia, Haynes, Nurez-Nickel & Monyano-Fuentes, 2007; Gomez-Mejia *et al.*, 2011). Indeed, prior studies argue that as family owners often aim to pass on the firm to the next generation, they are more interested in retaining control and ensuring a firm's long-term survival rather than short-term profitability (James, 1999; Le Breton Miller & Miller, 2006). Those owners also care about their firm's legitimacy and reputation as their family name is closely linked to them (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Deephouse & Jaskiewicz, 2013; Dyer & Whetten, 2006). Such emphasis on non-financial goals will likely influence governance choices in family firms.

While prior research treats family owners' interest in pursuing non-economic goals as rather distinct from their financial interest, such non-economic goals also have multiple aspects (Vardaman & Gondo, 2014). For example, earlier studies point out that family owners tend to emphasize their control over the management and board, long-term survival of their firm, preservation of family values and family environment, employee loyalty, and legitimacy (Berrone *et al.*, 2010; Gomez-Mejia *et al.*, 2011; James, 1999). Although these goals are directly or indirectly related, they may not always be compatible under some circumstances. For example, family owners' desire to retain control over the management or board may negatively impact employees' loyalty or their firm's external legitimacy. This suggests that family owners may sometimes make decisions that prioritize some non-economic goals over others. In this study, we examine how family firms make decisions

regarding the adoption of a new practice, board reform, that serves different aspects of their non-economic goals, and how information on those practices transferred by board ties moderates their decisions in the Japanese context.

While new practices can spread among firms through various channels, prior research treats board interlocks with prior adopters as one important mechanism that facilitates the transfer of relevant information (Beckman & Haunschild, 2002; Davis, 1991; Haunschild, 1993). But it is likely that not all interlock ties have the same or similar effects on inter-organizational learning. Cannella and colleagues (2015) suggest that common or similar interests and identity often lead family firms to establish interlock ties to other family firms. If similarity among family firms makes board interlocks more likely to happen, then it is also possible that those firms also learn from other similar firms through such ties, because similar firms tend to share or face similar issues and problems and also seek similar objectives. We examine this issue with the adoption of the board reform.

### **Board Reform – Executive Officer System (EOS)**

Although Japanese boards are legally responsible for monitoring management similar to boards in other countries, they have been dominated by insiders or executives of the firm.<sup>1</sup> This is largely due to the fact that a board position is usually regarded as the highest rank that employees can reach through their long tenure at the same firm after they graduated from school (Abegglen & Stalk, 1985; Charkham, 1994). This means that there was no clear separation of monitoring and execution functions within the board (Ahmadjian & Okumura, 2005). Many boards had a small number of outside directors, but they were usually affiliated with banks and other non-financial firms with which the focal firm had business relationships

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<sup>1</sup> Recently implemented corporate governance code in Japan in 2015 requires Japanese firms to appoint at least two independent directors or they need to explain if they do not make such appointment. Many Japanese firms have complied with this requirement by appointing multiple independent directors. Thus, the board composition of Japanese firms has started to change.



and hence they lack independence (Gerlach, 1992; Miwa & Ramseyer, 2005). Since those outside directors sat on the board for business relationship purposes or to monitor management on behalf of those affiliated firms, they did not represent the interests of other investors that seek more financial returns (David, O'Brien, Yoshikawa, & Delios, 2010).

This insider-dominated board of Japanese firms started to change gradually after Sony initiated a board reform by introducing the so-called “Executive Office System (EOS)” in 1997. Under this system, the board size was substantially reduced and the former board members were separated into “genuine” board members and “executive officers.” The objectives of this board reform measure were to improve managerial decision-making speed with smaller board size and to establish clear accountability for execution and for monitoring through separation of these functions (Ahmadjian & Okumura, 2005). The EOS was designed to follow the agency theoretic logic of governance typical in U.S. firms (Jensen & Meckling, 1976); a board consisted mostly of non-executive directors who monitor the executive officers who execute strategy. Although the EOS entails a politically difficult aspect as switching a position from a board director to an executive office may be perceived as “demotion” as executive officers are not legally board members (Ahmadjian & Yoshikawa, 2013), the practice still diffused widely and quickly among Japanese firms after Sony adopted it. However, most Japanese boards remained insider-dominated even after the diffusion of this practice until quite recently as there was no legal requirement for Japanese firms to have independent directors on the board. Yet, this system was still perceived as a step toward the U.S. style board which separates execution and managerial monitoring (Yoshikawa, Tsui-Auch, & McGuire, 2007).

## **HYPOTHESES**

### **Adoption of Board Reform (Executive Officer System) in Family Firms**

When family owners have a controlling or large equity stake in the firm, it is expected that those owners attempt to use the board to advance their interests including the preservation of their socioemotional wealth (Anderson & Reeb, 2004; Gomez-Mejia *et al.*, 2011). For example, family owners can use the board to justify the executive and board appointments of individuals who share the family values and thereby attempt to look after the family owners' desire to leave the family legacy. Family owners can also use the board to pursue strategic directions and investments that enhance their non-economic goals (Jones *et al.*, 2008). Indeed, prior research shows that family owners exert strong influence on boards often through board representation (Anderson & Reeb, 2004; Morck, Wolfenzon, & Yeung, 2005; Mustakallio, Autio, & Zahra, 2002). This suggests that family owners are likely to attempt to preserve their control on boards and thus oppose any board reform measures that may jeopardize their control.

The EOS, which usually includes the reduction of board size and the separation of execution and monitoring functions, may seem not too attractive to family owners for the non-economic or socioemotional reasons. Smaller board size means that there are fewer director positions, which will likely make it more difficult to maintain extant family representation on the board. If family owners attempt to maintain their board representation, they may have to allocate fewer board positions to non-family managers. This can, however, negatively impact the morale of those managers due to the limited promotion opportunities. Especially, as family firms tend to value employee loyalty with long tenure (Davis & Harveston, 2001), family owners may want to avoid being perceived as providing less opportunities to non-family employees and managers for promotion to the board position which was traditionally regarded as the highest rank that employees can aspire to reach in Japanese firms (Abegglen & Stalk, 1985).

In addition, as family owners and managers will likely prefer less control and monitoring by non-family executives on the board due to their desire to retain greater discretion, the separation of execution and monitoring functions would not be attractive. If family owners separate these two functions by appointing family members as board members and non-family members as executive officers, they can avoid the structure where non-family board members monitor family executives. However, such an arrangement can negatively influence non-family managers' morale and ultimately damage their company loyalty, especially as the switch from a director position to an executive officer position was perceived as demotion when the EOS started to spread (Ahmadjian & Yoshikawa, 2013). Hence, any board reform that enhances the board's monitoring function will likely not be welcomed by family owners.

The adoption of the new board reform such as the EOS may, however, send a legitimacy signal to external stakeholders, especially to those that the firm is paying closer attention. Family firms have a tendency to seek legitimacy from external stakeholders because social sanctions may damage not only the firm's reputation but also the family name (Berrone *et al.*, 2010; Dyer & Whetten, 2006; Miller, Breton-Miller, & Lester, 2013), and they have a desire to preserve and accumulate social capital with those stakeholders such as suppliers, customers, creditors, and investors, for their long-term viability (Carney, 2005). However, family owners could not precisely predict the implications of the EOS in the initial stage of its diffusion. This poses a great risk to those family owners especially as the practice may entail changes in the firm's decision-making structure at the highest level. Therefore, other things being equal, the negative factors likely outweigh the benefits of the adoption. We thus predict that family firms tend not to adopt the EOS.

*Hypothesis 1: Family firms are not likely to adopt the board reform (EOS).*

## **Effects of Board Interlocks on the Adoption of Board Reform**

Family owners are unlikely to be interested in adopting the EOS, because it potentially limits the number of board positions for both family and non-family managers. It also entails the separation of execution and monitoring functions, which can potentially constrain managerial discretion for family managers and owners. Therefore, we have predicted that family owners will likely not choose to adopt the EOS.

However, because of the lack of a clear monitoring function of Japanese boards which were dominated by insiders and also because of poor financial performance of many Japanese firms in the 1990s, board reforms were attracting great attention, especially among institutional investors such as CalPERS (Ahmadjian & Okumura, 2005; Yoshikawa *et al.*, 2007). For example, Sony's move to initiate the EOS in 1996 was widely reported in the media as the initial step toward the "Anglo-American" model that was then perceived as the global standard of corporate governance (Ahmadjian & Okumura, 2005). Therefore, there was rising pressure on Japanese firms to address their corporate governance problems in the late 1990s.

While it is expected that family owners were reluctant to implement board reform that may negatively impact their control on the board, the information about the EOS transferred through board ties could somewhat mitigate their anxiety. Managers who sit on the board of prior adopters or directors who are transferred from such firms can provide first-hand information about the practice from prior adopter firms. In the case of board reform, those who have board ties to prior adopters can directly observe how the board functions after the board reform in the tied-to firm. For example, the information shared by those directors about how the adopting firms implemented the practice and how their management handled the sensitive issue of appointing (or demoting) some former board members as executive officers could be insightful to family owners. Hence, rich information provided by outside directors

may be effective in reducing anxiety of a focal firm's management. Especially in the early stage of the diffusion of this reform, it is expected that any first-hand information provided by directors who are connected with prior adopters likely has an important impact. Therefore, board interlocks with prior adopters likely facilitate the adoption of the EOS.

Further, although family owners have weak incentives to adopt the EOS as it may negatively affect their board control which is an important aspect of their non-economic goals, an adoption of the EOS will likely positively contribute to enhancing external legitimacy of the adopting firms. This is especially so in the institutional environment where normative pressure to address the corporate governance problem is rising (Yoshikawa *et al.*, 2007). Thus, those owners may not be always against the adoption of the board reform measure under some conditions because greater external legitimacy is one important aspect of family owners' socioemotional wealth (Berrone *et al.*, 2010; Dyer & Whetten, 2006; Miller *et al.*, 2013).

Family owners' concerns such as the retention of managerial control in the board and removal of some board members would likely be sensitive in non-family firms as well. The EOS may pose a challenge to extant management of non-family firms as in family firms because it entails the top management structure and the board composition. Also, non-family firms may also have incentives to gain external legitimacy by adopting the board reform that institutional investors appreciate. However, as most of the top executives in non-family firms are usually professional managers with no or only small equity stakes in firms they manage, especially in the Japanese context (Kubo, 2010), structural change of the board poses less threat to their control unlike family managers who may be concerned about having more non-family directors. Further, compared to family firms where family owners exert strong control, it is likely that non-family firms may not face the same level of pressure to show legitimacy through board reform. Hence, managers of non-family firms would likely be less concerned

about the adoption of the EOS compared o family managers and owners. We therefore argue that non-family firms tend to place less importance to first-hand information transferred through board ties to prior adopters.

*Hypothesis 2: Board ties to prior adopters have greater impact on the adoption of board reform (EOS) in family firms than in non-family firms.*

### **Effects of Board Interlocks with Other Family Firms**

Building on social identity theory, Cannella and his colleagues (2015) argue that organizations seek outside directors who hold identities with similar organizations. Indeed, their study finds that family firms and lone-founder firms seek outside directors from other similar firms that have family owners or lone-founder. Similarly, Lester and Cannella (2006) argue that family firms often seek to establish interlocks to other family firms because they often share common interests and a common or similar identity. It is theorized that those common interests and identity as family firms lead those firms to establish interlock ties to other family firms so that family owners can solidify their control (Cannella *et al.*, 2015).

This tendency of family firms to establish linkages with other family firms has important implications on organizational learning. Firms often learn from other similar firms (Haunschild, 1993; Kraatz, 1998). As family firms tend to value similar non-economic goals due to the common interests and identities (Cannella *et al.*,2015), outside directors who are managers in other family firms are a quite valuable source of relevant information about new practices when those managers are already familiar with such practices. Since such directors likely understand the common goals and interests that are rather unique among family firms, they can provide the information in a way that is helpful to other family firms. Therefore, those directors are expected to facilitate the information transfer which likely leads to action. Managers and directors who have ties to other family firms also likely help the information flow and ultimately the implementation of a new practice. Those managers and directors in

family firms have opportunities to learn how prior adopter firms have implemented a new practice. Their board or managerial positions in other family firms with the prior adoption experience likely present valuable learning opportunities as those family firms likely care about the similar issues and share common or similar non-economic interests. Thus, we hypothesize that:

*Hypothesis 3: Board ties to other family firms with prior adoption affect the adoption of board reform (EOS) more strongly than those to non-family firms with prior adoption.*

### **Family Control and Identity**

While we have predicted that information from other family firms obtained through board interlocks leads to the adoption of the board reform, there is likely some variance among family firms in terms of the effects of such ties. In this study, we focus on family firms' control and identity and consider their moderating effects. Specifically, we use family ownership and family name in the firm's name to gauge family firms' control and identity and investigate their effects on the impact of interlock ties to other family firms. Our conjecture is that when a family firm has strong equity control, it has greater leeway to tailor a new practice to suit the interests of family owners and also it enhances family owners' identity with their firms. Those owners' identity can also be enhanced when a firm's name carries the family name (Chang & Shim, 2014). When a family firm has unique identity, it is likely that its members, including family owners' and managers,' identity as the firm's members rather than a member of "family firm" category becomes more salient than their other identities (Dutton, Dukerich, & Harquail, 1994). When its members strongly identify with the firm due to unique family identity, we expect that the firm and its management do not necessarily seek information from other family firms simply because the firm belongs to the same category as "family firms."

## **Family ownership control**

Equity ownership is a key component in retaining family control of a firm. The degree of influence over the management and key managerial decisions is often a function of the amount of equity ownership that a family holds. When family owners hold a significant amount of shares in a firm, they can more easily pursue non-economic goals or seek socioemotional wealth using their voting power (Deephouse & Jaskiewicz, 2013; Miller *et al.*, 2013). However, large family ownership may make other investors concerned about issues such as the conflict of interests between family owners and other shareholders and entrenchment of family managers. Hence, family firms with large family ownership likely feel greater pressure to show legitimacy by implementing board reform measures. At the same time, however, large family ownership allows the family to have greater leverage to seek its non-economic goals without trying to please other shareholders and stakeholders (Miller *et al.*, 2013). This suggests that large family ownership provides family firms with greater discretion to implement new practices such as board reform and consequently, makes the information about how other family firms adopted the board reform less important. In other words, family firms with large family ownership likely have less need to conform to or imitate other family firms' practices.

Large family ownership also implies that family owners feel a strong sense of attachment or belonging to and identity with their firm due to their large financial stake in the firm. This suggests that large family ownership enhances the sense of unique family identity that is different from other firms. Hence, those owners may not necessarily perceive other family firms as their peers simply because they also have family owners. This suggests that the firm's identity as a member of the family firm category likely becomes less salient for its owners and family members as their ownership stake increases. Based on these arguments,



information from other family firms through board interlocks is likely less important to such firms.

On the other hand, families with low ownership would be more concerned about retaining the family control when they decide to adopt the board reform. With their limited voting power and thus greater sense of insecurity, family members need to carefully design the composition of the top management team and board so that they can continue to exert influence to pursue their non-economic goals. Further, lower family ownership means the presence of other shareholders in the firm, which may somewhat dilute its members' identity with the firm itself and possibly enhances salience of other identities (Dutton *et al.*, 1994), i.e., as a member of the family firm category. This gives the family owners incentives to learn about how other family firms have implemented the board reform. Hence, board interlocks with other family firms with prior experience are likely to be more important for family firms with smaller family equity holdings due to their greater insecurity and identity with other family firms, which leads to their incentives to learn from similar firms.

*Hypothesis 4: Family ownership negatively moderates the impact of board ties to other family firms with prior adoption on the adoption of the board reform (EOS).*

### **Family name in the firm's name**

The presence of family legacy is often reflected in strong family values, visions, and founding principles in family firms. Chang and Shim (2014) suggest that such legacy is particularly strong when firms use the founding family names in the firm names, because the founder and other family members strongly identify with the firm that carries the family name. Family owners feel a greater responsibility to avoid any decisions that may potentially damage the family's reputation when their companies carry the family name (Deepphouse & Jaskiewicz, 2013; Dyer & Whetten, 2006) due to the strong identity with the firm. Indeed, the

use of the family name in the firm's name was used as a proxy for family legacy in prior studies (Gompers, Ishii, & Metrick, 2010; Klasa, 2007).

While many family firms are under some influence of family legacy, such legacy reflected in family values and visions in each firm tends to be unique and is likely different among family firms, because they are often built on the founder's and other family members' own belief, experience, and personality as well as the founding condition (Chan & Shim, 2014). For example, several Japanese automotive manufactures take on the founders' names such as Toyota, Honda, and Suzuki, and each firm has its own visions and values. Also, the way the founding family members are involved in the firm differs among these firms. Suzuki is characterized by strong managerial control by the Suzuki family, whereas the Honda family has no involvement in the management with no significant family ownership position. The Toyoda family always has some involvement in the management or on the board, but not always as the top executive. Yet, the family legacy is deeply rooted and professional executives understand the importance of the presence of the founding family members (Kurashina, 2003). When a family firm has such a strong identity with the founder and carries his or her family name in the firm's name, it is likely that identity as a member of the family firm category likely becomes less important or salient for its members. This suggests that for such firms, other family firms in general may be simply other information sources among others and hence, are not necessarily perceived to have greater relevance. On the other hand, family firms without family names in the firms' name are more likely to identify themselves with other family firms as their peers because the unique legacy effect in such firms is likely weaker and thus, they tend to see themselves similar to other family firms. Hence, they are more willing to learn from other family firms through board interlocks.

*Hypothesis 5: Board ties to other family firms with prior adoption likely have a weaker effect in family firms that have family names in their names than family firms without family names in the firms' name on the adoption of the board reform (EOS).*

## METHODS

### Sample and Data

Our sample includes all non-financial firms listed in the Japanese stock exchanges for the period from 1997 to 2002. The total number of firms in our sample is approximately 3,500. However, because of new listings, delisting, mergers, and bankruptcy, the number of listed firms varies by year. All financial and ownership data were collected from the Development Bank of Japan (DBJ) database. Data on firms' board structure were gathered from the Toyo Keizai database.

*Dependent variable.* Our dependent variable is the adoption of the Executive Officer System (EOS). We use a dummy variable that takes the value of 1 if firm  $i$  adopt the practice in year  $t$ , and 0 otherwise. As we focus on the first adoption of executive officer system (in contrast to repeated events), we drop the observation from the sample after the company adopted those practices.

*Independent variables.* Our main independent variable is family firm. *Family firms* defined as those with founders or their family members among the ten largest shareholders or in top management positions (CEO, President, or Board Chair), consistent with prior works in the family business literature with the developed economy and the Japanese context, e.g., Anderson and Reeb (2003) and Mehrotra, Morck, Shim & Wiwattanakantang (2013). We used *family ownership* which is measured as the ratio of shareholdings by family owners who are among a firm's ten largest shareholders for the control variable when we use family firm sub-samples. We chose this measure as only the largest 10 shareholders are disclosed for most firms. We constructed family trees for founders and their descendants by consulting the following sources: (1) *Nihon kaishashi sôran* (The Company History in Japan, 1995) that provides detailed company history and information including founding year and company name change of 3,072 Japanese companies, (2) *Zaikai kakeifu daikan* (Family Trees of Big

Business, 1971) that provides detailed family trees of more than 1,000 Japanese companies, and (3) company annual reports and their websites. Our family firms and family ownership are measured based on this categorization.<sup>2</sup> Other independent variables include the use of family name in a focal firm's name as a proxy for family legacy. The family legacy is a dummy variable..

The number of a focal firm's board interlocks with prior adoption of the EOS is another important variable. In the last, we classify *interlocks to prior adopter firms* into two category, *interlock ties to other family firms* and *non-family firms*. These independent variables were lagged by one year (t-1).

*Control variables.* We included a number of control variables to account for alternative explanations. First, we included *Board size* and *Subsidiary* as control variables. One of the motivations of EOS is to reduce the board size and thus, we expect that board size has a positive relationship with the EOS adoption. We included the subsidiary dummy to control for the effect of the parent company. We also included two performance measures. Specifically, we controlled for a firm's performance computed as *Tobin's Q* and *sales growth*. Firms with a low market-based performance or low growth may be more inclined to adopt the EOS due to pressures from investors. In addition, we captured the effect of a firm's *leverage* on the adoption of the EOS. We also controlled for *CEO age* because it can affect a CEO's propensity to implement new practices. We predict that older CEOs are less likely to adopt the EOS.

We also included control variables for different types of ownership. *Foreign ownership* is one of the variables that may influence the legitimacy of board reform. This variable is measured as the ratio of shareholdings by foreign investors who are among a

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<sup>2</sup> The Center for Economic Institutions at the Hitotsubashi University developed its ownership (covering 1950–1983) and board (covering 1962–1988) databases for all Japanese listed companies available to researchers.

firm's ten largest shareholders. *Bank ownership* is also included because of the significant influence large banks have over managerial decisions in the Japanese context. This variable is calculated as the ratio of bank ownership among a firm's ten largest shareholders. In the last, we control for *industry diffusion*. To capture this influence we computed the ratio of adopting firms in the same industry as the focal firm for each year. The industry classification is based on the 2 digit industry classification code. The effects of all control variables have been ascertained by prior literature and were lagged by one year (t-1).

### **Analysis**

As our dependent variables are dummy variables which indicate the board reform (EOS), we employed a logit regression to analyze the data. In line with prior literature, we used a discrete-time logit specification of event history with each spell corresponding to a year (Gimeno *et al.*, 2005; Tuschke *et al.*, 2014). This model is especially suited to account for right-censoring that accrues for firms that do not adopt the EOS throughout the observation period.

Our sample spans the time period from 1997 to 2002. Consequently we have six spells that were updated annually to accommodate time-varying covariates. Once a firm adopted EOS, the next year's risk set was diminished by that firm. As stated, we drop the observation from the sample after the company adopted the EOS.

The fact that limited dependent variable models (in our case is Logit) are intrinsically nonlinear, it complicates interpretation of findings. A unit change in an explanatory variable on the dependent variable (*marginal effect*) does not equal the variable's model coefficient. In addition, the value of this marginal effect varies with the value of all model variables. These facts imply that, in an LDV model, an explanatory variable's estimated coefficient can rarely be used to infer the true nature of the relationship between the explanatory variable and the dependent variable (Hoetker, 2007; Wiersema and Bowen, 2009). There are two common

solutions for this. The first is to compute the value of the marginal effect using the sample mean of all variables and assesses its significance. The second method computes the average of the individual marginal effect values at each observation and assesses its significance. In this paper, we followed the first method and compute the marginal effects of explanatory variables with the Stata command *mf*. We used the Huber/White/sandwich estimator of variance for the robust standard errors.

## RESULTS

Table 1 shows the correlation matrix. The correlations in this table indicate there is no multicollinearity problem. Table 2 shows the results for our hypotheses 1 and 2. Column 1 is the baseline model and only control variables are included. Column 2 is the effect of board interlocks to prior adopter firms. This effect shows the positive impact on the EOS adoption after controlling for alternative explanation. Column 3 is the effect of family firm and the interaction between family firm and board interlocks to prior adopter firms. Family firm shows a negative sign and statistically significant. This suggests that family firms are not likely to adopt the EOS supporting Hypothesis 1. The interaction term has a positive sign and statistically significant. This means that the effect of board interlocks to prior adopter firms on the EOS adoption is stronger in family firm than in non-family firms. Thus, the Hypothesis 2 is supported.

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Insert Tables 1 and 2 here  
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Tables 3 show the results for our hypothesis 3. The Model 1 in Table 3 shows that the effects of board interlocks to prior adopter firms among family firms are positive and significant. The Models 2,3 and 4 in Table 3 show the impact of board ties to other family firms or non-family firms on the adoption of the EOS. It is clear from this table that only

board interlocks with other family firms with prior adoption have a significant impact on the adoption decision and the result for ties with non-family firms show no significance. These results provide strong support for Hypothesis 3.

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Insert Table 3 here  
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Table 4 -1 presents the results for Hypothesis 4. The table compares the results for firms with family ownership below median and those above median by splitting the sample. These results show that while board interlocks with other family firms with prior adoption have a significant impact in firms in both groups, the effect is more significant in firms with family ownership below median than above median. Hence, the results are largely consistent with Hypothesis 4. Table 4-2 shows the interaction effect of family ownership and interlock ties on the EOS adoption. We found no significant interaction effect of family ownership and board ties to prior family firm adopters, suggesting family firms with large family ownership do not learn from other family firms when they implement the EOS.

Finally, we present the results for Hypothesis 5 in Tables 5-1 and 5-2. These tables compare the results for firms without family legacy and those with family legacy by splitting the sample. The results indicate that while board ties to other family firms with prior adoption have a positive and significant impact on the adoption in family firms without family legacy, they have no impact in firms with family legacy. Ties with family firms with prior adoption are important only for family firms without family legacy or with no family name in firms' name. These results are consistent with Hypothesis 5. The interaction effect analysis shown in Table 5-2 also marginally supports Hypothesis 5.

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Insert Tables 4-1, 4-2, 5-1 and 5-2  
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#### **Additional test**

To investigate the difference between family firms and non-family firms further, we have examined the effects of board interlocks to prior adopters with a sub-sample of non-family firms as shown in the Table in the appendix. This table shows that interlock ties to prior adopter firms, both to non-family and family firms, have no significant impact on the adoption of the EOS in non-family firms. However, the results show that board size as well as foreign ownership and bank ownership are significantly related to the EOS adoption. While board size is also significant for the family firm sub-sample, foreign ownership and bank ownership are significant only for the non-family firm sub-sample. Further, the industry diffusion is weakly significant for the non-family sub-sample, while it is not significant for the family firm sub-sample. These results suggest that pressure from those owners and industry-level diffusion rather than information gained through board ties to prior adopters tends to drive the adoption decision in non-family firms. They present further evidence that family firms are different from non-family firms.

## **DISCUSSION AND CONCLUSION**

This study has examined the effects of family control and director interlocks on the adoption of board reform measure or the EOS among family firms in Japan. The results on the adoption of the EOS reveal interesting behavior of family firms. Our findings show that family firms are more likely to oppose the adoption of the EOS, because the family owners do not prefer a board reform that constrains their board power and discretion and also may limit career opportunities for employees of the firm they own. This finding is consistent with our argument that as family firms pursue non-economic goals and the board reform may potentially pose a threat to such goals, family firms generally tend not to implement such practice.

Our results have also shown that family firms that have board ties with prior adopters are more likely to adopt the EOS. This suggests that even though family firms generally do



not prefer to implement the board reform practice that may constrain their discretion and power, they are more likely to implement it when the board has ties with prior adopters. This supports our argument that information about the EOS transferred through such ties could mitigate family owners' anxiety over the loss of managerial control and thus, board ties to prior adopter firms lead to the adoption decision. Hence, we can argue that organizational learning through board interlocks encourage family owners to seek greater legitimacy through board reform that external investors generally support.

This study also found that board ties to other family firms with prior adoption facilitate the adoption of the EOS. This is consistent with the view that a firm learns from other similar firms (Kraatz, 1998). However, the impact of such ties disappears or at least weakens when family firms have large family ownership or strong family legacy (family name in the firm's name in this study). These findings suggest that family firms are quite heterogeneous as recent research suggests (Wright *et al.*, 2014) and hence, their propensity to learn from other family firms varies significantly. In this study, we have focused on family firms' unique identity and ownership stake and shown that these factors negatively affect family firms' learning from other family firms.

This study makes several important contributions. First, it contributes to the family business research by showing that family firms vary in their likelihood to adopt new practices depending upon how each practice impacts their non-economic goals or socioemotional wealth. Our results suggest that family firms rather not adopt the EOS as such a board reform measure may have a negative impact on family control and discretion. Further, a reduction of board size that comes with the EOS may limit non-family managers' opportunities to be "promoted" to board or senior management positions. Hence, the EOS is not consistent with one aspect of family owners' non-economic objectives. This implies that, other things being

equal, family owners prioritize their greater control and discretion over external legitimacy when it comes to changes in the board or top management structure.

Second, this study integrates the board interlock research and the family business research, especially by taking family owners' unique non-economic interests into consideration when family firms adopt new practices. We have shown how information transferred by board interlocks is acted on in family firms. Since family owners usually have a broad set of interests, such as financial gain, managerial and board control, preservation of employee loyalty, and enhancement of external legitimacy, how family firms decide to adopt a new practice may be quite different from non-family firms. We have investigated this issue by focusing on a contentious governance practice that started to spread in the late 1990s in Japan. Our empirical analyses show that family firms and non-family firms are indeed different in terms of the effects of board interlocks on the adoption decision.

Further, we have extended prior research on the transfer of new practices or organizational learning by showing that a similar logic is applicable to the adoption of corporate governance reform. Specifically, this study has built on prior research which suggests that firms learn from similar other firms (Haunschild, 1993; Kraatz, 1998). While a recent study by Cannella *et al.* (2015) shows that family firms (or lone founder firms) tend to appoint directors from other family firms (or other lone founder firms) because those directors likely share identities with similar firms, our study went one step further and examined whether family firms learn a new practice through directors linked to other similar firms. Other things being equal, we show that they do as consistent with prior research. However, we have also shown that the impact of such ties disappears or weakens under certain conditions; high family ownership and the presence of strong family legacy in this study. This suggests that as ownership stake or legacy increases or strengthens, the likelihood of organizational learning through board ties with other family firms decreases.

These results indicate that family firms do not always learn from other family firms through board ties simply because they belong to the category. Hence, we present more nuanced relationships among family firms in terms of their organizational learning behavior.

Our study has some limitations that provide future research opportunities. First, as we have only examined the relatively early stage of diffusion process, we may find different patterns of adoption decisions when these practices are much widely diffused in later stages (Haunschild & Beckman, 1998). As a wider diffusion allows for more sources of information about specific practices, the impact of board ties may possibly be reduced over time. Looking at the phenomenon over a longer period of time will allow us to investigate the changing influences of board ties on the adoption decisions.

Secondly, this study has focused on a firm's decision to adopt the EOS without considering how the practice was actually implemented. It is possible that there are differences between family firms and non-family firms in terms of how the board reform was implemented. For example, as family firms are generally not very keen on board reform measures that constrain family owners' control and discretion, they may implement the EOS in a more symbolic way rather than substantively. Future research can further examine the actual implementation and investigate how family owners' objective to preserve socioemotional wealth may affect it.

Lastly, as this study uses the Japanese data, we need to be cautious about generalizing our results to family firms in other contexts. Compared to listed family firms in other institutional contexts especially emerging markets, family ownership stakes in listed Japanese firms tend to be lower. Therefore, family owners in listed Japanese firms may be more sensitive about losing their control and discretion. More studies on the effects of board interlocks on organizational learning of contentious or sensitive managerial practices in family firms are thus needed.

Family firms are often driven by their own unique objectives and hence, they tend to behave differently from non-family firms. Multiple aspects of those objectives are, however, not always compatible; pursuing one aspect of those objectives may jeopardize other aspects. For example, family owners may sometimes find retaining control and gaining external legitimacy are in conflict (Vardaman & Gondo, 2014). Managers of family firms thus have to manage and balance those differences by weighing the costs and benefits of their decisions. This study has shown that the adoption decision of new practices by family firms is influenced not only by the unique objectives of those firms but also by the sources of information about the practices, as each source brings different benefits (and possibly costs) to family owners. This suggests that we have to look at the relationship between family owners' incentives and the roles of different actors who provide information to understand how family firms make adoption decisions. Lastly, family firms are quite heterogeneous and we need to look into this heterogeneity into consideration when we examine their behavior. This study focuses on the scope of family involvement, ownership stake, and family legacy and the effects of such factors on the use of board ties to other family firms when family firms implement a contentious practice. Future research can look at other dimensions to uncover heterogeneity among family firms.

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**Table 1: Correlation Matrix**

Variables	Mean	S.D.	( 1 )	( 2 )	( 3 )	( 4 )	( 5 )	( 6 )	( 7 )	( 8 )	( 9 )	( 10 )	( 11 )	( 12 )	( 13 )
( 1 ) Initial adoption of EOS	0.043	0.204	1												
( 2 ) Family firms (t-1)	0.506	0.500	-0.0343*	1											
( 3 ) Family ownership (t-1)	10.765	16.684	-0.0515*	0.6376*	1										
( 4 ) Interlocks to prior adopter firms (t-1)	0.165	0.518	0.0344*	-0.1960*	-0.1324*	1									
( 5 ) Board size (t-1)	12.655	6.496	0.1091*	-0.2054*	-0.2683*	0.0465*	1								
( 6 ) Subsidiary (t-1)	0.201	0.401	-0.0171	-0.2714*	-0.0383*	0.1942*	-0.0779*	1							
( 7 ) Tobin's Q (t-1)	1.388	0.582	0.0242*	0.1253*	0.1632*	-0.0052	0.0189	-0.0194	1						
( 8 ) Sales growth (t-1)	0.003	0.151	-0.0112	0.0713*	0.1047*	-0.0099	-0.0153	0.0042	0.2702*	1					
( 9 ) Leverage (t-1)	0.189	0.155	-0.0016	-0.0475*	-0.0553*	-0.0268*	0.0464*	-0.0406*	-0.2793*	-0.0820*	1				
( 10 ) CEO age (t-1)	60.636	7.410	0.0075	-0.2994*	-0.2765*	0.0446*	0.1943*	0.0503*	-0.1227*	-0.0918*	0.0212	1			
( 11 ) Foreign ownership (t-1)	1.650	5.853	0.0319*	-0.0278*	-0.0432*	0.0187	0.0211	-0.0461*	0.1668*	0.0755*	-0.1149*	-0.0734*	1		
( 12 ) Bank ownership (t-1)	11.123	7.042	0.0541*	-0.0625*	-0.2781*	-0.1187*	0.3181*	-0.2777*	0.1002*	-0.0063	-0.0318*	0.1196*	-0.0935*	1	
( 13 ) Industry diffusion (t-1)	0.068	0.060	0.0566*	0.0527*	0.1021*	0.0480*	-0.1771*	0.0192	-0.0085	-0.0919*	-0.0558*	-0.0478*	0.0410*	-0.1115*	1

N=12,687;

\* Correlation coefficient is statistically significant at the 1 percent level.



**Table 2: Results on EOS Adoption – Hypotheses 1 and 2**

Column	Logit regression (Marginal effect)		
	( 1 )	( 2 )	( 3 )
Classification of family control	Base model	Effect of ties	Family firms
Interlocks to prior adopter firms (t-1)		0.0047** (2.62)	0.0009 (0.40)
Family firms (t-1)			-0.0083** (3.05)
Interlocks to prior adopter firms (t-1)*Family firms (t-1)			0.0150*** (3.30)
Board size (t-1)	0.0019*** (10.54)	0.0018*** (10.38)	0.0018*** (10.27)
Subsidiary (t-1)	0.0012 (0.35)	-0.0002 (0.07)	-0.0017 (0.52)
Tobin's Q (t-1)	0.0042* (2.18)	0.0040* (2.05)	0.0045* (2.37)
Sales growth (t-1)	-0.0161+ (1.91)	-0.0163+ (1.94)	-0.0153+ (1.86)
Leverage (t-1)	0.0090 (1.17)	0.0092 (1.20)	0.0080 (1.05)
CEO age (t-1)	-0.0002 (0.92)	-0.0002 (1.00)	-0.0002 (1.47)
Foreign ownership (t-1)	0.0004** (3.09)	0.0004** (3.03)	0.0004** (2.77)
Bank ownership (t-1)	0.0007*** (3.78)	0.0007*** (4.06)	0.0006*** (3.57)
Industry diffusion (t-1)	0.0732* (2.55)	0.0733* (2.56)	0.0706* (2.55)
Number of observation	12687	12687	12687
Pseudo R2	0.0956	0.0956	0.1051
Prob > F	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

**Table 3: Results on EOS Adoption -- Hypothesis 3 (Family Firm Subsample)**

Column	Logit regression (Marginal effect)			
	Family Sub-sample			
	( 1 )	( 2 )	( 3 )	( 4 )
Classification of board interlocks	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0135*** (3.54)			
Interlock ties to other non-family firms (t-1)		0.0056 (0.98)		0.0056 (1.01)
Interlock ties to other family firms (t-1)			0.0179*** (3.31)	0.0179*** (3.32)
Family ownership (t-1)	-0.0005*** (4.04)	-0.0005*** (4.11)	-0.0005*** (4.46)	-0.0005*** (4.34)
Board size (t-1)	0.0013*** (5.92)	0.0013*** (5.92)	0.0013*** (5.80)	0.0013*** (5.83)
Subsidiary (t-1)	-0.0004 (0.07)	0.0007 (0.11)	-0.0008 (0.13)	-0.0008 (0.14)
Tobin's Q (t-1)	0.0055* (2.42)	0.0057* (2.45)	0.0054* (2.38)	0.0054* (2.38)
Sales growth (t-1)	-0.0229* (2.03)	-0.0232* (2.04)	-0.0212+ (1.88)	-0.0217+ (1.92)
Leverage (t-1)	0.0037 (0.36)	0.0026 (0.24)	0.0032 (0.31)	0.0035 (0.34)
CEO age (t-1)	-0.0004* (2.24)	-0.0004* (2.38)	-0.0004* (2.25)	-0.0004* (2.23)
Foreign ownership (t-1)	0.0002 (0.57)	0.0001 (0.44)	0.0002 (0.54)	0.0002 (0.57)
Bank ownership (t-1)	0.0001 (0.45)	0.0001 (0.26)	0.0001 (0.37)	0.0001 (0.42)
Industry diffusion (t-1)	0.0568 (1.27)	0.0569 (1.25)	0.0587 (1.31)	0.0582 (1.30)
Number of observation	6419	6419	6419	6419
Pseudo R2	0.0905	0.0840	0.0916	0.0920
Prob > F	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

**Table 4-1: Results on EOS Adoption – Family Ownership Effect (H4) (Family Firm Subsample)**

Column	Low family ownership group (Below Median)				High family ownership group (above Median)			
	( 1 )	( 2 )	( 3 )	( 4 )	( 1 )	( 2 )	( 3 )	( 4 )
Classification of interlocking directors	All ties	Ties to other non-family firm	Ties to other family firm	Both effect	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0172** (3.17)				0.0074+ (1.69)			
Interlock ties to other non-family firms (t-1)		0.0107 (1.60)		0.0108 (1.63)		.		.
Interlock ties to other family firms (t-1)			0.0268*** (3.43)	0.0268*** (3.45)			0.0098+ (1.92)	0.0097+ (1.88)
Family ownership (t-1)	-0.0009+ (1.88)	-0.0010* (2.05)	-0.0010* (2.04)	-0.0009+ (1.92)	-0.0005** (2.63)	-0.0005** (2.83)	-0.0005** (2.74)	-0.0005** (2.87)
Board size (t-1)	0.0013*** (4.53)	0.0013*** (4.45)	0.0013*** (4.45)	0.0013*** (4.50)	0.0015*** (4.43)	0.0016*** (4.53)	0.0015*** (4.34)	0.0015*** (4.32)
Subsidiary (t-1)	-0.0166* (2.11)	-0.0172* (2.20)	-0.0173* (2.27)	-0.0168* (2.16)	0.0063 (0.77)	0.0089 (1.00)	0.0063 (0.77)	0.0073 (0.85)
Tobin's Q (t-1)	0.0067+ (1.80)	0.0068+ (1.81)	0.0064+ (1.74)	0.0065+ (1.76)	0.0049+ (1.84)	0.0054* (2.00)	0.0050+ (1.87)	0.0052+ (1.95)
Sales growth (t-1)	-0.0230 (1.39)	-0.0221 (1.34)	-0.0196 (1.17)	-0.0213 (1.29)	-0.0217 (1.48)	-0.0220 (1.47)	-0.0211 (1.43)	-0.0208 (1.39)
Leverage (t-1)	0.0214 (1.52)	0.0210 (1.47)	0.0190 (1.35)	0.0202 (1.43)	-0.0133 (0.88)	-0.0134 (0.88)	-0.0124 (0.83)	-0.0117 (0.79)
CEO age (t-1)	-0.0004+ (1.67)	-0.0005+ (1.74)	-0.0004+ (1.68)	-0.0004 (1.64)	-0.0004+ (1.70)	-0.0005+ (1.87)	-0.0004+ (1.68)	-0.0004+ (1.73)
Foreign ownership (t-1)	0.0002 (0.41)	0.0001 (0.32)	0.0002 (0.39)	0.0002 (0.43)	0.0003 (0.42)	0.0002 (0.26)	0.0003 (0.41)	0.0003 (0.35)
Bank ownership (t-1)	-0.0000 (0.09)	-0.0001 (0.27)	-0.0001 (0.17)	-0.0000 (0.08)	0.0001 (0.30)	0.0001 (0.14)	0.0001 (0.30)	0.0001 (0.24)
Industry diffusion (t-1)	0.0768 (1.12)	0.0753 (1.08)	0.0811 (1.16)	0.0799 (1.15)	0.0310 (0.53)	0.0283 (0.48)	0.0316 (0.54)	0.0308 (0.53)
Number of observation	3209	3209	3209	3209	3210	3210	3210	3210
Pseudo R2	0.1003	0.0947	0.1005	0.1022	0.0800	0.0777	0.0828	0.0841
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

**Table 4-2: Results on EOS Adoption – Family Ownership Effect (H4) (Family Firm Subsample)**

Column	Logit regression (Marginal effect)			
	( 1 )	( 2 )	( 3 )	( 4 )
Classification of interlocking directors	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0135*** (3.54)			
Interlock ties to other non-family firms (t-1)		0.0169* (2.45)		0.0167* (2.46)
Interlock ties to other non-family firms (t-1)*Family ownership (t-1)		-0.0019* (2.43)		-0.0018* (2.36)
Interlock ties to other family firms (t-1)			0.0218** (3.13)	0.0219** (3.17)
Interlock ties to other family firms (t-1)*Family ownership (t-1)			-0.0001 (0.84)	-0.0002 (0.91)
Family ownership (t-1)	-0.0005*** (4.04)	-0.0004*** (3.98)	-0.0005*** (4.18)	-0.0004*** (3.92)
Board size (t-1)	0.0013*** (5.92)	0.0013*** (5.97)	0.0013*** (5.84)	0.0013*** (5.92)
Subsidiary (t-1)	-0.0004 (0.07)	0.0009 (0.14)	-0.0003 (0.05)	-0.0001 (0.02)
Tobin's Q (t-1)	0.0055* (2.42)	0.0058* (2.51)	0.0055* (2.43)	0.0056* (2.48)
Sales growth (t-1)	-0.0229* (2.03)	-0.0227* (2.00)	-0.0216+ (1.91)	-0.0216+ (1.91)
Leverage (t-1)	0.0037 (0.36)	0.0030 (0.28)	0.0032 (0.31)	0.0039 (0.38)
CEO age (t-1)	-0.0004* (2.24)	-0.0004* (2.42)	-0.0004* (2.25)	-0.0004* (2.26)
Foreign ownership (t-1)	0.0002 (0.57)	0.0001 (0.43)	0.0002 (0.56)	0.0002 (0.57)
Bank ownership (t-1)	0.0001 (0.45)	0.0001 (0.20)	0.0001 (0.41)	0.0001 (0.39)
Industry diffusion (t-1)	0.0568 (1.27)	0.0571 (1.26)	0.0586 (1.31)	0.0582 (1.30)
Number of observation	6419	6419	6419	6419
Pseudo R2	0.0905	0.0859	0.0919	0.0941
Prob > F	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

**Table 5-1: Results on EOS Adoption – Family Legacy (H5) (Family Firm Subsample)**

Column	No family legacy (firm name is not family name)				Family legacy (family name is included in firm name)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Classification of interlocking directors	All ties	Ties to other non-family firm	Ties to other family firm	Both effect	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0158*** (3.59)				0.0014 (1.03)			
Interlock ties to other non-family firms (t-1)		0.0016 (0.22)		0.0011 (0.16)		0.0017 (1.22)		0.0018 (1.24)
Interlock ties to other family firms (t-1)			0.0258*** (5.20)	0.0257*** (5.20)			0.0014 (1.39)	0.0015 (1.29)
Family ownership (t-1)	-0.0005*** (3.40)	-0.0005*** (3.58)	-0.0005*** (3.94)	-0.0005*** (3.91)	-0.0000 (0.91)	-0.0000 (1.22)	-0.0000 (1.52)	-0.0000 (1.20)
Board size (t-1)	0.0018*** (5.29)	0.0018*** (5.26)	0.0018*** (5.31)	0.0018*** (5.31)	0.0002 (1.26)	0.0002*** (4.39)	0.0002 .	0.0002*** (3.73)
Subsidiary (t-1)	0.0003 (0.04)	0.0017 (0.21)	-0.0006 (0.08)	-0.0006 (0.08)	0.0006 (0.32)	0.0007 (0.37)	0.0006 (0.34)	0.0006 (0.33)
Tobin's Q (t-1)	0.0041 (1.49)	0.0041 (1.45)	0.0035 (1.28)	0.0035 (1.29)	0.0010 (1.01)	0.0011 (1.55)	0.0011+ (1.94)	0.0011 (1.52)
Sales growth (t-1)	-0.0154 (1.09)	-0.0153 (1.08)	-0.0136 (0.95)	-0.0137 (0.96)	-0.0062 (1.09)	-0.0069+ (1.94)	-0.0061* (2.09)	-0.0070+ (1.87)
Leverage (t-1)	0.0023 (0.18)	0.0004 (0.03)	0.0018 (0.14)	0.0019 (0.15)	0.0006 (0.24)	0.0006 (0.19)	0.0006 (0.23)	0.0007 (0.24)
CEO age (t-1)	-0.0004+ (1.75)	-0.0004+ (1.81)	-0.0004+ (1.89)	-0.0004+ (1.88)	-0.0001 (1.05)	-0.0001* (1.97)	-0.0001+ (1.96)	-0.0001+ (1.72)
Foreign ownership (t-1)	-0.0001 (0.22)	-0.0002 (0.38)	-0.0001 (0.28)	-0.0001 (0.27)	0.0001 (1.01)	0.0001 (1.55)	0.0001+ (1.82)	0.0001 (1.56)
Bank ownership (t-1)	0.0001 (0.41)	0.0001 (0.23)	0.0001 (0.35)	0.0001 (0.35)	0.0000 (0.30)	0.0000 (0.21)	0.0000 (0.23)	0.0000 (0.31)
Industry diffusion (t-1)	0.0699 (1.26)	0.0709 (1.25)	0.0761 (1.38)	0.0759 (1.38)	-0.0017 (0.17)	-0.0019 (0.17)	-0.0018 (0.18)	-0.0018 (0.17)
Number of observation	4428	4428	4428	4428	1842	1842	1842	1842
Pseudo R2	0.0928	0.0848	0.0985	0.0985	0.1095	0.1061	0.1076	0.1096
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

**Table 5-2: Results on EOS Adoption – Family Legacy (H5) (Family Firm Subsample)**

Column	Logit regression (Marginal effect)			
	( 1 )	( 2 )	( 3 )	( 4 )
Classification of interlocking directors	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0139*** (3.51)			
Interlock ties to other non-family firms (t-1)		0.0029 (0.41)		0.0025 (0.36)
Interlock ties to other non-family firms (t-1)*Family legacy (t-1)		0.0085 (0.73)		0.0091 (0.82)
Interlock ties to other family firms (t-1)			0.0252*** (5.12)	0.0252*** (5.13)
Interlock ties to other family firms (t-1)*Family legacy (t-1)			-0.0150+ (1.77)	-0.0150+ (1.76)
Family ownership (t-1)	-0.0004*** (3.70)	-0.0004*** (3.83)	-0.0005*** (4.20)	-0.0005*** (4.07)
Board size (t-1)	0.0013*** (5.93)	0.0014*** (5.94)	0.0013*** (5.89)	0.0013*** (5.93)
Subsidiary (t-1)	0.0008 (0.13)	0.0019 (0.28)	-0.0000 (0.00)	-0.0000 (0.00)
Tobin's Q (t-1)	0.0047* (1.99)	0.0048* (2.00)	0.0043+ (1.84)	0.0042+ (1.80)
Sales growth (t-1)	-0.0229+ (1.91)	-0.0230+ (1.91)	-0.0211+ (1.74)	-0.0217+ (1.79)
Leverage (t-1)	0.0035 (0.33)	0.0019 (0.18)	0.0031 (0.29)	0.0033 (0.32)
CEO age (t-1)	-0.0004* (2.30)	-0.0005* (2.47)	-0.0005* (2.42)	-0.0004* (2.42)
Foreign ownership (t-1)	0.0002 (0.72)	0.0002 (0.56)	0.0002 (0.72)	0.0002 (0.70)
Bank ownership (t-1)	0.0002 (0.61)	0.0001 (0.40)	0.0001 (0.51)	0.0001 (0.56)
Industry diffusion (t-1)	0.0447 (0.99)	0.0445 (0.97)	0.0494 (1.10)	0.0489 (1.09)
Number of observation	6270	6270	6270	6270
Pseudo R2	0.0905	0.0840	0.0936	0.0942
Prob > F	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.

## Appendix

**Table: Results on EOS Adoption -- Hypothesis 3 (Non-family firm subsample)**

Column	Logit regression (Marginal effect)			
	Non-family Sub-sample			
	( 1 )	( 2 )	( 3 )	( 4 )
Classification of board interlocks	All ties	Ties to other non-family firm	Ties to other family firm	Both effect
Interlocks to prior adopter firms (t-1)	0.0004 (0.17)			
Interlock ties to other non-family firms (t-1)		-0.0009 (0.34)		-0.0009 (0.35)
Interlock ties to other family firms (t-1)			0.0039 (0.94)	0.0040 (0.95)
Family ownership (t-1)	.	.	.	.
Board size (t-1)	0.0021*** (7.77)	0.0021*** (7.79)	0.0021*** (7.78)	0.0021*** (7.77)
Subsidiary (t-1)	0.0014 (0.31)	0.0017 (0.38)	0.0016 (0.37)	0.0018 (0.42)
Tobin's Q (t-1)	0.0056+ (1.81)	0.0056+ (1.84)	0.0052+ (1.69)	0.0053+ (1.70)
Sales growth (t-1)	-0.0054 (0.46)	-0.0053 (0.45)	-0.0058 (0.50)	-0.0058 (0.50)
Leverage (t-1)	0.0101 (0.89)	0.0098 (0.86)	0.0095 (0.84)	0.0092 (0.82)
CEO age (t-1)	0.0002 (0.67)	0.0002 (0.67)	0.0002 (0.67)	0.0002 (0.67)
Foreign ownership (t-1)	0.0005** (2.60)	0.0005** (2.60)	0.0005** (2.63)	0.0005** (2.63)
Bank ownership (t-1)	0.0007** (2.76)	0.0006** (2.68)	0.0007** (2.81)	0.0007** (2.76)
Industry diffusion (t-1)	0.0678+ (1.88)	0.0678+ (1.88)	0.0686+ (1.91)	0.0687+ (1.91)
Number of observation	6268	6268	6268	6268
Pseudo R2	0.1151	0.1151	0.1154	0.1154
Prob > F	0.0000	0.0000	0.0000	0.0000
Year dummy	Yes	Yes	Yes	Yes

T values appear in parentheses.

+, \*, \*\*, \*\*\* indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

The value of the coefficient is the marginal effects using the sample mean of all variables.