Family Control and Corporate Innovation in Stakeholder-Oriented Corporate Governance

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Abstract: This study investigates the effects of family control on corporate innovation activity in publicly traded firms in Japan under stakeholder-oriented corporate governance. In a sample of 14,991 firm-year observations in publicly traded firms in Japan during the period 2007 to 2016, we tested whether family owners or board members are enhancing research and development investments. While theoretical perspectives of principal–principal conflicts generally assume a negative relationship between family control and research and development intensity, we find a positive relationship, which supports the stewardship theory perspective. Additionally, we find that main bank ownership positively moderates the relationship between family control and research and development, suggesting that the main bank could affect the decision-making of family board members in the long-term. This result is supported by the close relationships between the main bank and client firms. Furthermore, our study reveals that the shareholder orientation of foreign shareholders suppresses family board members’ long-term orientation. We conclude that the exploitation presumed by principal–principal conflict perspectives has not been thoroughly investigated in Japan’s stakeholder-oriented corporate governance system.

Keywords: corporate innovation; principal-principal conflicts; stewardship theory; main bank

1. Introduction

Corporate innovation is crucial to a firm’s competitive advantage to realize the sustainable business management and is often influenced by the corporate expenses of research and development (R&D) activities [1–3]. Corporate governance is closely related to business strategies, including corporate innovation activity. Despite a global increase in the number of family controlled public firms during recent decades [4,5], the effects of family control on value creation through R&D have not been clearly defined [6].

From a family control perspective, family owners (instances where the corporate entity is controlled by a specific family due to their large number of shares in the company) tend to maintain control of their firms [7]. Additionally, family controlled firms may not always place a lot of emphasis on the importance of investing in R&D [8]. The objectives of a family controlled firm are expected to have negative effects on R&D investment [9]. Family owners do not tend to be in favor of R&D investment to realize long-term growth [10]. Conversely, agency theory suggests that concentrated ownership is likely to promote innovation activity because large shareholders have strong incentives to monitor management and promote innovation strategy and growth [11]. These two conflicting perspectives are summarized in [12]. Several empirical studies have found that family control can affect a positive influence on firm innovation [13,14].

As discussed above, there are two conflicting theoretical perspectives concerning the effect of family control on R&D investment. Stewardship theory states that controlling family board members act as stewards because they have long tenures and socio-emotional relationships with the firm [15]. In their role as stewards, family board members most...
often focus on the continuity of the business and on maintaining close relationships with the various stakeholders of the firm [16]. From the perspective of stewardship theory, this responsibility means that R&D investment would likely be facilitated in firms with controlling family board members. Conversely, principal–principal conflicts imply that possible conflicts between family members and minority shareholders could affect firm decision-making, for instance, R&D investment decisions [17]. In other words, controlling family members focus on their self-interests and exploit the firm’s wealth, as well as that of the minority shareholders [18]. Furthermore, several empirical studies show that family ownership could discourage innovation due to lower long-term R&D investment [18,19].

Referring to the existing literature, the relationship between family control and corporate innovation has primarily been investigated from the perspective of emerging economies [17,20,21]. Among developed economies, such as the United States and the United Kingdom, studies have focused on dispersed ownership structures [9,22,23]. Few studies have investigated the relationship between stakeholder orientation and corporate innovation in countries like Japan [10]. There remains a research gap about the relation between corporate innovation in family controlled firms under stakeholder-oriented corporate governance. Thus, the object of our paper is to examine the research gap and provide the new evidence in stakeholder-oriented corporate governance.

The originality of this paper is to clarify whether family involvement enhances the corporate innovation in a stakeholder-oriented corporate governance system. This study focuses on Japanese publicly listed family controlled firms to discover whether family owners or board members are enhancing R&D investments. According to Yoshikawa and Rasheed [24], a higher dividend payout in Japanese family controlled firms implies that there might be no exploitation by family owners. Their study supports the stewardship theory in Japanese family firms but does not reveal whether corporate innovation is promoted within family controlled Japanese firms, providing another reason for this study to focus on the effect of Japanese family owners on R&D investment. Furthermore, two major principals in Japanese corporate governance are addressed—main bank and foreign shareholders—to monitor the behavior of family board members [24]. There are many ways in which family board members can exploit other shareholders, such as higher executive salaries and perks for family executives, self-dealing, and investments in other family owned firms. Therefore, the monitoring of family board members is an important task, which falls on monitors such as the main bank and foreign shareholders.

This study uses panel data of Japanese publicly listed firms during a study period of ten-years, from 2007 to 2016. In the analysis, we adopt R&D intensity as the source of corporate innovation. The results provide three insights. First, R&D expenses are higher in family controlled firms, suggesting that family board members are stewards for these publicly listed firms and do not exploit them. Second, the main banks contribute to the increase in R&D expenses in their family controlled client firms, which could be due to having privileged information concerning client firms and supporting the long-term orientation of family board members. Third, foreign shareholders favor profit distribution rather than higher R&D expenses for the future growth of the firms because they want higher dividend payouts [25].

The remainder of this study is organized as follows. The next section explains the theoretical background and the development of our hypotheses. We then explain the data and methodology of the study. The following section presents descriptive statistics and estimation results, followed by a discussion of the findings. Finally, we conclude the study.

2. Theory and Hypothesis Development

2.1. Theoretical Background

Corporate governance has a great influence on innovation activity. Corporate innovations are facilitated by the disciplines of shareholder-oriented corporate governance [10,26–28]. La Porta et al. showed that family board members within family controlled firms tend to exploit their wealth without realizing appropriate resource allocations due to insuffi-
cient monitoring mechanisms within the firm [29]. This type of exploitation by family board members is characterized as a principal–principal conflict, and is observed in many emerging economies [17].

Principal–principal conflicts are a matter of concern from the corporate strategy perspective, as it leads to lower firm performance [17,30]. In the case of family board members being risk-averse, or using firm resources for their private benefit, a firm’s R&D investment may not be adequately developed, which may result in underinvestment, in turn, leading to financial underperformance problems [31]. Concerning large publicly traded Japanese firms, these types of conflicts in family controlled firms have not been appropriately investigated [24]. That implies family controlled leadership in Japan functions well according to the monitoring mechanisms of stakeholder orientation in corporate governance.

Our research model aims to distinguish whether principal-principal conflict perspectives are reflected to corporate innovation in family controlled firms in a stakeholder-oriented corporate governance. In addition, we also consider major stakeholders: main banks and foreign shareholders in a stakeholder-oriented corporate governance [24,32,33].

2.2. Research Context and Japanese System

There are context-dependent corporate governance systems in strategic management [20,21,34]. The Japanese economy is largely known as a capitalist economy but has been characterized differently from other developed economies, such as the United States. The Japanese system is based on debt-financing, connected by bank systems and tightly interconnected networks among firms, their trading partners, and other financial institutions [35]. These features are sources of different strategic preferences and the resultant resource development of Japanese companies [36,37]. This system means market-based corporate governance systems are not always managed effectively. However, their disciplinary mechanisms largely contribute towards improving firm performance. Although family controlled firms could be criticized due to their perceived expropriation [17,29], it is a relevant function, as strategic future investment is induced by their long-term orientations.

We also refer to the framework on national innovation systems, such as the triple helix model [38–40]. The triple helix model is a framework which is used to analyze the relationships between government, universities, and industries [38,41]. In the Japanese context, the historical changes in university–industry–government collaboration use the triple helix framework [42]. Their study implies the effects of university-centered regulations on the collaborations and interactions between universities, industries, and governments matter.

This study focuses on large publicly listed family controlled firms. Despite their efforts, previous studies have not been able to determine whether the German–Japanese model with a concentrated ownership structure can alleviate principal–principal conflicts [17]. Family involvement can enhance corporate innovation measured as R&D intensity in German corporations, which suggests the mitigation of principal-principal conflicts in German–Japanese model [43]. Considering stakeholder-oriented corporate governance in Japan [44], bank monitoring may be able to prevent the possible exploitation of firm resources and dividends caused by underinvestment.

This study also analyzes the interaction effect of foreign shareholders on the relationship between the family control of a firm and its R&D investments. We suggest that foreign shareholders could play an institutional reformative role to mitigate principal–principal conflicts [17]. From this perspective, foreign shareholders play the role of enhancing firm value in Japanese firms, as they are interested in financial performance, have a shareholder-oriented view focused on maximizing firm value [45,46], influence managerial decisions concerning firm restructuring [35], and enhance corporate risk-taking [47]. The presence of foreign shareholders with shareholder-oriented views has increased since the financial deregulation known as the transition era of corporate governance in Japan [48].
2.3. Family Control

A firm’s ownership heterogeneity can influence its business strategy due to different degrees of risk aversion and incentive [49]. According to the stewardship theory [15], controlling family board members tend to act as stewards. They will manage the organization with its best interests in mind because they subordinate their personal goals and promote family goals, abiding by relational contracts that determine family firm management [50]. Family board members also build long-term relationships with various stakeholders of the company, which in turn promotes improved R&D investments and corporate innovation [16]. Tsai et al. (2006) stated that the agency theory perspective is not suitable for Taiwanese family firms [51]. Asian collectivism and Western individualism cultures are opposed [52]. In addition, long-term orientation is strongly observed in Asian countries like China, Hong Kong, Taiwan, Japan, and Korea [32]. Therefore, family members adopting stewardship roles are expected in Asian collectivist cultures like Japan [53].

Nonetheless, family firms may be exploited by principal–principal conflicts, as previously stated [17]. When family members appropriate resources from the firm, the resources available for building the capabilities of the firm decrease [54]. Furthermore, nepotistic tendencies in controlling family members may cause severe agency problems within a firm, which can harm corporate innovation. Nepotism in family controlled firms refers to board members appointing family members as CEOs or executives on the boards. Due to nepotism, highly talented employees with knowledge and experience in R&D may leave and talented individuals from outside the firm may hesitate to join [55]. Concentrated ownership structures are very common in Japanese family controlled business groups and are arranged to enhance the family members’ collective economic welfare [56,57].

Whether family members in management positions are agents or stewards has been the subject of several studies [58,59]. Additionally, evidence of agency problems in family firms—where family members act as agents rather than stewards—have been reported [60,61]. Family influence, involvement, and control—resulting from the partial ownership of a firm—are indeed factors that are part of a complex phenomenon with both positive and negative consequences for the organization in question [62].

Japanese corporate governance is known as a stakeholder-oriented system [44], and—more often than not—in a family controlled firm, family board members do not exploit the firm, but rather contribute toward its growth [24,53]. Therefore, the long-term plans of Japanese top managers in family controlled firms would include the development of the firm’s R&D. Based on the above, we present the following Hypothesis:

**Hypothesis 1 (H1).** Firms with family board representation are more likely to increase R&D expenses than firms that are not family controlled.

2.4. Bank Ownership Monitoring and Family Control

Most Japanese firms pursue diversification as a growth strategy. The success of Japanese firms in the postwar period depended on their sustained commitment to R&D [63], which depends upon both a long-term orientation and a willingness to bear the risks involved in R&D strategies. Their commitment to long-term business relationships is likely to mitigate the importance of profit as well as a decline in current profits [64]. These long-term outcomes are supported by long and stable ownership structures that do not seek short-term profitability, unlike companies from the United States [37]. Specifically, the main banks have a close relationship with their client firms and have always played an active monitoring role concerning Japanese firms [65]. They gather information by utilizing bank-appointed monitors and their incentives are provided [66]. These banks are expected to be effective monitors and gather enough information concerning the financial health of client firms [67]. Therefore, the main banks prompt their client firms regarding investment for future growth by the family board members of the firms. That means the main banks want their client firms to increase their R&D investment to promote future growth.
Furthermore, banks provide credit to their client firms under the Japanese stakeholder-oriented corporate governance system [68]. Therefore, banks can influence firms’ decisions through capital supply to family controlled firms. The positive relationship that we suggested between increasing family control within firms and R&D investment will become stronger as bank ownership increases. Hence, we present our next Hypothesis.

**Hypothesis 2 (H2). Main banks positively moderate the relationship between family control and R&D expenses.**

2.5. Foreign Ownership Monitoring and Family Control

Japanese ownership structures divide shareholders into two different types called “relational owners” and “transactional owners.” These two groups hold different views concerning corporate strategy [64]. The former group represents banks and domestic investors that have close relationships with their firms. The latter group consists of foreign shareholders who have a “shareholder-oriented” viewpoint and a more distant relationship with the company. This group is expected to mitigate agency conflicts in publicly traded corporations [45].

The attitudes of foreign shareholders differ from those of the main banks, as they prefer a higher current dividend payout instead of future profits [69]. As stated above, foreign shareholders have an “arms-length” relationship with the firms in which they are stakeholders and require higher investment returns [70]. Therefore, they provide a managerial incentive to the firm for shorter-term financial performance [71]. Thus, the managers of firms with higher foreign shareholdings are continuously under pressure to improve financial performance. Foreign shareholders are not likely to advocate an increase in R&D investment for the future growth of firms, meaning that the negative relationship we implied between increasing family control and R&D investment will become stronger as foreign ownership increases. This leads to our third Hypothesis.

**Hypothesis 3 (H3). Foreign shareholders negatively moderate the relationship between family control and R&D expenses.**

3. Data and Methodology

The data were archival data commercially available from the Nikkei Needs and Nikkei CGES database, which contains corporate governance methods and characteristics of firms listed in the Tokyo Stock Exchange (TSE). The sample consists of publicly listed firms in the first section of the TSE and excludes financial firms. Our final sample consists of 14,991 firm-year observations during the period 2007 to 2016.

We adopt R&D intensity as a dependent variable because R&D is the source of corporate innovation [3]. Following Hoskisson and Hitt [27], R&D intensity is calculated by the ratio of R&D expenditure to total sale. We can control for both the size effect and heteroscedasticity by using R&D intensity (not absolute value of R&D) [3].

In our attempt to prove our hypotheses, we measure family control dummy variables using the same criteria used by Yoshikawa and Rasheed [24] and Sakawa and Watanabe [53]. We adopt family board representation as a proxy for family control. Next, we looked for the largest number of family shareholder names among the general top 10 shareholder names, after which we searched for the names of directors with the same family name as that of the largest family shareholders. In case there are more than two family names among top 10 shareholders, we only used the name with the largest individual names, following Yoshikawa and Rasheed [24]. This is the only way to verify exact family names in Japanese corporations [24]. Based on this method, for the purposes of this study we assume that family controlled firms are those that have a director (or directors) that share a family name with family shareholders on the board.

Our independent variables are as follows: we define the main banks as the largest lenders to their client firms [65]. Therefore, the main bank shareholding represents the
shareholdings of the largest lenders divided by total outstanding shares, following Morck et al. [72] and Sakawa and Watanabe [67]. Foreign ownership is measured as the shareholdings of foreign shareholders divided by the total outstanding shares [53, 64]. Leverage is measured as the debt to asset ratio, which controls for the firm’s interest payment cost produced by larger amounts of debt. Firm size is defined by the logarithm of a firm’s assets. The growth rate of sale (Growth Sales) is adopted as a proxy of firm growth. Cross Ownership is the percentage of shares of mutual shareholdings [68].

Our study analyzes the effects of family controls on R&D intensity. We adopt a cross-sectional time-series feasible generalized least squares (FGLS) regression model to control for panel-level heteroscedasticity [24, 73]. We also include year dummies and industry dummies based on the industry classification of the TSE to capture time variation and cross-industry variation. We also adopt lagged variables for all of the independent and control variables to avoid endogeneity problems.

Our descriptive statics and the correlation of the variables are as shown in Table 1. The average of R&D intensity measured as the percentage of R&D expenditure of total sales is 1.90. The average ratio of family members and dummy is 0.38, and 0.3, respectively. The means for main bank ownership, foreign ownership, and cross ownership is about 0.95, 14, and 8%. The mean of leverage is about 50%.

| Variable               | Mean  | Std. Dev. | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
|------------------------|-------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. R&D                 | 1.90  | 3.20      |     |     |     |     |     |     |     |     |
| 2. Family Members      | 0.38  | 0.66      | −0.06 | |     |     |     |     |     |     |
| 3. Family Dummy        | 0.30  | 0.46      | −0.06 | 0.88 | |     |     |     |     |     |
| 4. Main Bank Ownership | 0.95  | 1.63      | −0.07 | −0.08 | −0.09 | |     |     |     |     |
| 5. Foreign Ownership   | 14.13 | 12.41     | 0.20 | −0.10 | −0.10 | −0.22 | |     |     |     |
| 6. Leverage            | 49.42 | 19.81     | −0.26 | −0.16 | −0.18 | 0.23 | −0.16 | |     |     |
| 7. ln(Assets)          | 11.55 | 1.46      | −0.12 | −0.29 | −0.34 | −0.09 | 0.52 | 0.27 | |     |
| 8. Growth Sales        | 0.04  | 0.23      | −0.03 | 0.04 | 0.06 | −0.05 | 0.07 | 0.01 | −0.02 | |     |
| 9. Cross Ownership     | 8.06  | 8.68      | −0.02 | −0.25 | −0.28 | 0.30 | −0.15 | 0.08 | 0.06 | −0.04 | |

Note: N = 14,991. R&D is the percentage of R&D expenditure of total sales. Family Dummy is equal to 1 when a firm has family directors. Family Members refer to the number of family directors. Main Bank Ownership is the percentage of shares of total outstanding shares owned by main banks. Foreign Ownership is the percentage of total outstanding shares owned by foreign investors. We calculate the Leverage as the ratio of total debt to total assets. We control firm size by using the log of total assets (ln(Assets)). Growth Sales refers to the ratios of the year-on-year change divided by total sales. Cross Ownership is the percentage of shares of mutual shareholdings.

4. Empirical Results

4.1. Main Results

The results of our empirical analyses concerning family board representation and interaction terms are given in Table 2. Table 2 indicates the estimated results of family control on R&D intensity. First, we find that family dummy is significant and positive for R&D intensity in model (2) and (4). Second, we also find that family board members are significant and positive for R&D intensity in model (3) and (5). These results show that family board representation would enhance R&D intensity, consistent with Hypothesis 1. We can interpret that family board members are more likely to contribute to the future growth of the firm by promoting R&D intensity, implying that they function as stewards in the family controlled firm, rather than agents.

We also investigate the interaction terms of main bank ownership and family board representation. First, we find that R&D intensity is positively moderated by the interaction terms of family dummy and main bank ownership in model (4). Second, we also find that R&D intensity is positively moderated by the interaction terms of family board members and main bank ownership in model (5). In summary, we find that main bank ownership positively moderates the relationships between family board representation and R&D intensity, which confirms Hypothesis 2. This finding suggests that the main bank would contribute toward an increase in R&D intensity proposed by family board members.
Particularly, the long-term relationship between the main bank and family controlled firms would support a family board member’s long-term plans.

Table 2. R&D Intensity and Family Control.

| (1)            | (2)            | (3)            | (4)            | (5)            |
|---------------|---------------|---------------|---------------|---------------|
| Dependent Variable: R&D |               |               |               |               |
| Family Dummy  | 0.026 **      | 0.032 **      |               |               |
|               | (3.96)        | (4.05)        |               |               |
| Family Members| 0.028 **      | 0.031 **      |               |               |
|               | (6.29)        | (4.65)        |               |               |
| Main Bank     | −0.011 **     | −0.016 **     |               |               |
| Ownership (MB)| (−6.25)       | (−7.19)       | (−6.44)       |               |
| Foreign       | 0.002 **      | 0.002 **      | 0.002 **      | 0.002 **      |
|               | (5.94)        | (5.72)        | (6.01)        |               |
| Ownership (FO)| (5.46)        |               |               |               |
| Family Dummy  |               | 0.022 **      |               |               |
| * MB          |               | (5.63)        |               |               |
| Family Dummy  | −0.002 **     |               |               |               |
| * FO          |               | (−3.41)       |               |               |
| Family Members|               |               |               |               |
| * MB          | 0.015 **      |               |               |               |
|               | (4.79)        |               |               |               |
| Family Members|               | −0.002 **     |               |               |
| * FO          |               | (−4.30)       |               |               |
| Leverage      | −0.012 **     | −0.012 **     | −0.012 **     | −0.012 **     |
|               | (−62.66)      | (−55.79)      | (−56.64)      | (−56.99)      |
| ln(Assets)    | 0.162 **      | 0.149 **      | 0.148 **      | 0.152 **      |
|               | (64.22)       | (50.97)       | (48.40)       | (52.38)       |
| Growth Sales  | −0.065 **     | −0.047 *      | −0.020 **     |               |
|               | (−3.35)       | (−2.32)       | (−0.98)       |               |
| Cross         | −0.008 **     | −0.007 **     | −0.007 **     | −0.007 **     |
| Ownership     | (−23.36)      | (−19.04)      | (−18.55)      |               |
| Constant      | −1.008 **     | −0.956 **     | −0.997 **     |               |
|               | (−45.85)      | (−37.61)      | (−39.22)      |               |
| Industry Dummies | Yes           | Yes           | Yes           | Yes           |
| Year Dummies  | Yes           | Yes           | Yes           | Yes           |
| Wald chi²     | 128,175.9 **  | 647,203.8 **  | 428,426.3 **  | 443,454.5 **  |
|               | 1,862,302.0 **|               |               |               |

Note: N = 14,991. We use a cross-sectional time-series feasible generalized least squares (FGLS) regression model to control panel-level heteroscedasticity [73], following Yoshikawa and Rasheed [24]. We adopt lagged variables for all of the independent and control variables to avoid endogeneity problems. Z-statistics are as shown in parentheses. * p < 0.05; ** p < 0.01.

We next introduce the interaction terms of foreign shareholdings and family board representation. First, we find that R&D intensity is negatively moderated by the interaction terms of family dummy and foreign shareholdings in model (4). Second, we also find that R&D intensity is negatively moderated by the interaction between the terms of family board members and foreign shareholdings in model (5). These results suggest that foreign shareholdings negatively moderate the relation between family board representation and R&D intensity, consistent with Hypothesis 3. This suggests that foreign shareholders would advocate more frequent dividend payouts, rather than the uncertainty of R&D investment for future growth.

The results of the control variables are summarized as follows. Leverage is significantly negatively related to R&D intensity, suggesting that debt financing is used as expenses of R&D. The asset size is positively related to R&D, which means that larger firms tend to have a higher expense ratio of R&D. Finally, firms with a higher growth rate of sales do not tend to have a higher expense ratio of R&D.

4.2. Robustness of the Results

We firstly confirmed the robustness of the results concerning the GFC (Global Financial Crisis) period of 2007–2008 because the significant corruption of the global financial market
during the GFC era might affect our results. Sun et al. [74] analyzed the impact of the GFC on the R&D expenditure of family firms in the United States, pointing out that family firms tended to increase their investment in R&D compared to nonfamily firms during the crisis.

Similar to Table 2, Table 3 also indicates that family board representation contributes to the enhancement of R&D intensity, which is consistent with Hypothesis 1. The interaction terms of main bank ownership and family board representation are significantly positive, confirming Hypothesis 2. Furthermore, the interaction between the terms of foreign shareholders and family board representation are significant and negative, which is consistent with Hypothesis 3. These results confirm that our estimated results are stable during the GFC period.

Table 3. Additional analysis of R&D intensity and Family Control (GFC).

|            | (1) | (2) | (3) | (4) | (5) |
|------------|-----|-----|-----|-----|-----|
| Family Dummy | 0.059 ** | 0.064 ** | 0.051 ** | 0.010 ** | 0.003 ** |
| Family Members | 0.057 ** | 0.002 ** | −0.010 ** | 0.010 ** | −0.005 ** |
| Main Bank | (19.40) | (7.07) | (4.75) | (3.85) | (18.82) |
| Ownership (MB) | (0.59) | 0.001 ** | (1.19) | −0.008 ** | (24.34) |
| Foreign | 0.007 ** | 0.007 ** | 0.007 ** | 0.010 ** | 0.009 ** |
| Ownership (FO) | (19.89) | (19.02) | (24.34) | (18.82) | (1364) |
| Family Dummy | 0.055 ** | −0.005 ** | 0.055 ** | 0.029 ** | −0.005 ** |
| * MB | (8.67) | (9.38) | (26.22) | (21.73) | (24.34) |
| Family Members | −0.015 ** | −0.014 ** | −0.013 ** | −0.015 ** | −0.014 ** |
| Leverage | (−54.63) | (−49.40) | (−47.82) | (−52.66) | (−51.23) |
| ln(Assets) | 0.199 ** | 0.168 ** | 0.167 ** | 0.170 ** | 0.169 ** |
| In(Assets) | (52.57) | (47.79) | (45.49) | (46.62) | (45.37) |
| Growth Sales | −0.343 ** | −0.399 ** | −0.392 ** | −0.410 ** | −0.451 ** |
| Cross | (−11.07) | (−12.60) | (−12.12) | (−13.34) | (−14.52) |
| Ownership | −0.196 ** | −1.047 ** | −1.055 ** | −1.003 ** | −1.017 ** |
| Constant | (37.34) | (33.49) | (31.56) | (29.57) | (29.51) |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes |
| Wald chi² | 1,467,452.8 ** | 87,958.8 ** | 178,822.2 ** | 289,802.0 ** | 1,739,553.0 ** |

Note: N = 2904. We use a cross-sectional time-series feasible generalized least squares (FGLS) regression model to control panel-level heteroscedasticity [73], following Yoshikawa and Rasheed [24]. We adopt lagged variables for all of the independent and control variables to avoid endogeneity problems. Z-statistics are as shown in parentheses. * p < 0.05; ** p < 0.01.

Second, we also confirm the robustness of our results using of Table 4. We adopt another proxy of corporate innovation as the log of the R&D intensity of a firm measured by the log of one plus R&D (i.e., ln(1 + R&D)) following [3]. The estimation methodology is a feasible GLS method following [24]. Table 4 indicates that family board representation increases log of R&D intensity, which is consistent with Hypothesis 1. The interaction terms of main bank ownership and family board representation are significantly positive, consistent with Hypothesis 2. Furthermore, the interaction between the terms of foreign shareholders and family board representation are significant and negative, consistent with Hypothesis 3.
### Table 4. Additional analysis.

|                          | All period | GFC Period |
|--------------------------|------------|------------|
| **Family**               | 0.0053     | 0.0056     | 0.0229     | 0.0066     |
| Family Dummy (3.04)      |            |            |            |            |
| Family                   | 0.0072     | 0.0069     | 0.0187     | 0.0134     |
| Main Bank                | −0.0017    | −0.0037    | −0.0034    | 0.0038     |
| Ownership (MB) (−3.85)   |            |            |            |            |
| Foreign                  | 0.0004     | 0.0007     | 0.0030     | 0.0010     |
| Ownership (FO) (5.22)    |            |            |            |            |
| Family Dummy             | 0.0081     |            | 0.0141     |            |
| Family Dummy             | −0.0005    |            |            |            |
| Leverage                 | −0.0027    | −0.0027    | −0.0039    | −0.0038    |
| In(Assets)               | 0.0391     |            |            |            |
| Growth Sales             | −0.0068    |           | −0.0669    |           |
| Ownership                | −0.0015    |             |           |            |
| Constant                 | −0.2350    |             |           |            |
| Industry Dummies         | Yes        |             |            |            |
| Year Dummies             | Yes        |             |            |            |
| Wald chi²                | 350,649.0  | 239,421.0  | 359,966.2  | 273,553.8  |
| Number                   | 14,991     | 14,991     | 14,991     | 14,991     |

Dependent variable is the log of the R&D intensity of a firm measured by the log of one plus R&D (i.e., ln(1 + R&D)). We use a cross-sectional time-series feasible generalized least squares (FGLS) regression model to control panel-level heteroscedasticity [73], following Yoshikawa and Rasheed (2010) [24]. We adopt lagged variables for all of the independent and control variables to avoid endogeneity problems. Z-statistics are shown in parentheses. + p < 0.10; * p < 0.05; ** p < 0.01.

5. Discussion

R&D expenses are a driver for corporate innovation, which is an important aspect contributing to sustainable business management. As Peng and Jiang [6] mentioned, the effects of family members on corporate innovation through R&D have not been analyzed. The purpose of this study contributes to analyzing the effects of family control on R&D intensity in publicly listed firms in Japan. First, we found that family board members in Japan are generally not engaged in possible expropriation, but that they function as stewards of their firms, focusing on enhancing future growth, consistent with previous studies [24,53]. This result is consistent with German evidence, which suggests that principal-principal conflicts in family involvement are alleviated in the German–Japanese transition era of corporate governance in Japan [67,68,71]. Third, we discovered that foreign shareholders are in favor of immediate wealth distribution rather than investment in the future growth of family controlled firms, consistent with the results of a previous study [45].

In addition to the above findings, this study also examined the relationship between the R&D intensity and the growth opportunities of family controlled firms in Japan. The additional analyses revealed that foreign shareholders suppress R&D intensity more in
family controlled firms than the other shareholders do, implying that foreign shareholders prefer immediate capital gain, especially in firms with higher growth opportunities.

We also discuss the strategic aspects. Family involvement affects both the stewardship benefits and agency costs associated with it. The strategic context of the firm is important to determine the net impact of the benefits and costs associated with family involvement in the firm [69]. A stewardship orientation with a focus on business community, employees, and closer connections with external stakeholders support high levels of R&D in a firm [16]. Japanese corporations maintain the long-term relationship among stakeholders in the stakeholder-oriented corporate governance [44]. The long-term relationships in Japanese corporations would be one factor that facilitated stewardship roles and mitigated agency costs in the family controlled firms.

This study makes several theoretical contributions. First, we investigated the relationship between R&D intensity and family control in Japan, a country where corporate governance is stakeholder-oriented. Our results imply that instead of the potential expropriation by family members—which was a possibility—a higher R&D intensity is maintained by the long-term orientation of family board members. Second, we discovered that foreign shareholders—representing one of the shareholder-oriented scopes—prefer current profit distribution, rather than R&D investment for future growth opportunities in family controlled firms.

6. Conclusions

We firstly summarize our main contribution to previous family business literature. The family business literature focuses on two conflicting views (principal–principal conflict perspectives and stewardship theory perspectives) which predict on the influence of family involvement on a firm’s strategic decision making.

The main findings of our study are summarized as following three points. First, this study revealed that family control contributes to increased R&D investments in large publicly traded firms in Japan. The results also imply that family control enhances R&D intensity in family controlled firms, consistent with the stewardship theory perspective. Second, we found that bank monitoring also plays a role in enhancing R&D intensity as effective monitors under stakeholder orientation corporate governance. Third, the results showed that foreign shareholders would rather decrease R&D intensity in family controlled firms in favor of short-term profit, rather than the long-term growth of their firms.

Our study has several theoretical implications. First, the exploitation presumed by principal–principal conflict perspectives has not been thoroughly investigated in Japan’s stakeholder-oriented corporate governance system. In other words, the increase of R&D intensity in family controlled firms would reflect long-term orientation in Japanese firms. Second, we attribute the strategic context of growth opportunity in Japanese listed firms to the stewardship benefits regarding family involvement in the firm.

Our research finding also has practical implications that reflect long-term orientation in Japan. Japanese collectivist cultural aspects are different from those of Western countries [52]. The stewardship theory perspective is also supported by previous studies performed in similar collectivist cultures like Taiwan [51]. Moreover, this study contributes to the literature in terms of the important link between the cultural aspects of a country and its corporate governance mechanisms.

The limitation of our study is that our sample is restricted to publicly listed firms. There are many small and medium-sized family controlled firms in Japan. Therefore, there may be a possibility that the implications of this study cannot be applied to small and medium-sized firms in Japan, as they face different corporate governance challenges.

There might be several future research avenues. First, our study does not focus on the corporate innovation output such as patents. Therefore, this might be valuable future research task. Second, the result of our study cannot be applied to small firms that are not publicly traded or to large firms in other countries because they may have different
corporate governance features. Future research in other settings would be valuable to address this issue.

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