WHY DO FAMILY FIRMS CONGREGATE IN CERTAIN INDUSTRIES?

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Abstract

We propose that family firm involvement and performance across industries is not random and is related to specific industry conditions. Using the population of listed companies on the Taiwan Stock Exchange over the period 1997-2007 we find that family firms are more involved in industries with greater fixed assets and lower board independence. We document a positive relationship between family firm involvement and performance, which indicates a net advantage for family firm shareholders in industries where family firms congregate. However, we also find that family firm performance is negatively affected when family firms use more debt and maintain a higher control wedge than their industry counterparts.

Keywords: Family firms, industry, ownership, private benefits

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1. Introduction

Family firms are an integral part of most economies around the world, comprising an average of 59% of listed firms in Asia (ex-Japan) and 44% in Europe (Claessens et al., 2000; Faccio and Lang, 2002). However, little is known about the involvement and performance of family firms across industries. If there are no industry effects, family firms should be randomly distributed across industries. However, if family firms are better suited to certain industry conditions, we should find clustering of family firms in these industries and performance differentials between family and non-family firms. In this study we propose that family firm involvement and performance across industries is not random and is related to a number of specific industry conditions.

Prior studies have documented differences between family and non-family firms. For example, James (1999) shows that family owners generally take a long-term view of the success of the company, which allows for greater investment in fixed assets (Doukas et al., 2009). Faccio and Parsley (2009) find that family firms make better use of political and business connections, which can result in greater access to debt financing and tax concessions from government (Faccio, 2006). Numerous studies also indicate that consumption of private benefits of control is higher in family firms (Anderson and Reeb, 2003; Anderson et al., 2003; Dahya et al., 2008). These studies illustrate that family firms can provide shareholders with comparative advantages and disadvantages relative to non-family firms.

In this study we investigate whether family firms are more involved in industries where there is a better match to their comparative advantages and where there is greater potential for family owners to consume private benefits of control. For example, since family owners are more willing to invest in fixed assets and have greater access to debt financing, we examine whether family firms are more involved in industries that require more fixed assets and debt. Since industries with greater uncertainty and less external monitoring provide more potential for family owners to consume private benefits of control, we examine whether family firm involvement is higher in industries with these characteristics. In addition to family firm involvement across industries, we also examine family firm performance. This allows us to examine whether the greater involvement of family firms in these industries is associated with a performance advantage relative to non-family firms.

We make significant advances on previous research by being the first to examine the involvement and performance of family firms across industries using the entire population of listed companies in a market and over an 11-year period. Villalonga and Amit (2009) draw implications about the family

control of industries in the United States using a sample of 26 percent of listed companies in a single year. We examine family firms in Taiwan, a non-US market with high family ownership and relatively lower investor protection, which is more representative of other countries around the world. Finally, we examine new variables that are specifically related to the benefits family firms can derive from political and business connections (e.g. tax concessions and greater access to debt).

Our results indicate that family firm involvement across industries is not random and is related to specific industry conditions. We find that family firms are more involved in industries that require greater investment in fixed assets, consistent with the long-term view of family owners. We also find that family firms are more involved in industries where there is greater potential to consume private benefits of control. We then examine performance effects to determine if family firm involvement across industries provides advantages or disadvantages to family firm shareholders. Overall, we document a positive relationship between family firm involvement and performance, which indicates a net advantage for family firm shareholders in industries where family firms congregate. This is particularly so in high tax industries, where family firms pay less tax than non-family firms. Family firms also perform better in industries with lower board independence, which suggests their preference to be in these industries is not a disadvantage to shareholders. However, we also find that family firms may be utilizing their greater access to debt financing to raise too much debt relative to their industry counterparts and that family firms are worth less in industries where they have a bigger control wedge than non-family firms, indicating clear disadvantages to shareholders.

The rest of this paper is organized as follows. The next section provides details of prior research and develops our hypotheses. Section three describes the data and variables. Section four provides the empirical results and discussion. Conclusions are in the final section.

2. Hypothesis Development

2.1 Prior Literature

Previous research on family firms has focused on country- and firm-level factors. Family ownership has been found to be the dominant form of corporate ownership around the world and has been related to country-level factors such as legal origin and investor protection (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002). At the firm level, studies have examined family firm performance relative to other firms and investigated the specific characteristics of family firms. In early studies, family firms were found to perform worse than non-family firms (Holderness and Sheehan, 1988; Morck et al., 2000). However, in later studies, Mishra et al. (2001) and Anderson and Reeb (2003) find that family firms perform better than other firms, especially when there is a founder CEO. Villalonga and Amit (2006) reconcile these conflicting results by showing that different relationships exist between family ownership, family control, family management and firm performance.

According to Lane et al. (2006), the typical family firm follows the control model of corporate governance, where ownership is concentrated in the hands of the family group and members of the family are active in management and on the board of directors. This broad involvement by the controlling family group provides both benefits and costs to shareholders in family firms. Benefits include the long-term view of wealth creation by the family group compared to the relatively short-term view of hired CEOs (James, 1999), the family's superior knowledge and ability to monitor the operations of the company (Demsetz and Lehn, 1985), the presence of the family's reputation capital that can result in a lower cost of debt (Anderson et al., 2003) and the ability of the family group to create more wealth through political and business connections than other owners (Faccio and Parsley, 2009). Costs include the increased incentive and opportunity of the family group to expropriate wealth from other shareholders. This can occur through excessive compensation, related party transactions, special dividends, risk avoidance and remaining active in management even when they are no longer competent to run the company (Anderson and Reeb, 2003; Anderson et al., 2003; Dahya et al., 2008).

The only other study to examine family ownership at the industry level is Villalonga and Amit (2009). They examine the family control of US firms and industry sectors and find that families are more likely to retain control when the efficient scale is small, the need to monitor managers and other employees is high, shareholder investment horizons are long and firms have dual class stock. The major limitation of their study, however, is that they classify industries as being family controlled or not based on family firm participation, while only using 26 percent of listed companies. By ignoring the remaining 74 percent of firms, they cannot be sure their classification of industries is correct. We overcome this by using the population of firms listed on the Taiwan Stock Exchange, where all firms are classified as family or non-family controlled.

Using data from a non-US market, such as Taiwan, also has other advantages. Taiwan is a market with higher family ownership and lower investor protection than the United States, which is more representative of other countries around the world. Previous studies also show that the characteristics of family firms differ across markets. For example, Villalonga and Amit (2009) show that family firms in the US have lower leverage, while

Doukas et al. (2009) and Chen and Nowland (2010) show that family firms in Europe and Asia have higher leverage than non-family firms. Our results are therefore more likely to be generalizable to other markets in Asia and Europe. We also focus on variables that are specifically related to the advantages of family ownership (e.g. benefits from political and business connections), rather than general characteristics of concentrated ownership. Details of these variables and our hypotheses are provided below.

2.2 Advantages of Family Firms

In this section we highlight three characteristics that we propose are related to family firm involvement and performance across industries and may provide advantages to shareholders – long-term horizon, access to debt financing and tax concessions.

James (1999) shows that family owners generally take a long-term view of the success of their firms, compared to the relatively short-term view of other firms with hired CEOs. This is because family owners hold a large and undiversified financial and reputation investment in the firm and usually expect the firm to remain in the family for generations. In non-family firms, CEOs and managers are generally hired on short-term contracts (e.g. 5 years), which give them more incentive to focus on short-term value maximisation. This long-term view of family owners suggests that family firms may be more willing to undertake long-term investment, such as invest in fixed assets, than non-family firms. Doukas et al. (2009) provide support for this presumption, showing that family firms in Europe invest more in fixed-asset capital expenditures than non-family firms.

This preference for investment in fixed assets may be unrelated to industry conditions as it is possible that family firms invest more in fixed assets than non-family firms across all industries. However, we propose that family firms are attracted to two types of industry conditions. First, we expect family firm involvement to be higher in industries with more fixed assets. This provides a match between the desire of family firms to invest more in fixed assets and industries that require greater investment in fixed assets. Second, we expect family firm involvement to be higher in industries where family firms are more willing to invest in fixed assets than non-family firms.

Under these conditions, the tendency for family firms to invest more in fixed assets may provide them with a competitive advantage over their industry counterparts. If wealth-creating investments exist that will be undertaken by family firms, and not other firms, due to their tendency to invest more in fixed assets then this creates a comparative advantage for shareholders in family firms. But, if the tendency for family firms to invest more in fixed assets results in overinvestment and idle capacity then this would be a disadvantage for shareholders. Thus, we examine the performance of family firms relative to non-family firms in the same industry.

A number of papers portray cosy relations between business and politics as indicators of crony capitalism and corruption, which result in lower investment and economic growth (e.g. Mauro, 1995). However, there is evidence that some firms can benefit from close relationships with political and business leaders. In particular, Faccio and Parsley (2009) provide evidence that family firms create more wealth from political and business connections than other firms. The primary benefits of these connections are greater access to debt financing and tax concessions from government (Faccio, 2006). There is also more general evidence that family firms prefer debt financing over equity financing (Doukas et al., 2009) and enjoy a lower cost of debt than non-family firms (Anderson et al., 2003).

This preference for debt financing and greater access to debt through political and business connections suggests that family firms are better suited to industries that require higher levels of debt. We therefore expect family firm involvement to be higher in industries with more debt. We also expect family firm involvement to be higher in industries where family firms can access more debt than their industry counterparts. This, again, may provide family firms with a comparative advantage relative to non-family firms, particularly when access to debt financing is scarce. With respect to tax, we find it difficult to predict whether family firm involvement will be higher in low or high tax industries as all companies are expected to prefer lower taxes. However, we expect family firm involvement to be higher in industries where family firms pay lower taxes (gain more tax concessions) than non-family firms.

In addition to family firm involvement, we also relate these industry characteristics (fixed assets, debt and tax) to family firm performance. This allows us to examine whether the greater involvement of family firms in these industries is associated with a performance advantage relative to non-family firms. A positive performance differential indicates that family firms provide advantages to shareholders under these industry conditions.

2.3 Disadvantages of Family Firms

In this section we provide details of three characteristics that are expected to be related to family firm involvement and performance across industries and may provide disadvantages to shareholders – uncertainty, entrenchment and external monitoring.

A number of studies document an increased incentive and opportunity of family owners to expropriate wealth from other shareholders. This can occur through excessive compensation, related party transactions, special dividends, risk avoidance and remaining active in management even when they are

no longer competent to run the company (Anderson and Reeb, 2003; Anderson et al., 2003). We highlight three characteristics from previous research where the potential for consumption of private benefits of control are higher. The first is uncertainty or information asymmetry. Studies show that greater uncertainty about the expected performance of firms creates an environment where it is easier for family owners to consume private benefits (e.g. Anderson et al., 2009). The second is entrenchment, with studies documenting higher agency costs and lower firm performance when family owners are entrenched, i.e. have more voting or control rights than ownership rights (La Porta et al., 2002; Claessens et al., 2002). The third is external monitoring measured by board independence. Again, studies associate lower board independence with higher agency costs in family firms (e.g. Dahya et al., 2008).

If family owners are interested in consuming private benefits of control then we expect family firm involvement to be higher in industries where there is greater opportunity to consume private benefits – higher risk, greater entrenchment or lower board independence. [4] In addition, the consumption of private benefits of control is not only limited to industries where there is greater potential. We also expect consumption of private benefits of control to be greater in family firms under conditions where they are riskier, more entrenched and have lower board independence than non-family firms in the same industry. However, these arguments are based on the potential to consume private benefits of control. To find evidence of actual consumption and a disadvantage to shareholders we need to document a negative performance differential between family and non-family firms under these industry conditions.

2.4 Other Factors

In this section we cover other factors and arguments related to family firm involvement and performance across industries. We first consider the age of firms and industries. As family firms tend to be involved in the same industry for generations, it is quite possible that the current level of family firm involvement across industries is simply related to the number of family firms that entered these industries in their infancy. In Taiwan there is evidence that family firms are more involved in older industries (e.g. rubber, cement and plastics) and less involved in newer industries (e.g. electronics). We therefore examine whether family firm involvement across industries is related to industry age.

The second factor we examine is competition. If family firms are bigger and older than their industry counterparts then they could be in a much stronger competitive position, which is generally associated with better performance. We control for this with variables that measure the relative age and size of family firms compared to non-family firms. We also include a general measure of industry competition (Herfindahl index of market shares). The third factor is the value-maximizing size argument of Demsetz and Lehn (1985). They argue that firms need to reach a particular size (efficient scale) to compete successfully in an industry, but that the larger the size the more costly it is for controlling owners to maintain the same fraction of ownership. This suggests that controlling owners, including families, would prefer to operate in industries where the average firm size is smaller. Therefore, we test for a negative relationship between family firm involvement and the average firm size in industries.

Villalonga and Amit (2009) also examine the relationship between monitoring needs and family control of industries. Based on the control potential argument of Demsetz and Lehn (1985), they argue that firms with greater uncertainty and less skilled employees need more monitoring, which can be effectively provided by a controlling shareholder. In this study we frame this argument slightly differently, by using uncertainty as a measure of potential consumption of private benefits of control. Both arguments predict the same relationship between uncertainty and family firm involvement across industries. However, we expect a negative effect on performance, whereas Villalonga and Amit (2009) expect a positive effect.

3. Data and Variables

Our sample is obtained from the Taiwan Economic Journal (TEJ) database and comprises all listed companies on the Taiwan Stock Exchange from 1997 to 2007. We utilize Taiwanese firms as the TEJ database categorizes companies into family-controlled and non-family-controlled firms. This categorization of all listed companies ensures we correctly measure the level of family firm participation in each industry. Industry classifications are obtained from the Taiwan Stock Exchange, which classifies companies into 27 domestic industry groups. Further division of companies is not possible as segment reporting does not occur in Taiwan. Firm financial, ownership and board of directors data is also obtained from the TEJ database. All variables are defined in Table 1.

A common definition for family firms used in prior literature is where the founder or a member of his or her family by either blood or marriage is an officer, director or blockholder in the company (Anderson and Reeb, 2003; Villalonga and Amit, 2006). Our definition of family firms relies on the categorization of firms by the TEJ database, which identifies family firms as those where the largest controlling shareholder is a family group and at least

[4] While ownership and board independence are generally considered to be firm-level choices, we examine the variation across industries – industry effects.

two family members are involved on the board of directors or in senior management. This is slightly more restrictive than the definition used in prior US studies but ensures that we are identifying family firms where the family group is more actively involved in the company. Non-family firms are categorized by the TEJ database as government-controlled, management-controlled and widely-held firms. Over the 11-year sample period, we have a total of 7661 firm-year observations from 722 firms. Of these, 3482 firm-years are from family firms and 4179 from non-family firms.

Before examining industry effects we first establish that there are differences between family and non-family firms in our sample. Table 2 presents descriptive statistics and means tests. We find that family firms are significantly bigger, older, have more fixed assets and debt and have a lower tax rate than non-family firms. This is consistent with expectations as we expect family firms to be more willing to invest in fixed assets, be more able to access debt financing and pay less tax than non-family firms. It also indicates that family firms are in a strong competitive position as they are bigger and more established than other firms. We also find that family firms are riskier, have a higher control wedge and lower board independence than non-family firms. These results are also consistent with expectations and suggest that greater uncertainty, more entrenched ownership and a lack of external monitoring mean there is more potential for consumption of private benefits of control. There is no significant difference in the level of ownership. Finally, we find that family firms are performing worse than non-family firms as evidenced by both Tobin's Q and return on assets.

These results confirm that there are significant differences between family and non-family firms, which we predict are related to family firm involvement and performance across industries. However, to attribute these differences to industry effects we need to document three results. First, there is variation in family firm involvement across industries. Second, there is variation in our hypothesised characteristics across industries. Third, family firm involvement and performance varies across industry conditions as predicted by our hypotheses. We therefore aggregate the data at the industry level, which provides us with 297 industry-year observations over the sample period. We define family firm participation as the proportion of family firms in each industry. Family firm market share is the proportion of industry sales from family firms. Relative performance is the average Tobin's Q of family firms divided by the average Tobin's Q of non-family firms in each industry.

Table 3 shows the variation in family firm participation, market share and relative performance across industries. The table shows that family firm participation across industries ranges from 20 to 100 percent. Family firms completely dominate the paper and pulp industry and family firm participation is also high in the rubber, glass and ceramics and automobile industries. Family firm participation is lowest in the information service, other electronic and electrical and cable industries. In unreported results, we find a high correlation (0.68) between family firm participation and market share, which is reflected in the relatively consistent rankings across the two measures. The correlations between relative performance and family firm participation (0.13) and market share (0.19) are lower but still positive, suggesting that the performance of family firms is related to where they tend to congregate across industries. As further evidence of this relationship, the two highest measures of relative performance are in the rubber (1.47) and glass and ceramic (1.35) industries, which are also ranked second and third in family firm participation and market share. We cannot calculate relative performance for the paper and pulp industry as there are no non-family firms.

Table 4 displays the variation in our hypothesised characteristics. Both average industry characteristics and relative firm characteristics are reported. Average industry characteristics are calculated as the average of all firms in each industry-year observation. Relative firm characteristics are calculated as the average of family firms divided by the average of non-family firms in each industry-year observation. There are 297 observations for average industry characteristics, but only 286 observations for relative firm characteristics, as relative firm characteristics for the paper and pulp industry cannot be calculated. The table confirms that there is substantial variation in all characteristics across industries.

4. Results and Discussion

Our empirical analysis is comprised of three sections. The first section examines whether family firm involvement across industries is random or is related to our hypothesised industry characteristics. The second section examines whether family firm involvement and industry characteristics are related to performance and discusses the combined results. The third section details our robustness checks. All analysis is conducted at the industry level and models include robust standard errors.

4.1 Family Firm Involvement

In the prior section we document variation across industries in both family firm involvement and our hypothesised characteristics. In this section we test for industry effects by seeing if family firm involvement varies across industry conditions as predicted by our hypotheses. For example, our descriptive statistics show that family firms have more debt than non-family firms. To establish industry effects we need to show higher family firm involvement in high debt

industries (average industry effect) or higher family firm involvement in industries where family firms have more debt than their industry counterparts (relative firm effect). If there are no industry effects then family firms will have more debt than non-family firms across all industry conditions.

Table 5 relates family firm involvement across industries to our hypothesised industry characteristics. We expect family firm involvement to be higher in industries with more fixed assets, more debt, greater risk, greater entrenchment and lower board independence. We also expect family firm involvement to be higher in industries where family firms have more fixed assets, more debt, lower tax, greater risk, greater entrenchment and lower board independence than their industry counterparts. We use two measures of family firm involvement – participation and market share. Participation simply measures the proportion of family firms in each industry, while market share takes into account the relative size of family versus non-family firms.

In the first regression, we relate family firm participation to average industry characteristics and find positive relationships between family firm participation and fixed assets, size and age. We find a negative relationship between family firm participation and board independence. In the second regression we introduce relative firm characteristics, which serve two purposes. First, they control for differences between family and non-family firms in each industry-year observation to ensure the average industry characteristics are not being dominated by the characteristics of family firms. Second, they directly test our hypotheses related to the relative differences between family and non-family firms in the same industries. We find positive relationships between family firm participation and fixed assets, control wedge, size, age, relative fixed assets and relative tax. We find negative relationships between family firm participation and tax, board independence and relative control wedge. The other variables are insignificant.

In the third regression, we relate family firm market share to average industry characteristics. We find positive relationships between family firm market share and fixed assets and age. We find negative relationships between family firm market share and board independence and competition. In the fourth regression, we include both average industry and relative firm characteristics. We find positive relationships between family firm market share and fixed assets, age, relative tax, relative risk and relative control wedge. We find negative relationships between family firm market share and board independence and competition.

These results confirm that family firm involvement across industries is not random and is related to specific industry conditions. Family firms are more involved in industries with more fixed assets and in industries where family firms have relatively more fixed assets than non-family firms. This is consistent with the long-term view of family owners. Family firm involvement is higher in industries with greater entrenchment (control wedge) and lower external monitoring (board independence), and in industries where family firms are riskier than non-family firms, making it potentially easier for family owners to consume private benefits of control. As expected, we also find that family firm participation is higher in older industries and in industries with less competition.

There are also a number of unforeseen results. We find that family firm participation is higher in low tax industries, suggesting that family firms prefer low tax environments. However, we also find that family firm participation is higher when family firms are paying higher taxes than their industry counterparts. Here, we can only suggest that family firms must have alternative reasons for being in these industries, which more than compensate for their poor relative tax position. In contrast to the value-maximizing size argument of Demsetz and Lehn (1985), we find that family firm participation is greater in industries where the average firm size is bigger. This suggests that firm size in Taiwan has not become so large that maintaining control is deemed too costly for family owners. We also find conflicting results for relative control wedge. In the second regression we find a negative coefficient and in the fourth regression we find a positive coefficient. This is likely due to the different measure of family firm involvement and suggests that in industries where family firms have a higher control wedge than their industry counterparts there are less family firms but the family firms are bigger.

By comparing the explanatory power (Adj-R^2) of the regressions we note that the average industry characteristics explain 58 percent and 39 percent of the variation in family firm participation and market share. Adding the relative firm characteristics decreases the adjusted explanatory power to 54 percent and 35 percent. This indicates that family firm involvement across industries is primarily driven by industry characteristics and not relative firm characteristics.

Finally, we are able to compare our results to the US results of Villalonga and Amit (2009). We both find that family firm involvement is higher in industries where there is higher entrenchment (more voting or control rights than ownership rights). However, they find that family firm involvement is higher in industries where the average firm size is smaller and in younger industries. We find that family firm involvement is higher in industries with bigger firms and in older industries. This indicates that the characteristics of family firms and the structure of industries differ across countries.

4.2 Relative Performance

This section relates family firm involvement and industry characteristics to the performance of family firms relative to non-family firms. This allows us to examine whether the greater involvement of family firms in certain industries provides advantages or disadvantages to shareholders.

Table 6 presents these results. In the first and second regressions we relate relative performance to family firm participation and market share. This directly examines whether family firms perform better in industries where they are more involved. In the first regression the coefficient on family firm participation is insignificant. In the second regression the coefficient on family firm market share is positive. This indicates that family firms perform better when family firm market share is higher and indicates a net advantage for family firm shareholders in industries where family firms congregate.

To ascertain exactly where advantages and disadvantages to shareholders are created we relate relative performance to the industry characteristics. In the third regression we find a negative relationship between relative performance and board independence. In the fourth regression, we introduce relative firm characteristics and find a positive relationship between relative performance and tax. We also find negative relationships between relative performance and board independence, relative debt, relative control wedge, relative size and relative age. Other variables are insignificant. We discuss these results in conjunction with those from previous sections.

In the prior sections we found, consistent with the long-term view of family owners, that family firms are more involved in industries with more fixed assets. However, here we find no performance effects. This suggests that family firms prefer to invest more in fixed assets but this does not provide any measurable advantage to shareholders. It also shows that shareholders do not believe that family firms are overinvesting. We predicted family firms to be more involved in industries with more debt, but we find no such evidence. We do find that family firms perform worse when they have more debt than non-family firms. This suggests that family firms may be using too much debt in the eyes of shareholders.

For tax, we find a number of different results. In this section we find that family firms perform better than non-family firms in high tax industries. In unreported testing we investigate this further and find that that the median family firm pays 7% less tax than the median non-family firm in high tax industries. This suggests that family firms can access more tax concessions than non-family firms in high tax industries. In the prior sections, we find that family firms are more prevalent in low tax industries, suggesting they prefer low tax environments. We also find that family firms are more prevalent in industries where they pay more taxes than non-family firms. We repeat that family firms must have alternative reasons to be in industries where they are paying more tax.

The prior sections provided some evidence that family firms are more involved in industries where there is greater potential to consume private benefits of control, e.g. lower board independence and higher control wedge. In this section we find mixed results that consumption is actually occurring. We find that family firms perform better in industries with lower board independence, which suggests their preference to be in these industries is not a disadvantage to shareholders. This is consistent with the findings of Chen and Nowland (2010), which shows that too much board independence can hinder wealth creation in family firms. However, we also find that family firms are worth less in industries where they have a bigger control wedge than non-family firms. This indicates that a higher control wedge than industry counterparts is a disadvantage to shareholders.

The final results in this section are that family firms are worth less in industries where they are bigger and older than non-family firms. This indicates that family firms may not be capitalizing on their competitive position (bigger and more established) in these industries. The explanatory power of the models in this section also produces contrasting results to the previous section. Here, we find that relative performance is driven by relative firm characteristics and not industry characteristics. So it seems that family firm participation and market share are driven by industry characteristics but performance is driven by relative firm characteristics.

4.3 Robustness Checks

We recognize that family firm involvement across industries is sticky, as it is not costless to close operations in one industry and open operations in another. We specifically use market share as a measure of family firm involvement as it has greater variation over time than participation. We also use the proportion of total assets of family firms in each industry as an alternative measure with consistent results. For relative performance, we use return on assets as an alternative performance measure to Tobin's Q. We find consistent results but the significance of the variables is diminished. This suggests that the advantages and disadvantages of family firm involvement across industries are not reflected so much in current performance but in shareholders perception of future performance. Finally, we use the ratio of long-term debt to total assets in our analysis as it has a lower correlation with the other independent variables than the ratio of total debt to total assets. Using the ratio of total debt to total assets provides consistent results but necessitates the presentation of two specifications for each model.

5. Conclusion

A number of recent studies document significant differences between family and non-family firms. In particular, family owners generally have a longer investment horizon, create more wealth through political and business connections and consume more private benefits of control. Accordingly, this study proposes that family firm involvement and performance across industries is not random. We expect family firms to be to be more involved in industries that are better suited to their comparative advantages and where there is more potential for family owners to consume private benefits of control.

We find that family firms are more involved in industries that require greater investment in fixed assets, consistent with the long-term view of the family group, and in industry conditions that make it potentially easier for family owners to consume private benefits of control. This suggests that family owners either choose to operate in industries that have desirable characteristics or that family firms have been relatively more successful in these industries over time. Future research could examine the entry and exit of family firms in industries over time to further differentiate between these explanations.

We then examine performance effects to determine if family firm involvement across industries provides advantages or disadvantages to family firm shareholders. Overall, we find a positive relationship between family firm involvement and performance, which indicates a net advantage for family firm shareholders in industries where family firms congregate. In particular, we find that family firms perform better in high tax industries, where family firms pay less tax than non-family firms. We find that family firms perform better in industries with lower board independence, which indicates the lower board independence of family firms is an advantage and not a disadvantage to shareholders. However, we also find instances where shareholders are disadvantaged in family firms. Family firm performance is worse when family firms maintain a higher control wedge and have more debt than their industry counterparts.

In addition, our analysis indicates that family firm participation and market share are driven by industry characteristics but performance is driven by relative firm characteristics. This suggests that family firms are intrinsically better suited to certain industry conditions, but their performance through time depends on the choices family firms make relative to their industry counterparts. Finally, while we believe our results are generalizable to other similar markets in Asia and Europe, we recognize that family firm characteristics may differ across markets. For example, other markets can have varying industry structures and different levels of direct involvement by government entities. We therefore encourage researchers to conduct similar analysis in other markets as we are confident that there will be significant industry effects.

References

1. Anderson, R. and Reeb, D. (2003), "Founding-family ownership and firm performance: Evidence from the S&P 500", *Journal of Finance*, 58, 1301– 1327.
2. Anderson, R., Mansi, S. and Reeb, D. (2003), "Founding family ownership and the agency costs of debt", *Journal of Financial Economics*, 68, 263-285.
3. Anderson, R., Duru, A. and Reeb, D. (2009), "Founders, heirs, and corporate opacity in the U.S.", *Journal of Financial Economics*, 92, 205–222.
4. Chen, E. and Nowland, J. (2010), "Optimal board monitoring in family-owned companies: Evidence from Asia", *Corporate Governance: An International Review*, 18, 3-17.
5. Claessens, S., Djankov, S. and Lang, L. (2000), "The separation of ownership and control in East Asian corporations", *Journal of Financial Economics*, 58, 81-112.
6. Claessens, S., Djankov, S., Fan, J. and Lang, L. (2002), "Disentangling the incentive and entrenchment effects of large shareholdings", *Journal of Finance*, 57, 2741–2772.
7. Dahya, J., Dimitrov, O. and McConnell, J. (2008), "Dominant shareholders, corporate boards and corporate value: A cross-country analysis", *Journal of Financial Economics*, 87, 73-100.
8. Demsetz, H. and Lehn, K. (1985), "The structure of corporate ownership: Causes and consequences", *Journal of Political Economy*, 93, 1155-1177.
9. Doukas, J., Croci, E. and Gonenc, H. (2009), "Family control and financing decisions", SSRN working paper.
10. Faccio, M. (2006), "Characteristics of politically connected firms", SSRN working paper.
11. Faccio, M. and Lang, L. (2002), "The ultimate ownership of Western European corporations", *Journal of Financial Economics*, 65, 365-395.
12. Faccio, M. and Parsley, D. (2009), "Sudden deaths: Taking stock of geographic ties", *Journal of Financial and Quantitative Analysis*, 44, 683-718.
13. Holderness, C. and Sheehan, D. (1988), "The role of majority shareholders in publicly held corporations", *Journal of Financial Economics*, 20, 317-346.
14. James, H. (1999), "Owner and manager, extended horizons and the family firm", *International Journal of the Economics of Business*, 6, 41-56.
15. La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (1999), "Corporate ownership around the world", *Journal of Finance*, 54, 471 – 517.
16. La Porta, R., López De Silanes, F. Shleifer, A. and Vishny, R. (2002), "Investor protection and corporate valuation", *Journal of Finance*, 57, 1147–1170.
17. Lane, S., Astrachan, J., Keyt, A. and McMillan, K. (2006), "Guidelines for family business boards of directors", *Family Business Review*, 19, 147-167.
18. Mauro, P. (1995), "Corruption and growth", *Quarterly Journal of Economics*, 110, 681-712.
19. Mishra, C., Randoy, T. and Jenssen, J. (2001), "The effect of founding family influence on firm value and corporate governance", *Journal of International Financial Management and Accounting*, 12-3, 235-259.

20. Morck, R., Strangeland, D. and Yeung, B. (2000), "Inherited wealth, corporate control and economic growth: The Canadian disease?" In: R. Morck, Concentrated corporate ownership, University of Chicago Press: Chicago, 319-369.
21. Villalonga, B. and Amit, R. (2006), "How do family ownership, management and control affect firm value?", *Journal of Financial Economics*, 80, 385-417.
22. Villalonga, B. and Amit, R. (2009), "Family control of firms and industries", *Financial Management*, forthcoming.

Appendices

Table 1. Variable Definitions
Data is from the Taiwan Economic Journal (TEJ) database.

Variable	Description
Family firm participation	Number of family firms divided by total number of industry firms
Family firm market share	Family firm sales divided by total industry sales
Relative performance	Tobin's Q of family firms divided by Tobin's Q of non-family firms in the same industry
Fixed assets	Fixed assets divided by total assets
Debt	Long-term debt divided by total assets
Tax	Tax rate reported in the TEJ database
Risk	Standard deviation of monthly returns over one year
Ownership	Ultimate cash flow rights ownership of the largest shareholder as per Claessens et al. (2000)
Control wedge	Ratio of control to cash flow rights ownership of the largest shareholder as per Claessens et al. (2000)
Board independence	Number of independent directors divided by total number of directors
Age	Age in years since the firm was listed on the Taiwan Stock Exchange
Size	Total assets in billions of NT dollars
Competition	Negative of Herfindahl index (sum of squared market shares based on sales)
Tobin's Q	Market value of equity plus book value of debt divided by book value of assets.
Return on assets	EBITDA divided by total assets

Table 2. Descriptive Statistics
Descriptive statistics of sample firms. The firm sample includes 7661 firm-year observations from 722 firms listed on the Taiwan Stock Exchange during the period 1997 to 2007. Variables are defined in Table 1. Data is from the Taiwan Economic Journal database. Asterisks denote significance of difference in means t-tests as follows: * 10% , ** 5%, *** 1%.

	Family Firms (n=3482)		Non-Family Firms (n=4179)		Means Tests
	Mean	Stdev	Mean	Stdev	
Total Assets (NT$ billions)	17.06	45.12	12.90	53.97	4.16***
Age (years)	9.48	10.45	4.65	7.11	4.83***
Fixed Assets	0.14	0.21	0.10	0.17	0.04***
Debt	0.09	0.17	0.06	0.16	0.03***
Tax (%)	14.81	6.79	16.11	8.09	-1.30***
Risk	0.78	0.14	0.77	0.18	0.01***
Ownership	0.25	0.17	0.26	0.19	-0.01
Control Wedge	1.45	0.67	1.37	0.64	0.08***
Board Independence	0.04	0.10	0.08	0.14	-0.04***
Tobin's Q	1.16	0.56	1.20	0.56	-0.04***
Return on Assets (%)	4.50	25.90	6.06	37.48	-1.56**

Table 3. Family Firm Involvement and Performance by Industry

Average level of family firm participation, market share and relative performance across the 27 industries during the period 1997 to 2007. The firm sample includes 7661 firm-year observations from 722 firms listed on the Taiwan Stock Exchange during the same period. Aggregating at the industry level results in 297 industry-year observations. Variables are defined in Table 1. Data is from the Taiwan Economic Journal database.

Industry	Firm-years	Family Firm Participation	Family Firm Market Share	Relative Performance
Paper & Pulp	77	1.00	1.00	n/a
Rubber	99	0.89	0.93	1.47
Glass & Ceramics	55	0.80	0.97	1.35
Automobile	50	0.78	0.67	0.99
Cement	77	0.71	0.91	1.11
Food	220	0.65	0.44	0.63
Financial & Insurance	349	0.64	0.70	0.93
Oil, Gas & Electricity	88	0.63	0.84	0.91
Plastics	230	0.62	0.89	0.81
Textiles	506	0.61	0.84	1.04
Consumer Goods	110	0.60	0.57	1.14
Building Material & Construction	406	0.57	0.62	0.95
Shipping & Transportation	197	0.56	0.53	1.08
Tourism	66	0.50	0.64	0.87
Electric Machinery	395	0.47	0.41	1.04
Electronic Parts	736	0.43	0.61	1.00
Chemical & Biotechnology	393	0.42	0.54	0.90
Other	392	0.42	0.64	0.90
Iron & Steel	242	0.41	0.30	1.17
Semiconductor	587	0.40	0.42	1.05
Computer & Peripheral	592	0.34	0.34	0.89
Optoelectronic	534	0.32	0.60	1.00
Electronic Products Distribution	255	0.30	0.61	1.14
Communications & Internet	350	0.28	0.29	0.98
Electrical & Cable	132	0.25	0.63	1.20
Other Electronic	371	0.24	0.43	1.18
Information Service	109	0.20	0.19	0.67

Table 4. Variation in Industry Characteristics

Industry characteristics are the average for all firms in the industry. Relative firm characteristics are the average for family firms divided by the average for non-family firms in the same industry. The firm sample includes 7661 firm-year observations from 722 firms listed on the Taiwan Stock Exchange during the period 1997 to 2007. Aggregating at the industry level results in 297 industry-year observations for the industry characteristics and 286 industry-year observations for the relative firm characteristics. Variables are defined in Table 1. Data is from the Taiwan Economic Journal database.

	Distribution				
	Min	25%	50%	75%	Max
Fixed Assets	0.02	0.07	0.11	0.16	0.46
Debt	0.01	0.03	0.09	0.15	0.64
Tax (%)	9.58	13.38	15.09	17.30	34.52
Risk	0.23	0.69	0.77	0.84	1.00
Control Wedge	1.00	1.27	1.33	1.46	1.99
Board Independence	0.00	0.00	0.00	0.05	0.24
Size	0.89	4.63	9.33	19.11	93.45
Age	0.10	3.74	8.08	13.80	34.29
Competition	-0.88	-0.26	-0.17	-0.09	-0.04
Relative Fixed Assets	0.13	0.65	1.11	1.89	15.19
Relative Debt	0.06	0.40	0.99	1.65	10.01
Relative Tax	0.41	0.87	0.99	1.13	24.89
Relative Risk	0.18	0.99	1.00	1.02	4.95
Relative Control Wedge	0.46	0.99	1.09	1.28	1.79
Relative Board Independence	0.00	0.00	0.00	0.41	6.41
Relative Size	0.05	0.83	1.57	3.55	836.66
Relative Age	0.08	0.98	1.50	2.40	47.40

Table 5. Family Firm Involvement and Industry Characteristics

Regressions relate family firm participation and market share across industries to industry and relative firm characteristics. Industry characteristics are the average for all firms in the industry. Relative firm characteristics are the average for family firms divided by the average for non-family firms in the same industry. The firm sample includes 7661 firm-year observations from 722 firms listed on the Taiwan Stock Exchange during the period 1997 to 2007. Aggregating at the industry level results in 297 industry-year observations for the industry characteristics and 286 industry-year observations for the relative firm characteristics. Variables are defined in Table 1. Data is from the Taiwan Economic Journal database. Models include robust standard errors. T-statistics are in parentheses. Asterisks denote significance as follows: * 10% , ** 5%, *** 1%.

	Family Firm Participation		Family Firm Market Share	
	(1)	(2)	(1)	(2)
Intercept	0.3016 (3.00)***	0.3962 (3.03)***	0.4749 (3.84)***	0.1795 (0.97)
Fixed Assets	0.4363 (4.34)***	0.4347 (4.26)***	0.5571 (5.16)***	0.6046 (4.42)***
Debt	-0.0765 (-0.66)	-0.0233 (-0.22)	-0.0403 (-0.29)	-0.1203 (-0.92)
Tax	-0.0025 (-0.74)	-0.0068 (-2.23)**	-0.0037 (-1.19)	0.0018 (0.44)
Risk	-0.0169 (-0.20)	-0.0117 (-0.14)	-0.0231 (-0.19)	-0.0418 (-0.33)
Control Wedge	0.0668 (1.45)	0.0827 (1.70)*	0.0026 (0.05)	-0.0018 (-0.03)
Board Independence	-0.8929 (-7.57)***	-0.7589 (-6.00)***	-0.4580 (-2.34)**	-0.7567 (-3.29)***
Size	0.0001 (2.93)***	0.0001 (2.08)**	-0.0004 (-0.49)	-0.0001 (-1.06)
Age	0.0158 (10.04)***	0.0130 (7.45)***	0.0125 (7.29)***	0.0093 (4.01)***
Competition	0.0570 (0.86)	0.0245 (0.34)	-0.2320 (-1.85)*	-0.2608 (-2.31)**
Relative Fixed Assets		0.0240 (4.58)***		-0.0070 (-0.98)
Relative Debt		0.0007 (0.10)		-0.0015 (-0.16)
Relative Tax		0.0101 (2.08)**		0.0087 (1.84)*
Relative Risk		0.0325 (0.54)		0.1323 (1.64)*
Relative Control Wedge		-0.1060 (-2.14)**		0.1339 (2.01)**
Relative Board Independence		0.0012 (0.12)		0.0157 (0.83)
Relative Size		-0.0002 (-1.22)		0.0001 (0.35)
Relative Age		-0.0031 (-0.88)		-0.0015 (-0.46)
Adj-R^2	0.58	0.54	0.39	0.35
n	297	286	297	286

Table 6. Relative Performance, Involvement and Industry Characteristics

Regressions relate family firm relative performance across industries to industry and relative firm characteristics. Industry characteristics are the average for all firms in the industry. Relative firm characteristics are the average for family firms divided by the average for non-family firms in the same industry. The firm sample includes 7661 firm-year observations from 722 firms listed on the Taiwan Stock Exchange during the period 1997 to 2007. Aggregating at the industry level results in 286 industry-year observations for the relative firm characteristics. Variables are defined in Table 1. Data is from the Taiwan Economic Journal database. Models include robust standard errors. T-statistics are in parentheses. Asterisks denote significance as follows: * 10% , ** 5%, *** 1%.

	Relative Performance			
	(1)	(2)	(3)	(4)
Intercept	0.9089 (14.89)***	0.8609 (16.10)***	0.9272 (4.46)***	1.1474 (3.07)***
Family Firm Participation	0.2244 (1.61)			
Family Firm Market Share		0.2679 (2.65)***		
Fixed Assets			-0.2328 (-0.59)	-0.0543 (-0.12)
Debt			-0.2643 (-1.03)	-0.2442 (-1.00)
Tax			0.0024 (0.42)	0.0137 (1.85)*
Risk			-0.0622 (-0.38)	-0.1316 (-0.79)
Control Wedge			0.1014 (0.86)	-0.0802 (-0.64)
Board Independence			-0.5375 (-2.07)**	-0.8101 (-2.50)**
Size			-0.0001 (-0.86)	0.0002 (0.12)
Age			0.0049 (1.14)	-0.0020 (-0.42)
Competition			-0.1430 (-0.78)	-0.3082 (-1.56)
Relative Fixed Assets				-0.0036 (-0.26)
Relative Debt				-0.0474 (-2.61)***
Relative Tax				0.0076 (0.67)
Relative Risk				0.2961 (1.15)
Relative Control Wedge				-0.2610 (-2.11)**
Relative Board Independence				-0.0148 (-0.45)
Relative Size				-0.0008 (-2.62)***
Relative Age				-0.0168 (-3.05)***
Adj-R^2	0.01	0.03	0.01	0.11
n	286	286	286	286