

# Diversification of Unlisted Family Business Groups (FBG) and Board Control.

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In this paper, we analyze how the diversification pattern of business groups is affected by the structure of the families behind them. To address this question, we construct a data set of family relationships among board members of firms that integrate into family business groups (FBG) that belong to a regional family firms' association in Spain. Specifically we test which of two alternative possible rationales explain FBG diversification type and intensity. On the one side there is the capability effect, by which FBG would incorporate a large proportion of board members without family ties. On the other side there is the agency effect, by which FBG have board structures largely based on people with family ties. Strong related diversification structures are associated with a larger proportion of family members in boards of firms in a FBG (at both the brothers and "cousins" level), suggesting that it is the agency effect what better fits with the diversification pattern followed by FBG. For unrelated diversification we find similar, although less powerful and significant, results.

## 1. Introduction and motivation

The objective of this paper is to understand the governance implications of the diversification strategy for family business groups (FBG). The decision of diversification by firms is a relevant issue that has been extensively treated from a financial, managerial or economic perspective. Our paper introduces a different approach to the usual one due to the particular nature and objectives of those that own or control the firms we analyse: families.

In those cases where firms are controlled by a set of family members, the diversification decision has to internalize their budget constrain and also their objective function of firm control in the family core along time, even from generation to generation. This empirical paper specifically tries to shed some light on questions like: Which is the diversification pattern of family business groups (FBG)? Which forces drive to related or unrelated diversification? Do the governance of firms differ among diversified and undiversified FBGs? Which is the relationship between the diversification structure of the FBG and the family relatives' control of the board of directors?

To address these issues, we build a specific data set of FBG in a region (Balearic Islands), for families that belong to the regional family firm association (ABEF) and to the Spanish IEF. These business groups include 556 firms in a wide range of sectors of activity, mostly from tourism and hospitality services.

The FBG we consider are family owned, in the sense that a family (a group of individuals of the same family) have a controlling shareholder block in the group. Most of them are private firms (only two out of 50 FBG have public firms). Hence, in our sample of firms, on the one hand, minority shareholders outside the family are almost not relevant. And, on the other hand, the family may easily retain the control of the firms in the business group if some professional managers are hired to run them. Moreover, for most of the firms, families not just control, but are actively involved in management.

Under the Spanish 'Two-Surnames' system it is possible to trace kinship relationships within a board and establish a reliable dataset of FBG. According to these surname characteristics we are able to identify all firms where the family member of the family firms associations is board member and/or owner. We additionally can account for the "intensity" of the family relationship, like brothers (board members that have the same two surnames) and other relatives in firms' board composition.

Our research focuses on the board of directors of firms in FBG. These board in FBG may basically exert two different roles. The board may have an executive role, exerting the direct management of the firm.<sup>1</sup> Or, the board may exert a control role of the behaviour of the CEO of the company (be it a member of the family or a professional manager from outside the family). Indeed, the agency or delegation problem between owners and managers that can be present in these firms is one of monitoring manager's actions, not one of lack of true firm control. Hence, when a family considers whether to hire professional managers, the family must trade off the increase in managerial talent against the increase in monitoring effort that hiring outside managers may require.<sup>2</sup>

We interpret board composition (more specifically the proportion of members of the board that pertain to the family) as an indicator of the openness of the family group to outsiders in two different senses, according to whether the firm board exerts an executive or a control role. If the board has an executive role, a low percentage of family members in the board reflects that the family shares the management of the firm with professional managers and outside partners, that are expected to bring to the FBG a managerial talent that the family may lack. If instead the board has a control role, a low percentage of family members in the firms' boards means that the family has relinquished some of its control over the firm.

We then explore the relationship between the level of diversification and the governance structure in FBG. Our main result is that more diversification is accompanied with a more tightly control of the FBG by the family, suggesting that governance issues are of the utmost relevance to families when they explore new lines of business.

The paper is structured as follows. First, in the next section we briefly discuss how we interpret family firms and family business groups. Section 3 is devoted to discuss the relevance of the traditional analysis of firms' diversification decisions to the particular nature of FBG. In Section 4, we proceed to a descriptive analysis of two aspects of our sample of FBG. First, we provide a summary of board composition in firms within FGB. In the second place, we

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<sup>1</sup> This is indeed the case for most of the firms of smaller FBG.

<sup>2</sup> Another control issue that may emerge in a family firm is the possibility of divergence in objectives among family members, which may induce rent-seeking activities by these different members in order to control the FBG.

describe the pattern of business diversification we observe in our sample of FBG. Section 5 analyses the determinants of diversification in FBG, and the control structures chosen in diversified FBG, and we relate these two characteristics of FBG with other aspects of the FBG, as the actual family generation running the firms, size and other control variables. The paper concludes in section 6.

## 2. Family firms around FBG

The usual criteria defining family firms, from the management side point of view, is that the institutional values of the firm should be identified with the family. Empirically this implies the involvement of multiple generations in a business group, the ownership of the group and voting control by family members, the effective management of the firm by family members and a large number of family members having board seats.

There is, however, a lack of precision and consensus in the literature on FBG about a more detailed characterisation of family firms. This is reflected in the wide list of family firm definitions that emerge in the literature. Shanker and Astrachan (1996) introduce three approaches, depending on the degree of family involvement in the firm. The classification ranges from broader to narrower definitions relating to a weaker or a stronger family involvement respectively. The broad definition accounts for firms with family control of strategic decisions. In the middle term, the founder or descendants run the firm with the legal control of voting rights. A narrow definition accounts for a large amount of family involvement, with multiple generations running and owning the firm, where family owners have significant management responsibilities. Figures on the family firm contribution to the GDP, employment or job creation in the economy depend, of course, on the definition of family business that is employed.<sup>3</sup>

Our family firm definition is based on the role of family members as owners and managers, involving several generations. Hence our set of family firms fits between the intermediate and the narrow definitions that Shanker and Astrachan propose, to the extent that our sample is composed of family firms that belong to the ABEF or IEF, family firm associations that have strong requirements for their members' incorporation.

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<sup>3</sup> Sanker and Astrachan (1996) show empirical evidence of the impact on the economy depending on the empirical definition used in several studies.

After all, the significant family influence over the business is the key point in those definitions for the analysis we want to carry on. This influence can be exerted through the involvement in management decisions and (or) having significant shareholding stakes of the firm. These involvement levels differ across firms and, sometimes, for a given firm, along time. These differences are reflected in the organizational structure that potentially influences management decisions at the firm level, at the family business group, and also at family relationships level.

Our empirical definition of FBG includes, for every one of the 50 family members of the associations (ABEF and IEF's members from Balearics), all firms in which the family members appear as owners. Building the dataset of family businesses groups, as the cluster of firms under control of a family member of the ABEF or IEF, we exhibit different organizational forms among families firms, even in a close geographic environment as the Balearic Islands.

### **3. Diversification. Theoretical background.**

Diversification is the process of a business group entering into multiple lines of business. We may distinguish among related and unrelated diversification, which in turn can be seen as a continuum in between single business units and fully diversified firms. Related diversification means entering in multiple industries that are able to share a common pool of corporate resources and capabilities. These are businesses where sales force, advertising, and distribution activities can be shared, exploiting closely related technologies.

There is an extended literature on diversification advantages and drawbacks, and Palich et al (2000) surveys most of them. Only a number of these approaches, however, can be applied to FBG. Usually, the literature has followed two theoretical lines on inquiry to explain diversification in generic, not specifically family, firms:

- Diversification may create value for shareholders. The transfer of know-how and expertise from one business unit to another and the sharing of other resources as brand name or reputation may generate economies of scope. Additionally, related diversification may have a positive impact on firm's performance due to the achievement of learning economies, intra-firm technology diffusion, or from surpassing restrictions to production factor access in some industries.

- Managers follow their own interest when they diversify, instead of following shareholders' interest of creating value, which can potentially destroy firm's value

The empirical literature that evaluates the second conjecture has concentrated on looking for evidence of a “diversification discount”, namely whether diversification reduces shareholders returns. Empirical evidence suggest that a “diversification discount” seems indeed to exist, and it is usually interpreted as evidence that managers behaviour and shareholders interests are misaligned, and hence as an example of an agency problem in the corporate government of these firms.<sup>4</sup>

Family firms are characterized for the control of a limited number of owners with family ties, with significant equity shareholdings. Concentration of ownership reduces the possible diversification of financial risk, increases the risk premium and consequently the cost of capital (Demsetz and Lehn, 1985).

From the agency theory perspective, founding families and large shareholders have incentives to create structures that allow control through strong voice in the firm. One of the defining features of the family firm is the goal of maintaining the company ownership and control in the hands of people who share family ties, and to continue doing so for future generations. Family owners obtain monetary benefits of control and also non pecuniary benefits, such as the amenities potential (Burkart et al, 2003) and the satisfaction of transferring the firm to the descendants (Casson, 1999).

We may safely assume that the family is directly involved in decisions regarding corporate diversification (in contrast with publicly held firms, where managers make these choices). Hence, to concentrate on FBG can be a useful way to analyse whether diversification may be a valuable strategy for creating value, and indirectly, to evaluate the importance of agency problems in explaining the diversification decision. For a family, diversification is a way to extend their capabilities into new lines of business. The diversification will turn out profitable if the capabilities than were useful into one line of business are indeed also a capability in the new segment.

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<sup>4</sup> Campa and Kedia (2002) and Villalonga (2004), however, argue that firms that decide to diversify are the less performing ones; hence, there would be a sample selection bias in the observed diversification discount.

Diversification, on the other hand, may have two main costs for family business groups: (i) The need of adding capabilities outside those of the family, be it through the hiring of professional managers, or through partnerships with other shareholders that incorporate the needed new abilities. (ii) An increase in complexity in the family group that may affect negatively its organization. In any case, the incorporation of outsiders to the FBG reduces the firm's control by the family and may require an increase in monitoring effort.

If the existence of several lines of business severely affected performance, then the family would restructure the family group and focus on the more profitable businesses.<sup>5</sup> In other words, we do not expect to observe a diversified family group unless this is a corporate structure that creates value for the family. Hence we interpret the level of FBG diversification, and the way they diversify (in related lines of business or in a conglomerate way), as an indication of whether diversification can indeed create value for shareholders.

If we observe unrelated diversification in a FBG, we will interpret it as evidence that the family has been able to overcome any cost of increased complexity or reduced control due to diversification. Hence, our analysis may shed light on the important factors and determinants of agency problems and transaction costs in corporate governance.

## 4. Data and description of FBGs

### 4.1. Data collection

The data set in this research has been build from the files of all members of the ABEF, the Balearic association of FBG, and the Balearic members of IEF, the Spanish association of family firms. All firms in the sample belong to the family members of the aforementioned associations. The information provided by these associations help us to correctly build the 50 FBG registered at the end of 2004, and to account for additional characteristics of the FBG, as the generation currently running the firms or the succession procedures in which every family is involved.

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<sup>5</sup> This argument must be qualified if we interpret "performance" as achieving the maximum return from capital: a family may have a large amount of their wealth in the family group. Maintaining a controlling block limits the ability of a large shareholder to properly diversify risk. The management of risk could indeed explain diversification in FBGs. Anderson and Reeb (2003), however, find that family firms diversify less than non-family firms.

The identification of firms in a FBG has been done using the Sabi database, from Bureau van Dijk, which includes all board members of a set of 883 509 Spanish Firms in its 2005 version.

The Spanish ‘Two-Surnames’ system means that every new born has two surnames or family names (“apellidos”): the first is the first father’s surname, and the second is the first mother’s surname. This system is very suitable for genealogical purposes; it is easy to establish kinships, because the married women usually do not change her name.<sup>6</sup> According to these surname characteristics we are able to identify all firms where the family member of the family firms associations is board member and/or owner. We can also account for brothers (which have the same two surnames) and other relatives in firms’ board composition.<sup>7</sup>

From this research we are able to identify 556 firms (with at least 60 m. € of assets values and net income) grouped into the 50 FBG members of the associations.

Table 1 summarises some descriptive information about the firms which we have included in our sample.

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<sup>6</sup> The law has recently been modified in Spain, so that the order of surnames can be changed: first the mother’s surname, and then the father’s surname. This change can be done by mutual agreement of both parents, or by the choice of the concerned individual when he/she reaches the age of majority (18 years). Until now this modification has almost no impact on the structure of surnames in Spain.

<sup>7</sup> Once firms were identified, we checked with representatives of the family firms associations the correct identification of firms within FBG.

Table 1

Sample characteristics by sector of activity according to NACE classification. Values include the number of firms in the group, the aggregated values of assets and income by activity group.

Mean sector of activity values of total assets and mean gross income is shown in thousand €.

Data refers to the last end year available in the Sabi database, which is 2004.

	No. Firms	Total Asset	Total Income	Mean Total Assets	Mean Income
Agriculture, Fishing, Energy	7	17 492	5 201	2 499	867
Manufacturing	35	225 059	257 046	6 430	7 344
Construction	35	248 447	202 005	7 098	5 772
Wholesale, retail trade; repair of motor veh	53	383 701	793 324	7 240	14 968
Hotels and restaurants	121	6 205 529	2 398 944	51 285	20 159
Transport, storage and communication	70	1 139 366	4 424 784	16 277	66 042
Real estate, renting and business activities	198	5 814 904	2 512 085	29 368	13 152
Other community, social and personal servi	37	154 068	54 990	4 164	1 571
	556	14 188 565	10 648 378		

Table 1 reflects that FBG in our database have a productive structure very similar to the one of the economy of the Balearic Islands, since service sectors included in groups of hotels and restaurants and real state and renting capture almost two thirds of our sample firms. Another characteristic of our data set is the high dispersion of firm's size both for the whole sample and for specific sectors. For the whole sample, the standard deviation is more than five times the average value of assets and income.

Our unit of analysis is the family business group (FBG), which is the group of firms under control or managed by a group of people with family ties. For our purpose of analysing diversification and the relevance of the family members in the boards of the firms, the firms itself are only a component of the FBG. The general characteristics of these 50 groups in our sample are reflected in Table 2.

Table 2

Descriptive statistics of the 50 FBG in the sample. Financial information of firms comes from SABI and is shown in thousand €. Family business grouping is based on the information of ABEF and IEF, family firms associations.

variable	mean	sd	median	min	max
Number of firms	11	12	6.5	1	47
Assets	283 771	674 958	41 919	1 329	3 401 847
Income	212 968	556 599	29 243	1 525	2 994 838
Workers	1 464	3 683	195	5	17 092
Firm's age	18	5.3	18	5	34
Family generation	2.2	0.65	2	1	4

FBG present large levels of dispersion.. The standard deviation measures are very high compared to the mean values. Median values are also one tenth of the mean values.. On average, a FBG is build around 11 firms with average income of almost 213 Million €, and average asset value of 283,7 million €. The average age of firms belonging to a group is 18 years, and most of them are under control of the second generation.

Overall, the level of economic activity, measured as the income of firms under control of the members of the FBG, is a total 1 0648 Million €, that compared to the Balearics region GDP represent almost one third of it. Even lacking data on employees for some firms in the sample, we may evaluate workforce in near 70 000 employees. These numbers reflect the relative importance of FBG in a specific region like Balearics, which is comparable to what happens in other Spanish and European regions.

Nevertheless the perspective of this paper goes further to the economic relevance of FBG in the region. Our research questions are focussed on diversification patterns in sectors of economic activities and the organization of the family members into the FBG.

#### 4.2. Industry diversification of FBG

Descriptive statistics of diversification have basically two aspects to consider: One is the number of distinct sectors of activity in which the FBG is involved. The second refers to the intensity or the economic activity in each of these sectors.

NACE Rev. 1 is the activity classification which we are able to assign to the firms of FBG. Our sample includes NACE classification for all firms at a 3 digit level. This information for every firm in allows us to build several measures of activity dispersion or concentration for several grouping levels of NACE classification. These NACE code grouping distinguish among class of activities (4 digits), groups (three digits), divisions (two digits) and sections (defined by a letter), which is comparable to, in a wide sense, sectors classification at one digit level.

We have split the sample into three groups according to FBG's asset values. The three sample sizes called small, medium and large correspond to FBG with median number of employees, median income values and median number of firms per group as presented in panel A of Table 3. As usual, the larger the size in assets of a FBG, the larger are also income and number of employees. An interesting figure is the median number of firms for FBG, which moves from 5

into the small FBG sample until 12 for the larger ones. We include three measures of FBG diversification. The last two are weighted measures based on firms' size.

The first dispersion measure simply and accounts for the number of distinct sectors, divisions and groups of activity (NACE at level 1, 2 or 3) to whom a FBG belongs. The larger the FBG, the larger is the dispersion in terms of number of distinct activities where the firms of a business group are involved. Large FBG are always involved in more diverse activities than medium ones, and this is especially important for the more precise diversification measure (NACE 3 digits), which is indicative of related diversification.

Accounting for the number of distinct activities involved does not include the relative importance of those economic activities into the FBG. To take an example, a typical FBG in Balearics with several large hotels (all of them under the same NACE code) and with a very few small firms on real state or cleaning services, for instance, would be classified as dispersed if we accounted merely for the plain number of sectors. Weighting those activities according to any firm's size would lead to a low dispersion coefficient. A usual way to compute this is through the Herfindahl index, which has been calculated for the three classification levels of NACE. Panel B of Table 3 captures the dispersion coefficients as one minus the Herfindahl<sup>8</sup>.

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<sup>8</sup> The Herfindahl index H of concentration is calculated as  $H \equiv \sum_{i=1}^n P_i^2$ , where  $P_i$  is the proportion of FBG assets in industry  $i$ . The Herfindahl index itself accounts for the concentration level. For homogeneity of data presentations we present "1-Herfindahl" as the dispersion value.

Table 3

Sector of activity diversification ratios grouped by FBG sizes of asset values. Financial and firms data come from SABI and is shown in thousand €. Family business grouping is based on own calculation. Median values of the size groups.

Panel A			
FBG characteristics			
Size (Assets terciles)	Employees	Income (th. )	Firms
Small	51	5 043	3
Medium	164	24 059	6
Large	772	133 799	16
Total	195	29 243	7
Panel B			
Number of distinct classifications			
Size (Assets terciles)	NACE 1 digit	NACE 2 digits	NACE 3 digits
Small	2	2	3
Medium	3	3	4
Large	3	6	6
Total	3	3	4
Panel C			
1- Herfindahl			
Size (Assets terciles)	NACE 1 digit	NACE 2 digits	NACE 3 digits
Small	0.24	0.31	0.40
Medium	0.42	0.43	0.46
Large	0.36	0.44	0.51
Total	0.36	0.42	0.46
Panel D			
Entropy			
Size (Assets terciles)	Related diversification	Unrelated diversification	Total diversification
Small	0.71	0.55	1.38
Medium	0.79	0.60	1.51
Large	0.90	0.68	1.75
Total	0.81	0.60	1.48

average values

The Herfindahl index, by construction, is always smaller at 3 digits level than at one digit, for any FBG's size. 1-Herfindahl takes value 0 in case of a FBG formed by a single firm, which accounts for 100% of its business activity. On the other side, a very large number of firms with activities in different sectors, equally relevant in size, would lead to a near one coefficient of 1-Herfindahl. For our sample of FBG, panel C of Table 3 shows that medium size FBG are the most diversified at 1 and 2 digit levels, with similar diversification coefficient than large FBG for 3 digit NACE grouping activities. In any case, small FBG appear to be more concentrated groups for any precision level of economic activity. This is an expected result, given their budget constrain based on the capacity of self financing growing strategies keeping the control in the family.

Our third diversification calculation is the *entropy method*, which measures the dispersal of activities weighting the distribution of a particular activity across several business segments. The advantage is the ability to capture distances in

terms of diversification level, interpreted a continuum form related to unrelated diversification. A level of diversification, with the entropy index, presents a weighted average of a group diversification within sectors. The total diversification entropy measure is calculated as follows:

$$\text{Total Diversification } D_T = \sum_{j=1}^m \sum_{i=1}^n \left[ P_{ij} \times \ln(1/P_{ij}) \right] \text{ for a } P_{ij} \neq 0$$

Like the 1-Herfindahl index, entropy is a continuous measure that takes larger values for higher degrees of diversification. We follow Jacquemin and Berry's (1979) decomposition among related and unrelated diversification,

$$\text{Related Diversification } D_R = \sum_{j=1}^m P_j \sum_{i=1}^n \left[ \left( \frac{P_{ij}}{P_j} \right) \times \ln \left( \frac{P_{ij}}{P_j} \right) \right]$$

$$\text{Unrelated Diversification } D_U = \sum_{j=1}^m P_j \times \ln \left( \frac{P_{ij}}{P_j} \right)$$

where  $P_{ij}$  is the proportion of firm's assets in group  $i$  (NACE 3digits) within industry  $j$  (NACE one digit) code. Total diversification entropy is the sum of related plus unrelated diversification.

Panel D of Table 3 shows clearly that, for any measure of diversification we consider, its value is increasing on FBG size. It is important to mention the almost absence of related diversification in small FBG. Indeed, diversification among small FBG is more frequently unrelated, and for medium size FBG, the pattern is similar because most of the observed diversification is unrelated. For large FBG, related diversification becomes more important, although still lower than the unrelated. The average contribution of related diversification to total diversification is 40%.

#### 4.3. Board organization and family members in the FBG

Our main criterion to build FBG has been the control of the firm by family members. The term "control" includes firm ownership, but more particularly to intervene in the firm's strategic decisions. The formal way to participate is being a board member. The Sabi database includes all board member names for all firms in the sample, taken directly from official registry files (Registro Mercantil).

The number of board members has been endogenously decided by firms. Their board size for some cases is only one person, called in this case its "unique

administrator”, and the range goes up to 16 for the largest number in our 556 firms. The average number of board members per firm is 3.95, and the median value is 4

What is interesting for the research questions addressed in the paper is to know how FBG organize the control of firms through board structures. FBG average 11 firms, which means that on average more than 43 board seats must be covered per FBG. These seats can be assigned to a very limited limited number of people, repeating in every FBG firm On the other side the number of persons involve as board member can be very large, up to the theoretical limit of no one would repeating in two companies of the same FBG. These persons may have family ties or not, and in the case a family link exists, as we discuss below, it can be strong or weak.

We compute three measures of family openness in relation to the total number of board seats. First we account for unique board members, which measure the number of unique persons in the overall set of FBG board members. This figure considers people repeating as board member in the FBG. Table 4 shows as the mean value of 43.46 seats per FBG corresponds on average to 18.06 unique persons. The proportion of unique board members against total seats tells us how closed or open the circle of persons in the organization is. A ratio close to one means that all seats have been assigned to a completely unique persons. A ratio close to zero means that very few persons take positions in all boards seats of the FBG. This is our board dispersion measure.

From people that belong to the board, we can detect those that have a brother or sister relationship by checking that the two surnames match exactly in the same order. In that case, if the number of board members with two surnames matched equalled the number or board seats, that would mean that all board members belong to the family with brother-sister ties. If they were no brother or sister in the boardroom, this proportion would be one. This is our second measure of family control openness.

Also from the set of board members we detect those that have a “second level” family relationship as father-son, cousins, nephew/niece, grand son or grand daughter and similar. In this case we just look for the matching between one of the two surnames between the board members of a FBG. The maximum number of different surnames, considered one by one, is the double of the board seats. In case of a unique person on the board of all FBG firms this number would be two. As the proportion increases, it means that the FBG is less

concentrated in terms of the “second level” of family ties. This “cousins” level is our third measure of family control openness.

Table 4

FBG board sizes and composition with family ties for several group size levels. Board composition accounts for the average of FBG values of total, unique, brothers and cousins board members. Proportions in panel B are related to the number of board members. Mean values across asset value terciles.

Panel A. Board composition				
	Number of different people at level			
Size (Asset terciles)	Number of Board Members	Name + two surnames	two surnames	one of both surnames
Small	10.69	7.13	4.81	3.88
Medium	24.18	11.12	8.65	6.59
Large	93.59	35.29	30.29	19.53
Total	43.46	18.06	14.78	10.12

  

Panel B. Board members proportions				
Size (Asset terciles)	Non Repeating People	Without Brother Family Ties	Without ”Cousin” Family Ties	
Small	0.74	0.51	0.44	
Medium	0.46	0.38	0.30	
Large	0.44	0.39	0.29	
Total	0.55	0.43	0.34	

From Table 4 panel A we see as the average number of FBG board members is increasing on size. The number of non repeating board members is increasing on FBG’s size and the pattern is similar for non repeating people at the level of two surnames (brothers) or just one surname (cousins). From panel A the most interesting interpretation is horizontal, in the sense that we can explain how board seats are taken by a reduced number of people (name + two surnames), most of them with brother ties (two surnames), and many more with second level family ties.

Panel B is a standardization of Panel A values by FBG board size. Panel B accounts for the proportion of board members that do not repeat in the firms of the FBG. This value is larger for small FBG and almost similar for medium and large size FBG. The 0,39 Value for large FBG in Panel B indicates the proportion of board members that do not have brother-sister ties in relation to the number of board seats of the FBG. This value is decreasing on FBG size as the value form small FBG is 0,51. Finally, under the concept “without cousin family ties” we account for those board members that do not have any one of their two surnames (family names) in common in the same FBG. This includes brothers, and also other types of second level family ties, and represents on

average near 29% and 30% for large and medium size FBG, and near 44% in small FBG in our sample.

## 5. FBG board structure and diversification decisions

Diversification decisions imply to enter into new business lines, which entail at least two new sets of resources: Funds to finance these new projects, and the knowledge or human abilities to go into new industries that require different technologies. In both cases, incorporating financial or human resources will be reflected in the composition of decision making units: the board of directors.

The availability of knowledge, resources or capabilities can be associated, to some extent, with diversification decisions. But these resources could be afforded by the market, issuing new shares to get sufficient additional funds or contracting new people to manage new diversified projects. In both cases new members will be part of the decision making structures. For family firms this process is especially relevant because of the control of the firm by family relatives. Introducing new people into FBG's sharing responsibilities has two potential and opposite effects: on the one side it increases the FBG's intangible assets, as knowledge and abilities. On the other side, however, potentially introduces agency problems in the control of the FBG.

We test which of these two alternative rationales are associated with the actual observed process of FBG diversification. If the knowledge, capacity, or capabilities effect dominates, we expect that FBG have a larger proportion of different people in the board, and also that we will observe boards opened to members without family ties. On the other side, if the agency effect dominates, we expect to observe board structures largely based on a reduced number of people, most of them with family ties.

### 5.1. Univariate analysis

A descriptive approach to the problem with our data set is shown in Table 5. We split our sample in three parts (terciles) depending on the diversification level, measured with entropy values (the three columns on the left of Table 5). Total diversification, related diversification and unrelated diversification are classified as low medium and high. Panel A shows that as long as any kind of diversification is large, the number of non repeating people, the number of board members without brothers ties and number of members without "cousin" family relationships in the board of FBG is also large. The opposite is also true, meaning that the number of people outside the family core is reduced for non

diversified firms. The relative measures of openness presented in panel B are lower for FBG with large diversification ratios. This is the case for total, related and unrelated diversification combined with any of three board's diversity measures. In those cases the proportion of outside family members is lower for diversified firms than for undiversified ones.

The non weighted measure of diversification reports the number of different NACE codes of FBG at one, two and three digit level. Splitting our sample of 50 FBG in terciles as a function of the number of NACE codes, we see that the number of different people (without counting the number of times that they repeat as members of the board of firms of the FBG) is increasing with the number of sectors of activity, for all NACE digits level. The number of board members of all firms in FBG with unique pairs of two surnames is lower than the previous measure in the case of brothers. This measure of openness of the FBG to non brothers' relationship is also increasing on the number of different NACE activities for one, two or three digit level. The results are similar for different people that do not share one of two family surnames (i.e. the "cousins" relationship). Recall however that this observed pattern is not corrected for any size measure, and could be simply a size effect.

In panel B of Table 5, for the terciles division according the number of different NACE codes per FBG, the proportion of non repeating people on boards in relation to FBG board size is decreasing on industry diversification. The brothers' openness measure in relative terms is decreasing with the number of different sectors of activity where FBG is involved. Similar results are obtained for the cousins' measure and the industry diversification in number of NACE codes.

Table 5

Board structure and Board proportions for several levels of FBG diversification measured by the number of different NACE codes at various digit levels. Panel A accounts for number of people on board non repeating along firms in the group and without family ties. Panel B accounts for the proportions of the Panel A numbers related to FBG sum of board sizes. Data that refers to board composition comes from SABI database for the year 2004.

Panel A. Number of different people						
	Non Repeating People	Without Brother Family Ties	Without "Cousin" Family Ties	Non Repeating People	Without Brother Family Ties	Without "Cousin" Family Ties
Total	18.06	14.78	10.12	18.06	14.78	10.12
	A1. Total Diversification Terciles			A4. Number of NACE One Digit		
Low	17.00	14.44	10.44	7.00	5.19	3.97
Medium	10.94	8.71	6.56	10.77	8.15	6.12
High	26.18	21.18	13.38	31.00	26.19	17.29
	A2. Related Diversification Terciles			A5. Number of NACE Two Digit Codes		
Low	7.06	5.88	4.66	4.27	3.00	2.27
Medium	21.71	18.29	12.50	12.32	9.53	7.37
High	24.76	19.65	12.88	31.10	26.25	17.05
	A3. Unrelated Diversification Terciles			A6. Number of NACE Three Digit Codes		
Low	15.13	12.88	9.47	6.75	4.50	3.44
Medium	13.65	10.76	7.24	12.80	10.07	7.07
High	25.24	20.59	13.62	24.33	20.44	13.80
Panel B. Board members proportions						
	Non Repeating People	Without Brother Family Ties	Without "Cousin" Family Ties	Non Repeating People	Without Brother Family Ties	Without "Cousin" Family Ties
Total	0.55	0.43	0.33	0.55	0.43	0.33
	B1. Total Diversification Terciles			B4. Number of NACE One Digit		
Low	0.59	0.43	0.36	0.71	0.52	0.43
Medium	0.55	0.45	0.37	0.50	0.39	0.31
High	0.45	0.35	0.29	0.45	0.37	0.26
	B2. Related Diversification Terciles			B5. Number of NACE Two Digit Codes		
Low	0.60	0.43	0.38	0.76	0.54	0.46
Medium	0.54	0.46	0.37	0.54	0.43	0.34
High	0.45	0.34	0.28	0.44	0.37	0.25
	B3. Unrelated Diversification Terciles			B6. Number of NACE Three Digit Codes		
Low	0.60	0.45	0.38	0.79	0.50	0.42
Medium	0.55	0.43	0.35	0.60	0.48	0.37
High	0.45	0.35	0.29	0.45	0.37	0.27

## 5.2. Multivariate analysis

The univariate analysis do not control for relevant variables that may influence the relationship between FBG's diversification decision and the structure of the board of directors. The empirical model to test tries to explain the diversification decision in terms of the trade off between board capabilities on the one hand and strong family control on the other hand.

$$Diversification = \alpha + \beta_1 \text{Board Characteristics} + \beta_j \text{Control Variables} + e_j$$

Our model introduces control variables, as the generations currently involved in the management of the FBG, and also corrects by the average firm size of the group of the FBG. The potential problem with this specification is that board characteristics could be correlated with the error term, which would mean correlation with some unexplained causes of diversification decisions. In that case (when board characteristics would be determined partially by diversification as well), our estimates would be biased and the estimator inconsistent.

The methodological solution is to estimate the model with instruments, which help us to identify the causal relationship between board characteristics and diversification decisions. The instruments introduce an exogenous source of variation of board structure. We have checked several variables as possible instruments, and to avoid the overidentification problem, the number of firms by FBG seems to be the more appropriate one. Alternative specifications with instruments like group total income, or average board size show similar results in terms of significance coefficients. The Wu-Hausman test applied in the econometric specifications supports our two-stage least squares (2SLS) estimation of the structural equation.

The question addressed (which effect dominates, the dominance effect of the board structures with more capabilities, against retaining a close FBG control) is analysed in Table 6, for two sets of diversification measures. We find that total diversification is inversely related with board members diversity (there is a strong and significant negative coefficient). Average firm size is also negative but non significant and the family generation takes a positive link with diversification, but statistically not significant. We have instrumented our board diversity structure with the number of firms by FBG and the low p values of the Wu-Hausman test allow the rejection of the null hypothesis that OLS estimation brings efficient estimates. This result is consistent to any measure of board structure openness. Indeed, the relative measure of non brothers proportion in the board has an inverse relationship with FBG total diversification. R square value and significance of coefficients are similar to those found for board openness and for the proportion of non cousins on the board. Hence, our results suggest that more diversification is accompanied with less board competence and more family control of the FBG through the boards.

When we concentrate our analysis on related instead of on total diversification, we obtain similarly consistent estimators. As Table 6 shows, we find significance and sign of the coefficients in the second (related diversification) column similar to those in the first column (total diversification). The value of the coefficients

is lower by construction of the entropy measure of total diversification: it is the sum of related diversification plus unrelated diversification. The reason is that on average, 69% of total diversification is due to related diversification.

Table 6

Regression analysis of FBG diversification measured by the entropy value and number of NACE activities. Total diversification is the sum of related and unrelated diversification. The explanatory variables are the family generation running the firm, the average size of firms and the openness of the board of directors. This openness is measured through three variables. Board diversity accounts for the proportion of non repeating people on board related to FBG board size. Non Brothers diversity refers to the proportion of people without brothers family ties related to FBG board size. Non Cousins diversity refers to the proportion of people without "cousin" family ties (one of two surnames) related to FBG board size.. Data refers to board compositions from SABI for the year 2004 for 456 firms in 50 FBGs.

People on Board Diversity						
Dependent Variable	Diversification			Number NACE		
	Total	Related	Unrelated	one digit	two digits	three digits
Board Diversity	-2.530***	-1.025**	-1.505**	-17.076***	-27.494***	-7.039***
Mean Firm Asset	-5.265*	-1.13	-4.136	-8.156	-3.534	-0.577
Family Generation	0.144	0.025	0.119	1.246	1.915	0.256
Constant	2.630***	1.449***	1.181***	10.461***	15.706***	6.041***
F- test	6.076	2.728	3.232	5.822	6.631	5.046
R2	0.075	0.033	0.055	0.243	0.300	0.014
Wu-Hausman	9.235	3.007	3.250	31.461	81.516	8.503
P-value	0.004	0.090	0.078	0.000	0.000	0.006
Non Brothers Diversity						
Dependent Variable	Diversification			Number NACE		
	Total	Related	Unrelated	one digit	two digits	three digits
Brothers Diversity	-3.734**	-1.513*	-2.220*	-25.196**	-40.569**	-10.387**
Mean Firm Asset	-2.294	0.075	-2.368	11.898	28.755	7.69
Family Generation	0.138	0.023	0.115	1.207	1.852	0.24
Constant	2.807***	1.521***	1.287**	11.653**	17.627**	6.533***
F- test	3.500	2.263	2.226	3.541	3.866	3.024
R2	0.274	0.125	0.213	0.370	0.400	0.290
Wu-Hausman	14.560	4.180	6.172	38.991	97.023	13.496
P-value	0.000	0.047	0.017	0.000	0.000	0.001
Non Cousins Diversity						
Dependent Variable	Diversification			Number NACE		
	Total	Related	Unrelated	one digit	two digits	three digits
Cousins Diversity	-3.218**	-1.304*	-1.914*	-21.718**	-34.969**	-8.953**
Mean Firm Asset	-2.464	0.006	-2.47	10.749	26.905	7.216
Family Generation	0.047	-0.014	0.061	0.592	0.863	-0.013
Constant	2.473***	1.385***	1.088**	9.401***	14.000**	5.604***
F- test	3.673	2.401	2.251	4.112	4.477	3.323
R2	0.257	0.083	0.208	0.342	0.380	0.260
Wu-Hausman	14.762	3.916	6.827	37.495	95.028	13.238
P-value	0.000	0.054	0.012	0.000	0.000	0.001

For unrelated diversification (the third column in Table 6), the results are not so clear-cut as before. The F statistic of joint significance of estimated parameters is under the usual confidence levels for any type of board openness proportion, and the R square is also lower. The sign of the coefficients remain unchanged, but only at a 10% level of significance. Hence, for unrelated diversification our model only presents a weak and negative association with the board openness degree.

The analysis for the alternative measure of “unweighted” diversification, (number of different NACE codes) included in the last three columns of Table 6. The results are statistically significant for any specification. Diversity measures of the board are inversely related with industry NACE diversification. The control variables of size and the generation running the FBG remain none statistically significant alone.

From this analysis we conclude that FBG keep a large proportion of people around the family in the board of firms when they follow an industry diversification strategy (instead of focusing on core businesses). These results are stronger for related diversification than for unrelated diversification.

## 6. Conclusion

Firms that fit under the “family business” label represent a relevant fraction of firms in the economy. Those firms are run by or under control of families with the objective of succeeding along time in this form from generation to generation. Financial diversification to reduce family risk exposure becomes incompatible with firm control of the family under limited budget constrain.

Family Business Groups (FBG) or the group of firms under the control of the family with activities in several industries is an alternative that has some implications for the family business. To achieve economies of scope, to enter into new business units or simply sharing fixed resources for new related or unrelated activities can be done either introducing new people that contribute with financial resources and/or with new capabilities or simply either with the family core. Two alternative justifications explain FBG diversification. On the one side there is the capacity effect, by which FBG incorporate large proportions of board members without family ties. On the other side there is the agency effect by which diversified FBG have boards structures largely based on people with family ties.

Our results are based on a database of 556 firms belonging to 50 families which are members of family business associations in the region of Balearics in Spain.

We identify the activities of firms in every FBG, building the entropy measure of diversification and distinguish the intensity of related and unrelated diversification. Using the unique Spanish two surname system we compute the structure of the board of FBG measuring the degree of openness of the board itself, and the openness of the family at the brothers level (matching two surnames) and at the “cousins” level (matching one of two surnames).

Our model explains the type of diversification and its intensity depending on the board of director’s openness and controlling for generation involved in the FBG management and also controlling for size. A two stage least squares estimation of the model, with instruments to avoid the endogeneity problem, reveals that diversification is inversely related with the degree of board openness. Specifically, the larger the related diversification, the less open is the board of directors of FBG to members outside the family. This strong result becomes weaker explaining unrelated diversification.

Our research seems to confirm that the effect of avoiding agency costs introducing large proportions of board members outside the family core dominates the alternative explanation of incorporation of new capabilities in case of diversification of FBG, specially for related diversification.

Finally, let us notice two issues that we have neglected in our enquiry on diversification and board composition in FBG, that would require a more thoughtful analysis. First, we abstract from financial constraints that may limit the group’s growth; whenever a group has diversified into some segment of activity, we are assuming that the family has the financial resources (or is able to obtain it from other sources) to fully exploit the opportunity for creating value that this segment is offering. Of course, this is a very strong assumption, and we should not discard that a family group do not expand into some segment due to a lack of financial resources. Second, we also abstract of the potential conflicts of interest that may emerge within a complex family; we assume all along the paper that a family group is able to manage itself efficiently as a group. Of course, a more sophisticated analysis would take into account the possibility of conflict and inefficiencies *within* a complex family.

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