Determinants of Nonprofit Board Size and Composition
The Case of Spanish Foundations

Pablo de Andrés Alonso
Valentín Azofra Palenzuela
Elena Romero Merino
Universidad de Valladolid

ABSTRACT: Recently, many empirical studies have shed light on the determinants of boards of directors. Our aim in this paper goes far from the corporate setting. We explain how nonprofits boards are structured. As opposed to corporations' goals, the objectives of nonprofits are non-lucrative. They can not disburse profits to their contributors, but the role played by their boards of trustees in monitoring and advising managers is analogous to that of boards of directors. Using a sample of Spanish foundations, we show that nonprofit board determinants, such as organizational complexity and financing structure, are mostly similar to those of corporate boards. Nonprofit age, however, illustrates the different nature of these organizations and their voluntary boards.

Keywords: Nonprofit Governance, Board of Trustees, Foundations, Efficiency.

Dpto. de Economía Financiera y Contabilidad
Facultad de CC. Económicas y EE.
Avda. Valle del Esgueva 6
47011 Valladolid
Tel. +34 983 423444
Fax +34 983 183830
pandres@eco.uva.es
vazofra@eco.uva.es
hromero@eco.uva.es

Academic research over recent years has addressed several questions about size, structure and functioning of corporate boards. Further, despite a growing body of literature on corporate and nonprofit boards, little is known about an optimal composition to maximize organizational efficiency. We are only aware of normative recommendations regarding optimal board size and composition (see Aguilera and Cuervo-Cazurra, 2004; Dawson and Dunn, 2006) and our understanding of board effects on organizational performance is still limited (Shleifer and Vishny, 1997; Baghat and Black, 1999).

In general, all these papers have failed to link board characteristics to organization attributes and context. Boards are not exogenous mechanisms but rather an endogenous response to the agency problems inherent in the governance of all organizations (Hermalin and Weisbach, 2003). Recently, some authors have begun to examine the determinants of the size and composition of these boards in the corporative area (Kieschnick and Moussawi, 2004; Lehn, Patro and Zhao, 2004; Yang, Linck and Netter, 2004; Linck, Netter and Yang, 2005).

Taking this as our starting point, we study the determinants of boards governing organizations far from the business world: nonprofit entities. We specifically examine the size and composition of boards of foundations. Foundations are independent entities with their own board and which, by express wish of the founders, have their endowment tied to the pursuit of objectives of general interest. European foundations allocate annually more than 51.000 million Euros to their activities (EFC, 2005). Although their objective is not the maximization of shareholders' value but rather the attainment of certain statutorily established goals, their governing mechanism par excellence, the board of trustees, fulfils certain functions similar to those of the boards of directors: strategy and monitoring (Van der Bergue and Levran, 2004).

Previous literature about board determinants can be grouped into three major blocks. In the first place, papers in which the organizational complexity is understood as an essential determinant of the board (Fama and Jensen, 1983; Pearce and Zahra, 1992; Denis and Sarin, 1999; Lehn et al., 2004; Linck et al., 2005). In the second place, research which conceives the board as a result of a negotiation between the manager and outsider board members (Hermalin and Weisbach, 1998; Baker and Gompers, 2003; Lehn et al., 2004; Raheja, 2005). And, finally, papers which relate board characteristics to the specific monitoring conditions of the activity

(Demsetz and Lehn, 1985; Pearce and Zahra, 1992; Raheja, 2005; Linck et al., 2005).

Following these arguments, the structure of the board is derived from the costs and benefits of its double role: managerial monitoring and advising. Nevertheless, there exists a direct determinant of board composition which has not been included in the previous argument: ownership structure. In corporations, board composition reflects ownership structure because stakeholders exercise their legal rights of control through the board (Denis and Sarin, 1999). For nonprofits like foundations we cannot make the same claim.

Nonprofit organizations are characterized by a legal restriction on the disbursement of profits. The so-called "nondistribution constraint" implies that people supporting nonprofits through voluntary contributions are not their residual claimants. Donors do not explicitly gain control rights over the nonprofit they finance. Nonprofits lack owners, but they do have boards, which have control rights. "These boards are often partially composed by and their representatives" (Glaeser, 2003:1). Foundations, given their special legal status, also include on their boards those individuals and institutions which set them up: founders. Therefore, the figure of the owners in corporations is replaced by founders and donors whose contributions are indispensable for the foundations' survival. The structure and type of donors and founders should be considered when we define the characteristics of a nonprofit board.

To sum up, in this paper, together with the arguments about the organizational complexity, the negotiation between managers and contributors and the conditions of monitoring, we incorporate the structure of donors and founders as participants whose interests must be represented on the board of trustees. Far from the corporate setting, our paper presents some of the first pieces of evidence about the board determinants of nonprofit organizations. Using a sample of Spanish foundations we show that their board size and independence is positively related to the volume of funds they handle. We also find a non-linear relation between the board size and independence and the organizations' age. Finally, the percentage of outsiders in the board is positively related to the leverage of the foundation and negatively linked to its growth opportunities and the alignment of interests between donors and managers. The development of these arguments and results is structured as follows. First, we introduce the role of the board of trustees in the nonprofit organizations and we define the hypotheses concerning the determinants of their characteristics. Then, we contrast the hypotheses proposed for a sample of Spanish foundations

and, lastly, we present the conclusions obtained from the empirical analysis.

NONPROFIT ORGANIZATIONS AND DETERMINANTS OF THEIR BOARDS

According to agency theory, all organizations (for profit or not) are a nexus of contracts between different participants in the development of an activity. These contracts, or internal rules of the game, specify the nature of the residual decision and control rights of an organization and their assignation in the different stages of decision making.

Nonprofit organizations have decision systems that separate the management (initiation and implementation) and control (ratification and monitoring) of decisions. These systems can only survive when they ensure that donations are used effectively and are not easily expropriated. Any possible expropriation of donations by residual claimants is prevented by the nondistribution constraint. However, the incentives of other internal agents to expropriate donations remain (Fama and Jensen, 1983).

The separation of the management and control of decisions in the nonprofits implies the delegation of the decision management to one or various internal agents. Nevertheless, those decision agents with the greatest responsibility are chosen, monitored and evaluated by boards. Nonprofit organizations protect the interests of the donors and founders with a governing body similar to the board of directors: the board of trustees.

Boards of trustees defend the interests of the founders, donors, beneficiaries and the society in general. They are at the top of decision control systems of every kind of nonprofit organization. In the case of foundations, trustees are responsible for accomplishing the founding goals and administering diligently its rights and resources maintaining their performance and utility.

The responsibilities and functions of the board allow the establishment of a parallelism between the characteristics of the board of trustees and those of the board of directors. The literature regarding boards of directors has centered on the analysis of two of their basic characteristics: size and independence. With respect to the size, a board composed of many directors and with a high percentage of outsiders has a

large amount of information, which is an enriching factor for the performance of their monitoring and advisory function (Haleblian and Finkelstein, 1993). However, on the largest boards the decision-making cost increases due to coordination and free rider problems (Lipton and Lorsch, 1992; Jensen, 1993).

With respect to the independence of the board, this has traditionally been linked to a greater monitoring objectivity (Fama and Jensen, 1983). However, the presence of insiders on the board offers direct access to the internal information of the organization which is vital for correctly monitoring and advising the management (Adams and Ferreira, 2006).

To sum up, the ideal composition and size of any board is the result of a progressive adjustment to the needs of the organization. Below, we present a series of hypotheses which reflect the adaptation of the boards to the organizational activity, to their particular characteristics and to the overall interests which must be represented.

HYPOTHESES FOR FOUNDERS AND MAJOR DONORS

In spite of the costs which stem from a large board, the stakeholders demand that their interests are represented on the board of directors, thus increasing the size of the board and its independence. On the one hand, when there exists a blockholder, this usually leads to a reduction of the number of directors which diminish decision making costs (Kieschnick and Moussawi, 2004). On the other hand, a blockholder often encourages the inclusion of outsiders on the boards increasing their amount of information and independence (Bathala and Rao, 1995; Kieschnick and Moussawi, 2004).

In nonprofits such as foundations, membership to the board and, therefore, the right to vote, does not stem directly from the contributions carried out. Explicit rights do not exist for becoming a member of the board but its size grows whenever it needs to include more concerned stakeholders (Pfeffer, 1973; Abzug *et al.,* 1994). We can expect that major founders and donors will be interested in being trustees of the board.

Large institutional and public donors encourage the organizations which they finance to create effective boards which support transparency and good governance (O'Regan and Oster, 2002). Thus, both types of

stakeholder will promote a reduction of the number of trustees and an independence increase.

H1. The greater a founder's endowment or the greater a donor's contribution, the smaller will be the size of the board and the greater the percentage of outsiders.

HYPOTHESIS FOR THE COMPLEXITY OF THE ORGANIZATIONAL ACTIVITY

The organizational structure is related to the scope and complexity of the organization's activity. Many nonprofit organizations specialize in the supply of outputs whose quality is difficult to evaluate. Thus, the hypothesis regarding the complexity of the organizational activity is especially appropriate for characterizing the nonprofit environment.

Both in nonprofit and for profit arenas, those organizations which are the biggest and which have the most complex productive processes require more hierarchical structures (Fama and Jensen, 1983). The boards of these large entities need a greater flow of information in order to perform their functions adequately.

An organization is more complex when its size is large or its sectors of activity are multiple. An entity which expands geographically or pursues a strategy of diversification needs to recruit directors, normally outsiders, with specific knowledge and information concerning the areas of expansion (Pearce and Zahra, 1992; Baker and Gompers, 2003; Lehn *et al.,* 2004).

Additionally, associated with the processes of growth or diversification, it is usual to increase the leverage of the organization. A complex financial structure, in terms of debt, also supposes an increase in the need for knowledge and information on the board. The entities with a high level of debt obtain great benefits from the inclusion of financial experts on the board (Pearce and Zahra, 1992; Booth and Deli, 1999).

Lastly, the organizational complexity grows at the same time as the organization's age, although not lineally: i.e., it only increases at the initial stage of the organization's life and then it is maintained or reduced once "maturity" is reached (Linck *et al.,* 2005).

H2. The greater the operative or financial complexity of the foundation's activities, the greater will be the size of the board and the percentage of outsiders.

HYPOTHESIS FOR NEGOTIATION BETWEEN MANAGERS AND OUTSIDERS

If the proportion of insiders and outsiders is the result of a process of negotiation between the general manager and the principal stakeholders (Hermalin and Weisbach, 1998), the level of representation of the managers in the board depends on their negotiating power (Arthur, 2001). In the corporate setting, when the executive team owns a high percentage of shares in the company, their negotiating power as active members of the board increases and their propensity to consume perquisites decreases (Jensen and Meckling, 1976). In these cases, there is an alignment of interests between principals and agents, so the need for monitoring is reduced at the same time as the percentage of outsiders (Bhatala and Rao, 1995; Linck *et al.,* 2005) and the size of the board (Raheja, 2005).

The absence of lucrative objectives in foundations does not ensure that the interests of the residual claimants (founders and donors) and agents coincide. Moreover, the altruistic behavior of many of their managers does not make them perfect agents (Jensen, 1994) for donors and founders.

Only when the manager was also a founder or is currently a donor we can assure a convergence of interests between the principals and agents of a nonprofit. In this case, the necessity for strict monitoring is reduced and so the proportion of outsiders.

H3. The greater the alignment of interests between principals and managers, the smaller will be the size of the board and the percentage of outsiders.

HYPOTHESIS FOR GROWTH OPPORTUNITIES

When an organization develops its activities in a noisy environment, i.e., with a high level of uncertainty and information asymmetries, monitoring costs increase considerably (Demsetz and Lehn, 1985).

Although nonprofit organizations usually produce highly complex outputs in environments characterized by strong information asymmetries (Hansmann, 1980), those entities which are financed from their economic activity are the ones most exposed to the risks of the environment and the ones which can most take advantage of the growth opportunities. The financial survival of these nonprofits depends on their capacity to discover and take advantage of growth opportunities in the environment in which they operate. Their connection with the organizational context is much closer than that of the nonprofits whose resources come from the financial investment of their endowment or from the donations drawn from their fundraising efforts. In a nonprofit financed from its economic activity the adaptation of the board to the environment is essential for their endurance.

In the noisy contexts, the inclusion of a high number of outsiders on the board is not an adequate strategy for increasing their effectiveness (Denis and Sarin, 1999; Raheja, 2005). The specific information which is handled in a volatile environment is difficult and costly to transmit to outsiders. However, the management flexibility necessary for taking advantage of perceived growth opportunities is hampered by the excessively deliberated decision processes of outside directors and, in general, the processing and communication costs increase at the same time as the number of directors increases (Lipton and Lorsch, 1992).

H4. As the growth opportunities of an entity increase, the size of the board and the percentage of outsiders decrease.

EMPIRICAL ANALYSIS FOR SPANISH FOUNDATIONS

Having presented the hypotheses, we will now briefly discuss our sample and the methods for collecting the data. Given that nonprofit sector depends essentially on the economic and human resources voluntarily contributed by the citizens, we would expect the nonprofit organizations to have a high level of transparency and visibility. In Spain, however, most nonprofits have adopted a posture of suspicion and concealment of information. Also, official public registers do not provide free access to complete data on nonprofits and neither are there any private source of information as it could be Guidestar. Specifically, in the Spanish foundation sector, all the monographic studies carried out during the 1990's and up to the present date detect and reprove the lack of information in the

sector and the opacity of the foundations (Ruiz, 2000; Garcia, Jimenez, Saez and Viaña, 2004).

This lack of secondary information databases concerning Spanish nonprofit organizations obliged us to go directly to primary sources for the empirical study. We used a postal questionnaire to obtain the necessary data for our research. In October, 2004, we sent over 2.200 questionnaires ignoring ex ante if all of them continued running. Garcia *et al.* (2004) point out that more than two thirds of the Spanish foundations are inactive entities, despite continuing inscribed in a public register. Therefore, our operative population was significantly reduced to about 645 active entities.

We sent the questionnaires by mail and later by e-mail when it was available. Additionally every foundation belonging to the Spanish Association of Foundations where also contacted by phone. After all, we get 144 responses (104 with complete information), which represents an answer rate of about 22% over the expected active population (16% if we consider only complete questionnaires). In economic terms our sample is even more significant, the 104 foundations included in this study managed more than 308 million Euros in 2003, a third of the almost 926 million Euros spent by those Spanish foundations which participated in the study of the European Foundation Centre (EFC, 2005).

VARIABLES AND DESCRIPTION OF THE SAMPLE

The general description of the sample as well as the different variables used for contrasting the hypotheses are summarized in Table 1.

[table 1 here]

The average size of the board in our sample rises to 12 trustees which is similar to the Australian boards (Steane and Christie, 2001) although somewhat lower than the average size (16-19 trustees) of the board of a North American nonprofit (O'Regan and Oster, 2005). Although more than half of our sample lacks insiders in their boards of trustees, the average independence of the boards of Spanish foundations is lower than that shown by American studies: 89% of outsiders in the Spanish

nonprofits compared with 98% of the American boards (Callen, Klein and Tinkelman, 2003).

A relevant question also for the understanding of the nonprofits under study is the nature and significance of their founders and donors. The private institutional founders provide 43% of the total of the initial endowment of the entities and 21% of the resources they handled in 2003. The percentages are reduced for the public administrations which provided 13% of the endowment and 18% of the income in the year 2003 (Table 1).

On average, the foundations analyzed were constituted 12 years ago and handle an average of funds close to 3 million Euros, of which approximately 20% comes from their economic activity. These nonprofits maintain a level of leverage (over fixed assets) of 63% and usually specialize in one or two activities.

On their boards scarcely 3% of the trustees of the foundations are simultaneously outsiders and major donors to the entity. We find in the sample young foundations in which the principal donors are also managers and trustees, combining the functions of decision management and control, compared with others in which all the functions are perfectly separated.

EMPIRICAL MODEL AND STATISTICAL TECHNIQUES.

To contrast the hypotheses presented, we have formulated two empirical models, one for the board size and the other for the board composition.

In order to explain the board size:

$$SIZE_i = \alpha + \beta_1 PUBFOUND_i + \beta_2 INSFOUND_i + \beta_3 PUBDON_i + \beta_4 INSDON_i + \beta_5 INCOME_i + \beta_6 DEBT_i + \beta_7 DIVERS_i + \beta_8 AGE_i + \beta_9 AGE2_i + \beta_{10} INTDONOR_i + \beta_{11} GROWTH_i + \mu_I$$

And, to explain the independence of the board:

$$OUTS_i = \alpha + \beta_1 PUBFOUND_i + \beta_2 INSFOUND_i + \beta_3 PUBDON_i + \beta_4 INSDON_i + \beta_5 INCOME_i + \beta_6 DEBT_i + \beta_7 DIVERS_i + \beta_8 AGE_i + \beta_9 AGE2_i + \beta_{10} INTDONOR_i + \beta_{11} GROWTH_i + \mu_I$$

In both models we include, as explicative variables, diverse measurements of the importance of the major stakeholders (PUBFOUND, INSFOUND, PUBDON y INSDON), of the organizational complexity (INCOME, DEBT, DIVERS, AGE, AGE2), of the alignment of interests (INTDONOR) and of the growth opportunities (GROWTH).

The explanatory model of the size is estimated by ordinary least squares (OLS) while in the case of independence we employ the tobit analysis. The nature of our OUTS variable, with 58% of its observations concentrated on its upper limit value, can not be estimated by an OLS model but it requires the utilization of a hybrid analysis. Tobit is a hybrid between the probit and the multiple regression which not only considers the values of the intermediate variables but also the occurrence probability of the limit values (Tobin, 1958).

RESULTS OF THE ESTIMATIONS

The results of the board size model (SIZE) are shown in Table 2. The explanatory capacity of the overall model is acceptable, but only some of the variables used to measure the extent and complexity of the activities are clearly significant. Specifically, we refer to the size (INCOME) and the age (AGE and AGE2) of the organization.

[table 2 here]

On the one hand, as in the corporate sector (Denis and Sarin, 1999; Kiel and Nicholson, 2003; Lehn *et al.,* 2004; Linck *et al.,* 2005), the greater the volume of resources which an organization manages (INCOME), the larger is the size of the board. The monitoring of a large (and frequently complex) entity requires a greater number of trustees and knowledge which compensates for the costs of coordination and free rider in which a large board incurs.

On the other hand, the relationship between the number of years an entity has been operating (AGE) and the board size is significant, in the way expected. In the first years of a foundation's life, its organizational

complexity grows and, with it, the number of directors necessary to develop effectively the board functions. However, there exists a point of maturity in the entity after which it is not necessary for the structure to become more complex in order to provide for its necessities (Linck, *et al.*, 2005). At that moment, the number of trustees ceases to grow, as is reflected in the negative sign of the size with respect to the quadratic age variable (AGE2).

Although the significance of the estimator is low, the results also show indications which imply that the presence of an institutional donor (INSDON) may be related to a more reduced size (Kieschnick and Moussawi, 2004). The institutional donor performs a monitoring function in the nonprofit which is financed and reduces the need for monitoring on the part of the board. His presence as a substantial donor in a foundation encourages the formation of a small-sized board, as is recommended by "best practices" of governance. The negative relationship between donations and board size is maintained in the case of public donors (PUBDON) although no evidence exists to support this finding.

With respect to board independence (OUTS), the results are considerably more significant than those obtained for the size (see table 3). These results agree with earlier studies such as those of Hermalin and Weisbach (1998), Bathala and Rao (1995) or Linck *et al.* (2005). All of these authors limit their analyses to the board composition or propose a smaller number of hypotheses regarding the size of the board.

[table 3 here]

In the first place, the relationship between the organizational complexity (INCOME) and the percentage of outsiders presents a positive sign as we expected (Denis and Sarin, 1999; Lehn *et al.,* 2004; Linck *et al.*. 2005). Parallel to what happens in firms, those organizations which receive a large quantity of resources and which, supposedly, carry out a greater volume of activity, introduce more outsiders onto their boards.

With regard to financial complexity (DEBT), the coefficient with a positive and significant sign also allows us to confirm the hypothesis propounded. When a foundation's leverage is high, more outsiders with financial knowledge are included on the board who aid the survival of the entity. This result coincides with those of Denis and Sarin (1999) or Linck

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et al. (2005), who obtained a positive relation between the percentage of outsiders and the level of company indebtedness.

With regard to age, the results show a different situation to that in the enterprises. As the number of years in operation of the nonprofit increases (and also their organizational complexity), the number of outsiders is reduced. But, according to the indication of the quadratic variable (AGE2), there exists a level from which the trend changes. The composition of the board of trustees reflects the life cycle of the nonprofit organizations. Initially, boards of trustees are formed from the founders of the entity. Nonprofits require a period of maturation before being able to capture outsiders who can devote their time freely to the board of trustees. On many occasions, although the foundation seeks to include outsiders on their board, these do not want to commit themselves until the entity has demonstrated its capacity to survive and the sustainability of its goals. The board grows during the initial years at the expense of individuals especially committed to the organization's aims who belong to the board and who are also managers (insiders). Later, when the reputation of the foundation has been demonstrated, new outsiders are captured who increase the independence of the organization.

Besides, the alignment of interests between managers and resource donors (INTDONOR) presents a negative and significant coefficient. This result leads to a defense of the "negotiation hypothesis". When the managers of an organization are also donors, the divergence of interests is reduced and, with it, the need to include outside monitors on the board. Our sample, therefore, follows the results obtained in the business literature (Denis and Sarin, 1999).

With respect to growth opportunities, reflected in the importance of the economic activity as a source of income for the organization (GROWTH), the estimator's sign is negative and significant. In accordance with the corporative research (Bathala and Rao, 1995; Denis and Sarin, 1999; Lehn *et al.,* 2004; Linck *et al.,* 2005), when a foundation has more external opportunities, the percentage of outsiders is lower. We verify that the monitoring of entities with high growth opportunities is more costly for the outsiders because these opportunities are a reflection of a greater uncertainty regarding the organization's results.

Lastly, the estimators of the variables introduced for measuring the effect of the donors or founders (PUBFOUND, PUBDON, INSDON) also show the same trend that other analyses such as Bathala and Rao (1995) or Kieschnick and Moussawi (2004) pointed out in the business field. The presence of major donors encourages a board composition where the key

players are the outsiders, but none of these effects has the level of significance necessary to draw conclusions which can be extrapolated to the rest of the nonprofits.

ROBUSTNESS OF THE ESTIMATIONS

We have evaluated the robustness of the results by introducing into the model certain variables that we could not include previously due to problems of correlation (i.e. institutional founders) and substituting some of the initial variables for other alternative measurements for the same concepts.

In the first of the models we include a variable measuring the weight of the institutional founders (INSFOUND). This variable was excluded in the original model because of its elevated correlation with the weight of the public founders (PUBFOUND) and of the institutional donors (INSDON). So, when we add in the institutional founders we took out these two variables to avoid multicollinearity problems (Model with institutional founders in Table 4).

[table 4 here]

In the second model, we substituted the organizational income (INCOME) for nonprofit expenses (EXPENSES). Both of the variables are highly correlated and alternatives in the measurement of the concept of organizational size (Model with size alternative in Table 4).

And, lastly, in the third model we substituted total activities (DIVERS), which measured the activity diversification of the nonprofit, for a variable which combines this type of diversification with the geographical expansion (GEODIV). Both variables are relatively correlated and measure alternatively the organizational complexity by means of the diversification (Model with geographical dispersion in Table 4).

As we expected, main results of the analysis do not change on introducing new variables or modifying the measurement of others. The conclusions drawn from the models are, therefore, consistent for the sample studied and also for other Spanish foundations[i].

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CONCLUSIONS

Overall, using a cross-sectional sample of 104 Spanish foundations, we have evidenced that the size and structure of boards of trustees are not exogenous. The boards of trustees or directors exists to monitor and advice managers so as to reduce the agency costs and to maximize organizational value. Their effectiveness in monitoring and advising is derived from a balance between the extra information added by recruiting more trustees, especially outsiders, and the coordination costs and free rider problems that generates their inclusion in the board. So, there is not an optimal composition that fits every organization but rather it varies with its characteristics.

Our results show that the size and independence of the board increase as the organizations grow and so do their need for supervision and counseling. The board composition is also modified as organizations moves in its life cycle. Lastly, the independence of the board is positively related to the leverage of the organization and negatively connected to its growth opportunities and the alignment of interests between donors and managers.

The evidence we present in this paper is almost like that obtained in the corporate sector. However, we provide new insight into the board determinants in a context far from the business setting: the nonprofit sector. The governance of nonprofit organizations is topic of increasing academic relevance not only due to the growth of the sector but also because managers of these organizations have a high degree of autonomy.

Even though most of the determinants of the board of trustees confirm the outcomes evinced for the board of directors, the idiosyncrasy of nonprofits marks some differences in their board constitution. The "nondistribution constraint" avoids any kind of remuneration for their trustees, so a frequent reason for them giving time to a board is their prestige gaining. Individuals obtain reputation by pertaining to the boards of consolidated nonprofits. A lucrative firm with remunerated directors can employ prestigious and talented directors from the very beginning. But a board of trustees, with voluntary members, is initially composed of those founders who also devote their time to running the organization. Later, as the entity matures, it gains public confidence, and more competent outsiders opt for investing their time in its board. So issues like the life

cycle affect the independence of the board of trustees opposite to that of the board of directors.

Our paper has implications for both academic research and public recommendations about governance. The understanding of board characteristics as endogenously determined stimulates the reappraisal of those papers which analyse the link between them and the organizational efficiency. The failure of previous studies to find robust evidence can be due to the treatment of board characteristics as exogenous. Also, when codes of best practices recommend smaller and more independent boards for every organization they are underestimating that board composition depends on the characteristics of the entity.

END NOTES

[i] Some prior research analyses a potential interdependency between the board size and independence for robustness reasons (Denis and Sarin, 1999; Linck, *et al.,* 2005). We could correct the endogenous problem using crossed orthogonal variables (Denis and Sarin, 1999) obtaining essentially the same results. However we can not use simultaneous equations (2SLS) (Linck, *et al.*, 2005) because we would be forced to employ OLS for both of our dependent variables losing the advantages of the tobit model to estimate the percentage of outsiders. Also, we lack adequate instruments (lagged values) to use a tobit model with endogenous covariates. So, we finally decided that the benefits of correcting theoretical endogeneity through a 2SLS model or an instrumentalized *tobit* are undermined by a lost in their prediction power when treating with a variable as board independence (censured between 0 and 1) and our sample (vastly concentrated in 1).

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TABLES

Table 1. Hypotheses, variables and descriptive analysis.

	VARIABLE	PREDICTIONS OF THE HYPOTHESES		DESCRIPTIVE STATISTICS			
		size	independence	mean	std. dv.	min.	max.
Dependant variables:							
Board size (Total number of trustees – in logarithm)	SIZE	----	----	11,98	7,68	3,00	41,00
Independence (percentage of trustees without executive charge in the foundation)	OUTS	----	----	0,89	0,20	0,00	1,00
For the hypothesis regarding founders and major donors:**:**							
Percentage of initial resources donated by a public institution	PUBFOUND	negative	positive	0,13	0,32	0,00	1,00
Percentage of initial resources donated by a private institution (profit-making or not)*	INSFOUND	negative	positive	0,43	0,47	0,00	1,00
Percentage of income provided by a public institution in 2003	PUBDON	negative	positive	0,17	0,25	0,00	1,00
Percentage of income provided by a private institution (profit-making or not) in 2003*	INSDON	negative	positive	0,21	0,30	0,00	1,00
For the hypothesis regarding the complexity of the foundation's activity**:**							
Size of the foundation (total income in millions of Euros – in logarithm)	INCOME	positive	positive	3,09	7,09	0,00	44,10
Size of the foundation (total expenses in millions of Euros – in logarithm)	EXPENSE	positive	positive	2,97	7,08	0,01	44,70
Percentage of debt in relation to the capital of the foundation	DEBT	positive	positive	0,63	1,78	0,00	14,06
Activity diversification (number of sectors of activity)	DIVERS	positive	positive	2,37	1,64	1,00	8,00
Activity diversification and dispersion (No. sectors x geographical extension)**	GEODIV	positive	positive	7,49	6,28	1,00	32,00
Age of the foundation (age of the foundation – in logarithm)***	AGE	positive	positive	12,41	12,17	1,00	89,00
For the hypothesis regarding negotiation between managers and outsiders:							
Alignment of interests (percentage of insiders who are also major donors 2003)	INTDONOR	negative	negative	0,03	0,08	0,00	0,60
For the hypothesis regarding growth opportunities:							
Growth opportunities (percentage of income 2003 from economic activity)	GROWTH	negative	negative	0,20	0,29	0,00	1,00

* We include all private institutions profit-making or not (except individual persons) which is a founder or donor.

** Geographical dispersion is measured by a categorical variable (1=local; 2=regional; 3=national; 4=international).

***To contemplate the non-lineal realtionship between age and size or independence of the board, we introduce age variable in the logarithm (AGE) and a quadratic variable constructed as the logarithm of the age squared (AGE2).

Table 2. Econometric model for the board size.

		Model 1: SIZE	
Method of estimation:		Ordinary Least Squares	
Dependant variable:		SIZE	
H1	PUBFOUND	0,253946	(0,165)
	PUBDON	-0,0164293	(0,944)
	INSDON	-0,3150068	(0,107)
H2	INCOME	0,062744	(0,021)
	DEBT	-0,0404727	(0,171)
	DIVERS	0,0235206	(0,462)
	AGE	0,7787306	(0,001)
	AGE2	-0,1642716	(0,001)
H3	INTDONOR	-0,6134683	(0,324)
H4	GROWTH	0,271525	(0,167)
	α	0,6614801	(0,103)
No. observations		103	
Prob > F		0,0001	
R squared		0,3033	
Adjusted R squared		0,2276	

The estimation coefficients of the variables are shown with the
levels of significance in brackets.

Table 3. Explicatory model for board independence

		Model 2: INDEPENDENCE	
Method of estimation:		Tobit analysis	
Dependant variable:		OUTS	
H1	PUBFOUND	0,1222697	(0,350)
	PUBDON	-0,2280863	(0,212)
	INSDON	-0,0631016	(0,670)
H2	INCOME	0,0330688	(0,119)
	DEBT	0,103535	(0,075)
	DIVERS	-0,0245061	(0,284)
	AGE	-1,015882	(0,006)
	AGE2	0,2153111	(0,006)
H3	INTDONOR	-2,111506	(0,000)
H4	GROWTH	-0,3050602	(0,058)
	α	1,887463	(0,000)
No. observations		103	
Prob > Chi2		0,0000	
Probability Log.		-39,3971	
Pseudo R squared		0,3502	

The estimation coefficients of the variables are shown with the levels of significance in brackets.

Table 4. Models of robustness

		Model 1: SIZE					Model 2: INDEPENDENCE		
Method of estimation		Ordinary least squares					Tobit analysis		
Dependant variable		SIZE					OUTS		
		Model 1 with institutional founders (INSFOUND)[a]	Model 1 with alternative size (EXPENSE)[b]	Model 1 with geographic dispersion (GEODIV)[c]			Model 2 with institutional founders (INSFOUND)[a]	Model 2 with alternative size (EXPENSE)[b]	Model 2 with geographic dispersion (GEODIV)[c]
H1	PUBFOUND	----- -----	0,2571 (0,162)	0,2625 (0,151)	H1	PUBFOUND	----- -----	0,1280 (0,331)	0,1113 (0,394)
	INSFOUND	-0,0579 (0,627)	----- -----	----- -----		INSFOUND	0,0029 (0,975)	----- -----	----- -----
	PUBDON	0,2030 (0,345)	-0,0155 (0,948)	-0,0033 (0,989)		PUBDON	-0,1592 (0,339)	-0,2324 (0,206)	-0,2388 (0,193)
	INSDON	----- -----	-0,3092 (0,116)	-0,3100 (0,110)		INSDON	----- -----	-0,0622 (0,677)	-0,0722 (0,625)
	INCOME	0,0780 (0,004)	----- -----	0,0593 (0,032)		INCOME	0,0388 (0,063)	----- -----	0,0345 (0,110)
	EXPENSE	----- -----	0,0638 (0,032)	----- -----		EXPENSE	----- -----	0,0306 (0,180)	----- -----
	DEBT	-0,0371 (0,217)	-0,0412 (0,167)	-0,0394 (0,181)		DEBT	0,1010 (0,078)	0,1059 (0,072)	0,0977 (0,090)
H2	DIVERS	0,0141 (0,666)	0,0275 (0,388)	----- -----	H2	DIVERS	-0,0262 (0,261)	-0,0220 (0,331)	----- -----
	GEODIV	----- -----	----- -----	0,0081 (0,341)		GEODIV	----- -----	----- -----	-0,0068 (0,265)
	AGE	0,8140 (0,000)	0,7969 (0,000)	0,7794 (0,000)		AGE	-0,9471 (0,008)	-1,0322 (0,006)	-1,0150 (0,006)
	AGE2	-0,1766 (0,001)	-0,1664 (0,001)	-0,1635 (0,001)		AGE2	0,1988 (0,009)	0,2196 (0,006)	0,2149 (0,007)
H3	INTDONOR	-0,7340 (0,258)	-0,6379 (0,307)	-0,6101 (0,326)	H3	INTDONOR	-2,1024 (0,000)	-2,1455 (0,000)	-2,1111 (0,000)
H4	GROWTH	0,4008 (0,035)	0,2437 (0,217)	0,2742 (0,162)	H4	GROWTH	-0,2694 (0,073)	-0,3096 (0,056)	-0,3084 (0,055)
	α	0,3993 (0,307)	0,6144 (0,164)	0,6911 (0,090)		α	1,7369 (0,000)	1,9280 (0,000)	1,8698 (0,000)
No. observations		103	103	103	No. observations		103	103	103
Prob > F		0,0004	0,0002	0,0001	Prob > Chi2		0,0000	0,0000	0,0000
R squared		0,2702	0,2979	0,3061	Prob. logarithm		-39,9657	-39,7145	-39,3490
Adjusted R squared		0,1995	0,2216	0,2307	Pseudo R squared		0,3408	0,3449	0,3510

The estimation coefficients of the variables are shown with the levels of signification in brackets.

[a] In this model we include the INSFOUND variable but, given its high correlation with PUBFOUND and INSDON, we have to omit these two variables.

[b] In this model we include the EXPENSE variable as an alternative for measuring the size, omitting INCOME.

[c] In this model we include the GEODIV variable as an alternative for measuring the diversification, omitting DIVERS.