



The Impact of Corporate Governance Mechanisms on Value Creation in Family Firms: Evidence from an Emerging Economy

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How to cite

Esparza Aguilar, José Luis, and Argentina Soto Maciel. 2023. "The Impact of Corporate Governance Mechanisms on Value Creation in Family Firms: Evidence from an Emerging Economy" *Journal of Evolutionary Studies in Business* 9(1): 33-56. <https://doi.org/10.1344/jesb2024.9.1.40345>

Received: 30 August 2022 | Accepted: dd July 2023 | Published: 2 January 2024
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Online ISSN: 2385-7137
<http://revistes.ub.edu/index.php/JESB>

The Impact of Corporate Governance Mechanisms on Value Creation in Family Firms: Evidence from an Emerging Economy

Abstract

Corporate governance (CG) is a system by which firms are directed and controlled. Through its mechanisms, it ensures optimal levels of efficiency, exploits opportunities, and prevents conflicts of interest between directors, shareholders, and stakeholders. The studies do show a positive relationship between CG and performance, but they are conducted in developed countries with stable legal and economic environments. Thus, CG contributes to the value creation (VC) of the firms. But in family firms, the concentration of power resulting from the overlapping of its subsystems (family, business, and ownership) influences the functioning of CG, and probably, VC. Setting goals, monitoring results, or controlling performance can be some of its forms. But we do not know the influence in emerging countries.

The aim of the study is to empirically analyze the financial contribution of CG mechanisms to the VC of listed family firms in a Latin American economy. The results show the importance of the size of the board of directors, the participation of independent directors, and the duality of the chief executive officer. All the latter are important, considering the high representation of the family firms, their traditional concentration of power, the level of legal or regulatory weakness level, the uncertainty and instability of market conditions. The study is relevant due to the lack of evidence in emerging markets.

Keywords: family business, corporate governance mechanism, value creation, emerging economy

L'impacte dels mecanismes de govern corporatiu en la creació de valor a les empreses familiars: evidència a partir d'una economia emergent

Resum

El govern corporatiu (GC) és un sistema pel qual es dirigeixen i es controlen les empreses. Mitjançant els seus mecanismes, assegura uns nivells òptims d'eficiència, aprofita les oportunitats i evita conflictes d'interessos entre consellers, accionistes i grups d'interès. Els estudis mostren una relació positiva entre el CG i el rendiment, però s'han realitzat en països desenvolupats amb entorns legals i econòmics estables. Així, la CG contribueix a la creació de valor (VC) de les empreses. Però a les empreses familiars, la concentració de poder resultant de la superposició dels seus subsistemes (família, empresa i propietat) influeix en el funcionament de la CG, i probablement, de la VC. Establir objectius, supervisar els resultats o controlar el rendiment poden ser algunes de les seves formes. Però en desconeixem la influència als països emergents.

L'objectiu de l'estudi és analitzar empíricament la contribució financera dels mecanismes de GC al VC de les empreses familiars cotitzades en una economia llatinoamericana. Els resultats mostren la importància de la mida del consell d'administració, la participació dels consellers independents i la dualitat del conseller delegat. Totes aquestes últimes són importants, tenint en compte l'alta representació de les empreses familiars, la seva tradicional concentració de poder, el nivell de debilitat legal o reglamentària, la incertesa i inestabilitat de les condicions del mercat. L'estudi és rellevant per la manca d'evidència als mercats emergents.

Paraules clau: negoci familiar, mecanismes de govern corporatiu, creació de valor, economia emergent

El impacto de los mecanismos de gobierno corporativo en la creación de valor en las empresas familiares: evidencia a partir de una economía emergente

Resumen

El gobierno corporativo (GC) es un sistema por el que se dirigen y controlan las empresas. Mediante sus mecanismos asegura unos niveles óptimos de eficiencia, aprovecha las oportunidades y evita conflictos de intereses entre consejeros, accionistas y grupos de interés. Los estudios muestran una relación positiva entre el CG y su rendimiento, pero se han realizado en países desarrollados con entornos legales y económicos estables. Así, la CG contribuye a la creación de valor (VC) de las empresas. Pero en las empresas familiares, la concentración de poder resultante de la superposición de sus subsistemas (familia, empresa y propiedad) influye en el funcionamiento de la CG, y probablemente, de la VC. Establecer objetivos, supervisar los resultados o controlar su rendimiento pueden ser algunas de sus formas. Pero desconocemos su influencia en los países emergentes.

El objetivo del estudio es analizar empíricamente la contribución financiera de los mecanismos de GC en el VC de las empresas familiares cotizadas en una economía latinoamericana. Los resultados muestran la importancia del tamaño del consejo de administración, la participación de los consejeros independientes y la dualidad del consejero delegado. Todas estas últimas son importantes, dada la alta representación de las empresas familiares, su tradicional concentración de poder, el nivel de debilidad legal o reglamentaria, la incertidumbre e inestabilidad de las condiciones del mercado. El estudio es relevante por la falta de evidencia en los mercados emergentes.

Palabras clave: negocio familiar, mecanismos de gobierno corporativo, creación de valor, economía emergente

Introduction

Corporate governance has among its objectives to ensure corporate efficiency, transparency, and accountability, protect shareholders and stakeholders, and mitigate conflicts that arise in order to create value for owners, managers and relevant parties (Aluchna 2009). To achieve this, institutions and governments regularly adjust their legal, regulatory, and institutional frameworks with the aim of promoting economic efficiency, financial stability, and sustainable economic growth (OCDE 2016). Within firms, corporate governance (CG) operates through various mechanisms.

To date, most studies on CG and performance have been conducted in developed countries and in publicly traded companies. Most of these studies show positive associations, although there is a lack of consensus on the characteristics of governance and the measures of performance. However, we found a lack of work on this relationship in emerging markets, considering public and private companies, but especially family firms. In these contexts, characterized by uncertainty and instability, it is necessary to improve knowledge of this relationship, in order to contribute to their economic development.

This paper focuses on studying the level of influence of CG through its mechanisms on VC in family firms in a developing Latin American country. The topic of study is relevant due to the nature of the family firms, which tests the mechanisms of CG and its benefits.

To achieve this, we view the family firms as one in which family members participate in its ownership and management. The nature of this kind of firms facilitates the concentration of power among family members and their decision-making privileges their own interests, goals, and level of risk. As a result, decisions are

not systematically based on objective criteria and family owners may benefit at the expense of non-family shareholders (Anderson, Reeb and Zhao 2012; Steier, Chrisman and Chua 2015; Jara et al. 2019). Thus, the expected benefits of CG for optimizing decision making, monitoring management, achieving safe investment and VC may be limited. In emerging markets, family firms have highly concentrated ownership structures, the degree of legal or regulatory weakness and uncertain or unstable market conditions may affect governance dynamics and, consequently, VC. VC is the measure of the productivity of the resources invested in a firm to ensure its durability and growth (García 2009).

The interest of CG in family firms research started late and has focused on public companies and developed countries (Mazzi 2011; Arteaga and Basco 2021). In addition to the scarcity of studies, not all have agreed on a positive relationship between CG and VC (Sindhuja 2009). In some cases, it depends on a broader perspective of VC, or a longer time horizon derived from patient, stable and responsible ownership (Heino, Tuominen, and Jussila 2020). Koji, Bishnu and Le Tram (2020) found a positive relationship, but it depends on the type of analysis and measurement variables. Some of the few studies conducted in emerging markets have not addressed the relationship between CG and VC as a long-term goal, but through performance (Charbel, Elie and Georges 2013; Lu et al. 2015; Ciftci et al. 2019; Saidat, Silva and Seaman 2019; Briano-Turrent, Watkins and Puente-Esparza 2020; Razzaque, Jahangir and Mather 2020).

The research question framing this study is how CG mechanisms (board size, independent directors, CEO duality, and audit committee size) positively influence the VC of family firms? To answer this question, we conduct an

econometric study of Mexican family firms listed in the stock market during a period of stability prior to the COVID-19 crisis.

The results show that the size of the board of directors, the participation of independent directors, the duality of the CEO, and the size of the audit committee influence the VC for family firms. The main contribution of this research concerns the enrichment of the existing literature related to the research on CG mechanisms and the VC in family firms in emerging markets. This contribution concerns the agency cost theory (Jensen and Mecklin 1976) because the duality of the CEO and the presence of independent directors will mitigate the conflict of interest between family members and senior management, which could help in achieving better supervision or monitoring for the family firms to obtain a greater VC.

To achieve this work, the structure of the paper begins with a review of the literature, followed by the research methodology and the presentation of the results. It ends with the discussion of the results and conclusions.

Literature review

The majority of the CG research mobilizes the agency cost theory. However, the complexity of family firms requires a complementary view that incorporates the stewardship theory, the resource-based view (Siebels and zu Knyphausen-Aufseß 2012), or the socio-emotional wealth perspective (SEW) (Wiseman and Gomez-Mejia 1998). This research defines family firms as the active participation of family members in the ownership and management of a business (Faccio and Lang 2002; Anderson, Reeb and Zhao 2012; Steier, Chrisman and Chua 2015; Dinh and Calabrò 2019; Esparza and Soto 2019).

The SEW from the behavioral agency model has

recently attracted interest by explaining the inconsistency of results (Astrachan 2010). Nevertheless, the attempt is not consistent either (Cennamo et al. 2012; Saleem, Siddique and Ahmed 2020), nor is the prevalence prominent in rational decisions regarding emotions (Carlock, and Ward 2001; Memili, Singal and Barrédy 2016). Due to the inconsistency of previous work and the lack of evidence in emerging markets (Gomez-Mejia et al. 2020; Vazquez, Carrera, and Cornejo 2020), we consider the mobilization of agency cost theory relevant to this work.

The agency cost theory

Agency cost theory recommends the separation of ownership and management because of the conflict of interest that each party (principal and agent) pursues. Information asymmetry and limited rationality lead to the creation of contracts and agency costs for the firm (Jensen and Meckling 1976), which lead to opportunistic behavior, the misuse of corporate assets, or the undertaking of excessively risky projects (John and Senbet 1998). Consequently, a contract is proposed that structures the compensations of managers, or adequate monitoring implies the establishment of protection mechanisms for shareholders within respect to the owner-manager.

In family firms, agency costs are reduced or eliminated because ownership and management are in the same hands (Jensen and Meckling 1976). In these cases, the agency conflict concerns the controlling and minority shareholders (Young et al. 2008). It can reappear depending on the complexity, size, or ownership characteristics of the firm, sometimes to limit external financing (Demsetz 1983), to limit the entry of external managers, or due to the lack of strategic planning (Gomez-Mejia, Nunez-Nickel and Gutierrez 2001;

Bartholomeusz and Tanewski 2006; Tetteh et al. 2022). Fama and Jensen (1983) predict utility as a cause of agency costs reduction or as a cause of long-term managerial perspective (Harvey 1999). However, the evidence is mixed, as Sciascia and Mazzola (2008) and Harjoto, Santoso and McGowan Jr. (2021) found a negative relationship.

Moreover, scholars have recently pointed to the challenge in emerging markets, where agency costs increase due to the concentration of power in the family firms and the weakness of the institutional context (Young et al. 2008). As a results, powerful families control different business groups through crossholdings; therefore, their decisions are focused on maximizing family wealth at the expense of minority investors.

Corporate governance and value creation in family firms

CG in family firms faces important structural challenges and plays a central role in strategic decisions due to its familial nature and the multiple interventions of its members (Bammens, Win Voordeckers and Van Gils 2011; Gersick and Feliu 2014; Jara et al. 2019). The studies carried out in this regard follow one of the two most recurrent perspectives. The first considers that the predominance of the family participation in CG facilitates the alignment of long-term business objectives in exchange for greater risk aversion, reduces the opportunistic behavior of agents, and avoids costs due to the unnecessary separation of decision control and management (DeAngelo and DeAngelo 2000; Che and Langli 2015; Visintin, Pittino and Minichilli 2017). In the context of agency cost theory, owner-managers adopt a collective attitude to information asymmetry, foregoing their self-interested tendencies for the common family good (Meier and Schier 2016). The second argues that the

constitution of a heterogeneous CG privileges the economic interest of the firm in the short run (Anderson and Reeb 2003; De Massis et al. 2013; Jara et al. 2019), exerts a positive effect on the VC through innovation (Napoli 2012), and avoids the expropriation of wealth from external investors (Arosa, Iturralde and Maseda. 2010).

VC is the measure of the productivity of the resources invested in a business to ensure its sustainability and growth (García 2009).

Beyond the perspective, according to Bartholomeusz and Tanewski (2006), if families in family firms can obtain benefits through means that are not shared with other non-family shareholders, their actions may not be consistent with maximizing the firm's VC. For Barclay and Holderness (1989), the value of the firm is reduced with a high concentration of power and family involvement. Either the family firms may underperform, or the CG may fail to mitigate the negative effects of principal-principal agency problems (Schulze, Lubatkin and Dino 2003). The above may be of concern for emerging economies, as the complexity of their competitive and globalized scenario, as well as the high level of uncertainty, influence the way a firm is organized.

The literature review showed that a better CG in family firms is highly correlated with a better market valuation (Fauzi and Locke 2012), even in countries with a weak legal environment (Klapper and Love 2004; Durnev and Kim 2005). However, it is still necessary to improve the empirical research (Mazzi 2011; Memili, Fang and Welsh 2015; Bodolica, Dupuis and Spraggon 2020; Martínez-Romero, Rojo-Ramírez and Casado-Belmonte 2020) in emerging economies, such as in the case of Latin America in general, and, particularly, in Mexico.

Corporate governance mechanisms and hypotheses

Good CG "must provide appropriate incentives to the board of directors and the governing body to pursue objectives that serve the interests of the company and its shareholders, in addition to facilitating effective supervision" (OCDE 2004, 11). CG is organized into mechanisms and follows certain principles. The mechanisms of the principals include the board of directors (board size, inside and outside directors), board committees (audit, compensation, and nomination), and the chief executive officer (CEO)—duality or separation, board meetings, and shareholders.

The board of directors is one of the most important governance elements (Houle 1989; Carver 1990) with the function of aligning the interests of managers and shareholders (Voordeckers, Van Gils, and Van den Heuvel 2007) through monitoring, controlling, and advising on making decisions (Fama and Jensen 1983; Forbes and Milliken 1999; Gómez-Betancourt, Zapata-Cuervo and Betancourt-Ramírez 2016). The literature focuses on the importance of the firm size (Yermack 1996; Eisenberg, Sundgren and Wells 1998; Dalton et al. 1999) and firm composition (Anderson and Reeb 2004). To date, the influence of other mechanisms, and board committees, such as audit, nominating, and compensation committees, has been little studied (Bodolica, Dupuis, and Spraggon 2020).

The objective of this work is to determine whether CG control mechanisms had a significant positive impact on the VC of Mexican family firms listed on the Bolsa Mexicana de Valores (BMV, Mexican Stock Exchange) during the years 2012-2018. CG mechanisms are related to size, composition, independence, and qualitative characteristics of the company. The VC is defined as a measure of the productivity

of the resources committed to a business to ensure its permanence and growth (García 2009). In addition, the family firms is considered a business in which the members of a family group hold the majority of the shares and actively participate in its management and direction (Dinh and Calabrò 2019).

Regarding VC, the most frequently used indicator is Return On Assets (ROA) (Williams 2018; Bodolica, Dupuis and Spraggon 2020). Based on market information, we find the Tobin Q indicator (Molina, Botero and Montoya 2017). Another indicator used is the Market-To-Book (MTB) (Randoy, Dibrell and Craig 2009; Pucheta-Martínez 2015). The MTB indicator measures the market's (shareholders') expectations regarding the firm's ability to generate wealth for its shareholders in the long term (Shan and McIver 2011; Wahla, Ali Shah and Hussain 2012) or to determine the level of profitability (Penman 1996). In this paper, the VC mobilizes ROA and MTB indicators.

Board size

Family firms have large boards (Gersick and Feliu 2014). Although for some authors, the relationship between board size and VC is positive (Swamy 2011; Fauzi and Locke 2012; Yasser, Al Mamun and Seamer 2017), the studies are inconclusive. For Pucheta-Martínez (2015), the relationship is positive up to a certain point; the increase of one additional board member decreases VC. Other studies show a negative relationship (Yermack 1996; Eisenberg, Sundgren and Wells 1998; De Andres, Azofra and Lopez 2005; Koji, Bishnu and Le Tram 2020).

Based on the review of the previous literature, the following hypothesis are formulated:

H1: The size of the board of directors positively influences the VC of the family firms.

Board independence

In family firms, the literature is not categorical regarding board independence and VC (Bodolica, Dupuis and Spraggon 2020). Some authors report a positive relationship (Swamy 2011; Jara et al. 2019), others a negative relationship (Klein, Shapiro and Young 2005; Martinez, Stöhr and Quiroga 2007; Setia-Atmaja, Tanewski and Skully 2009; Pucheta-Martínez 2015), or even a non-significant relationship (Culasso et al. 2012; Rouyer 2016; Yasser, Al Mamun and Seamer 2017). Che and Langli (2015) show the importance of three conditions: a higher proportion of family members on the board, stronger family power, and smaller boards. According to Jara et al. (2019), it depends on the distribution of power among several large shareholders. Other authors report a U-shaped relationship (Che and Langli 2015) or a concave relationship, where the optimal level of board independence is 38 percent (Chen and Nowland 2010). Too little board monitoring encourages expropriation, while too much supervision wastes resources (Chen and Nowland 2010).

Therefore, the hypothesis is as follows:

H2: The participation of independent directors positively influences the VC of the family firms.

Duality of the CEO

The duality of the CEO refers to that of the person who occupies the highest executive position in the company and who is also the highest representative of the board of directors (Fernández, Rodríguez and Ruiz 2007). For family firms, the participation of the owner in management, coupled with the scarce diversification of the directors and in interaction with other mechanisms, is the way to ensure effective decision-making, maximize family wealth, and limit agency costs (Nowland

2008; Lin and Chuang 2011; Siddik and Kabiraj 2016).

In some cases, CEO duality and other characteristics, such as board size and family affiliation, contribute to the optimal choice of a mix of financing instruments (Gill et al. 2012). The literature shows that duality can impair board and management effectiveness, monitoring, and consequently financial performance (Dahya, García and Van Bommel 2009; Christensen, Kent and Stewart 2010; Tuggle et al. 2010). Nowland (2008), and Chen and Nowland (2010) found that splitting the positions of chairman and CEO has a positive relationship with market value. Nevertheless, the threat of turnover ensures that CEOs act in the interests of shareholders (Brunello, Graziano and Parigi 2003). While Pucheta-Martínez (2015) considers that this duality does not affect VC, for Braun and Sharma (2007), the relationship is not direct but depends on the level of family ownership level, while for Goh, Rasli and Khan (2014), family owners do not use CEO duality to weaken the control of non-dominant large shareholders, although they prioritize firm control to protect family interests.

Based on the previous findings, the hypothesis is as follows:

H3: CEO duality has a positive effect on family firms VC.

Audit committee size

The audit committee monitors both the principal's role in financial performance and financial reporting. Lack of oversight allows large investors to take advantage of minority shareholders in the form of earned profits, special dividends, or excessive compensation (DeAngelo and DeAngelo 2000; Faccio, Lang and Young 2001). The monitoring function prevents managerial opportunism, such as the

presentation of fraudulent financial information (Suyono 2016). A larger, independent, expert, and active audit committee is expected to exhibit better monitoring. For Karamanou and Vafeas (2005), size has an important effect on monitoring.

According to Siddik and Kabiraj (2016), an audit committee usually consist at least three members; typically, it has four to five members. Suyono (2016) and Klein (2002) find a related negative effect between audit committee size and VC. Typically, two-thirds of the members are external auditors to indicate the of the independence committee. The audit committee has a positive relationship with market value (Chen and Nowland 2010; Swamy 2011; Siddik and Kabiraj 2016).

The hypothesis is as follows:

H4: The size of the audit committee positively affects the VC of FF.

The Latin American Economy: The Emerging Mexican Context

In Mexico, 83 percent of business can be considered family businesses, and the CEO is also the founder (39 percent of businesses are more than 20 years old; 28 percent are between 19 and 10 years old; 19 percent are between nine and five years old; 14 percent are less than four years old) (San Martín and Durán 2017). The study was conducted in large firms (more than 250 employees) that are listed in the BMV. This type of firms represents only 0.2 percent of the total number of firms in the country. Nevertheless, they are an important source of employment, accounting for 31.6 percent of the total, and generate 47.8 percent of total revenues (INEGI 2020).

As a size of the business increases, family ownership decreases. In general, 21 percent of cases have a board of directors, and 15 percent

have a shareholders' committee. Some authors believe that these businesses lack professionalization and that decisions are highly concentrated in the hands of the Chief executive officer (CEO). According to the existence of a board of directors, in many cases it is considered "mandatory" and is imposed by the Code of Best Corporate Practices, while the absence of the shareholders' committee is explained by the high level of ownership concentration (Ferron et al. 2016).

Mexican family firms have a high ownership concentration, with the founder or family members holding more than 50 percent of the ownership. In large firms, 53 percent of directors or executives are also directors or relatives of executives of other firms in the same group (Husted and Serrano 2002). The chairman of the board is usually the main shareholder and CEO (Castañeda 2000). Although 20 percent of the firms have outside members, this does not imply independence because the firms are interrelated.

The Mexican corporate system has much more in common with European or Latin-American models (San Martín and Duran 2017) than with the Anglo-Saxon one in terms of professional management and specialized control. CG is regulated by the Code of Best Corporate Practices (CMPC)¹ created by the Business Coordinating Council and inspired by the provisions of the OCDE (2004). This code establishes the recommendations for all trading companies of the BMV.² These recommendations highlight the characteristics of their governance mechanisms for effective performance. Consequently, it is recommended that the Board of Directors be composed of a

¹ See: <http://cce.org.mx/comitedegobiernocorporativo>,

² Including medium and large companies, whose annual sales are in excess of 5.01 billion U.S. dollars (DOF 2009).

number between 3 and 15 directors (in practice, there are 9). It is recommended that independent directors represent at least 25 percent of the total members. It is also recommended that the Chairman of the Board and the Chief Executive Officer (CEO) should be different individual in order to limit conflicts of interest. It is recommended that the audit committee be composed of at least three independent directors (BMV 2018a).

In Latin American economies, especially in Mexico, the level of legal or regulatory weakness, the uncertainty or instability of market conditions, and the concentration of power can modify the dynamics and impact of CG. In addition, the lack of evidence in emerging economies can limit the VC of family firms from CG. It is important to verify or contrast the results with studies.

Methodology

The present study is descriptive, exploratory, and causal, and is conducted through a panel data econometric study. This technique was chosen because it allows us to study the dynamics of change within short time series and with repeated observations of sufficient cross-sections. In the field of family firms research, mainly in economics and finance, panel data analysis is widely used to study the behavior of several micro and macroeconomic

variables over a period. For this purpose, a sample of Mexican family firms listed in the BMV capital market (stocks) from the years 2012-2018 was used. The selected period was characterized by its stability (before the COVID-19 crisis). The data source used to extract financial information from the companies was Economática. The information on family ownership and the CG of the sample used was obtained from the annual reports of the companies published by the BMV on its website (BMV 2018b) for the aforementioned period. Financial and "non-profit" companies were excluded due to their characteristics. Initially, 79 family firms were identified from the annual reports, based on the fact that the majority of shareholdings were under one family name and that one or more members of the said family participated in the board of directors or in the management of the company. Thus, 12 companies were eliminated because they did not provide sufficient financial information for the study. The 67 family firms (469 observations) that make up the final sample (see Table 1) are representative of the different economic sectors in which they participate, based on the central limit theorem (Esparza and Soto 2019). The panel data are incomplete, as some firms stopped trading and others started trading during the study period. However, the estimates of models with incomplete panel data are as reliable as those with complete data panels (Arellano 2003).

Econometric model

To carry out this work, econometric models using panel data were used. One of the advantages of this model is its flexibility in analyzing the differences between the behavior that could exist among the different firms, instead of being limited to a cross-sectional analysis. With the model established and presented below, the impact of CG control mechanisms on the VC of FF listed on the BMV

TABLE 1. THE SAMPLE USED BY SECTOR OF ECONOMIC ACTIVITY

Sector	Family firm	%
Industrial	14	21
Materials	18	27
Common consumer products	17	25
Health	3	4
Telecommunications services	6	9
Non-basic consumer goods and services	9	13
Total	67	100

Source: Own elaboration based on information from the BMV website.

during the period from 2012-2018 was analyzed, taking into account certain control variables, such as size, age, debt, and risk of insolvency. The estimations of the models were carried out using the statistical program Gretl and Eviews.

$$VCE_{it} = \beta_0 + \beta_1 SBD_{it} + \beta_2 TID_{it} + \beta_3 SAC_{it} + \beta_4 DPCEO_{it} + \beta_5 SIZE_{it} + \beta_6 AGE_{it} + \beta_7 DEBT_{it} + \beta_8 RISK_{it} + \epsilon_{it}$$

Where $i=1, 2, 3...67$ family firms and $t=2012$ until 2018.

Variables

Dependent

Two very important variables were used to measure the firm's VC: the market-To-book indicator (MTB) indicator, and the return on assets (ROA) indicator.

MTB. The Market-To-Book indicator is used to indicate how much capital investors pay for each Mexican peso in the family firms net assets. This variable consists of the market capitalization of the firm between the net book value (total assets minus total liabilities). This measure has been used in other studies (Randoy, Dibrell and Craig 2009; Goh, Rasli and Khan 2014).

ROA. Economic profitability was calculated using the coefficient of earnings before interest and taxes to total assets and represents what investors receive in earnings before interest and taxes on total assets (Nowland 2008; Huang 2010).

Independent variables

SBD. The size is measured by the logarithm of the number of regular, independent, and related directors (Suyono 2016; Esparza and Soto 2019).

TID. Represents the number of Total Independent Directors among the total number

of directors comprising the board (Suyono 2016; Esparza and Soto 2019).

SAC. The size of the audit committee is measured by the logarithm of the number of members (Suyono 2016; Esparza and Soto 2019).

DPCEO. Duality in the chairmanship of the board of directors and the CEO (Huang 2010; Esparza and Soto 2019). This dummy variable takes the value of 1 if there is duality and 0 otherwise.

Control variables

SIZE. This variable represents the size of the family firms measured by the logarithm of total assets (Zott and Amit 2008; Watkins 2018). Larger firms are more efficient than smaller ones.

AGE. This is measured by the logarithm of the number of years the firm has been in operation since its started.

DEBT. These variable measures the inDEBTedness of the firm, taking into account the total debt to total assets.

RISK. This variable represents the insolvency risk of the family firms measured through the Altman modified Z-score (Altman 2000; Esparza and Soto 2019). An indicator greater than 2.9 indicates that the firm does not have financial insolvency problems.

Statistical estimation method

The two econometric estimations consider that the intersections and slopes are common among the firms studied. These intersections must vary between each firm and each period due to their own characteristics. As a first step, it was decided to run two panel data models with the variables MTB and ROA. The second step was to analyze the appropriateness of using fixed effects or random effects in the

estimation of the models was analyzed. For this purpose, the Hausman test was used, which contrasts the specification with the orthogonality of the fixed and random effects, the results of which favored the fixed effects model (MTB: $p = \text{prob}(\text{chi-square}(8) > 189,636) = 9.71291e-037$; ROA: $p = \text{prob}(\text{chi-square}(8) > 69.4057) = 6.4528e-012$). The presence of cross-sectional heteroscedasticity was then analyzed using the Lagrange multiplier. To avoid the presence of this effect and errors in inference, the White (1980) model was

estimated (MTB: $p = \text{prob}(\text{Chi-square}(43) > 198.934968) = 0.000000$; ROA: $p = \text{prob}(\text{Chi-square}(43) > 369.760549) = 0.000000$), with the presence of this effect corrected using robust standard errors. The presence of autocorrelation was also analyzed using the Durbin-Watson test (MTB: 0.297786, $R^2 = 15\%$; ROA: 1.057098, $R^2 = 49\%$). To correct this effect, the AR(1) test of serial autocorrelation of order 1 was used, as well as the ion of securities lagged by one period (t-1). Finally, as shown in Table 2, to determine the presence of multicollinearity among the variables, analysis was performed using the Variance Inflation Factor (VIF); the largest VIF is not greater than 1.986

TABLE 2. VARIANCE INFLATION FACTOR (VIF)

Variable	VIF
SDB	1.312
TID	1.056
SAC	1.088
DPCEO	1.052
SIZE	1.268
AGE	1.035
DEBT	1.964
RISK	1.986

Source: Own elaboration.

Results

The research question that frames this study is how CG mechanisms (board size, independent directors, CEO duality, and audit committee size) positively affect the VC of the family firms. To answer this question, we conducted an econometric study of Mexican family firms

TABLE 3. DESCRIPTIVE STATISTICS

Continuous variable	N	Mean	Standard deviation	Minimum	Maximum
MTB	464	2.43	2.47	0.25	18.55
ROA	462	0.11	0.17	-0.11	1.96
SBD	469	2.40	0.32	1.39	3.09
TID	469	0.46	0.15	0.15	0.88
SAC	469	0.37	0.48	0.00	1.00
SIZE	464	17.27	1.45	14.08	21.14
AGE	469	3.44	0.65	0.00	4.53
DEBT	464	0.52	0.19	0.14	0.98
RISK	460	3.09	2.29	-2.50	14.47
Dummy variable	% (0)	% (1)			
DPCEO	63.3	37.7			

Source: Own elaboration.

listed on the capital market during a period of stability before the COVID-19 crisis.

The descriptive statistics of the variables of the listed family firms are estimated in the following table. As shown in Table 3, the

average MTB indicator remained above 2.4 points throughout the 7 years of the study. The average ROA is 11% for the same period. The participation of independent directors is 46% on average. Similarly, debt represents 52% of total assets. It can be observed that the

TABLE 4. PEARSON CORRELATION ANALYSIS

Variables	MTB	ROA	SDB	TID	SAC	DPCEO	SIZE	AGE	DEBT
ROA	.192**	-							
SDB	0.078	0.066	-						
TID	-0.084	-.103*	-.158**	-					
SAC	0.026	-0.03	.233**	-0.072	-				
DPCEO	-.134**	0.044	-0.026	0.088	0.023	-			
SIZE	.113*	0.079	.408**	-0.025	.215**	-0.054	-		
AGE	0.023	0.051	0.026	0.009	0.076	0.077	0.089	-	
DEBT	.252**	0.039	.181**	-.118*	0.02	.146**	.149**	-.093*	-
RISK	-0.037	.524**	-.245**	0.054	-0.033	-0.087	-.213**	0.086	-.688**

** The correlation is significant at the 0.01 level (bilateral).

* The correlation is significant at the 0.05 level (bilateral).

Source: Own elaboration.

insolvency risk is above 2.9, which means that, on average, family firms are financially healthy.

In the correlation analysis presented in Table 4, it can be observed whether the variables studied are related or not, as well as the type of relationship indicated by the respective sign. It can be seen that some of the relationships between the two variables yielded significant data, both positive and negative.

The estimated parameters and statistical tests for Model I are presented in Table 5, and, as can be seen, the AR(1) test for serial autocorrelation of order 1 rejects the null hypothesis of non-autocorrelation at a significance level of 0.01. This explains that if there was an autocorrelation problem, it has

already been corrected. In general, the results of the estimations show that three of the CG mechanisms have an impact on family firms VC, as measured by the MTB indicator.

As can be seen in the previous table, the results confirm a positive and significant relationship between the board size (SBD), total independent director (TID) participation, and CEO duality (DPCEO) with the market-to-book (MTB) indicator. This is consistent with the results found by Fauzi and Locke (2012), Siddik and Kabiraj (2016), Suyono (2016), Voordeckers, Van Gils and Van den Heuvel (2007), respectively. Therefore, hypotheses H1, H2, and H3 can be tested. Regarding the control variables, positive and significant relationships

TABLE 5. REGRESSION WITH FIXED EFFECTS AND ROBUST STANDARD-ERROR CORRECTION MODEL I (MARKET-TO-BOOK)

Variable	Coefficient	Estándar error	Statistical t	Probab:
C	27.6492	2.4487	11.2915	0.000
SDB	0.5111	0.1868	2.7358	0.006
TID	0.3555	0.1504	2.3640	0.018
SAC	-0.0352	0.1650	-0.2133	0.831
DPCEO	0.1310	0.0503	2.6061	0.009
SIZE	-1.6085	0.1259	-12.7779	0.000
AGE	-0.3878	0.3503	-1.1071	0.269
DEBT	4.5985	0.4112	11.1830	0.000
RISK	0.0473	0.0154	3.0743	0.002

Dependent variable: MTB

R²: 93.3 %

R² adjusted: 91.7 %

F-statistic: 58.61

AR(1), prob.: 0.0000

Source: Own elaboration.

TABLE 6. REGRESSION WITH FIXED EFFECTS AND ROBUST STANDARD-ERROR CORRECTION MODEL II (ROA)

Variable	Coefficient	Standard error	Statistical t	Probability
C	0.1516	0.2285	0.6634	0.5076
SBD-1	0.0320	0.0200	1.6006	0.1105
TID-1	0.2564	0.0797	3.2191	0.0014
SAC	-0.0748	0.0158	-4.7332	0.0000
DPCEO	0.0333	0.0151	2.2071	0.0280
SIZE	-0.0815	0.0127	-6.4233	0.0000
AGE	0.0843	0.0236	3.5723	0.0004
DEBT	1.1528	0.1820	6.3336	0.0000
RISK	0.1150	0.0131	8.7612	0.0000

Dependent variable: ROA

R²: 87.0 %

R² adjusted: 83.8 %

F-statistic: 26.67

Durbin-Watson: 1.7

Source: Own elaboration.

were also found between size (SIZE), age (AGE), indebtedness (DEBT), and insolvency risk (RISK) with the VC (MTB) of the family firms.

Table 6 presents the results considering the ROA variable. Lagged values (t-1) were used in two variables to observe the lagged effect of these variables on the endogenous one, and robust standard-error tests were used to overcome the problem of heteroskedasticity. In general, the results of the estimations showed that three of the CG mechanisms exerted an influence on FF's VC as measured by the ROA indicator.

The results of the previous table show a positive and significant relationship between

total independent director participation (TID), CEO duality (DPCEO), and VC (ROA). This is consistent with the findings of Voordeckers, Van Gils and Van den Heuvel (2007) and Siddik and Kabiraj (2016). Therefore, hypotheses H2 and H3 are accepted. The size of the audit committee (SAC) shows a negative and significant relationship with ROA; therefore, hypothesis H4 was rejected. The control variables revealed positive and significant relationships between size (SIZE), age (AGE), indebtedness (DEBT), and insolvency risk (RISK) with FF VC (ROA).

The following table summarizes the regressions with fixed effects and robust standard-error correction for Model I (MTB) and Model II

TABLE 7. SUMMARY OF RESULTS

Variable	MTB		ROA	
	Coefficient	Probability	Coefficient	Probability
C	27.6492	0.0000	0.1516	0.5076
SDB / SDB-1	0.5111	0.0066	0.0320	0.1105
TID / TD-1	0.3555	0.0187	0.2564	0.0014
SAC	-0.0352	0.8313	-0.0748	0.0000
DPCEO	0.1310	0.0096	0.0333	0.0280
SIZE	-1.6085	0.0000	-0.0815	0.0000
AGE	-0.3878	0.2691	0.0843	0.0004
DEBT	4.5985	0.0000	1.1528	0.0000
RISK	0.0473	0.0023	0.1150	0.0000

Source: Own elaboration.

Discussion

This study contributes empirical evidence on the effect of CG mechanisms exert on the VC of Mexican listed family firms. It also contributes to the state-of-the-art and is of greater importance when considering that this topic has been poorly studied in emerging economies.

In family firms, the SBD is of great importance to achieve effectiveness between it and the VC.

Therefore, a larger board size can influence the quality of the discussion between family and non-family members and the ability to reach optimal corporate financial decisions for the firm. However, determining the ideal size of the board has been an ongoing and controversial debate in the CG literature (Eisenberg, Sundgren and Wells 1998; Pucheta-Martínez 2015). According to the previous literature, several studies (Yermack 1996; Eisenberg, Sundgren and Wells 1998; De Andres, Azofra

and Lopez 2005; Swamy 2011; Fauzi and Locke 2012; Pucheta-Martínez 2015; Yasser, Al Mamun and Seamer 2017) confirm a variety of results regarding SBD and VC. Nevertheless, the efficiency of SBD can be understood under the argument that the more efficient the SBD is in performing its functions, the better the firm will be managed, which will lead to greater VC of the family firms. Therefore, the results of this study confirm a positive and significant relationship between the SBD size and VC. This is consistent with the findings of Swamy (2011), Fauzi and Locke (2012), and Yasser, Al Mamun and Seamer (2017).

Regarding the participation of independent directors, the results obtained in this study are consistent with Swamy (2011) and suggest that these directors have a clearer or more objective vision of the firm; therefore, they may have better decision-making than the other directors as long as they can perform the financial monitoring function more efficiently. In the family firms, the family may include independent directors in the SBD to take advantage of their knowledge and experience. According to agency theory (Jensen and Meckling 1976), the presence of independent directors will reduce the conflict of interest between family members and senior management, which could help to achieve better supervision or monitoring for the family firms to achieve a higher VC.

The results of this study show that the SAC has a negative and significant relationship with the VC of the family firms, as found by Klein (2002) and Suyono (2016). This hypothesis was not supported according to the agency theory, because the results found could explain that the presence of the audit committee in the family firms listed on the Mexican market has not yet managed to optimize its monitoring function in the establishment and follow-up of the internal

control system, nor in ensuring accountability, mainly in terms of acting for the benefit of shareholder interests and improving the firm's financial performance. This could be explained by the low variability of the independent variable (the recommended number of audit committee members is 3), which makes it difficult to capture the real impact of this variable on the firm's performance. The foregoing indicates that there is no clear conclusion on the effect of the number of members of this committee.

From the perspective of agency theory, CEO duality can create an imbalance in the distribution of corporate power since a large concentration of control and management resides in a single person who could jeopardize the effectiveness of the board of directors and financial decision-making. However, in family firms, this duality can help achieve better financial performance (Anderson and Reeb 2003; George, Wiklund and Zahra 2005; Maury 2006; Braun and Sharma 2007; Siddik and Kabiraj 2016; Watkins 2018) because the interests of the CEO are subordinated to the interests of the family, the firms are more conservative, less risky, and financially healthier (McConaughy, Matthews and Fialko 2001; Watkins 2018; Esparza and Soto 2019). The results of this study show that CEO duality has a positive and significant relationship with the VC of the family firms, as found by Nowland (2008) and Chen and Nowland (2010).

These findings are consistent with the notion that in emerging markets can partially compensate for the negative characteristics of their environment by establishing good CG, efficient governance practices, and providing credible investor protection (Klapper and Love 2004; Durnev and Kim 2005). These findings highlight academic and practitioner implications for designing and implementing an optimal governance system that can enhance firm value.

Conclusions

This research focused on determining whether the CG mechanisms significantly and positively influenced the VC of the family firms listed in the BMV during the years 2012-2018. With the results obtained, the objective of the research was achieved. It is relevant to mention that there is little empirical evidence regarding on CG and the VC for family firms in Mexico with its emerging economy.

The results of this study have important academic implications. First, according to the theoretical premise, the existence of CG mechanisms in place generally leads to good financial performance and, therefore, VC has been shown to be effective worldwide. However, this study is one of the few to addresses this issue with respect to listed family firms in Mexico, an emerging market economy. Second, our results contribute to the growing literature on agency problems within family firms. Third, this study contributes to the empirical literature on CG mechanisms in family firms within an understudied region that has gained importance in the global economy. Within the implications for practitioners, family firms are generally treated as a single entity, ignoring how families can influence governance decisions. This study shows how family participants affects governance and financial decisions, and how it depends to a large extent on the different ways in which families participate in firms.

A relevant recommendation of this work is that family firms should implement, as part of the CG mechanisms, the family protocol, which allows them to establish all the rules that the family that owns a company must follow to avoid common conflicts, such as evaluating and compensating family members, making decisions, avoiding conflicts of interest, establishing policies on dividends and profits,

hiring family members and shareholders, managing related parties, as well as creating internal communication mechanisms.

A limitation of this work is that it focuses on Mexican family firms listed on the stock market exchange from 2012-2018. Thus, the effects of CG mechanisms and their relationship with the VC of family-owned firms have not been evaluated in different economic and cultural contexts, nor were they compared with non-family-owned firms. Another limitation is the lack of timely availability of annual information or qualitative characteristics, such as family and non-family shareholders, directors, managers, generations, or successors. This means that some control variables weren't included in the analysis, such as the percentages of ownership in family hands, family members on the board of directors, or family members on the management team.

As future lines of research, comparative studies can be conducted between family- and non-family-owned firms, among countries with emerging economies, including other CG mechanisms, such as the various committees that support the board of directors, or the number of annual meetings of this governing body, the quality of the work of the audit committee (number of meetings per year), the equality of participation, the participation of women, the succession plan, the family generation, the family CEO, and financial indicators such as the Tobin Q model, EVA, and ROE, among others, as well as the mobilization or combination of different theoretical perspectives to improve the explanatory power or to enrich the VC variable according to the nature of the family. The results can be influenced by cultural factors, so comparative research between countries can be relevant.

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