Título:

Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

Mesa:

Finanzas y Economía

Lugar y fecha del evento:

EGADE del Tecnológico de Monterrey,
San Pedro Garza García, Nuevo León, México Abril 2010

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Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

This study investigates the relation between financial performance and ownership structure in Mexican public companies. The conclusions suggest that there is not a difference between family and non-family business regarding their financial performance (measured by ROA and Tobin’s Q). Moreover, Mexican public family business without a family member CEO have a better financial performance “ROA” (1%) than family business with a family business CEO. Regarding the Tobin’s Q there is not a difference between family and non-family business. Finally, there is not a difference between financial performance and the company’s age (ROA and Tobin’s Q). Overall our results are contradictory to our hypothesis; suggesting that the ownership structure of Mexican public companies does not affect their financial performance.

Key words: Finance, Corporate Governance, Family Business
INTRODUCTION

According to Blondel (2005) family businesses represent more than 75% of the companies in most economies, which has motivated different authors to analyze this topic. The objective of this study is to analyze the financial performance of Mexican public family and non-family businesses in order to discover if a relationship among its financial performance and ownership structure exists. According to Whyte (1996) there is a specific need to study family businesses in emerging countries since they are considered the “engine” of the economy; even though there are studies under this research line in different countries, there has not been find any study developed in Mexico. This study pretends to answer the following questions: 1) does Mexican public family businesses have a better financial performance than non-family businesses?; 2) does Mexican public family businesses with a family member CEO have a better financial performance than those family businesses without a family member CEO?; and 3) does Mexican public companies have a better financial performance if they are over 50 years old?. The scope of this analysis is limited to the Mexican public companies with available information which were listed continuously on the Mexican Stock Exchange (BMV) between 1996 and 2008.

The study is divided in five sections: the first one, defines the concept of family business, presents its relevant characteristics and provides Mexico’s business environment; the second one, presents a literature review in order to understand the most relevant studies under this research line; the third section, formulates the hypothesis and describes the methodology used; the fourth one, presents the analysis and interpretation of the results; and finally, the fifth section, shows the discussion and conclusion of the results obtained, as well as further possible studies.
DEFINITION AND RELEVANT CHARACTERISTICS: FAMILY BUSINESSES

This section covers three different areas related with family business. First, several definitions of family business are discussed. Second, a family business advantages and disadvantages analysis is presented, in order to identify its relevant characteristics. And third, the Mexican business environment is described in order to understand the research context and support the interpretation of results.

Family Business Definition

The cultural and institutional differences of societies contribute to avoid the existence of a generalization of the concept of family business. On one hand, Carney (2005) believes it is critical that family members have control rights over the business assets in order to influence its decision making process. And Habbershon and Sharma (1999) define family business as a group of dominant family members that control and visualize the business throughout generations. On the other hand, Colli et al (2003) consider family business as that in which the CEO is a family member, the family control exists for at least two generations, and a minimum of five percent of the voting shares belong to the family. For Miller and Le Breton-Miller (2003), a family business is that in which the family has sufficient share ownership in order to determine the board of directors’ structure, in which the CEO and at least one of the directors is a family member. Therefore, for the purpose of this study, the family business concept is based in the definition provided by Carney (2005), who considers a family business as that in which the ownership concentration (shares percentage) of one or several family members is
significant enough to influence its decision making process, without setting a minimum limit for it\(^1\).

Relevant Characteristics of Family Business

In order to understand the relevant characteristics of family business (private and public) it is necessary to distinguish its advantages and disadvantages. According to Abati and Ocejo (2004), Carney (2005), Mishra et al (2001), and Martinez et al (2007) some of the advantages of family business are: 1) compromise and love to the business, in other words, the sense of belonging motivates its members to work together for the business to become competitive; 2) knowledge or *know-how* of the business, since the members of the family learn the strategies and ways of working of the business; 3) flexibility, since family members are willing to work the hours necessary to fulfill their commitments; 4) reliability and pride, since the company has been founded by a member of the family; 5) steady culture, because in some of these companies employees have worked a long time, and therefore are aware of the philosophy and way of operating; 6) quick decision making, as there is good communication between family members and no bureaucracy; 7) long-term planning, since it is desirable that the firm remains in the hands of future generations, and 8) low cost of debt financing due to reputation and prolonged presence of the family business.

According to Gedajlovic and Shapiro (1998) one of the main advantages of family business is monitoring the managers, since the agency conflicts are reduced and the value of the company is maximized. Jensen and Meckling (1976) suggest by the agency theory that the interests of the family and company managers are not the same. According to these authors, much of the performance of the

\(^1\) For instance, in 2000, 28\% of FEMSA’s shares were held by a family, while 9\% was held by a bank, and the remaining 63\% was diluted among the rest of the shareholders. This shows that although the percentage of shares held by the family is less than 51\% the decision making process is affected by this family, therefore, for the purpose of this study it is considered as a family business.
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Business depends on the family’s ability to effectively monitor and control managers. On one side, the family seeks to maximize profits, while on the other; the general managers have neither the interest nor the incentive to do so, since they are seeking strategies of personal interest. Moreover, Demsetz and Lehn (1987) report that concentrated ownership is associated with utility maximization.

Abati and Ocejo (2004), Martinez et al (2007) and Mishra et al (2001), mention the disadvantages of family business: 1) rigidity, as family business have a traditional way of management when facing changes in the market, there is resistance to change, 2) business challenges, due to technological obsolescence, product manufacturing, or marketing, 3) succession, since changes in leadership causes transition problems in the business as well as emotional problems in the family, 4) emotional conflicts, since there is a juxtaposition between the interests of the family and the business, 5) leadership and legitimacy, as leadership can become confusing in family businesses because of the lack of a succession planning, 6) lack of initial capital, thus needing to include more family members; 7) lack of management knowledge, often the CEO of the company do not have the education or experience enough to lead and manage; 8) nepotism and favoritism, a preference to appoint a relative as part of the company management, and 9) use the company’s resources as of themselves, since they have control of cash flows, they can profit at the expense of the firm performance.

Mexican Business Environment

According to Whyte (1996), there is generally a better financial performance in family businesses in emerging countries, since they are considered the “engine” of the economy. Similarly, Claessens et al (2002) argue that family businesses contribute to a significant proportion of the Gross Domestic Product (GDP) in emerging countries, since they are considered dynamic and versatile. Therefore, this project aims to analyze the performance of family businesses in Mexico.
The Mexican economy is the second largest in Latin America, and the third largest in America, after the United States and Brazil. According to the Central Intelligence Agency of the United States (2009) Mexico’s GDP, measured in purchasing power parity, in 2008 was 1.56 billion dollars, positioning the country in the 12th place worldwide; however, when compared to the GDP per capita, also in 2008, which is 14,200 dollars, the country is located in the 82nd place worldwide. The statistics show that although the country generates wealth, it is not enough in comparison to its population.

The Mexican Stock Exchange (2009) is the only stock exchange in Mexico; and in 2009, 130 companies listed on it, representing a 0.0043 percent of the total companies in the country. The literature shows that the amount of public companies in Mexico is not as high as in other emerging countries due to the elevated costs of regulation and the listing fees (Moody, 2007). Finally, it is worth mentioning that when family businesses become public, their professionalism level increases, reducing their disadvantages, and improving their financial performance.

LITERATURE REVIEW: FAMILY AND NON-FAMILY BUSINESSES FINANCIAL PERFORMANCE

Several authors have analyzed the relation between financial performance and family businesses in different countries: developed and emerging countries. On one hand, there are several researches by Anderson and Reeb (2003), Mishra et al (2001), Martinez et al (2007) and Lauterbach and Vaninsky (1999) who analyzed the relationship among public companies of the United States, Norway, Chile and Israel, respectively. On the other, the studies of Westhead and Cowlings (1997), Gedajlovic and Shapiro (1998), and Smith (2008) analyzed the same relationship among private companies in the United Kingdom; the United States, the United Kingdom, Germany, Canada and France; and Australia, respectively.
Tables 1 and 2 show a comparison between the studies mentioned above regarding the relationship between the ownership structure and financial performance. Since each study considers a different definition of *family business*, the tables present a summary in which it uses four characteristics: 1) shares percentage, which refers to families who have enough controlling rights to influence the decision making process; 2) CEO, meaning that the CEO belongs to the family; 3) board members percentage, refers that a significant part of the board belongs to the family (in order to make decisions); and 4) perception of family business, meaning that the society perceives the company as familiar.

Table 1:
*Comparison of researches focused on public companies*

<table>
<thead>
<tr>
<th></th>
<th>Anderson and Reeb</th>
<th>Mishra et al</th>
<th>Martinez et al</th>
<th>Lauterbach and Vaninsky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of study</td>
<td>E.U.A.</td>
<td>Norway</td>
<td>Chile</td>
<td>Israel</td>
</tr>
<tr>
<td>Years of study</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Definition of Family Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares percentage</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
</tr>
<tr>
<td>CEO</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
</tr>
<tr>
<td>Board members percentage</td>
<td>Ok</td>
<td>Ok</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception of family business</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database</td>
<td>Standard and Poor’s 500</td>
<td>Oslo Stock Exchange</td>
<td>Santiago Stock Exchange</td>
<td>Tel Aviv Stock Exchange</td>
</tr>
<tr>
<td>Simple size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public companies</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
</tr>
<tr>
<td>Private companies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

<table>
<thead>
<tr>
<th>Number of companies analyzed</th>
<th>403</th>
<th>120</th>
<th>175</th>
<th>280</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family business (FB)</td>
<td>35%</td>
<td>44%</td>
<td>57%</td>
<td>37%</td>
</tr>
<tr>
<td>Non-family business (NFB)</td>
<td>65%</td>
<td>56%</td>
<td>43%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Financial performance indicator
- ROA: Ok  Ok  Ok  Ok
- ROE:       Ok           
- Tobin’s Q: Ok  Ok  Ok
- Income:    Ok
- Sales:

Conclusions
- FB better performance: Ok  Ok  Ok
- No relation between variables: Ok

Table 2:
*Comparison of researches focused on private companies*

<table>
<thead>
<tr>
<th></th>
<th>Westhead and Cowlings</th>
<th>Gedajlovic and Shapiro</th>
<th>Smith</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of study</td>
<td>UK</td>
<td>USA, UK, Germany, Canada and France</td>
<td>Australia</td>
</tr>
<tr>
<td>Years of study</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Definition of Family Business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares percentage</td>
<td>Ok</td>
<td>Ok</td>
<td>Ok</td>
</tr>
<tr>
<td>CEO</td>
<td></td>
<td></td>
<td>Ok</td>
</tr>
<tr>
<td>Board members percentage</td>
<td></td>
<td>Ok</td>
<td></td>
</tr>
<tr>
<td>Perception of family</td>
<td></td>
<td></td>
<td>Ok</td>
</tr>
<tr>
<td>business</td>
<td>Ok</td>
<td></td>
<td>Ok</td>
</tr>
</tbody>
</table>
Tables 1 and 2 show that even though all the studies mentioned analyzed the same variables: financial performance and property structure of the companies, the results are not comparable, since each research presents differences in: definition of family business, dependent and independent variables, sample type (public and private companies), and time periods. Therefore, it is difficult to generalize the relationship of these variables since the results obtained depend on the country in which the study was developed, and the factors mentioned above.

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2 USA: Disclosure-spectrum-ownership; UK: The european companies handbook; Germany: Commerzbank’s a guide to capital links in german companies; Canada: The financial post survey of industrials; and France: Dun and bradstreet’s france 30,000.
Finally, three out of the four studies analyzed agree that public family business have a better financial performance than non-family business. Regarding private family business the studies conclude that there is no significant relation between the structure of property and financial performance of companies. It is worth mentioning, that these studies include developed and emerging countries. Moreover, these results provide to the academia community the possibility for further studies to corroborate the current theories about family businesses.

HYPOTHESIS AND METHODOLOGY

This study pretends to analyze the same hypothesis proposed by some of the authors discussed earlier:

$H_1$: Mexican public family businesses have a better financial performance than Mexican public non-family businesses.

$H_2$: Mexican public family businesses with a family member CEO have a better financial performance than Mexican public family businesses without a family member CEO.

$H_3$: Mexican public companies have a better financial performance if they are over 50 years old.

There are two variables that are considered in order to measure the financial performance of Mexican public companies. First, return on assets (ROA) which establishes a relationship between net income and total assets of a company. And second, the Tobin’s Q which provides the relationship between the market value and the book value of a company (Financiero, 2009). Moreover, since the research analyzes the profitability of the companies through time, a longitudinal analysis is presented considering the time period of 1996 to 2008. Moreover, Economatica database was used in order to obtain the adjusted data (December
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31, 2008), in other words, they do not present seasonal trends and splits or dividend effects (Economatica, 2009).

The regression model used to measure the financial performance of the companies, considers two dependent variables: ROA and Tobin’s Q; and five independent variables: 1) a binary variable (FAM) which considers if the company is familiar (1) or non-familiar (0); 2) a binary variable (CEO) which considers if the CEO is a family member (1) or a non-family member (0); 3) a binary variable (AGE) which considers if the company is over 50 years old (1) or under 50 years old (0); 4) natural logarithm of total assets (LnAssets) to consider the company size; and 5) long term liabilities over total assets (LTL/Assets) to include the capital structure of the company. In other words:

\[ \text{Financial Performance (ROA / Tobin’s Q)} = \delta_0 + \delta_1 (\text{FAM}) + \delta_2 (\text{CEO}) + \delta_3 (\text{AGE}) + \delta_4 (\text{LnAssets}) + \delta_5 (\text{LTL/Assets}) + \varepsilon \]

There are 130 companies listed on the Mexican Stock Exchange (BMV) in 2009; from which 122 were constantly listed through 1996 to 2008. However, 82 of the group did not present all the requested information for this research or belonged to the financial sector, which we excluded from this analysis in order to avoid bias on the sample due to regulations. In order to classify the 40 companies left, according to their ownership structure (family or non-family business), the meeting minutes were analyzed from the BMV in Av. Paseo de la Reforma 225, Cuauhtemoc, Mexico City. Nevertheless, it was not possible to gather information from five companies; therefore, the final sample is composed by 35 companies, from which 24 are family businesses, and 11 non-family businesses. The companies with indirect family control, such as, trust funds or other associations with familiar ownership structure are considered in the group of family businesses.
For the purpose of this research, the 35 companies are denominated “sample size”; however, this is the population universe. In other words, in spite of having 24 family businesses and 11 non-familiar, the sample is unbiased since it was not randomly chosen, rather, it considers the total of companies with available information. Though, assuming that we had information of the entire population (122 companies), and that 35 were considered as the sample size, it is reliable to say that this size is enough to describe the performance of the entire population using the formula provided by Fernandez (1996) which calculates the sample size of a finite population. Using an estimated proportion of 50%, since according to the author this is the value used if the approximated value of this parameter is unknown; a precision of 15%, since according to Bartlett et al (2001) this value should be between 5 and 20%; and a confidence level of 95%, the minimum sample size must be 31 in order to obtain reliable results.

It is necessary to analyze the companies considered. Therefore, table 3 shows the 35 Mexican public companies grouped their industrial sector and ownership structure percentage. Table 3 demonstrates that Mexican public family businesses are the leaders within the different industrial sectors, with exception of the telecommunication services sector. In general, 68.6% of the public companies evaluated through 1996 to 2008 and considered for this study are familiar.

Table 3:
Amount and percentage of family business and non-family business by industrial sector

<table>
<thead>
<tr>
<th>Industrial Sector</th>
<th>Total</th>
<th>Familiar</th>
<th>Non-Familiar</th>
<th>% Familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>71.4%</td>
</tr>
<tr>
<td>Materials</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>80.0%</td>
</tr>
<tr>
<td>Frequently consumed products</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>55.5%</td>
</tr>
<tr>
<td>Telecommunications services</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>50.0%</td>
</tr>
<tr>
<td>Non-basic consumer goods and</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>71.4%</td>
</tr>
</tbody>
</table>
To complement this analysis, table 4 presents a more detailed classification of the sectors, by presenting the companies grouped according to their industrial sub-sector. The following table shows that family businesses dominate (in amount) the food and hotels, restaurants and entertainment sub-sectors. Moreover, dispersion is present since there are 22 sub-sectors and 35 companies under study.

<table>
<thead>
<tr>
<th>services</th>
<th>Total</th>
<th>35</th>
<th>24</th>
<th>11</th>
<th>68.6%</th>
</tr>
</thead>
</table>


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Table 4

*Amount and percentage of family business and non-family business by industrial sub-sector*

<table>
<thead>
<tr>
<th>Industrial Sub-sector</th>
<th>Total</th>
<th>Familiar</th>
<th>No Familiar</th>
<th>% Familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile components</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Beverages</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Building materials</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Building products</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Construction and engineering</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Controller</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Equipment and recreational and sports products</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Food</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>66.60%</td>
</tr>
<tr>
<td>Glass and plastic products</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Hotels, restaurants and entertainment</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Household and personal products</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Housing</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Manufacturing and marketing materials</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Media</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Metals and mining</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Multiline sales</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Shipping</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Supplies and commercial services</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Textile, clothing and luxury goods</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Various telecommunication services</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Wood and paper</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>24</td>
<td>11</td>
<td>68.6%</td>
</tr>
</tbody>
</table>
To continue analyzing the 35 companies, table 5 presents the means of the dependent and independent variables of the sample.

Table 5

*Differences in mean test: family and non-family business*

<table>
<thead>
<tr>
<th></th>
<th>Family</th>
<th>Non-Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>0.29</td>
<td>0.28</td>
</tr>
<tr>
<td>Ln Assets</td>
<td>16.56</td>
<td>16.29</td>
</tr>
<tr>
<td>LTL / Assets (%)</td>
<td>21.69</td>
<td>22.25</td>
</tr>
</tbody>
</table>

As can be seen in table 6, there is a minimum difference between the dependent variables, therefore this initial attempt to understand the relationship between variables is not reliable. Hence, it is necessary to develop an econometric model to prove the statistical difference or equality among the variables, in order to reach a reliable conclusion.

Table 6 provides the correlation between the independent variables. Most of them are positive correlations (negatives correlations are close to zero). However, there is a highlight in the correlation between the variables “FAM” and “CEO”. These results show that if a company is familiar, it is most likely to have a family member as their CEO. However, further proof is needed in order to conclude about its effects on the company’s financial performance.
Table 6:
Correlation between independent variables

<table>
<thead>
<tr>
<th></th>
<th>FAM</th>
<th>CEO</th>
<th>AGE</th>
<th>LnAssets</th>
<th>LTL / Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>1</td>
<td>0.74</td>
<td>-0.07</td>
<td>0.08</td>
<td>-0.05</td>
</tr>
<tr>
<td>CEO</td>
<td>0.74</td>
<td>1</td>
<td>0.00</td>
<td>0.16</td>
<td>0.06</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.07</td>
<td>0.00</td>
<td>1</td>
<td>0.28</td>
<td>0.03</td>
</tr>
<tr>
<td>LnAssets</td>
<td>0.08</td>
<td>0.16</td>
<td>0.28</td>
<td>1</td>
<td>0.28</td>
</tr>
<tr>
<td>LTL / Assets</td>
<td>-0.05</td>
<td>0.06</td>
<td>0.03</td>
<td>0.28</td>
<td>1</td>
</tr>
</tbody>
</table>

ANALYSIS AND INTERPRETATION OF CROSS-SECTION AND DATA PANEL MODELS

This section is divided in two phases. The first phase considers as a dependent variable the Return on Assets (ROA), while the second considers the Tobin’s Q. Both phases are analyzed by two regression models, the first one is the cross-section analysis in which a regression is developed per year (1996-2008); and the second one is a data panel analysis in which all years are considered in one single regression (EViews, 2009).

First Phase: ROA as the Dependent Variable

In this first analysis, a cross-section regression model is developed in order to measure the financial development in Mexican public companies in a specific period of time. Table 7 presents the 13 regressions developed in order to analyze the five independent variables per year.
Table 7:  
*Cross-section analysis with ROA as the dependent variable*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>Coef.</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
<td>-0.02</td>
<td>0.00</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.75</td>
<td>1.00</td>
<td>0.87</td>
<td>0.69</td>
<td>0.41</td>
<td>0.95</td>
<td>0.68</td>
<td>0.61</td>
<td>0.67</td>
<td>0.62</td>
<td>0.96</td>
<td>0.67</td>
</tr>
<tr>
<td>CEO</td>
<td>Coef.</td>
<td>-0.01</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.03</td>
<td>-0.05</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.86</td>
<td>0.97</td>
<td>0.22</td>
<td>0.63</td>
<td>0.82</td>
<td>0.71</td>
<td>0.45</td>
<td>0.17</td>
<td>0.30</td>
<td>0.31</td>
<td>0.25</td>
<td>0.19</td>
</tr>
<tr>
<td>AGE</td>
<td>Coef.</td>
<td>-0.02</td>
<td>-0.03</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.45</td>
<td>0.10</td>
<td>0.98</td>
<td>0.57</td>
<td>0.99</td>
<td>0.91</td>
<td>0.49</td>
<td>0.52</td>
<td>0.88</td>
<td>0.23</td>
<td>0.56</td>
<td>0.75</td>
</tr>
<tr>
<td>LnAssets</td>
<td>Coef.</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.57</td>
<td>0.18</td>
<td>0.39</td>
<td>0.79</td>
<td>0.40</td>
<td>0.35</td>
<td>0.30</td>
<td>0.31</td>
<td>0.00</td>
<td>0.02</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>LTL/Assets</td>
<td>Coef.</td>
<td>-0.16</td>
<td>-0.24</td>
<td>-0.22</td>
<td>-0.09</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.06</td>
<td>0.10</td>
<td>-0.19</td>
<td>-0.01</td>
<td>-0.07</td>
<td>-0.20</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.06</td>
<td>0.00</td>
<td>0.00</td>
<td>0.31</td>
<td>0.22</td>
<td>0.44</td>
<td>0.60</td>
<td>0.40</td>
<td>0.01</td>
<td>0.94</td>
<td>0.28</td>
<td>0.02</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td>0.21</td>
<td>0.37</td>
<td>0.47</td>
<td>0.06</td>
<td>0.13</td>
<td>0.04</td>
<td>0.10</td>
<td>0.16</td>
<td>0.40</td>
<td>0.27</td>
<td>0.32</td>
<td>0.37</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.79</td>
<td>1.74</td>
<td>2.87</td>
<td>2.40</td>
<td>2.71</td>
<td>2.61</td>
<td>2.36</td>
<td>2.13</td>
<td>2.07</td>
<td>1.85</td>
<td>2.35</td>
<td>3.07</td>
<td>3.21</td>
</tr>
</tbody>
</table>

Note. "0.00" values represent decimal numbers below 0.04

A 95% confidence level was used in order to determine the significance of the variables. As can be seen, the binary variables are not significant for any year. In contrast, the variables “LnAssets” and “LTL/Assets” are significant and not significant throughout the time period analyzed. Moreover, by experience, it is known that for cross-section regressions the R-squared value should be between 0.20 and 0.60. Table 7 presents six years in which the R-squared value is below the limit, therefore, further analysis is needed in order to conclude.
Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

The second regression model analyses the same criteria, but evaluates the information as a data panel. For this analysis, the 35 Mexican public companies are considered during the 13 years under study (1996-2008), in other words, there are 455 observations considered rather than 35. Table 8 shows the results obtained.

Table 8:
Data panel regression with ROA as the dependent variable

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>0.00</td>
<td>0.70</td>
</tr>
<tr>
<td>CEO</td>
<td>-0.03</td>
<td>0.00</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.01</td>
<td>0.13</td>
</tr>
<tr>
<td>LnAssets</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>LTL / Assets</td>
<td>-0.08</td>
<td>0.00</td>
</tr>
</tbody>
</table>

R-squared 0.07
Durbin-Watson 0.87

Note. “0.00” values represent decimal numbers below 0.04

As can be seen in Table 8, only CEO, LnAssets and LTL/Assets are significant. However, for data panel regressions, the R-squared value should be between 0.20 and 0.80; and this model only explains 7% of the ROA. Moreover, the model has a non-acceptable Durbin-Watson value, since it is lower than the value obtained from tables (1.79), which means that the model has an
autocorrelation problem. Therefore, there is a need to modify the model by introducing: 1) the first order autoregressive error model “AR(1)”, which takes correlated errors into account when constructing an econometric model, and 2) the autoregressive-distributed lag “ARDL”, which takes the flexibility and parsimony of model into account. Table 9 presents the results of the modified model.

Table 9: 
Data panel regression AR(1) and ARDL with ROA as the dependent variable

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>0.01</td>
<td>0.43</td>
</tr>
<tr>
<td>CEO</td>
<td>-0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>AGE</td>
<td>0.01</td>
<td>0.67</td>
</tr>
<tr>
<td>LnAssets</td>
<td>0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>LTL / Assets</td>
<td>-0.01</td>
<td>0.56</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.39</td>
<td></td>
</tr>
</tbody>
</table>

Note. “0.00” values represent decimal numbers below 0.04

Table 9 shows that the variables FAM, AGE and LTL/Assets are not significant. Therefore, the variables CEO and LnAssets explain in 39% the financial performance variable ROA. The final model that explains the financial performance of Mexican public companies is:
Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

\[
\text{Financial performance (ROA)} = -0.039 - 0.009 \text{ (CEO)} + 0.003 \text{ (LnAssets)}
\]

Second Phase: Tobin´s Q as the Dependent Variable

Table 10 presents the results of the cross-section regression model considering Tobin´s Q as the dependent variable, and as independent variables the binary variables FAM, CEO and AGE, and LnAssets and LTL/Assets. Moreover, the same sample size is used, in other words, 35 observations per year.

Table 10:

\textit{Cross-section analysis with Tobin´s Q as the dependent variable}

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>Coef.</td>
<td>-0.01</td>
<td>0.08</td>
<td>0.05</td>
<td>0.05</td>
<td>0.03</td>
<td>0.07</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
<td>0.07</td>
<td>0.08</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.90</td>
<td>0.21</td>
<td>0.42</td>
<td>0.43</td>
<td>0.72</td>
<td>0.37</td>
<td>0.82</td>
<td>0.80</td>
<td>0.63</td>
<td>0.51</td>
<td>0.37</td>
<td>0.27</td>
</tr>
<tr>
<td>CEO</td>
<td>Coef.</td>
<td>0.03</td>
<td>-0.07</td>
<td>-0.04</td>
<td>0.02</td>
<td>0.01</td>
<td>-0.03</td>
<td>-0.06</td>
<td>-0.08</td>
<td>-0.04</td>
<td>-0.07</td>
<td>-0.02</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.73</td>
<td>0.24</td>
<td>0.53</td>
<td>0.80</td>
<td>0.84</td>
<td>0.67</td>
<td>0.52</td>
<td>0.43</td>
<td>0.61</td>
<td>0.53</td>
<td>0.77</td>
<td>0.39</td>
</tr>
<tr>
<td>AGE</td>
<td>Coef.</td>
<td>-0.05</td>
<td>-0.03</td>
<td>-0.05</td>
<td>0.01</td>
<td>-0.03</td>
<td>-0.02</td>
<td>-0.04</td>
<td>-0.04</td>
<td>0.02</td>
<td>-0.03</td>
<td>0.00</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.39</td>
<td>0.45</td>
<td>0.28</td>
<td>0.85</td>
<td>0.59</td>
<td>0.71</td>
<td>0.59</td>
<td>0.62</td>
<td>0.75</td>
<td>0.65</td>
<td>0.99</td>
<td>0.91</td>
</tr>
<tr>
<td>LnAssets</td>
<td>Coef.</td>
<td>-0.02</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.01</td>
<td>-0.03</td>
<td>-0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.17</td>
<td>0.68</td>
<td>0.97</td>
<td>0.74</td>
<td>0.18</td>
<td>0.42</td>
<td>0.29</td>
<td>0.23</td>
<td>0.46</td>
<td>0.27</td>
<td>0.75</td>
<td>0.92</td>
</tr>
<tr>
<td>LTL/Assets</td>
<td>Coef.</td>
<td>0.56</td>
<td>0.16</td>
<td>0.26</td>
<td>0.15</td>
<td>0.43</td>
<td>0.40</td>
<td>0.88</td>
<td>0.83</td>
<td>0.33</td>
<td>0.95</td>
<td>0.32</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Prob.</td>
<td>0.01</td>
<td>0.30</td>
<td>0.12</td>
<td>0.47</td>
<td>0.11</td>
<td>0.20</td>
<td>0.01</td>
<td>0.02</td>
<td>0.25</td>
<td>0.00</td>
<td>0.22</td>
<td>0.91</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td>0.28</td>
<td>0.12</td>
<td>0.14</td>
<td>0.10</td>
<td>0.16</td>
<td>0.08</td>
<td>0.27</td>
<td>0.21</td>
<td>0.06</td>
<td>0.31</td>
<td>0.08</td>
<td>0.05</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td></td>
<td>1.66</td>
<td>2.20</td>
<td>2.13</td>
<td>2.18</td>
<td>2.31</td>
<td>2.01</td>
<td>2.21</td>
<td>2.22</td>
<td>2.42</td>
<td>2.79</td>
<td>2.54</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Note. "0.00" values represent decimal numbers below 0.04
Considering a 95% confidence interval, Table 10 shows that the variables FAM, CEO, AGE and LnAssets are not significant for the period 1996-2007. However, these variables (except AGE) are significant for 2008. Moreover, no conclusions can be made for LTL/Assets since it shows significance and non-significance throughout the period under study. In addition, eight years present an R-squared value below the limit; therefore, further analysis is needed in order to conclude.

The second regression model analyses the same criteria in a data panel model. Table 11 shows the results.

Table 11:  
*Data panel regression with Tobin’s Q as the dependent variable*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>0.07</td>
<td>0.01</td>
</tr>
<tr>
<td>CEO</td>
<td>-0.05</td>
<td>0.02</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.03</td>
<td>0.11</td>
</tr>
<tr>
<td>LnAssets</td>
<td>-0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>LTL / Assets</td>
<td>-0.46</td>
<td>0.00</td>
</tr>
</tbody>
</table>

R-squared: 0.13  
Durbin-Watson: 0.54  
*Note: “0.00” values represent decimal numbers below 0.04*
Even though table 11 shows that FAM, CEO, LnAssets and LTL/Assets are significant, its R-squared value, and Durbin-Watson value are below the limit mentioned before. Therefore, there is a need to include “AR(1)” and “ARDL” variables into the model in order to conclude. Table 12 presents the results of this modified model.

Table 12  
Data panel regression ARDL and AR(1) with Tobin’s Q as the dependent variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>0.37</td>
<td>0.06</td>
</tr>
<tr>
<td>CEO</td>
<td>-0.19</td>
<td>0.24</td>
</tr>
<tr>
<td>AGE</td>
<td>0.01</td>
<td>0.79</td>
</tr>
<tr>
<td>LnAssets</td>
<td>-0.06</td>
<td>0.01</td>
</tr>
<tr>
<td>LTL/Assets</td>
<td>1.24</td>
<td>0.00</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.71</td>
<td></td>
</tr>
</tbody>
</table>

Note. “0.00” values represent decimal numbers below 0.04

As can be seen in table 12, binary variables are not significant to the model. Moreover, the variables LnAssets and LTL/Assets explain in a 71% the financial performance measured by Tobin´s Q. The final model that explains the financial performance of the Mexican public companies is:

Financial performance (Tobin´s Q) = 0.903 – 0.055 (LnAssets) + 1.235 (LTL/Assets)
DISCUSSION AND CONCLUSION OF RESULTS

In conclusion, for the years 1996 to 2008, it can be said that: 1) there is no financial performance significant difference among Mexican public family and non-family businesses for both ROA and Tobin’s Q. Some of the possible reasons for this result could be due to the professionalism level in family businesses, which could be attributed to the amount and strictness of the requirements asked by the BMV. 2) Mexican public family businesses without a family member CEO have a better financial performance “ROA” (1%) than family businesses with a family member CEO. In contrast, when analyzing the Tobin’s Q, there is no significant difference regarding this relationship. Therefore, the shareholders do not have neither a positive nor a negative reaction regarding if the CEO is a family member or not. And, 3) there is no significant difference between Mexican public companies financial performance regarding their age for both ROA and Tobin’s Q. Therefore, in the case of having a family business with a family member CEO, it is not important to consider the number of the CEO generations for further research, since it does not affect the company’s financial performance.

It is important to state that even though the results obtained in this study are similar to the ones obtained in one of our previous work, the P-Value of the binary variable FAM when Tobin´s Q is considered has been reduced to been almost significant (0.06). The reason for this change is the inclusion of the years 2006 to 2008; therefore, some of the reasons for this may be due to the financial crisis present during this period and/or the Mexican securities market law (SML) introduced in 2007. Further research is needed to analyze the effects of these reasons. There is a probability that if the time period under study broadens, in order to include more data after 2007, new conclusions may arise in order to understand if the SML has changed the market´s value (Tobin´s Q) towards improving the financial
performance of Mexican public family businesses when compared to non-family businesses.

Moreover, this research encourages the academia community to continue developing studies under this research line, in order to extend the knowledge regarding family businesses in Mexico. The development of new studies will enable the possibility of finding conclusions that evolve paradigms of family business which may help to better understand their financial performance. Further researches may cover: 1) the relation between financial performance and ownership structure among Mexican private businesses, which are 99.8% of the Mexican companies; and 2) the effects of the 2007 Mexican’s SML in public family businesses.
Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?

REFERENCES


Financial performance and ownership structure in Mexican public companies (1996-2008): Does the family matter?


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