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EMPIRICAL STUDY ABOUT THE RELATION BETWEEN FAMILY OWNERSHIP AND FIRM PERFORMANCE: EVIDENCE FOR ROMANIAN FAMILY FIRMS

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Abstract

The objective of the article is to produce and validate a statistical model for quantifying the performance of family firms. Such aim will be achieved through the analysis of a sample of 27 entities from the "family firms from Romania" group. The statistical hypothesis underlying the specification of the model is one according to which selected variables will distinguish the performing family firms from the non-performing ones, regardless of ownership. The article addresses an alternative possibility for assessing the financial performance of family businesses, namely a model created by Carton, R. The complex indicator created by Carton, R, is composed of performance factors such as asset growth, debt change and degree change survival rate (Z-score change), calculated using the Statev coefficient, Z-score. The indicators that were used are extracted from both the Entities' Balance Sheet and their Profit and Loss Account (on-line), while the modelling is carried out through the Excel statistical modelling.

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Introduction

Family businesses are the predominant form of business worldwide, accounting for two-thirds of all companies [De Masis 2017]. They play a key role within the economic and social scenarios, both in developed and developing countries. Indeed, they actively influence the increase of new jobs and contribute substantially to the growth of the gross national product.

Moreover, family firms also play an important role in the economic recovery during a crisis within emerging economies. For this reason, the attention they receive from governments is extremely high, and their proximity to the government is listed among the most crucial factors in the development of family businesses [Monticelli 2017; Kim, Kandemir and Cavusgil 2004]. This rapprochement is considered one of the important resources of a family business, being part of the organizational resources' category.

Due to the increasing number and importance of family businesses in the world economy, more and more studies have focused on the analysis of the factors influencing their performance [João Miguel Capela Borralhoaet al. 2020; Martin, G.et al. 2016; Miller, D. & Le Breton-Miller, I. 2006; Miller, D. and al 2013].

The approaches to the concept of performance and its evaluation are defined within three categories [Botnari, Nedelcu 2014]:

- the one-dimensional approach: this is when the financial performance is identified with another economic concept which is called "profit" and it is under the accounting discipline. Within the accounting umbrella, the financial performance of the economic entity is identified as
- the "relationship between the income and the expenses of the entity presented in situations of profit and loss";
- the systemic approach: according to this, the financial performance is recognized as a multidimensional concept, evaluated through the prism of a system of indicators that measure distinct economic phenomena (profitability, indebtedness, general solvency – "Sg" and patrimonial solvency "Sp").

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This approach has certain limits, as the selection of indicators for the evaluation system is based on theoretical, empirically unconfirmed considerations.

The econometric approach: it involves the development of an econometric model in view of the evaluation of financial performance. The econometric modelling provides a more accurate representation of the risk of bankruptcy than the other approaches.

Regarding this, we must highlight that the development of an econometric model comprises the following phases:

Specification – it implies the definition of the model, the elaboration of an economic model and an econometric one, the formulation of statistical hypotheses.

Estimation – it refers to obtaining the numerical values of the coefficients of the elaborated econometric model.

Validation – it consists of assessing whether the values obtained during the previous stage are theoretically and statistically acceptable. From an economic point of view, it is assessed whether the data obtained comply with the constraints of the model, and from a statistical point of view, the assumptions made at the previous stage and the materiality level are checked by means of different tests.

Literature Review

One of the strengths of a family business is its rooting in the local community. This relationship can be transformed into a unique competitive advantage and plays an important role in creating local jobs and developing those communities.

While demographic and social changes increase, family businesses from different parts of the world are exposed to new challenges that make the traditional methods of succession and governance no longer appropriate. More and more studies have focused on analyzing the factors that lead to the growth of performance of a family business. Such studies considered the differences between the generational perspectives and the way family businesses face the challenges associated with succession and governance in the modern era [Schank M. J. 2017; Borralhoa J.M.C. and al. 2020; Jiaqi Chen et al. 2020 etc.]. There is also a wide-standing literature that addresses the family's participation in the management of the company and its impact on the company’s performance. O'Boyle, Pollack and Rutherford (2012) list 78 such studies in 24 countries, published between 1980 and 2008, while list 45 studies in 20 countries published in 2003–2009 [Amit and Villalonga 2014].

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According to a study by Price Waterhouse Coopers (PwC) (2017) on a sample of 2,802 owners and CEOs of family businesses in 50 countries globally, (out of which 68 were leaders of Romanian family businesses), 82% of the Romanian respondents consider that measuring success beyond growth and profit is one of the most important aspects that characterizes family business, and 75% claim that the strategy of the family and that of the company are fully aligned. With regards to the role of such companies in the economy and society, 85% of the Romanian respondents believe that family businesses bring stability to the economy, while 82% of the family businesses affirm they are doing their best to support the communities in which they operate, not only through hiring local people but also through keeping the employees even in more difficult economic times. As far as succession and governance in family businesses in Romania are concerned, 37% consider the succession planning to be an important concern over the next 5 years, and 47% have a succession plan for many key management positions, 74% have next-generation family members working in the company, and 47% plan to transfer both ownership and management of the organization to the next generation.

Within the bulk of literature, the performance of family firms in Romania has been addressed in terms of the relationship between the ownership structure of a company and its financial performance [Schank, 2017]or by analyzing the correlation between the attributes of Romanian family firms and their financial performance [Hategan et al. 2019].

Performance is a result of the links between risk indicators and financial stability, being these indicators the ones to represent the economic and financial areas. Addressing the bankruptcy risk consists of the banking or optimal method, used to predict the bankruptcy of an economic entity, and which uses certain synthetic risk notes obtained through statistical methods [Holt, 2009].

The discriminatory analysis is a technique through which discriminatory statistical models can be created to determine the financial state of an economic entity and to detect the risk of its deterioration in advance.

The variables of a model built on the discriminatory analysis are selected in such a way that they best explain, in a discriminatory manner, the performance of economic entities. They indeed manage to best differentiate economic entities in good financial condition from those facing bankruptcy [Săvoiu, 2012].

The combination of these discriminating variables results in a synthetic indicator called Z “score”, being the linear function of the Z score empirical and, focused on the company's ability to prevent bankruptcy. Thus, the Z score is a good

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indicator for the evaluation of performance and, according to Carton (2004) it is more suitable for distinguishing performing entities from and non-performing ones.

Materials and methods

The Model

This paragraph highlights the peculiarities of the evaluation of the financial performance of the family firms, using 2 methods of econometric modelling. The statistical hypothesis that underlines the econometric model states that the selected variables will distinguish the performing family firms from the non-performing ones:

1. The formulation of an economic model involving the development of a function:

$$y = (x_1, x_2, \ldots, x_n) \qquad (1)$$

Where:

y is risk of bankruptcy Z score;

x_1, x_2,.... x_n are the dimensions (factors) of the risk of bankruptcy, such as profitability and payment capacity;

The model of assessment of the risk of bankruptcy Z-score that we suggest is the statistical discriminant model of Statev [Statev, 2008], under the following form:

$$Z_{Statev} = 1.281 * V_8 + 1.879 * V_{16} - 0.386 * V_{32}$$

Where:

V_8 = Permanent capital / Total liabilities

V_{16} = Total Debts / Total Liabilities

V_{32} = Added Value /Total Asset

The decisive rule is as follows:

Appreciation Range Z_{statev} :

- < 1: Safe Zone - Very low probability of bankruptcy,
- 1 < Z < 1.8: Unsafe zone - Risk of average bankruptcy,
- >1.8 Bankruptcy condition.

The Statev discriminant model was applied by the society of insolvency practitioners, Solvendi, in front of the court in order to prove the bankruptcy condition of an economic entity that was insolvent, according to the 2014 Report on cases that led to the insolvency of the debtor [Bebeșelea, Patache 2019].

2. Formulation of an econometric model based on the function of the economic model:

$$P_f = a * x_1 + b * x_2 + \cdots + oh * x_n + \mu \quad (2)$$

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Where:

P_f is the financial performance (dependent variable);

a, b, oh are the parameters of the model;

μ is the error.

We suggest the Carton model as an appropriate for the evaluation of the financial performance, under the following form:

$$P_f = 0.208 * GR\ AST + 0.244 * CLIAB/AST + 0.739 * CALTZ \quad (3)$$

Where:

GR AST is the level of growth (increase in assets)

CLIAB/AST is the change of circumstances in indebtedness (change in overall indebtedness)

CALTZ is the change in the survival level (the change of the Statev coefficient Z-score)

The decisive rule is as follows:

Appreciation Range $P_f > 1$: high performance,

between 1 and 0: average performance,

≤ 0: low performance

Sample

In this study, 27 economic entities declared as family businesses and registered in the Family Business Network Romania Association, were considered. The study covered a 12-years period (2008-2019) for each of the 27 family businesses with 100% Romanian capital. The sample included representatives from 8 sectors of activity (from trade, distribution, courier, food industry, production of electrical and electronic equipment, production of dermo-cosmetic goods to travel agents, car rentals and real estate developers) and 324 data were processed. The sampled firms have been active from a minimum of 10 years to a maximum of 29 years.

The annual sales for the sampled companies during the period under review ranged from around EUR 867 million to EUR 1.3 million. The average sales value is between EUR 1.2 million (minimum value) and EUR 372 million (maximum average value recorded during this period).

The total assets for the sampled companies ranged from a maximum value of EUR 622 million to a minimum of EUR 160,544. The median total assets for the sample were EUR 12.7 million and the average total assets were EUR 27,894 million.

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In order to include in our sample, the data gathered in a whole year, such year has to be considered complete from all points of view so that all the variables can be considered for the research. Moreover, the firm years of data were to be for a full period of twelve months.

Balance and Profit and Loss Account indicators presented by companies, online, on specialized financial sites, were used. Given the fact that the companies use such sites to report their financial information synthetically, rather than analytically, we could not consider Altman's Z-score function. Hence, for the application of the Carton model for assessing financial performance, we considered Statev's function which leads to the same decision rule.

The timeframe for two of the sampled firms was narrower, 9 years and 10 years, respectively. However, due to the availability of data, they were considered, being the period enough to outline the overall picture of the family businesses situation in Romania.

To calculate the function of the risk of bankruptcy Z_{statev}, described in the previous sub-chapter, three indicators of financial performance for each year and for all 27 family businesses included in the sample were considered. The variables have been selected to represent each of the main performance categories, depending on the frequency of usage in previous empirical studies, as well as the frequency of their usage in practice.

Since many operative calculations of a variable are accepted, we present, below, a brief description of the variables used in the statistical model for the assessment of the bankruptcy risk, Z_{statev} score:

- The V_8 indicator was calculated by dividing the permanent capital by the total liabilities. This report was calculated using the final absolute values for both denominator and numerator.
- V_{16} was calculated as the ratio between total liabilities and total liabilities, using all final absolutes of both financial indicators
- V_{32} is the ratio between the added value and the total asset and it was calculated based on the absolute final values for each year and company.

In the Card model of financial performance evaluation, described above, we also used three measures of financial performance, as follows:

- GR AST which represents the level of growth of assets and which was identified as index of the total asset dynamics
- CLIAB/AST is the change in the degree of global indebtedness, and it was also calculated as an index of dynamics. The overall indebtedness was determined

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as the ratio between the total debts and the company's assets. This indicator shows the extent to which borrowed and attracted sources participate in financing the businesses.

- CALTZ represents the change in the survival level and it was calculated as index of the dynamics of the Z-Score coefficient of the previously calculated M_{statev} function.

While it is not common for companies to have negative equity, there are several cases where these circumstances arise. The first example involves companies that have large amounts of intangible assets that are not reflected in their balance sheets. If these companies engage in large programs of share repurchase in the form of treasury shares, the repurchased shares are recorded at their purchase price as a reduction in equity. A second example involves companies that hold a lot of fixed capital (real estate). These companies can refinance properties with new mortgages and use the collections for distributions to shareholders, as it happens with many real estate investment trusts that are publicly traded.

There were two periods of interest for this research, the annual periods and those throughout the selected timeframe.

Moreover, both static and dynamic values were used for variables for both periods. Since dynamic values require the calculation of both starting and ending value, another year of data was needed to calculate the change over the entire period. Thus, the indicators used for the determination of Statev's bankruptcy risk function were calculated using static values, and those used in determining financial performance according to Carton's model, were calculated using dynamic values.

Both annual values and averages of the values recorded for the entire period considered were also calculated. For the Z_{statev} score function and for the financial performance, both annual values and their average have been determined, being punctual values over time that neither accumulate nor compose.

Results and Discussions

In order to reach a correct decision on the financial solidity of a company, we analyzed the financial performance by Z score, basis within the Carton's model, and the evolution of the score for each company in the sample, during the years 2008-2019, was also determined and taken into account. Thus, the statistical hypothesis of the model was validated, meaning the selected variables distinguished performing family firms from the non-performing ones.

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There is a close direct link between performance and risk. The detection of the risk of bankruptcy is carried out through the score method, which aims at the prediction of the bankruptcy risk, starting from a series of financial rates, which are closely correlated with the state of health/weakness of the family firms. Such rates are identified through discriminant analysis and then the best linear combination of them is sought, to distinguish, as clearly as possible, high-performing entities from those at high risk of bankruptcy.

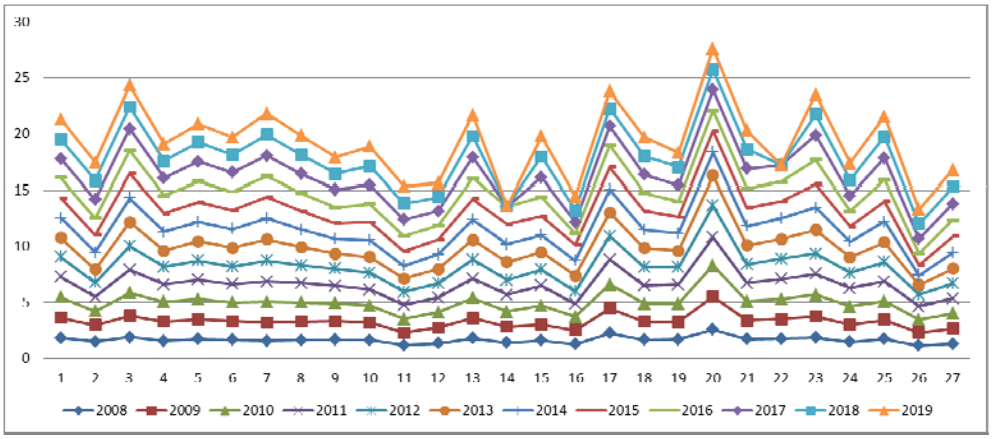

Figure nr. 1. Annual values of Statev Z-score function
Source: Authors' elaboration

From the graph analysis of the obtained scores representations, three areas by which family firms can be classified are identified:

Z < 1: Safe Zone - Very low probability of bankruptcy, for 11 of them.

1 < Z < 1.8: Unsafe zone - Risk of average bankruptcy, for 13 of them.

Z >1,8: Risky Area- High probability of corporate bankruptcy, for 3 of them.

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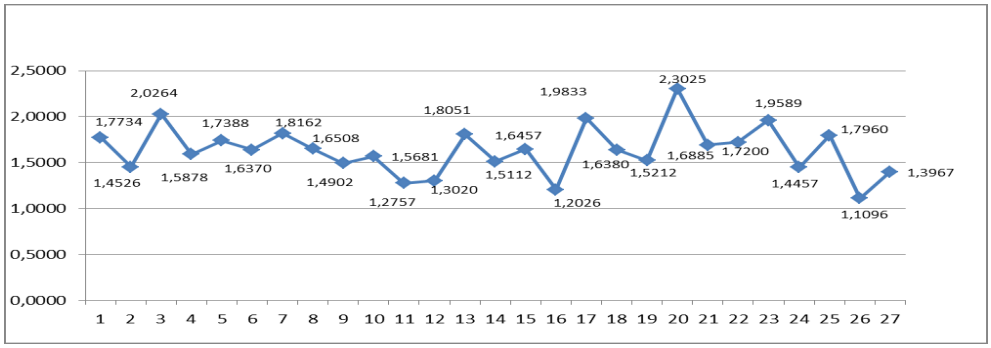

Figure nr. 2. Average Statev Z-score function
Source: Authors' elaboration

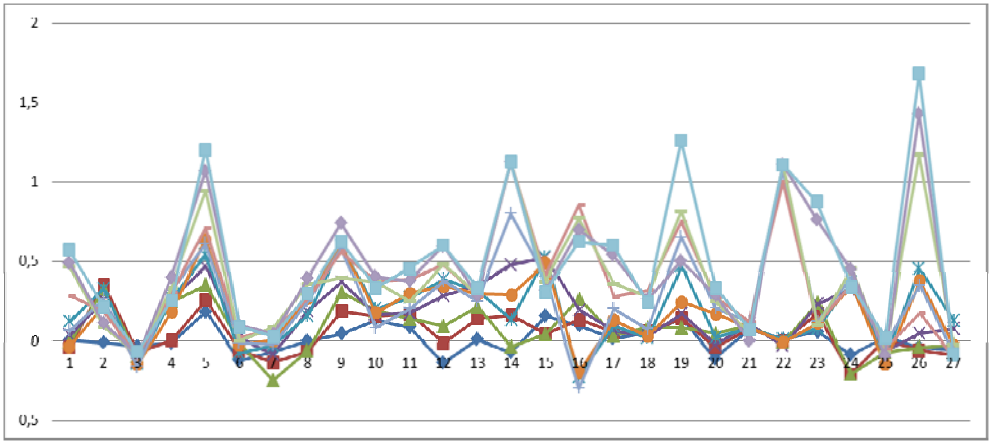

Figure nr. 3. Annual values of Financial Performance
Source: Authors, elaboration

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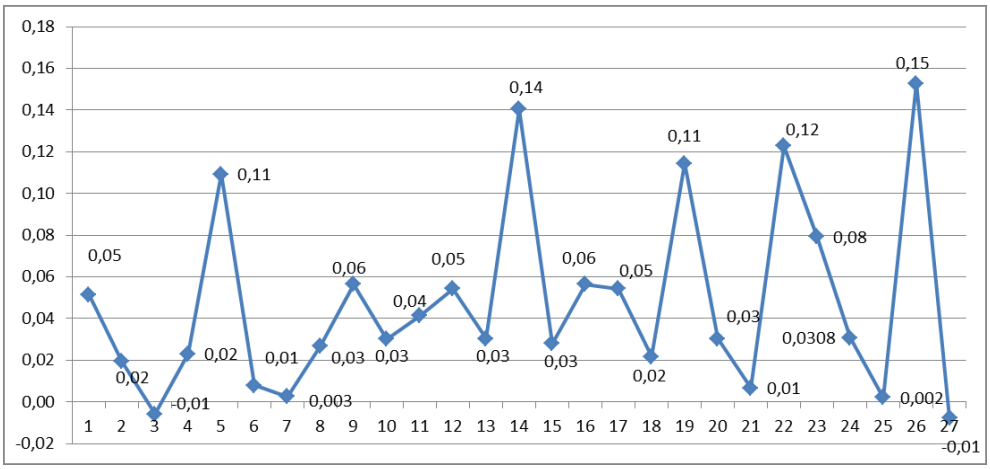

Figure nr. 4. Average values of financial performance

Source: Authors' elaboration

As expected, from the graph analysis of the representation of the financial performance of the studied family firms, three areas according to the Carton, R indicator can also be identified:

Pf = 0 and 1: average performance, for 23 of them.

Pf ≤ 0: low performance, for 4 of them.

Conclusion

In this article we presented an alternative possibility of evaluation of the family firms' financial performance, namely a model created by Carton, R. The complex indicator, created by Carton, R consists of performance factors such as increase of assets, change in indebtedness and variation of the degree of survival (modification of Z score), calculated by means of the coefficient Statev's Z score. This function of financial performance allows differentiation the performing family firms from the least performing ones in 80% of cases.

Based on the current research, the statistical hypothesis according to which the difference between performing family firms and non-performing family firms, regardless of ownership relationships, will be reflected in the value of the financial performance function, is confirmed.

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Accordingly, it can be mentioned that the application of the discriminant analysis through the Carton model reveals that grouping and differentiating family firms through the tree above mentioned areas of the financial performance function, is correct.

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