

AN ANALYSIS OF ENTREPRENEURSHIP IN FAMILY-OWNED STOCK COMPANIES

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Abstract

Research background: Family businesses are included in the functioning of each market transaction. testing their development and dissemination can be an interesting area of research from the point of view of hierarchy and from the point of view of the owners of these companies.

Purpose: The purpose of the article was to present an analysis of entrepreneurship of family-owned companies listed on the Warsaw Stock Exchange (WSE).

Researcher methodology: The quantitative analysis method, including also the descriptive statistics method, ratio analysis, and inference was incorporated. The study was based on the financial data of 38 family capital groups. The data analysis on entrepreneurship in the years 2009–2018 indicates that in the case of all of the studied companies most were in a stable situation. The analysis of entrepreneurship, which takes into account the rate of income growth and efficiency indicators, indicates that the examined group of family companies was characterized by a high level of entrepreneurship throughout the analysed period, thus showing a downward trend.

The results: The results of the research may form the basis for further research in the field presented in the article with an emphasis on sector diversification, the size of companies and the extension of the analysed time periods.

Novelty: Entrepreneurship research in family entities can be seen from the point of view of the rate of increase of revenues and efficiency of assets and cash efficiency.

Keywords: dynamic sales, ROA, cash productivity assets

JEL classification: G32, M21

Introduction

Entrepreneurship is most often associated with undertaking economic activities (Griffin, 2002, p. 730); however, it is less often interpreted as a way enterprises use to strive for their development (Drucker, 1992). H.H. Stevenson and J.C. Jarillo (1990) were the precursors in saying that corporate entrepreneurship (CE) is not contrary to typical entrepreneurship. They claim that entrepreneurship is a process that is supposed to motivate individuals to create additional value and that entrepreneurship should be treated as an important element of strategic management (1990). Corporate entrepreneurship is also defined by P. Sharma and J.J. Chrisman (1999) as an 'entrepreneurial spirit' at an enterprise level, which is a specific combination of traits such as corporate ventures, innovations, and strategy.

The purpose of the article was to present an analysis of the enterprises listed on the WSE with respect to entrepreneurship. The enterprises were examined by the size of the effects of the phenomenon of entrepreneurship in the years 2009–2016; therefore the article is based on the sector-time analysis. In the initial phase of the study, the enterprises were divided into four groups depending on the rate of increase in revenues. It was followed by an analysis of the development dynamics of Polish listed companies compared to the accounting and market financial performance of these companies. In the final stage of the article, the author made a comparative analysis of the results of the research undertaken in the article with the data collected by Statistics Poland. The article distinguishes the following phases:

- introduction,
- literature review,
- data and the variable measurements,
- methodology,
- results,
- conclusions.

1. Literature Review

1.1. Family business

Family businesses, according to various estimates, are said to account for 70–90% of global GDP. In emerging economies, family businesses are vitally important because they exhibit greater dynamism and versatility (Whyte, 1996), perform unique tasks like protecting wealth (Carney, 2007), and are responsible for a higher percentage of national economic growth

(Claessens, Djankov, Lang, 2000). In China, for instance, there are almost eight million private businesses, and more than eighty per cent of which are family businesses (Steen, Baldwin, 2015).

However, family businesses remain the most difficult to define, as the formulation of the definition arouses controversy among researchers and affects the estimation of the number of these entities in the economy (Casillas, 2007, 18–20). Most definitions cover the concept of family ownership, control or management, and family involvement and/or intention to transfer a family business (Heck, Trent, 1999). Some definitions are narrow and limited by the inclusion criteria of involving two generations in business activities, while others include all businesses owned by one or more family members (Henry, 2016). Family involvement in family businesses is defined in the literature as family ownership (e.g. Anderson, Reeb, 2003; Chu, 2011; De Massis, Kotlar, Campopiano, Cassia, 2015; Tsao, Chen, Lin, Hyde, 2009; Yammeesri, Lodh, 2004); family control (e.g. Barontini, Caprio, 2006; Silva, Majluf, 2008); and family management (e.g. Chang, Shim, 2016; DeMassis et al., 2015; Ensley, Pearson, 2005).

The level of involvement of family ownership has a proven impact on a company's performance (Anderson, Reeb, 2003; Sciascia, Mazzola, 2008). Family businesses in emerging markets have different characteristics from the same type of business in developed markets – for instance, a greater incidence of nepotism (Khwaja, Mian, 2005). In family businesses, it is common to fill middle-level managerial positions with family members because business owners have more freedom in personnel matters, and nepotism (employing family members) is tolerated or understood (Birley, 2001). In these companies, the participation of family members in managerial activities directly affects how the company is managed in-house. While family involvement in senior and mid-level management has a significant impact on the functioning and performance of the company, the mechanisms through which these two management levels influence the performance of the company can vary greatly.

In Asian countries, but also in Italy and Spain, individuals or families control several companies concurrently as family business groups. The family organizes the ownership of the companies belonging to the group either in horizontal or pyramidal structures. A pyramid structure is defined as a network of companies that are connected in cascade fashion on many levels (Aluchna, 2014). The de-facto owner exercises control over businesses indirectly, through other entities. The owner holds a majority share in the main company at the top of the pyramid and is thus able to control another company, which in turn enables him/her to control companies at a lower level (Almeida, Wolfenzon, 2006; Aluchna, Kuszewski, Zatoń, 2017).

H. Qiongjing, Z. Yanlong, Y. Jingjing (2018), in their analysis of Chinese private family businesses, found that family involvement in mid-level management was negatively correlated to the work productivity of family businesses, which means there is a negative impact of family involvement in mid-level management on the productivity of family businesses; especially when the CEO is a family member or when the family businesses are big, or when the family businesses are located in regions with low labor mobility.

The results of these studies show that mid-level managers and senior decision-makers have different roles in family businesses. Having studied the impact of the percentage of family members among mid-level managers, they gained a deeper understanding of the impact of family involvement. By integrating the perspective of organizational justice with the agency dilemma, they suggested a new perspective on understanding the phenomenon of family involvement. They revealed that nepotism is detrimental when choosing mid-level managers, but persists only under certain conditions.

S.H. Tahir and H.M. Sabir (2014) investigated the impact of family control on investments - cash flow sensitivity. They analysed whether there is a dominant shareholder in a family ownership structure, and whether there is information about asymmetry and agency dilemmas over the company's investment decisions. They showed that family businesses show lower sensitivity to investments and cash flows, asymmetric information and agency problems. They recommended employing a professional financial director (CFO) since they create more value and bring professionalism to the company, which thus prolongs the life of the company. They also stated that companies relieve the financially constrained capital markets and should therefore not have a high leverage ratio. The managers of family businesses should adjust their capital accordingly.

S.M. Fazzari, R.G. Hubbard and B.C. Petersen (1988) concluded there was a strong positive relationship between investment sensitivity and cash flow. They considered that the role of large institutional investors in the investment decision-making process to be inversely proportional to the sensitivity between investments and cash flows in the United Kingdom. Unlike Fazzari et al. (1988), S. Kaplan and L. Zingales (1997) showed a higher level of sensitivity, which cannot be interpreted by financial constraints. According to S.M. Fazzari et al. (1988), A. Marhfor, K. Bouslahi and B. M'Zali (2012), there is a significant relationship between investment sensitivity and cash flows. A family business has some potential benefits that contribute to reducing the sensitivity of investment cash flows for the following reasons: firstly, according to the arguments of various authors, including M. Galeotti, F. Schiantarelli and F. Jaramillo (1994), the benefits of family ownership help reduce financial market shortcomings;

secondly, W.S. Schulze, M.H. Lubatkin and R.N. Dino (2003) state that family corporations can better evaluate strategic investment projects by virtue of their deep knowledge and long-term commitment of family members to their businesses, which allows them to reduce the deviation from optimal new investments. This optimal level helps control the sensitivity of investment cash flow (Morgado, Pindado, 2003); thirdly, family ownership helps reduce the cost of intermediation between shareholders and bondholders, leading to a lesser difference between the cost of external and internal funds (Jensen, Meckling, 1976) – these lower financial constraints lead to the choice of the optimal investment, which ultimately reduces the sensitivity of the investment to cash flow; fourthly, the available literature on family businesses indicates that family owners are more concerned about the reputation of the company, which leads to higher earnings, thus helping reduce conflicts between agencies – lower agency conflicts reduce the sensitivity to cash flow from investments in a family business.

R. La Porta, F. Lopez-de-Silanes and A. Shleifer (1999) found that in companies with concentrated ownership, large shareholders monitor each other and provide potential benefits that have a disciplining effect on the family business.

The literature on the finance of family businesses strongly follows ‘the pecking order’ theory when financing their projects. Family companies prefer internal financing at a lower cost of capital, and pass on their businesses to the next generation with capital efficiency. Moreover, the involvement of the family is linked to a lower agency, and problems stem from the extent of the overlap between management and ownership. J.J. Chrisman, J.H. Chua and R. Litz (2004) indicate that companies with a founding CEO may have easy access to external funding due to the absence of an intermediate level of decision-making. R.C. Anderson, S.A. Mansi and D.M. Reeb (2003) empirically confirmed that companies with a family CEO are less indebted than non-family companies. The impact of family ownership on investment-cash flow sensitivity depends on the extent of family involvement in the management of the company. If a family member or their descendant is a CEO, then family businesses can be more successful in making investment decisions by virtue of this controlling management position. In family-owned companies, there is also a less classical owner-manager conflict in which a family member holds the position of the chief executive officer (James, 1999). The founder or successors have easy access to an external debt due to their reputation and long-term family ties with financial institutions or bondholders, thus leading to less reliance on internal funds. R.C. Anderson, S.A. Mansi and D.M. Reeb (2004) claim that the family’s long-standing presence in the management process guarantees the strength of a relationship with external sources of funding through commitment and trust. In effect, compared to their counterparts, family businesses incur lower debt costs for

external financing to undertake new investments. Long-term family managers offer extensive industry knowledge and experience that can be used to effectively make investment decisions.

The presented literature review concerning the financial management of a family business indicates their specific type of activity, which has many advantages and as many drawbacks; certainly, there are entities distinguished by their financing structure, managerial structure, work efficiency, level of innovation, and reputation or other factors that have a significant impact on the growth rate of companies and their financial results.

1.2. Entrepreneurship

The amount of research on entrepreneurship has grown exponentially in recent years as a result of increased economic globalization that boosts entrepreneurship worldwide. Entrepreneurial activity takes place and can be researched at individual, organisational and national levels (Luke, Verreynne, Kearins, 2007). However, while the collapse of communism and the rise of economic opportunities have transformed emerging economies into appealing investment destinations in recent years, little research has been done on entrepreneurial activity in post-communist countries, especially at an organisational level.

The aim of this study is to investigate the relationship between corporate entrepreneurship and corporate governance of entities listed on the Romanian market using a theoretical framework rooted in agency and signalling theories. Romania and some other former communist countries are considered ‘modest innovators’ in the European Union (Business 24, 2014); therefore, research on corporate entrepreneurship is useful in understanding its mechanisms.

While the concept of entrepreneurship is widely used, it still remains hard to define. P. Sharma and J.J. Chrisman (1999) indicate that this concept was first used in 1734 by Richard Cantillon, who defined entrepreneurship as self-employment of any sort. The relevance of this concept has evolved and entrepreneurship is now analysed at individual, organisational or national levels (Luke, Verreynne and Kearins, 2007); and is seen through features like innovation, or growth etc. or results, e.g. value creation (Gartner, 1990). P. Sharma and J.J. Chrisman (1999) attempt to reconcile existing definitions and approaches, and define entrepreneurship as follows: ‘Entrepreneurship encompasses acts of organisational creation, renewal, or innovation that occur within or outside an existing organisation.’

The entrepreneurship of enterprises is one of the most important areas of research in the field of entrepreneurship from the viewpoint of an operating company (Hagen, Emmanuel, Alshare, 2005). N. Albu and R.A. Matescu (2015) define entrepreneurship as the sum of its innovative activities and ventures that help a company gain new opportunities expand its

business, enter a new business, increase revenue and productivity. This article will consider this type of entrepreneurship.

2. Data and the variable measurements

An analysis of the entrepreneurship of 38 Polish family companies listed on the Warsaw Stock Exchange (WSE) in the years 2009–2016 was carried out. The research employed consolidated financial reports compiled in accordance with International Financial Reporting Standards (IFRS) published on the companies' websites. The Substantial Family Influence ratio – which takes into account the participation of family members in management boards and supervisory boards – was calculated to determine the family relationships in the entities.

All the companies operating on the Warsaw Stock Exchange were analysed using the Substantial Family Influence ratio (Klein, 2000) to select family businesses for the analysis. In the SFI ratio, family control is understood as family share in the ownership of a company and its management, and family supervision over the entity (Stradomski, 2010). The interpretation of this ratio implies that a weak family influence on the functioning of an entity occurs when the result is between 0.5 and 1.0; a result of up to 1.5 indicates average family influence, while a value above 1.5 will indicate companies with strong family influence upon the enterprise. A family business is one in which at least one family member participates in the management and/or supervision of the company, and the family members hold at least 25% of the company assets. This definition allowed the authors to identify family capital groups listed on the WSE, and then analyse their financial standing (Mioduchowska-Jaroszewicz, Szczepkowska, 2018). In the case of 60 family capital groups listed on the WSE, a family had a significant impact on their decisions, both through ownership, supervision, and management. The remaining 38 analysed entities can be described as those in which a family has a weak influence on the functioning of the entity. The value of the SFI may be underestimated because the family members have a common name, which is not applicable when classifying an enterprise passed on to a daughter who has a different name from the parents. Also, persons from outside the family and those delegated to the supervisory authorities on behalf of the family are not included. Both of these factors could further increase the influence of the family on the functioning of the entity.

3. Methodology

3.1. An analysis of entrepreneurship based on the dynamics of changes in revenues

The data published on the website of the Warsaw Stock Exchange were used to analyze the Polish family capital groups. Out of 448 listed companies, 38 family companies operating in the form of a capital group were identified. Table 2 presents basic information about the studied group.

The analysis of entrepreneurship of Polish family-owned stock companies in the years 2009–2018 was carried out on a sample of 38 stock companies listed on the Warsaw Stock Exchange. The study used consolidated financial reports prepared in accordance with the International Financial Reporting Standards available on the websites of the companies, revenues from sales for the period 2009–2018 and the rate of dynamics (Wędzki, 2006, pp. 228–229) with a variable base shifted three years back. The reason for the application of these calculated dynamics indicators was the methodology used by Statistics Poland in its analysis of the entrepreneurship of enterprises in the years 2007–2009. (*Wybrane...*, 2012).

The proposed methodology presents the division of enterprises into five groups, depending on the growth rate of sales revenues. The value of the increase or decrease in revenues qualifies the company to the appropriate group of entrepreneurship in a given period (*Wybrane...*, 2012):

- a) rapid growth enterprises – according to the international methodology, entities showing in a three-year period an average annual increase in revenues of 20% and more, which means that the total revenue growth rate in this period was 72.8% and more;
- b) growth enterprises – entities whose revenue growth rate ranged from 10 to 72.8% in the three analysed years;
- c) stable enterprises – entities obtaining similar income values in the studied three-year periods, which means that in the last year their value accounted for 90 to 110% of the beginning value;
- d) declining enterprises – entities for which revenues earned in the last year of the studied period constituted from 51.2 to 90% of revenues yielded at the beginning;
- e) rapid decline enterprises – characterized by an average annual decrease in revenues by 20% and more, which means that at the end of the analysed three-year period their revenues accounted for 51.2% and less compared to revenues yielded at the beginning of this period.

3.2. An analysis of the financial standing of family-owned companies based on ROOA and CCPA

The second part of the research on entrepreneurship deals with the assessment of the financial situation of family-owned listed companies using two indicators, which examine efficiency from accrual (ROOA) and cash (CCPA) perspectives. Both indicators measure the efficiency of the entire capital group with the data from consolidated financial statements.

The return on operating assets (ROOA) determines the operating efficiency of the capital group's assets. The analysis of the value of the ratio indicates the course of action to help improve the efficiency of the assets held, adjust the size of the assets to the size of the business, and eliminate unnecessary and excessive assets (Gabrusewicz, 2019). The desirable trend of the indicator is its growth over time; higher than the average value in the sector and higher compared to competitors. The ratio takes the following form:

$$\text{ROOA} = \frac{\text{consolidated operating profit}}{\text{average total assets of the capital group}} \quad (1)$$

Cash productivity of operating assets of the capital group (CCPA) is the relation of cash flows from operating activities to average assets. The value of the ratio informs of the cash efficiency of the capital group's assets used. Its value reflects the ability of a capital group's assets to generate positive operating cash flows; it is also the ability to finance the assets of a company in question with cash. The higher the value of the ratio, the better. A satisfactory value of the indicator is 30% (Śnieżek, Wiatr, 2011). The formula of this ratio is the following:

$$\text{CCPA} = \frac{\text{consolidated cash flows from operating activities}}{\text{average total assets of the capital group}} \quad (2)$$

4. Results

4.1. The analysis of entrepreneurship

Table 1 lists the calculated dynamics indicators with the base shifted three years back to obtain the results that can be classified in a way similar to the one applied by the Statistics Poland and to compare the results with the cited publication (*Wybrane...*, 2012). The study identified five research periods: 2012/2009, 2013/2010, 2014/2011, 2015/2012, 2016/2013, 2017/2014 and 2018/2015.

In an appendix (Table 1) shows dynamics indicators calculated and based on the value of revenues from sales. The analysis of data contained in the table indicates the lack of possibility to show the general revenue growth rate for the studied group of enterprises as each of the company is characterized by an individual dynamics of changes in sales depending on many specific macroeconomic and microeconomic factors. Based on the appendix (Table 1), to draw conclusions on entrepreneurship in family capital groups, the companies were compiled according to the directions and dynamics of change and thus classifying them into five groups of entrepreneurship in Table 1.

Table 1. Family capital groups compiled according to directions and dynamics of development in the years 2009–2018

Family-owned	2012/2009	2013/2010	2014/2011	2015/2012	2016/2013	2017/2014	2018/2015
1	2	3	4	5	6	7	8
ABM Solid	G	G	G	G	G	G	G
Alchemia	RG	RG	RG	RG	RG	RG	RG
Alma Market	RG	RG	RG	RG	RG	RG	RG
ATM	RG	RG	RG	RG	RG	RG	RG
Boryszew	RG	RG	RG	RG	RG	RD	RD
Comarch	RG	RG	RG	RG	RG	G	G
Czerwona Torebka	nda	nda	RG	RG	RD	RD	RD
Energoinstal	RG	RG	RG	RG	RG	RD	RD
Ferrum	nda	nda	RG	RD	RD	RD	RG
Famur	RG	RG	RG	D	RG	RG	RG
Fota	RG	G	RD	RD	nda	nda	nda
Groclin	RG	RG	RG	RG	RG	G	G
Introl	RG	RG	RG	RG	RG	RD	RD
Impel	RG	RG	RG	RG	RG	RD	RD
Interbud-Lublin	nda	RG	G	D	RD	RD	RD
Komputronik	G	RG	RG	G	S	S	S
Mennica Polska	RG	S	D	D	RD	S	G
Monarii	D	RG	RG	RG	G	G	G
Mirbud	RG	RG	RG	S	D	D	S
Netmedia	S	S	G	G	G	RD	RD
Neuca	S	S	S	G	G	G	G
NTT	G	G	G	G	D	D	D
Patentus	G	G	D	D	D	D	RG
PMPG	NDA	NDA	NDA	NDA	D	D	D
PGE	NDA	G	G	G	G	RD	RD

1	2	3	4	5	6	7	8
Pamapol	G	D	D	D	S	G	G
Selena	G	G	G	G	G	RD	RD
Skyline	RG	RD	RD	RD	G	D	G
Trans Polonia	RG	RG	G	G	RG	RD	RD
Tesgas	D	D	D	G	G	RD	D
Unima	G	G	G	G	G	D	RG
Vindexus	RG	RD	RG	G	G	RD	RD
Wasko	G	G	G	G	D	RD	RD
Wandalex	S	G	G	RG	G	nda	nda
Wojas	RG	G	G	G	G	S	S
Wistil	D	G	G	S	S	RD	RD
ZPUE	G	G	G	G	G	S	G
ZUE	RG	S	G	S	D	D	G

RG – rapid growth; G – growth; S – stable; D – declining; RD – rapid decline; nda – no data available.

Source: own elaboration.

Analysis of the data contained in (Table 1) indicates a fairly diverse situation in terms of the rate of increase in sales revenues with the numerical structure of family capital groups in terms of entrepreneurship in the years 2009–2018. The leading research period was 2012/2009 as the largest number of family-owned companies got into the group of rapid growth, which means that the period was marked by the rapid development of companies. Each subsequent period was slightly weaker; the first four periods were characterised by a high number of companies from the group of enterprises with a sufficient level of entrepreneurship (rapid growth and growth companies). In the periods of 2015/2012, 2016/2013, 2017/2014, and 2018/2015 the number of rapid growth companies decreased, and there were more companies with declining revenues. The period of 2012/2009 was the best year in terms of the growth rate of sales revenues since in as many as 28 enterprises revenues rose by 20 and more. Seven family-owned companies had stable revenues, whilst in 5 of the companies; the revenue growth rate was around 10. The following years were also relatively positive. In the years from 2010 to 2013, 15 companies recorded a rapid growth rate of revenues, and in twenty-two companies the revenues went up from 20% up to 72.8%. Then, in six companies the turnover was stable, in two companies the revenues rose by 10–20% per annum, however in three companies the revenues markedly decreased. In the following period of 2014/2011, the situation was comparatively good. There were still the fewest companies (only one) with a rapid decline in revenue. The largest number of companies with growing revenues, i.e. as many as sixteen, displayed dynamically growing

revenues, and there were 13 family companies from the growth group. In the years 2012–2015, the largest number of companies, as many as twelve, belonged to the rapid growth group, and fourteen family-owned companies were developing dynamically. The years 2016–2013 were characterized by a high number of dynamically developing companies; there were as many as eleven of them, and thirteen companies recorded an increase, and in three companies the turnover was stable. In the years 2017/2014 and 2018/2015, the situation concerning revenues was considerably deteriorating as the revenues were falling sharply; the number of rapid growth and growth companies was decreasing, while there were more companies recording a rapid decline in revenues.

The analysis of the situation of 38 family-owned companies listed on the stock exchange in terms of the rate of income changes, reflecting their entrepreneurship, shows the following conclusions from the research conducted in 2009–2018:

- the companies were characterised by growing revenues from 2009 to 2016,
- the number of declining companies and rapid decline companies increased,
- the number of companies with stable revenues in each period is the most stable,
- the number of rapid growth companies and growth companies went down,
- the number of growth companies was the highest in the entire period,
- the level of entrepreneurship in the analysed companies was good.

4.2. Results of the financial performance of family-owned stock companies

The analysis of the financial results of family-owned capital groups with indicators of operational profitability and cash performance of assets indicates that the studied group of companies is evolving in terms of revenue dynamics and financial results. The variability of results is dictated by changes in the micro-environment, but mainly in the macro-environment, which significantly influenced the functioning of Polish publicly-owned companies in the last three research periods. Since 2016, the Polish stock exchange market has ceased to fulfil its function of a capital provider, and it has become inefficient, for not being able to support companies. The changes on the WSE, and the withdrawal of fifty entities from the public market (from 2016 to 2020), is an important indication of the reason for the weakening of entrepreneurship and financial performance of the studied group of companies.

Table 2 presents the basic measures of descriptive statistics for the calculated return on operating assets and cash productivity of assets for the years 2010–2018. The minimum value of the return on operating assets and cash productivity of assets in all of the analysed periods varies below unity which means that there are accrual and cash deficits in the analysed group

Table 2. Descriptive analysis based on ROOA and CPPA

	ROOA	CPPA
Median	0.05	0.06
Average	0.05	0.08
Standard deviation	0.08	0.13
Minimum value	-0.54	-0.28
Maximum value	0.33	1.58
NOBS*	321	321
Companies	38	38
PPMCC**		0.1781
Correlation	0.190105084	
F-test	0.036139943	
R ²	0.036139943	

*NOBS – number of observations; **PPMCC – the Pearson product-moment correlation coefficient.

Source: own elaboration.

of companies. Whereas the highest maximum operating profitability of assets is 33%, which indicates high operating efficiency; such high profitability was achieved by Boryszew, a metal sector company in 2011. In the remaining years the value of ROOA ranges from -54 to 33%; the average value of profitability of the studied group is 5% while the median distributes the groups of companies by the horizontal value of 5% which means that some of the analysed family-owned companies were an attractive capital investment. The cash productivity of assets informs the cash profitability of the business. The average and median cash performance is higher than the same measures of operational profitability which confirms the theses on cash holding and on financing investments with equity (Pecking order theory). The level of standard deviation for both indicators is high in relation to the arithmetic mean which indicates a strong diversification of the group of companies in terms of their financial results. The value of Pearson's correlation coefficient indicates that the examined indicators are poorly correlated so it can be concluded that the evaluation of effectiveness was made in two levels independent of each other. As the analysis of sales and dynamics shows family-owned companies do not focus on financial results, but on market survival.

Conclusions

The analysis of the effects of the entrepreneurship phenomenon in family-owned stock companies is an interesting study of the achievements of those companies in the period of 2009–2018. The analysis of companies considering the growth rate of revenues indicated a significant variation in the dynamics of incomes of the distinguished research group. The growth rate of revenues also changed along with the change of the period under review. Although the first research period covers the years when the world was experiencing a financial crisis caused by the “speculative bubble” on the US market the studied companies from the Warsaw Stock Exchange were in a good economic condition and were developing quickly. Recent years have been weaker than the year 2010 as to the growth rate of revenues and the generated profits are concerned which is confirmed by the halving of the number of rapid-growth companies and the increase – in rapid-decline companies.

The analysis of the financial results of 38 family-owned stock companies for the period of 2009–2018 also revealed that in each of the analysed years there were some companies with a negative financial result. The level of deficit companies remains stable. The operating efficiency of family capital groups is high both in terms of the accrual and cash basis. The family companies show high entrepreneurship and significant operational profitability. The results of the research presented in this article although built on a small sample of family capital groups confirm the views presented in the literature review concerning the results of the hierarchy of funding sources investments and management strategies of 38 family businesses over a 9-year period continued to grow maintaining operational profitability and cash efficiency. Accrual results are lower than the cash-based results meaning that cash is more important than paper results. Cash is utilised as a source of financing and ensures a safe market presence.

The results of the research contained in *Wybrane wskaźniki przedsiębiorczości* [the Selected indicators of entrepreneurship] (2012) from which the research methodology necessary to study entrepreneurship in this article was taken are similar to the research results on the selected groups of enterprises presented in this article. In the entire period “the most significant was the group of the growth companies whilst in the last three analysed periods the share of this group was systematically decreasing (...).

Making comparisons in the analogous periods, the years 2009–2010 were the weakest period in the study carried out by Statistics Poland. In the analysis presented in this article the situation is different as there were mostly rapid growth and growth companies. Such a situation was caused by the specificity of listed and family companies and the research sample

was significantly lower than that applied by Statistics Poland. Corporate entrepreneurship is an important element in assessing the directions and dynamics of the development of Polish enterprises thus it is important to be aware of its existence and the need to analyze it from different angles and perspectives.

Future research should be continued in comparison with the growth rate of the industrial sector of which the companies are part of would be relevant in order to obtain a more precise framework related to their performance. Additionally you could use a model which could be devised and be related to the potential strategic alternatives of these types of companies.

Appendix

Table 1. The value of dynamics with a variable reference base in the years 2009–2018 in family-owned stock companies

Name	2012/2009	2013/2010	2014/2011	2015/2012	2016/2013	2017/2014	2018/2015
1	2	3	4	5	6	7	8
ABM Solid	51	23	17	29	40	56	68
Alchemia	191	166	85	74	76	75	106
Alma Market	160	130	110	96	0	0	0
ATM	108	106	133	158	143	87	78
Boryszew	219	154	117	116	115	30	27
Comarch	121	123	132	128	119	72	66
Czerwona Torebka	nda	nda	168	86	20	4	1
Energoinstal	163	188	217	252	204	19	11
Ferrum	nda	nda	121	22	12	20	107
Famur	214	133	77	54	88	133	173
Fota	100	69	24	17	nda	0	0
Groclin	102	202	245	123	91	53	67
Introl	220	154	163	113	105	1	2
Impel	137	144	139	128	127	4	2
Interbud-Lublin	nda	123	72	37	3	5	4
Komputronik	127	195	220	169	117	84	85
Mennica Polska	259	106	56	29	97	98	116
Monarii	84	480	652	677	159	140	114
Mirbud	275	311	177	102	70	62	103
Netmedia	95	109	131	151	153	1	2
Neuca	101	95	103	122	122	111	108
NTT	133	129	113	111	85	64	53
Patentus	152	135	85	60	53	66	200
PMPG	nda	nda	nda	nda	88	52	61
PGE	nda	143	115	117	121	5	4
Pamapol	129	83	57	68	99	129	123
Selena	166	127	108	94	91	46	49
Skyline	422	27	35	31	154	80	128
Trans Polonia	384	239	139	135	326	17	20
Tesgas	70	31	44	134	110	50	69
Unima	116	128	145	114	153	82	892
Vindexus	192	26	216	165	142	48	42

1	2	3	4	5	6	7	8
Wasko	118	126	137	156	56	63	45
Wandalex	95	145	121	179	166	0	0
Wojas	182	146	148	127	122	107	108
Wistil	78	110	110	104	103	2	0
ZPUE	161	155	143	129	122	104	111
ZUE	259	105	123	105	84	56	141

nda – no data available.

Source: own elaboration.

Table 2. ROOA and CCPA in family-owned capital groups for the years

Name	2010		2011		2012		2013		2014		2015		2016		2017		2018	
	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA	ROOA	CPPA
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ABM SOLID	0.04	0.06	-0.10	-0.02	-0.54	0.04	-0.01	-0.01	0.00	0.02	-0.01	0.02	0.04	-0.02	-0.04	-0.08	-0.08	-0.02
Alchemia	0.04	0.10	0.17	0.09	0.05	0.06	0.01	0.06	0.02	0.04	-0.04	0.07	0.00	0.05	0.02	0.02	0.07	0.08
Alma Market	-0.07	0.08	0.03	0.06	0.04	0.00	0.03	0.06	0.00	0.04	-0.20	0.11	0.00	0.00	nda	nda	nda	nda
ATM	0.05	0.26	0.03	0.08	0.05	-0.01	0.09	0.09	0.07	0.13	0.07	0.16	0.10	0.12	0.10	0.03	0.07	-0.09
Boryszew	-0.19	0.03	0.33	-0.11	0.05	0.08	0.03	0.05	0.07	0.06	0.01	0.11	0.06	0.11	0.11	1.58	0.30	0.44
Comarch	0.02	0.09	0.04	0.06	0.03	0.06	0.03	0.09	0.08	0.13	0.09	0.09	0.09	0.07	0.04	0.04	0.06	0.09
Czerwona Torebka	0.10	0.00	0.02	-0.03	-0.03	0.04	0.08	0.05	0.09	0.19	0.09	0.08	0.09	0.04	0.10	0.09	0.10	0.15
Energoinstal	-0.03	0.08	0.02	0.07	0.04	0.07	0.01	0.06	-0.17	0.11	0.16	0.21	0.00	0.00	nda	nda	nda	nda
Drozapol	nda	nda	0.00	-0.01	0.0	-0.02	-0.02	0.21	-0.03	-0.05	-0.07	0.17	-0.01	0.00	0.01	-0.04	0.00	-0.06
Famur	0.13	0.17	0.14	0.11	0.08	0.09	0.10	0.17	0.11	0.04	0.10	0.10	0.12	0.10	0.14	0.15	0.14	-0.07
Farmacol	0.05	0.05	0.04	0.13	0.06	0.11	0.05	0.01	0.04	0.04	0.03	-0.02	0.04	0.12	0.01	-0.04	0.00	-0.06
Ferrum	0.09	0.12	0.05	0.04	0.08	0.14	0.14	0.16	0.16	0.06	0.14	0.11	0.15	0.20	0.07	0.05	0.05	0.05
Fota	0.15	0.04	-0.01	0.06	0.04	-0.02	0.05	0.03	0.07	-0.02	0.05	0.05	0.05	0.02	0.00	0.03	-0.29	0.02
Groclin	0.03	0.11	0.05	-0.04	0.02	-0.02	0.03	0.08	0.07	0.07	0.04	0.02	0.05	0.05	0.00	0.00	nda	nda
Impel	0.15	0.23	0.10	0.02	0.08	0.05	0.06	0.16	0.04	-0.06	0.03	0.05	0.04	-0.11	0.10	-0.03	0.04	0.23
Interbud Lublin	nda	nda	0.16	0.06	0.02	0.02	0.04	-0.05	-0.13	0.03	0.11	0.07	-0.24	0.01	-0.01	0.01	-0.01	0.09
Introl	0.12	0.14	0.10	0.11	0.07	0.12	0.07	0.21	0.03	0.06	0.08	0.16	0.09	0.19	0.07	0.14	0.01	0.81
Komputronik	0.03	0.04	0.06	0.05	0.01	0.07	0.01	0.07	0.07	0.07	0.02	0.08	0.10	0.14	0.11	0.15	0.14	0.11
Mo-Bruk	0.00	0.00	0.02	0.06	0.03	0.09	0.02	0.03	-0.01	0.03	-0.01	0.03	0.00	0.03	0.06	0.08	0.16	0.16
Mennica	0.00	0.00	0.07	0.05	0.04	0.09	0.04	0.01	0.04	0.07	0.05	0.08	0.04	0.05	0.06	0.03	0.08	0.04
Mirbud	0.00	0.00	0.02	0.06	0.03	0.09	0.02	0.03	-0.01	0.03	0.00	0.03	0.03	0.06	0.06	0.08	0.16	0.16
Monarii	0.08	0.10	0.02	-0.04	0.06	0.08	0.03	-0.05	0.06	0.08	0.02	0.02	-0.04	-0.04	-0.16	-0.04	0.06	-0.05
Netmedia	0.05	-0.06	0.04	0.06	0.00	0.01	0.04	0.02	0.07	0.00	0.09	0.01	0.05	0.08	0.07	0.05	0.01	0.09
Neuca	0.03	0.02	0.04	0.08	0.05	0.07	0.05	0.01	0.03	0.09	0.05	0.07	0.05	0.07	0.04	0.04	0.04	0.04
NTT	-0.01	0.01	0.00	0.00	nda	nda	nda	nda	0.07	0.03	0.03	0.35	0.03	-0.28	0.01	0.01	0.03	0.00
Pamapol	0.02	0.05	0.03	0.05	0.02	0.07	0.02	0.01	-0.05	0.03	0.02	0.04	0.03	0.07	0.01	0.09	0.02	0.10
Patentus	0.04	0.08	0.05	0.07	0.58	0.06	0.07	0.16	0.08	0.14	0.07	0.15	0.07	0.12	0.08	0.10	0.09	0.11
PMPG	-0.02	-0.05	0.05	0.04	-0.10	0.11	0.21	0.09	0.21	0.22	-0.13	-0.12	0.19	0.14	0.13	0.16	0.06	-0.03
PGO	0.00	0.00	0.13	0.10	0.11	0.12	0.10	0.16	0.07	0.07	0.09	0.09	0.07	0.10	0.02	0.03	0.06	0.12
Selena	0.05	0.03	0.01	-0.03	0.04	0.07	0.07	0.09	0.09	0.04	0.08	0.07	0.05	0.09	0.05	-0.01	0.06	0.06
Skyline	nda	nda	nda	nda	0.18	0.29	0.06	0.10	0.06	0.11	0.08	0.06	0.04	0.09	0.07	0.18	0.08	0.06
Tesgas	0.07	0.07	0.08	-0.04	-0.10	0.06	0.01	0.03	0.02	0.03	0.03	0.11	-0.05	-0.11	-0.07	0.01	0.03	-0.01
Trans Polonia	-0.02	-0.19	0.01	0.12	-0.05	0.06	-0.02	0.11	-0.03	0.13	-0.04	0.17	-0.07	-0.02	0.06	0.15	0.03	0.66
Triton	-0.02	-0.19	0.01	0.12	-0.05	0.06	-0.02	0.11	-0.03	0.13	-0.04	0.17	-0.07	-0.02	0.06	0.15	0.03	0.66
Unima	0.07	0.12	0.02	0.15	0.04	-0.17	-0.02	0.14	0.06	-0.01	0.02	0.08	0.05	0.09	-0.08	0.04	0.04	0.11
Vindexus	0.00	0.00	0.06	0.02	0.09	0.02	0.09	0.02	0.08	0.09	0.12	0.07	0.11	-0.08	0.10	0.02	0.09	0.06
Wandalex	0.06	0.18	0.01	0.15	0.02	0.09	0.06	0.15	0.08	0.19	0.06	0.20	0.09	0.19	0.00	0.00	nda	nda
Wasko	0.02	-0.04	0.00	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda	nda

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Wistil	0.00	0.00	-0.09	0.04	0.05	0.06	-0.03	0.10	0.00	0.00	nda	nda	0.19	0.35	0.07	0.12	0.00	0.00
WOJAS	0.00	0.05	0.08	0.00	0.07	0.03	0.07	0.06	0.09	0.08	0.04	0.04	0.03	0.08	0.03	0.05	0.03	0.00
ZPUE	0.07	0.08	0.09	0.13	0.12	0.10	0.11	0.11	0.09	0.09	0.10	0.08	0.05	0.10	0.00	0.04	0.01	0.03
ZUE	0.03	0.04	0.15	0.20	0.18	0.17	0.11	0.20	0.06	0.16	0.13	0.26	0.17	0.24	0.18	0.27	0.22	0.28
min	-0.19	-0.19	-0.1	-0.11	-0.54	-0.17	-0.03	-0.05	-0.17	-0.06	-0.2	0	-0.24	-0.28	-0.16	-0.08	-0.29	-0.09
max	0.15	0.26	0.33	0.2	0.18	0.29	0.21	0.21	0.21	0.22	0.16	0.35	0.19	0.35	0.18	1.58	0.3	0.81
mediana	0.03	0.05	0.04	0.06	0.04	0.07	0.05	0.07	0.06	0.06	0.05	0.08	0.05	0.07	0.05	0.04	0.06	0.06
standard deviation	0.06	0.08	0.07	0.06	0.11	0.07	0.05	0.06	0.07	0.06	0.06	0.07	0.08	0.11	0.07	0.26	0.09	0.19

nda – no data available.

Source: own elaboration.

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