The Relationship between Capital Structure and Family Control: Evidence from the Czech Republic

Ondřej Machek, Jiří Hnilica

Abstract— The role of family businesses in Eastern European countries has been long underestimated and the academic attention devoted to this topic does not reflect the powerful role that family-controlled enterprises play in the world economy. This article deals with the relationship of family control and capital structure in the Czech Republic. We test the hypothesis of a lower leverage and greater liquidity on a sample of 1500 Czech medium and large-sized companies using regression analysis with dummy variables. The hypothesis was been tested on the available data on each year from 2009 to 2012. The authors found that the level of debt is significantly lower and the level of liquidity tends to be greater in the case of family firms. The risk of transfer of control over the company to other people than family members in case of default, as well as a possible damage to family reputation, may be possible reasons for a higher risk aversion of Czech family firms.

Keywords— Capital structure, Leverage, Liquidity, Family firms, Czech Republic

I. INTRODUCTION

The fact that for many the phrase "family business" connotes a small or medium-sized company with just a local significance does not reflect the powerful role that family-controlled enterprises play in the world economy. They are not just companies like Walmart, Samsung, Tata Group, or Porsche, but they account for more the 30% of all companies with sales in excess of $1 billion [15]. In most countries, regadless of company size, family business account for a major share of business. Family businesses are thus significant in terms of employment, turnover, added value, investments and accumulated capital [1].

Therefore it is no wonder that interests of academicians have been attracted towards studying family businesses. However it is important to mention that family business as an academic discipline is relatively new – it was first anchored by establishing Family Firm Institute in 1986 and by issuing the first number of Family Business Review in 1988, a scholarly publication devoted exclusively to exploration of the dynamics of family-controlled enterprise.

As an emerging field the family business discipline has been establishing especially in the two following directions: defining family business, and performance differences between family and non-family businesses.

The very definition of family business is crucial because usually the research outcomes do compare family and non-family businesses from many perspectives. In spite of the fact that there is no unanimous agreement upon the definition of what constitutes a family business, each definition usually includes three dimensions [23]:

- One or several families hold a significant part of the share capital;
- family members retain significant control over the company, which depends on the distribution of capital and voting rights among nonfamily shareholders, with possible statutory or legal restrictions;
- family members hold top management positions.

Researchers (e.g. [7]) conclude that due to unique institutional legal contexts in states across the globe it makes no sense to come up with a definition that could be universally applicable. Nevertheless each study must explicitly state what is understood under the family business because different definitions do lead to different findings.

Most empirical investigations find a superior financial performance of family businesses compared to non-family ones (e.g. [2]; [15]; [18]) whereas others investigate both financial and non-financial dimensions of performance such as growth or alternative qualitative indicators.

The results are often interpreted by more effective management due to familial nature of businesses, with the followings emphasized:

1. Reduction of agency costs within family businesses: The separation of ownership and control in companies may lead to agency costs, i.e. because the interests of owners (principals) and hired managers (agents) are not the same managers may act in order to maximize their own utilities instead of those who hired them [10]. This separation is mitigated in family businesses as managers in family businesses (often family members or family "friends") act more like stewards [7].
2. Long-term orientation of the shareholders´ family: The intention of family business owners is usually to preserve the family inheritance for its transmission to following generations. This leads to better investment policies in comparison to non-family businesses ([14]; [29]).

3. Reduced levels of debt in balance sheets: Modern corporate finance considers a judicious amount of debt as a good thing because through financial leverage it may create value. On the other hand debt decreases room to maneuver if a setback occurs. Family firms are very risk averse and as a result carry less debt ([15]; [24]) – therefore they do not need to make big sacrifices to meet financing demands during recessions.

4. System of values: Values shared across family business stakeholders (such as managers, owners, employees, suppliers) generate synergistic effects [11].

In the Czech Republic the family businesses have been getting an issue recently especially due to "succession issues". Whereas by the beginning of 1990´s we could hardly speak of any family businesses (with possibly an exception of those somewhat drawing upon the heritage of their predecessors who ran their own family businesses before the nationalization), then some 25 years later it is quite common that owners (fathers and mothers) already have transferred their businesses to their heirs or have at least started considering it. From this perspective the reality of family businesses in the Czech Republic resembles the situation in other non-socialistic countries around the world.

II. PROBLEM FORMULATION

Capital structure directly affects the financial risk of a company. Broadly speaking, capital structure can be viewed as the proportion of debt and equity. Family firms are no different than nonfamily firms in their need of financial resources. However, since the dynamics and intentions of family businesses differ from professionally managed firms, the capital structure is also supposed to be different. Of course, besides the family involvement, the capital structure of firms will be affected by various internal and external factors, including firm size, strategy, goals, and the nature and extent of family control [28].

As already mentioned, in the past research, most authors found a more conservative financial policy of family businesses ([24]; [26]; [31]). One of the possible reasons is the risk aversion of the founding family, when the risk of loss of family control over a company motivates to a lower utilization of debt [27]. The long-term perspective and the intention and vision to continue the business across generations (intention for succession) [14] will also influence a family business' capital structure. A greater risk aversion could also be reflected in a lower utilization of short-term (risky) capital and higher levels of liquidity [1].

However, it should be also noted that some of the past studies advance the notion that the risk aversion depends on the situation of the family business and that the controlling family may take irrational risks to secure control over the firm [12].

With regard to the above mentioned facts and assumptions, we expect the existence of a negative relationship between family involvement and level of debt and liquidity and formulate the following hypotheses:

H1: Family firms tend to use less external financial resources, i.e. have a lower debt ratio.

H2: Family firms have a higher current ratio, which means they keep a larger buffer of short-term assets to cover their current liabilities thus reducing the financial risk.

H3: Family firms keep a higher level of net working capital (current assets minus current liabilities), whose interpretation is similar and a higher value indicates a more conservative financial policy.

III. METHODOLOGY AND DATA

In order to examine the influence of family control on capital structure, we employed a multiple linear regression (OLS) model, which can be specified as:

$$Y = \beta_0 + \beta_1(FB) + \\ + \Phi(\text{Control variables}) + \varepsilon_i \qquad (1)$$

for firms $i = 1, 2, \ldots, n$, where:

- Y denotes the dependent variable,
- FB is a dummy (binary) variable which equals 1 in i is a family-controlled enterprise and 0 otherwise,
- *Control variables* are other variables that are supposed to affect a firm's capital structure.
- ε_i represents the random error,
- n is the sample size.

The null hypothesis is that family control has no effect to capital structure of companies. This hypothesis is tested against the alternative hypothesis which states that family control does affect a firm's capital structure. A statistically significant coefficient β_1 will indicate the rejection of the null hypothesis.

As stated above, FB is a "flag" (binary variable) signaling whether i is a family firm or not. Another possible approach could involve a variable which would measure the share of family in ownership, management, or control. However, the authors do not believe that such indicators actually capture the true level of family influence over a company [22].

As dependent variables, we used two measures of capital structure:

- Debt ratio DR (Liabilities over assets),
- Current ratio CR (Current assets over current liabilities),
- Net working capital NWC (Current assets minus current liabilities).

Besides the binary FB variable, the following independent control variables have been used in the model (all absolute amounts are denominated in Czech crowns CZK):

- NOEMP – the number of employees as a proxy for firm size;
- EBIT – earnings before interest and taxes (CZK);
- ROE – return on equity (Net earnings/Equity), which represents the return to shareholders;
- ROA – return on assets (EBIT/Total assets), which measures the ability of a firm to create profits;
- LABPR – labor productivity (Value added/Number of employees);
- ASSETS – total assets (CZK);
- SALES – revenue (CZK);
- INVTO – inventory turnover (Revenue/Inventory) which measures the liquidity of inventory;
- LIABTO – liability turnover (Revenue/Short-term liabilities), which measures the ability to cover current liabilities;
- SE – the ratio of revenue over equity, which measures the ability of generate sales using equity.

A. Data

The collection of data is challenging since there is no Czech database of family companies and economic subjects have no legal obligation to disclose whether there are family businesses or not [19]. We used our database of Czech family firms used in past research which was created using the surname matching approach [13].

As mentioned above, the capital structure also depends on firm size and industry. To eliminate such differences we created pairs of family and nonfamily firms. We assigned to every family company a set of companies which operate in the same industry (classified by the five digit code NACE) which helped neutralize differences due to different industries. Subsequently, from the set of companies operating in the same industry, we selected the company with the closest number of employees, and if there were multiple companies with the same number of employees, we selected the company with the closest turnover. This way, the differences due to firm size have been mitigated.

The final sample contains only large and medium-sized firms which is similar to the study of Menéndez-Requejo [25] who used the matched-pair investigation to compare family and nonfamily firms.

The data was gathered for the period 2009-2012 (after the economic crisis which has hit all Czech, but also foreign industries and sectors [21]) and the basic characteristics are displayed in the following Tab. 1.

The sample sizes are displayed for individual years, as well as the means of dependent and independent variables. The sample sizes may vary across the years under consideration, since some accounting statements were not correctly disclosed, which is a common issue of databases containing accounting information ([30], [5], [6]), and the appropriate pairs could not have been established.

Tab. 1 Data description

	2009	**2010**	**2011**	**2012**
Sample size (*n*)	1518	1523	1509	1410
Means				
DR (%)	54.6	53.5	53.2	51.6
CR (-)	1.62	1.57	1.57	1.69
NOEMP (-)	171	172	186	190
EBIT (mil. CZK)	16.7	21.3	21.1	27.7
ROE (%)	8.35	7.93	8.63	6.75
ROA (%)	4.95	4.85	4.82	4.60
LABPR	129	133	131	137
ASSETS (mil. CZK)	295.2	308.3	330.2	364.4
SALES (mil. CZK)	254.6	284.1	316.8	360.9
INVTO (-)	7.25	7.37	7.66	7.06
LIABTO (-)	3.33	3.50	3.63	3.74

In this section, we will present and discuss the results for debt ratio and liquidity.

After having checked the Pearson correlations among independent variables, we do not see any particular significant correlations to cause concern about multicollinearity problems. The only significant correlations were observed in the case of EBIT and ASSETS and SALES.

B. Debt ratio

Table 2 displays the regression results where the level of debt (debt ratio) is the dependent variable.

The independent variables that are particularly statistically significant in explaining the debt ratio are EBIT, LABPR, ASSETS, SALES, FB and LIABTO. Among others, the results support a hypothesis that more profitable firms use less debt than less profitable firms. Also, more productive companies (in terms of labor productivity) use more debt than less productive firms. Companies which generate more sales also need less external financing. However, we don't find any strong influence of the number of employees to the level of debt (the results are mostly non-significant and mixed).

The coefficient of the FB variable is statistically significant and negative, which is consistent with the hypothesis H1 and support the idea that family businesses use less debt financing than nonfamily businesses.

Tab. 2 Regression results: Debt ratio

	2009	2010	2011	2012
Constant	72.62	71.54	72.47	66.57
NOEMP	-0.007*	-1E-4	0.007*	0.005
EBIT	-1.8E-5*	-2E-5**	2E-5	-3E-5*
ROE	0.0002	0.001	0.101	2E-5
ROA	-0.017	0.003	-1.10***	-0.05**
LABPR	0.002**	0.001**	0.006***	0.003**
ASSETS	-1E-5***	-7E-6***	-1E-5***	-3E-6
SALES	1E-5***	6E-6***	5E-6***	4E-6**
FB	-3.9**	-5.2***	-5.2***	-4.6***
INVTO	-5.5E-5	0.0003	0.0005	-0.0001
LIABTO	-3.5***	-3.5***	-2.8**	-2.9***
SE	0.002	0.003	0.101**	0.042*
Adj. R2	0.19	0.22	0.31	0.20
F-test	32.1***	39.2***	62.3***	31.4***

Note: *** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

Tab. 3 Regression results: Current ratio

	2009	2010	2011	2012
Constant	0.559	0.695	0.660	-0.199
NOEMP	-5E-4*	-6E-4**	-0.001**	-0.001**
EBIT	-6E-7	6E-6***	1E-6	-2E-7
ROE	1E-5	7E-5	-0.001	-7E-4
ROA	-0.001*	-0.001**	0.003	-0.002
LABPR	-4E-5	-8E-5	-1E-4	-6E-5
ASSETS	1E-6***	6E-7***	8E-7***	1E-6***
SALES	-1E-6**	-8E-7***	-6E-7***	-7E-7**
FB	0.185*	0.118	0.177*	0.305**
INVTO	-3E-5	-4E-5**	-5E-5*	-3E-5
LIABTO	0.40***	0.357***	0.366***	0.55***
SE	-4E-7	-3E-4	-0.01***	-0.007**
Adj. R2	0.35	0.38	0.37	0.39
F-test	75.9***	86.8***	79.1***	82.5***

Note: *** Significant at the 1% level.

** Significant at the 5% level.

* Significant at the 10% level.

C. Current ratio

Table 3 displays the regression results where the liquidity (current ratio) is the dependent variable.

In this case, we observe that the number of employees (NOEMP) negatively affects liquidity (significant observations). On the other hand, the value of assets (ASSETS) positively affects liquidity.

Other independent variables that are statistically significant in explaining the current ratio are SALES (surprisingly a negative relationship), and LIABTO (the higher the liability turnover, the higher current ratio).

Concerning the FB variable, significant results (at the 10% level) are obtained in 2009, 2011 and 2012. Thus, family involvement seems to affect liquidity, but to a lower extent than the debt ratio.

However, care must be taken when interpreting the results. A low level of liquidity is not desirable since the level of risk is increased (this effect should be higher in the case of family businesses which is supported by the regression results), but a considerably higher level of liquidity is also not desirable because of the opportunity costs associated with employing too many current assets which bear a zero or negligible return.

D. Net working capital

Table 3 displays the regression results where the net working capital (NWC) is the dependent variable. Net working capital is a difference between current assets and current liabilities and thus represents an absolute indicator, as opposed to the current ratio which is a relative measure of liquidity.

Higher level of net working capital indicates that a firm avoids the use of short-term financing in order to reduce risk and adopts a relatively low-risk position which can be seen as one of the advantages of NWC. However, long-term financing is generally more expensive than short-term financing, which represents the one of the main disadvantages of keeping a large level of net working capital.

In this case, we observe that the variables EBIT, ASSETS, SALES and LIABTO positively affect net working capital. The impact of other independent variables is not so clear-cut. The impact of headcount is positive in the first two years (statistically significant), but seems to be negative in the last two years (not statistically significant).

Concerning the FB variable, statistically significant results are obtained in the years 2009 and 2010. In the following years 2011 and 2012, no statistically significant observation has been made and although the regression coefficients are positive, the hypothesis H3 couldn't be fully supported.

Tab. 4 Regression results: Net working capital

	2009	**2010**	**2011**	**2012**
Constant	-15808	-28041	-21690	-31745
NOEMP	195.1***	83.96***	-11.48	-20.48
EBIT	0.80***	1.10***	0.64***	0.76***
ROE	7.19***	-0.73	30.72	0.31
ROA	-25.61	-59.51	306.44	-77.27
LABPR	9.97**	3.43	-44.4***	-12.67*
ASSETS	0.05***	0.06***	0.18***	0.15***
SALES	-0.13***	-0.04***	-0.04***	0.05***
FB	13080.1*	15491**	3539.2	6285.5
INVTO	1.56	-0.76	-0.91	-3.76*
LIABTO	4501***	5348***	6289***	457***
SE	24.17	-0.85	-143.21	-18.04
Adj. R2	0.32	0.58	0.69	0.92
F-test	63.3***	190.4***	310.7***	1623***

Note: *** Significant at the 1% level.
** Significant at the 5% level.
* Significant at the 10% level.

IV. Discussion

Apart from discussing the influence of control variables, we may confirm that our regressions support the hypothesis H1 since the observations are statistically significant. Family firms seem to use less debt than their nonfamily counterparts.

On the other hand, the hypotheses H2 and H3 could be supported only to a certain extent (in two out of the four years under consideration). That is to say, we observed a larger buffer of short-term assets to cover current liabilities, but more evidence is needed to support or reject these hypotheses.

Broadly speaking, debt financing is an attractive way to fund business growth when the cost of debt is less than the overall return on assets (ROA). Under such conditions, debt acts as a lever which raises a company's return on equity (ROE) thus increasing the return to shareholders.

On the other hand, a higher level of debt increases the risk of default, the cost of debt, and the risk of transfer of control over the company to other people than family members in case of default. A greater risk aversion is reflected in a pursuit for less risky strategies and more careful risk management [17], including financial policy. From this viewpoint, family members may also want to avoid damaging their family's reputation in case of default on their obligations. Another possible reason why family firms prefer less debt and greater liquidity may be the fact that creditors could play a monitoring role and impose undesirable constraints on family firms [16]. To sum up, we may suppose that Czech family firms are more risk-averse than nonfamily firms and prefer less debt. From that point of view, Czech family businesses seem to be no different than family firms from other countries.

However, further analysis is warranted. A greater risk aversion is often connected with a lower desire to grow rapidly, which could potentially negatively affect a firm's short-term growth. But it is the long-term stability and the intention of family founders to pass the company to following generations which is one of the main distinguishing attributes of family businesses. The impact of risk aversion on short and long-term growth, on diversification, internationalization and managerial practices should be evaluated in the future research.

V. Conclusion

Studying the Czech sample of family businesses is a contribution to the current academic debate on differences between family and nonfamily firms. The Czech conditions are different from the Western countries since the history of modern family businesses starts in 1989 due to the existence of a state-controlled economy before that year.

The study also has certain limitations. Our sample contained only large and medium-sized firms. However, the importance of small firms in employment creation and economic development is crucial [9] and most family businesses belong to the class of small firms. Moreover, not all Czech family businesses were included in the sample; some of them were not detected by our surname-matching approach. On the other hand, the studied sample is large enough to test the differences between family and nonfamily firms.

The future research will focus on the reasons why family businesses actually prefer less debt than their nonfamily counterparts. Such an analysis will have to be qualitative in nature.

References

[1] J. Allouche, B. Amann, J. Jaussaud, T. Kurashina, "The Impact of Family Control on the Performance and Financial Characteristics of Family versus Nonfamily Businesses in Japan: A Matched-Pair Investigation," *Family Business Review*, vol. 21, no.4, pp. 315–329, 2008.

[2] R. C. Andersson, D. M. Reeb, "Founding-Family Ownership and Firm Performance: Evidence from the S&P 500," *The Journal of Finance*, vol. 58, no. 3, pp. 1301–1327, 2003.

[3] M. Bigelli, J. Sánchez-Vidal, "Cash holdings in private firms*," Journal of Banking & Finance*, vol. 36, No.1, pp. 26-35, 2012.

[4] S. Birley, "Succession in the Family Firm: The Inheritor's View*," Journal of Small Business Management*, vol. 24, no. 3, pp. 36-43, 1986.

[5] C. Bonaci, J. Strouhal, L. Müllerová, J. Roubíčková, "Corporate Governance Debate on Professional Ethics in Accounting Profession," *Central European Business Review*, vol. 2, no. 3, pp. 30-35, 2013.

[6] C. Bonaci, J. Strouhal, "Accounting Ethic: Some Research Note," in *Recent Researches in Applied Mathematics and Economics.* Vouliagmeni, 07.03.2012 – 09.03.2012. WSEAS Press, 2012, pp. 138–143.

[7]   M Carney, "Corporate governance and competitive advantage in family-controlled firms," *Entrepreneurship: Theory & Practice*, vol. 29, no. 3, pp.249–265, 2005.

[8]   C. M. Daily, M. J. Dollinger, "An empirical examination of ownership structure in family and professionally managed firms," *Family Business Review*, vol. 5, no. 2, pp. 117-136, 1992.

[9]   P. Dasan, "Small & Medium Enterprise Assessment in Czech Republic & Russia Using Marketing Analytics Methodology," *Central European Business Review*, vol. 2, no. 4, pp. 39–49, 2014.

[10] E. F. Fama, M. C. Jensen, "Separation of ownership and control," *Journal of Law and Economic*, vol. 26, pp. 301–326, 1983.

[11] T. G. Habbershon, M. Williams, "A resource-based framework for assessing the strategic advantages of family firms," *Family Business Review*, vol. 12, no. 1, pp. 1–25, 1999.

[12] M. R. Hiebl, "Risk aversion in family firms: what do we really know?," *Journal of Risk Finance*, vol. 14, no. 1, pp. 49-70, 2012.

[13] J. Hnilica, O. Machek, "Toward a Measurable Definition of Family Business: Surname Matching and its Application in the Czech Republic," *International Advances in Economic Research*, Article in Press, 2014.

[14] H. James, "Owner as manager, extended horizons and the family firm," *International Journal of the Economics of Business*, vol. 6, pp. 41-56, 1999.

[15] N. Kachaner, G. Stalk, A. Bloch, "What you can learn from family business," *Harvard Business Review*, vol. 90, no. 11, pp. 102-106, 2012.

[16] M. R. King, E. Santor, "Family values: ownership structure, performance, and capital structure of Canadian firms," *Journal of Banking and Finance*, vol. 32, pp. 2423-2432, 2008.

[17] P. Kögler, J.Strouhal, C. Bonaci, R. Mustata, "Corporate Risk Management in SMEs," In Recent Advances in Management, Marketing and Finances. Cambridge, 30.01.2012 – 01.02.2013. WSEAS Press, 2013, pp. 63–68

[18] O. Machek, M. Brabec, J. Hnilica, "Measuring Performance Gaps Between Family and Non-Family Businesses: A Meta-Analysis of Existing Evidence," *International Academic Research Journal of Business and Management,* vol. 2., no. 3, 2013.

[19] O. Machek, J. Hnilica, "On the Performance Gaps between Family and Non-Family Firms in the Czech Republic," *Central European Business Review*, vol. 2, no. 4, pp. 54-55, 2013.

[20] O. Machek, J. Hnilica, M. Brabec, "Current State of Knowledge on the Performance Gaps Between Family and Non-Family Firms*," International Advances in Economic Research*, vol. 20, no. 3, pp. 349-350, 2014.

[21] O. Machek, J. Špička, "Productivity and Profitability of the Czech Agricultural Sector After the Economic Crisis," *WSEAS Transactions on Business and Economics*, vol. 11, pp. 700-706, 2014.

[22] O. Machek, J. Hnilica, "Is Substantial Family Influence a Good Measure of Family Involvement? Evidence from the Czech Republic," in *Proceedings of 7th Asia-Pacific Business Research Conference*, 25 - 26 August 2014, Bayview Hotel, Singapore. Melbourne: World Business Institute Australia, 2014.

[23] A. Massis, P. Sharma, J. H. Chua, J. J. Chrisman, *Family Business Studies – an annotated bibliography*, Edward Elgar Publishing, 2012.

[24] D. L. McConaughy, C. H. Matthews, A. S. Fialko, "Founding Family Controlled Firms: Performance, Risk, and Value," *Journal of Small Business Management*, vol. 39, no. 1, pp. 31-49, 2001.

[25] S. Menéndez-Requejo, "Ownership Structure and Firm Performance: Evidence from Spanish Family Firms," in P. Poutziouris, K. Smyrnios, S. Klein (eds.), *Handbook of Research on Family Business*. Cheltenham: Edward Elgar Publishing, pp. 575, 2006.

[26] C. S. Mishra, D. L. McConaughy, "Founding Family Control and Capital Structure: The Risk of Loss of Control and the Aversion to Debt," *Entrepreneurship Theory and Practice*, vol. 23, pp. 53-64., 1999.

[27] A. Prencipe, G. Markarian, L. Pozza, "Earnings management in family-firms: Evidence from R&D cost capitalization in Italy," *Family Business Review*, vol. 21, no. 1, pp. 71-88, 2008.

[28] C. A. Romano, G. A. Tanewski, K. X. Smyrnios, "Capital structure decision making: A model for family business*," Journal of Business Venturing*, vol. 16, no. 3, pp. 285-310, 2001.

[29] J. C. Stein, "Efficient capital markets, inefficient firms: A model of myopic corporate behavior," *Quarterly Journal of Economics*, vol. 104, no. 4. pp. 655–669, 1989.

[30] L., Tyll, P. Pohl, "Diminishing Role of Accounting Information for Investment Decisions," *International Journal of Engineering Business Management*, vol. 8, 2015.

[31] E. S. Vieira, "Capital Structure Determinants in the Context of Family Firms," *Proceedings in ARSA-Advanced Research in Scientific Areas*, vol. 1, 2013.