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DETERMINANTS OF A FAST-GROWING FIRM'S PROFITS: EMPIRICAL EVIDENCE FOR SLOVENIA

Dijana MOČNIK*
Karin ŠIREC**

Abstract

This paper seeks to explain the relationship between a firm's profitability and firm size, leverage ratio and labour costs – using a sample of 782 Slovenian fast-growing firms from the years 2008 and 2009. We determined that profitability is negatively related to the firm size and leverage ratio, but positively to the labour costs. These results illustrate that, with increasing firm size, a fast-growing firm becomes less profitable. The negative coefficient for the leverage ratio indicates that the higher the extent to which debts were used as the source of financing, the lower the profits. One explanation for this is that profitable, fast-growing firms rely on their equity capital. Alternatively, higher-leveraged firms bear greater risks of bankruptcy; consequently, creditors are reluctant to approve credit for such clients. The positive association between labour costs and profitability implies that the higher the labour cost, the higher the profitability of fast-growing firms.

Keywords: fast-growing firms, entrepreneurship, profitability, firm size, leverage ratio, labour costs

JEL classification: L21, L25

1. INTRODUCTION

The purpose of this paper is to specify and test the relationship between profitability, firm size, leverage ratio, labour costs and other structural variables using a data set covering 782 fast-growing firms for the years 2008 and 2009[1]. The primary objective of this paper is to identify which factors are relevant in determining the profitability of a fast-growing firm.

As only profitable firms are important for economic development and the creation of wealth and employment in the long run, we decided to empirically study whether some generally accepted factors hypothesized to impact profitability can also be regarded as critical factors for the profitability of Slovenian fast-growing firms. To date, research has focused predominantly only on partial factors (i.e., firm size only or leverage only) that are relevant for profitability and in addition only for large and public firms or smaller public or

* Faculty of Electrical Engineering and Computer Science, University of Maribor, Slovenia; e-mail: *dijana.mocnik@um.si*.

** Faculty of Economics and Business, University of Maribor, Slovenia; e-mail: *karin.sirec@uni-mb.si*.

private firms in general, but none of them on fast-growing firms. Thus, we assessed simultaneous relationships between the profitability of fast-growing firms from manufacturing with mining and agriculture, construction, trade and services and several possibly relevant additional factors. We adopted this approach for two reasons. First, to date empirical conclusions of observed factors that might relate to profitability are very heterogeneous and done on very different samples so that results are hard to compare. Second, we focus on profits' determinants of fast-growing firms because profits are essential for firms' sustainable existence and development as well as society's progress. Through such an investigative focus, we sought to stress the importance of fast-growing firms' profits in addition to their growing revenues or number of employees or assets.

This paper's fundamental research question is as follows: Is variability in the profitability of the fast-growing firm explained by companies' size, leverage ratio, labour costs, industry, liability legal form, governance structure, firm location and gender of a firm's owner? Liability legal form, governance structure, firm location and gender are control variables added to the model to assure its robustness. Thus, our sample provides a good forum for analysing the impact that a number of firm-level factors have on a fast-growing firm's profitability. To our knowledge, this is the only paper that investigates such simultaneous impacts on firm profitability of small and micro-sized fast-growing enterprises from a variety of industries.

The study reveals that firm size and leverage ratio have a negative and large impact on firm profitability whereas labour costs are positively, although to a smaller extent, related to profitability. We also found that even more detrimental for profitability is a firm's leverage ratio in the services industries, although it is much less for firms with unlimited liability legal form.

In the following sections, we developed the conceptual framework and state the hypotheses to be tested, describe the data and estimating model(s), and present the empirical results. The concluding section discusses our findings.

2. PREVIOUS RESEARCH AND HYPOTHESES

Interest in small and medium-sized enterprises (SMEs) has increased significantly over the last two decades. Many researchers have presented evidence in which scarce financial resources are described as a primary cause of SMEs' failure (Jones, 1979; Wucinich, 1979; Gaskill and Van Auken, 1993; Van Auken and Neeley, 1996; Welsch and White, 1981; Coleman, 2000; Smolarski and Kut, 2011). Small businesses' capital structures usually diverge from those of larger companies. Being dependent primarily on private markets, small businesses face limitations in terms of the types of financing they can receive. At the same time, SMEs initially utilise internal sources of capital. Thus, such a combination creates a unique situation in which capital structure decisions are made. It is well known that small firms express different optimal capital structures. The financial sources can be also very diverse at different stages of the company's life-cycle (Berger and Udell, 1995). Scholars from different domains, such as strategic management, accounting, industrial economics, marketing, and finance, have sought to identify the sources of variation of firm-level profitability. Industrial economics argues that any momentary divergence in a firm's profit rate from the market average soon attracts the potential or actual entry and exit or other competitive forces. Consequently, above-average profit cannot be sustained over longer periods of time (Jonsson, 2007; Dogan, 2013). Larger companies possess more

competitive power than SMEs. Because of their bigger market share, they also have more profitable opportunities. Given their richer resource base, they can seize the opportunity in fields requiring high capital rates (Dogan, 2013). Different stakeholders, particularly owners and managers, try to grow their business as successfully as possible within a given industry. The reason lies in the premise that large firms possess many advantages over their smaller competitors. They might benefit from economies of scale and scope as well as from specialization. At the same time, their bargaining power is stronger. Thus, it can be concluded that larger companies must be more profitable than smaller ones. Regarding our hypotheses, we divided further discussion on the theoretical background into three sections, as follows.

2.1. Firm size and profitability

Simon (1962) has performed one of the earliest studies investigating the effect of firm size on profitability, but he could not confirm a statistically significant relationship between the investigated variables. Further studies on the relationship between firm size and profitability have returned mixed results. Hall and Weiss (1967), Fiegenbaum and Karnani (1991), Majumdar (1997), Ozgulbas *et al.* (2006), Jonsson (2007), Serrasqueiro and Nunes (2008), Lee (2009), Stierwald (2009) and Saliha and Abdessatar (2011) all found a positive relationship between firm size and profitability whereas others (i.e., Shepherd, 1972; Schneider, 1991; Banchuenvijit, 2012) found a negative relationship between the same two variables, concluding that bigger companies are less profitable. Additional studies have found that firm size does not have an effect on profitability (i.e., Simon, 1962; Whittington, 1980; Becker-Blease *et al.*, 2010). In summary, some studies have found either a weak negative relationship or none at all while others have found a positive association between firm size and profitability. According to these mixed empirical results and the expectation that our investigated firms have strong market growth orientation, meaning that they are oriented towards market growth rather than profits, our first hypothesis is:

Hypothesis 1: A fast-growing firm's size and its profitability are negatively related.

2.2. Leverage ratio and profitability

Researchers have investigated the role of debt in firms' performance for more than fifty years (e.g., Modigliani and Miller, 1958). However, this role remains a questionable subject which has attracted the attention of many researchers (e.g., Goddard *et al.*, 2005; Berger and Bonaccorsi di Patti, 2006; Rao *et al.*, 2007; Baum *et al.*, 2007a; Weill, 2008; Nunes *et al.*, 2009; Margaritis and Psillaki, 2010; Kebewar and Shah, 2013). Researchers have analysed the leverage ratio (called also debt ratio or debts) to determine whether an optimal leverage ratio exists or not. The optimal leverage ratio is generally defined as the one which minimizes the cost of capital for the company while maximizing the value of the company. In other words, the optimal leverage ratio is the one which maximizes the company's profitability.

Three essential theories highlight the influence of debt on corporate profitability: signalling theory, the agency costs theory and tax theory (Kebewar and Shah, 2013). "First, according to signalling theory, the debt, in the presence of asymmetric information, should be correlated positively to profitability. According to the agency costs theory, debt has two

contradictory effects on profitability: First, it is positive in the case of agency costs of equity between shareholders and managers; second, its effect is negative due to the agency costs of debt between shareholders and lenders. Finally, the influence of taxation is complex and difficult to predict because it depends on the principles of tax deductibility of interest, income tax and non-debt tax shield" (Kebewar and Shah, 2013, p. 2).

In addition, many researchers disagree about the negative relationship between profits and debts. Some authors have assessed debt's negative effect on profitability (e.g., Majumdar and Chhibber, 1999; Eriotis *et al.*, 2002; Goddard *et al.*, 2005; Rao *et al.*, 2007; Zeitun and Tian, 2007; Nunes *et al.*, 2009). On the other hand, Baum *et al.* (2007a), Berger and Bonaccorsi di Patti (2006) and Margaritis and Psillaki (2007) showed a positive influence. In addition, Simerly and LI (2000), Mesquita and Lara (2003) and Weill (2008) found both effects in their studies. Berger and Bonaccorsi di Patti (2006), Margaritis and Psillaki (2007) and Kebewar and Shah (2013) also identified a non-linear effect (inverse U-shaped relationship). Finally, Baum *et al.* (2007b) confirmed an insignificant effect.

These inconsistent results in the empirical studies occur for different reasons. Researchers have investigated the phenomena using different types of samples (i.e., sectors, countries, companies' size as well as periods). Different measures of profitability as a dependent variable (i.e., ROA, ROE, ROI) and various debt ratios as an independent variable (i.e., ratio of total debt to assets, ratio of short-term debt to assets, ratio of long-term debt to assets) have been used. The presented studies also differ in applied methodologies (i.e., OLS, GLS, weighted least squares, fixed effect, random effect model, maximum likelihood, method of simultaneous equations).

We see debt as a risky choice whose consequences on the profitability of firms can be considerable (e.g., the risk of bankruptcy and its consequences for stakeholders as well as lenders' reluctance) and thus propose our second hypothesis:

Hypothesis 2: A fast-growing firm's leverage ratio and its profitability are negatively related.

2.3. Labour costs and profitability

"Although companies have long been accustomed to using high wages and good working conditions to attract and retain quality professionals, they often overlook incentives for their junior employees. Management's traditional assumption is that employees at the bottom are more readily replaceable or are less valuable to the company's performance, so investing in them is not seen as profitable. However, these often-overlooked workers actually contribute disproportionately to a company's financial and social performance. Investing in them can be an advantage in both good economic times and bad" (Heymann, 2010, p. 4).

The McGill Institute for Health and Social Policy's six-year study, which was published as a book by Heymann (2010), looked at companies in nine countries; these companies ranged in size from 27 to 126,000 employees. The businesses were chosen to represent diversity in terms of geographical location, company size and industrial sector. The study's author went from believing that it was possible for companies to improve working conditions while remaining profitable to realizing that the companies studied had actually increased their profitability by investing in their lower-level employees. The study demonstrated that sustainable high-performing organisations have engaged workforces,

which means that they feel satisfied, love their jobs, work hard and promote the organisation. This impact is largely indirect and occurs by improving retention, customer loyalty, productivity, and safety - all of which impact the healthy firms' bottom line and is reflected in higher investments in workers (labour costs). Taleo Research (2009) revealed that companies with highly engaged employees earned 13% greater total returns for shareholders. The analysis by Harter *et al.* (2002) showed that companies in the top 25% in terms of employee engagement (among those companies studied) produced up to four percentage points more in profitability. In 2009, the authors repeated the study and found that the top 25% increased their profitability by 16% (Harter *et al.*, 2009).

Research by Towers Perrin (2003) indicated that companies with more involved employees are more likely to exceed the industry average in one-year revenue growth. "Specifically, there is a trend showing that highly engaged employees work for organisations that had revenue growth at least one percentage point above the average of their industry, while the organisations of the most disengaged employees work for companies where revenue growth falls one or two percentage points below the average" (Towers Perrin, 2003, p. 20). Yet it needs to be emphasized that different reasons might exist for such an explanation. Namely, better-performing companies often attract more motivated individuals. We decided to include labour costs among profitability determinants of fast-growing firms, using them as an approximation of employees' engagement and consequently intangible assets. Our fast-growing firms have very high revenue growth (such a firm's five-year sales growth rate ranges from 382% to 10,240%). This decision was also based on the study of Scottish high-growth firms which revealed that these firms are characterised by distinct human resource management practices. Their recruitment procedures and subsequent employee empowerment are extensive and reflected in companies' higher performance (Mason and Brown, 2010). This study also revealed that fast-growing firms have quite unique core competences related primarily to the quality of their employees, innovative products and services as well as technical, market and customer knowledge. Therefore, we propose our third hypothesis:

Hypothesis 3: A fast-growing firm's labour costs and its profitability are positively related.

2.4. Additional profitability factors

As is generally accepted and empirically shown, profitability is a complex phenomenon with numerous determinants (e.g., Hormiga and Bolivar-Cruz, 2014). Thus, we tried to improve the results by incorporating several control variables into our analysis – namely, for industry, liability legal form, governance structure, location and gender of the firm owner.

Industry: Analyses of firm profitability patterns indicate that an industry might have an important effect on firm-growth rates and profitability (Camp *et al.*, 1999; Lumpkin and Dess, 1995; Sexton *et al.*, 2000). Lee and Mahmood (2009, p. 351) studied inter-industry differences in profitability and identified four key factors that jointly influence an industry's price–cost margin: "(i) the intensity of strategic investment (e.g., R&D and advertising), (ii) the skewness of the distribution of market share or market concentration, (iii) the appropriability of strategic investment, and (iv) the extent to which firms' market shares are determined by the intensity of their strategic investment". Meanwhile, Ji and Giannikos

(2010) researched the profitability, seasonality and source of industry momentum. According to Acquaah (2003), industry competition is regarded as a moderator between the effectiveness of corporate management capabilities and the sustainability of a firm's abnormal profitability.

Dawid and Reimann (2005) found that the introduction of a single firm oriented towards market growth rather than profits is sufficient to trigger a severe drop in profits and a transformation towards an industry with strong market growth orientation and a large number of marketed product innovations. Furthermore, they demonstrated that the degree of the horizontal differentiation of product innovations from existing products is of significant importance for the individual incentives to adopt market growth orientation and the effects of such a development on overall industry profits.

Some studies have sought to determine whether a threshold level of concentration exists that separates industries into two regimes in terms of profits (Ratnayake, 1996). The majority of previous studies have found supportive evidence for the hypothesis. Vertical and horizontal integrations can also be an important business strategy among firms, affecting the profitability of the integrated firm. Bhuyan (2002) demonstrated that increased vertical mergers in food industries lower profits. The introduction of a single firm oriented towards market growth rather than profits is sufficient to trigger a severe drop in profits and a transformation towards an industry with strong market growth orientation and a large number of marketed product innovations.

Therefore, based on previous empirical results, we divided our sample into four industry subgroups: (1) manufacturing, mining and agriculture; (2) construction; (3) trade; and (4) services. The construction, trade and services dummy variables were added to the model(s).

Liability legal form: Companies can be active under various legal forms. When investigating productivity and firm size, the most important question remains in terms of whether the legal form offers the owners limited liability or not. Previous studies have shown that firms with limited liability grow faster than firms with unlimited liability based on German (Harhoff *et al.*, 1998) and Swedish data (Davidson *et al.*, 2002). This might lead us to the implication that limited liability firms' owners rather invest in risky ventures that might foster firm growth. Harhoff *et al.* (1998), on the other hand, found that firms with a limited liability are more likely to become insolvent than comparable firms with unlimited liability. In our study, we decided to determine whether firms with the unlimited liability have any significant differences in their profitability compared to the limited ones. Thus, we used a dummy variable for unlimited liability legal form.

Governance structure: Business governance structure has also been suggested to affect firm performance. Joh (2003) argued that independent firms grow faster and have better performance than firms with parent corporate relationships. He associated this argument with the hypothesis that, when governing shareholders' control rights exceed their ownership rights, they have an incentive to expropriate firm resources as their private benefits exceed their costs. He also suggested that expropriation is more likely to occur when the discrepancy between control and ownership is large and when their position is secure. Firms with a greater expropriation of resources more often express under-performance. Joh (2003) also investigated whether these effects are stronger in business groups. Controlling shareholders in business groups can maintain their control with the help of indirect pyramidal ownership (la Porta *et al.*, 2002; Claessens *et al.*, 2000). "These controlling shareholders therefore have greater incentives and means to expropriate firm

resources than their counterparts in independent firms. In addition, firms affiliated with business groups can suffer more, as their controlling shareholders have more tools to divert firm resources through the transfer of assets from one subsidiary to another" (Joh, 2003, p. 288). Davidson *et al.* (2002) studied firm growth, using dummy variables for parent companies, subsidiaries, and independent firms. In a similar fashion, in our base regression model for independent firms, we included two dummy variables: one for a parent and subsidiary and the other for a subsidiary only.

Location: Researchers have utilised the link between location and different measures of performance, including initial public offering (IPO) (Deeds *et al.*, 1997), foreign direct investment survival (Shaver and Flyer, 2000), new venture survival (Saxenian, 1990), innovation (Porter and Stern, 2001; Schoonhoven and Eisenhardt, 1990), new venture growth and profitability (Anitra-Gilbert, 2002; Murphy *et al.*, 1996), the assumption of superior performance achieved by cluster firms and/or network governance (Pouder and St. John, 1996; Jones *et al.*, 1997; Porter, 2000; Shaver and Flyer, 2000), and the geographic sources of innovation (Feldman and Florida, 1994; Porter and Stern, 2001). For the purposes of our study, we divided Slovenia into two regions: the more developed western region and the less developed eastern region. We used the dummy variable for the western region as opposed to the eastern region of the base regression.

Firm owner's gender: Social feminist theory defines the difference between women and men based on their early and on-going socialization (Robb and Watson, 2012). It further emphasises that this does not mean women are inferior to men. Moreover, women and men might develop different but equally effective traits. Previous entrepreneurship studies comparing men and women in terms of socialized traits and values are consistent with a social feminist perspective. They have revealed few consistent gender differences and have suggested that those differences that do exist might have little impact on business performance. "Although women's businesses do not perform as well as men's in terms of measures of size, they show fewer differences in other, arguably more critical business effectiveness measures - namely, growth and productivity - and no differences in returns" (Fischer *et al.*, 1993, p. 153).

Mainstream literature usually concludes that female-owned businesses underperform relative to male-owned businesses (Robb and Watson, 2012). Many previous studies have investigated gender differences in firm performance using different types of metrics, such as sales, firm closure rates, and profits (see, for example, Bosma *et al.*, 2004; Fairlie and Robb, 2009; Fasci and Valdez, 1998; Honig, 1998; Loscocco *et al.*, 1991; Robb, 2002; Rosa *et al.*, 1996). Based on their review of this literature, Klapper and Parker (2011, p. 243) concluded that "women entrepreneurs tend to underperform relative to their male counterparts".

Hsu *et al.* (2013), using data from 1992-2008 small public accounting practices in Taiwan, examined the association between gender variables and firms' profit performance. The findings revealed a significant difference in profit performance between male-owned and female-owned firms included in the sample. The current study aims to clarify the effects of owners' gender on financial performance of businesses, explaining that female owners adopt different management strategies than male owners. Many other studies have compared firms' profit performance according to the firms' owners (i.e., Carter and Cannon, 1992; Loscocco and Leicht, 1993; Chaganti and Parasuraman, 1996; Rosa *et al.*, 1996; Rishe, 1999; Coleman, 2000; Hitt *et al.*, 2001; Watson, 2002; Collins-Dodd *et al.*, 2004; Carter *et al.*, 2007; Inmyxai and Takahashi, 2010). Thus, in our regression model, we included one dummy variable for the female owner of the firm.

3. DATA AND MODELS

3.1. Data

The empirical study was performed on Slovenia's fastest-growing companies. The dataset of fast-growing companies from around the nation was provided by the newspaper company Dnevnik and collected primarily by the company Bisnode Ltd. More precisely, the newspaper Dnevnik publishes a list of the 500 fastest-growing companies in Slovenia, where firms are ranked by sales growth over a 5-year period in all Standard Industry Classification (SIC) categories. The selected companies must match the following criteria: generating a profit in the balance of last year, with at least 220,500 euros in revenues from sales in the base year; operating all 12 months in both index years; and having a profit in the last year. The dataset is checked and verified by certified public accountants. Unlike small-scale, regional, or survey-based studies, the sample is not only large enough to be representative, but also provides a 5-year longitudinal perspective on companies from around the country.

The statistical population identified for this study (fast-growing gazelle firms in Slovenia) consists of two firms cohorts: firms on The 500 fastest growing gazelles list 2008 (sales growth difference from 2003 to 2007) and firms of the 500 fastest growing gazelles list 2009 (sales growth difference from 2004 to 2008). We used the polled dataset for 2008 and 2009; N = 782. To avoid repeated measures, data was retained only for the last year a firm appeared on the list. Table 1 presents the sample description.

Table no. 1 – Sample description

Variable	Description	Frequency	Percentage
Industry	Manufacturing, mining and agriculture	165	21.1
	Construction	129	16.5
	Trade	238	30.4
	Services	250	32.0
	Total	*782*	*100.0*
Liability legal form	Limited	681	87.1
	Unlimited	101	12.9
	Total	*782*	*100.0*
Governance structure	Independent	695	88.9
	Subsidiary	78	10.0
	Parent and subsidiary	9	1.2
	Total	*782*	*100.0*
Size class regarding number of employees	Micro	526	67.3
	Small	175	22.4
	Medium	48	6.1
	Large	33	4.2
	Total	*782*	*100.0*

Source: Newspaper company Dnevnik and the company Bisnode Ltd.

Table 1 shows that more than 60% of firms operate in trade and services and more than one-fifth in manufacturing, mining and agriculture, but only 16.5% in construction. In terms of the legal form, 87% of firms operate as limited liability firms whereas 13% operate as unlimited liability firms. The majority of firms, 89%, are independent entities; in addition,

10% represent subsidiary entities, and 1.2% are both parent and subsidiary entities simultaneously. Furthermore, 67% of fast-growing firms were considered micro in terms of the number of employees, slightly more than one-fifth were small, 6% were medium, and 4% were large.

In 2010, Slovenia had 126,965 firms, of which less than 1% were in agriculture, nearly 14% were in manufacturing (including mining, electricity, and water), 19% were in trade, almost 15% were in construction, and 51% were in other services. Of the total 78 billion euros in revenues generated in 2010, the service sector (trade included) created more than 55%, broad manufacturing 37%, construction almost 8%, and agriculture only 1%. The service sector with trade employed nearly 50% of all employees whereas broad manufacturing employed 38%, construction nearly 12%, and agriculture less than 1%. In 2010, Slovenia's economy employed almost 513,000 people (Rebernik *et al.*, 2012).

3.2. The models

We first estimated the relationship between the three independent variables and the dependent variable using model (1):

$$\text{Profitability}_i = a + b_1 \text{ Firm size}_i + b_2 \text{ Leverage ratio}_i + b_3 \text{ Labour costs}_i + e_i \quad (1)$$

where:

profitability is the ratio of the net income to assets;
a is a regression constant;
b_j is regression coefficients (j = 1, 2, 3);
firm size is calculated as the logarithm of squared assets;
leverage ratio measures total debts to assets;
labour costs is the ratio of labour costs to employees;
e is an error term of the regression*;*
and *i* is the index for the number of cases.

After obtaining the results from model (1), for which R^2 was 0.215, we extended the model by incorporating dummy variables for industry: construction, trade and services (with manufacturing, mining and agriculture to be the base regression), unlimited legal form (with limited to be the base regression), parent and subsidiary as well as subsidiary only governance structures (with independent to be the base regression), western region (with eastern region as the base regression), and female owner (with the male owner to be the base regression) to determine whether we could improve the model. All dummy variables amount to 1 if the case (a firm) belongs to a group and 0 otherwise. Only the services and unlimited legal form dummy variables proved to significantly increase the R^2, which amounts to 0.314.[2] Thus, in the next step, the model includes three main independent variables, dummies for services and unlimited legal form and interactions between the dummies and main independent variables. Model (2) for estimation reads:

$$\begin{aligned}\text{Profitability}_i = {} & a + b_1 \text{ Firm size}_i + b_2 \text{ Leverage ratio}_i + b_3 \text{ Labour costs}_i + s \text{ Services}_i + \\ & + u \text{ Unlimited}_i + sb_1 \text{ Services}_i \times \text{Firm size}_i + sb_2 \text{ Services}_i \times \text{Leverage ratio}_i + \\ & + sb_3 \text{ Services}_i \times \text{Labour costs}_i + ub_1 \text{ Unlimited}_i \times \text{Firm size}_i + ub_2 \text{ Unlimited}_i \times \\ & \times \text{Leverage ratio}_i + ub_3 \text{ Unlimited}_i \times \text{Labour costs}_i + e_i\end{aligned} \quad (2)$$

where:

the description of variables is the same as in model (1)[3];

s and *u* are the regression coefficients of the services and unlimited dummies;

and sb_j and ub_j are the regression coefficients of interaction terms between the services and unlimited dummies and centred main independent variables.

4. RESULTS

In this section, we analyse the results from model (2).

4.1. Descriptive statistics

Table 2 shows descriptive statistics for the key variables. The average profitability in 2008 and 2009 was 7.8%, which means that on average a firm creates €7.8 with its €100 assets. The average value of a firm size in 2008 and 2009 amounted to slightly more than 2 million euros (the value 29.1079 in Table 2 is represented as the natural logarithm of squared assets). We can also see that, on average, leverage ratio (represented by the ratio of the sum of short- and long-term debts to assets) amounts to 71%, which is fairly high indebtedness. The mean value of labour costs amounts to €23,555, which means that in 2008 and 2009 on average, an employee caused such an amount of labour costs. Dummy variables and interaction terms are excluded from Table 2. The calculations were made based on 774 cases (firms).

Table no. 2 – Descriptive statistics of Slovenian fast-growing firms

Variable	Mean	Std. Deviation	N
Profitability	7.7622	9.73209	774
Firm size	29.1079	2.44984	774
Leverage ratio	0.7130	0.20951	774
Labour costs	23,555	12,359	774

4.2. Regression results

The estimation of regression coefficients was conducted using a stepwise OLS with SPSS 19.0. Table 3 presents the results of the regression analysis. As Table 3 indicates, three main independent variables and two interaction terms are significantly related to firm profitability after the five steps of the stepwise regression and explain 32.8% of the variability of the dependent variable. In the model, no problem of collinearity exists as Table 3 indicates that all VIF factors are much smaller than 10 (Gujarati, 2004) and the condition index is 2.200[4]. In addition, no problem of autocorrelation emerges, as shown by the Durbin-Watson (DW) statistic in Table 3. For the robustness of the model we also verified if the chosen model might suffer from an endogeneity problem or specification error, such as the omission of an essential variable or an inappropriate functional form. The examination was conducted in three ways. First, we visually tested the model's residuals plot (Gujarati, 2004)and determined that the residuals did not exhibit any observable patterns. Second, we used the DW test to detect any specification error. The estimated DW test was not significant, which means that we can reject the hypothesis of incorrect specification of the model (Gujarati, 2004)[5]. Third, we calculated Ramsey's test, which is a general test of specification

error, referred to as a regression specification error test (RESET) (Gujarati, 2004, p. 521). This test also confirmed the absence of specification error.

We found a statistically significant and negative coefficient for firm size (b_1 = -0.447; p = 0.000) and a negative coefficient for leverage ratio (b_2 = -21.873; p = 0.000). The coefficient for labour costs is positive (b_3 = 5.481E-5; p = 0.026). The coefficient of the interaction between the services dummy and leverage ratio is statistically negative (sb_2 = -13.343; p = 0.000), and the interaction between the unlimited dummy and leverage ratio is significantly positive (ub_2 = 16.087, p = 0.000). Most (27.9%) of the variability in profitability is explained by the leverage ratio (for firms in services or unlimited firms, this figure amounts to 29.9%), whereas firm size explains only 0.9% of the variability and labour costs 0.4% (see Table 3, R^2 change). To be able to see the relative importance of independent variables, we must look at standardized partial regression coefficients (beta coefficients). The greatest impact on profitability stemmed from the leverage ratio. The beta coefficient of b_2 is –0.471, which means that the increase of the centred leverage ratio for one standard deviation (=0.20951) decreases the profitability by 0.471 of a standard deviation of profitability (=9.73209). The second greatest impact is from the interaction between the services dummy and leverage ratio (sb_2 beta = -0.164). Next in terms of impact is the interaction between unlimited dummy and leverage ratio (ub_2 beta = 0.142), followed by the firm size (b_1 beta = -0.112) and labour costs (b_3 beta = 0.070).

We confirmed our first research hypothesis (H1), which states that a fast-growing firm's size is negatively related to its profitability. Our result concurs with the findings of a negative association between firm size and the profitability of some previous research (i.e., Shepherd, 1972; Becker-Blease *et al.*, 2010; Banchuenvijit, 2012). Our negative association between profitability and firm size can be explained based on Markman and Gartner (2002) assumption that the growth of a firm is a measure of firm performance that is generally based on the belief that growth is a precursor to the attainment of sustainable competitive advantages and profitability. Thus, Slovene fast-growing firms have not yet arrived to the point where their businesses become profitable. The negative and significant parameter estimate for firm size illustrates that Slovene smaller fast-growing firms are less profitable than larger firms. This finding can be an indicator that smaller firms, unlike larger ones, do not exploit scale economies and benefit from economies of scope. An alternative interpretation is that smaller firms can access capital at higher costs than larger firms, which aggravates their investment and, consequently, their size.

The negative relationship between profitability and firm size also concurs with the structure–conduct–performance model, which postulates that the degree of concentration in an industry determines firm behaviour and profitability. A higher concentration enables collusion between firms, which can lead to higher profits. As our sample consists mostly of SMEs and collusion is hardly possible, differences in firms' profitability might be assigned to the efficiency level, organizational structure, and quality of management (Stierwald, 2009), which can be implied with the firm size variable.

We confirmed our second research hypothesis (H2), which states that a fast-growing firm's leverage ratio is negatively related to its profitability. The coefficient for leverage ratio is significantly below zero. The value of this coefficient for services firms should be decreased for another -13.343 (this is the value of the sb_2 regression coefficient in Table 3) and unexpectedly increased by 16.087 for all unlimited firms (ub_2 coefficient in Table 3). This might mean that, the higher the debts as the source of financing, the lower the profits. Another explanation can be that profitable fast-growing firms rely less on debt because they

have not had easy access to debt financing. Alternatively, higher leveraged firms bear greater risks of bankruptcy; consequently, creditors are reluctant to approve credit for such clients (Stierwald, 2009). The positive coefficient of the unlimited dummy reveals that the services of fast-growing firms, for which the repayments of debts are secured by the personal assets of the principal parties, have somewhat easier access to borrowed money than limited ones. We expected a negative association with profitability based on the results of Almus and Nerlinger (1999) study, which showed that firms with limited liability grow faster than those with unlimited liability. However, the positive coefficient of the unlimited dummy concurs with the result of Harhoff *et al.* (1998) study, which found that firms with a limited liability are more likely to become insolvent (i.e., encounter more difficulty in borrowing money to solve their liquidity) than comparable firms with full (unlimited) liability. Generally, our result is in accordance with the previous results that also found a negative relationship between leverage ratio and profitability (i.e., Majumdar and Chhibber, 1999; Eriotis *et al.*, 2002; Goddard *et al.*, 2005; Rao *et al.*, 2007; Zeitun and Tian, 2007; Nunes *et al.*, 2009).

Finally, we confirmed our third research hypothesis (H3), which argues that a fast-growing firm's labour costs are positively related to its profitability. Our result showing a positive relationship between worker engagement (i.e. labour costs) and profitability is in accordance with the results of Harter *et al.* (2002) studies as well as with Gberevbie (2012) who estimated a strong relationship between human resource development and firm performance.

Table no. 3 – Multiple least square dummy variable regression

Dependent variable: Profitability (Net income to assets in %); Method of estimation: Stepwise OLS

	Step 1	**Step 2**	**Step 3**	**Step 4**	**Step 5**
a	7.748**	7.700**	7.774**	7.777**	7.777**
Constant	(26.063)	(26.246)	(26.824)	(26.992)	(27.061)
b_2	-24.526**	-19.894**	-22.857**	-22.360**	-21.873**
Leverage ratio[a]	(-17.274)	(-11.657)	(-12.729)	(-12.476)	(-12.145)
VIF	1.000	1.485	1.690	1.703	1.729
sb_2		-14.191**	-14.138**	-14.019**	-13.343**
Services × Leverage ratio[a]		(-4.749)	(-4.797)	(-4.783)	(-4.540)
VIF		1.485	1.485	1.485	1.501
ub_2			17.534**	16.998**	16.087**
Unlimited × Leverage ratio[a]			(4.739)	(4.616)	(4.353)
VIF			1.202	1.205	1.220
b_1				-0.372**	-0.447**
Firm size[b]				(-3.151)	(-3.647)
VIF				1.013	1.094
b_3					5.481E-5*
Labour costs[c]					(2.227)
VIF					1.123
R^2	0.279	0.299	0.319	0.328	0.332
R^2 Change	0.279**	0.020**	0.020**	0.009**	0.004*
R^2 Adjusted	0.278	0.297	0.316	0.324	0.328
Number of cases	774	774	774	774	774
F	298.40**	164.64**	120.30**	93.76**	76.38**
DW[d]					2.038

Note: Main independent variables are centred: [a] the share of debts to assets minus mean (mean=-0.0006); [b] value of natural logarithm of assets squared minus mean (mean=0.0142); [c] value of labour costs per employee minus mean (mean=0.0000); [d] *DW*–Durbin Watson; we can accept the hypothesis of no positive or negative autocorrelation in the model. In parentheses are *t*-values. * significant at the 0.05 level; ** significant at the 0.01 level. As no *VIF* factor is higher than 1.729 and Condition Index amounts to 2.200, we can accept the proposition of no multicollinearity in the model.

5. CONCLUSIONS

In the paper, we presented the results of our empirical research in which we tested the relationships among the profitability of Slovenian fast-growing businesses. The estimation was made using a stepwise regression on the pooled sample of 782 firms from Slovenia in the years 2008 and 2009. We assessed simultaneous relationships among the profitability of fast-growing businesses. Our main research question was: Can profitability of fast-growing businesses be explained by businesses' size according to their asset value, their leverage ratio and labour costs? We were also interested in determining whether the estimated relationships of the stated determinants change when other possibly relevant factors are added to the model. We added industry (manufacturing with mining and agriculture, construction, trade and services), the business's liability legal form (limited or unlimited liability of the firm), its governance structure (parent company, subsidiary or independent unit), firm location (more developed western or less developed eastern part of Slovenia) and gender (male or female) of the firm's owner. With the inclusion of these control variables, we ensured the robustness of the regression model.

The results showed a negative association between a firm's size and its leverage ratio and profitability. The impact of labour costs on profitability proved to be positive.

We confirmed our first research hypothesis (H1), which states that a fast-growing firm's size is negatively related to its profitability. Our assumption was that the growth of a firm can be considered as one of the firm's performance measures. It is generally assumed that, to become an established large company with a sustained and profitable business, a firm should be growing steadily. Thus, fast-growing Slovene firms have not yet arrived at this point of profitable business. The negative and significant parameter estimate for firm size indicates that smaller fast-growing Slovene firms are less profitable than larger firms.

The results showed that the greatest impact on profitability is the leverage ratio. The coefficient for the leverage ratio is negative and significant, which confirms our second research hypothesis (H2) regarding the negative relationship between profitability and the leverage ratio. The leverage ratio's coefficient for service firms has an even larger negative value. This might mean that, the higher the indebtedness of a firm, the lower the profits. Another explanation can be that profitable fast-growing firms rely less on debt and use their own finances. Alternatively, higher leveraged firms use fewer debts for financing because creditors are reluctant to approve credit for clients considered to be riskier (Stierwald, 2009). The positive coefficient of the interaction term between the unlimited dummy and leverage ratio reveals that fast-growing businesses that secure their repayments of debts using personal assets borrow money somewhat easier than businesses with the limited liability legal form.

Finally, we confirmed our third research hypothesis (H3), which argues that a fast-growing firm's labour costs are positively related to its profitability which might exhibit that the better payment of labour affects leads to motivated and satisfied employees and might also be related to more educated employees.

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[1]. In the sample, 282 firms were examined for 2008 and 500 firms for 2009.

[2]. The increase of R^2 is significant. *F restricted* (df num = 8, df denum = 762) amounts to 30.03, whereas *F tabulated* (8, 500) at $p = 0.01$ is 2.55 and at (8, 1000) is 2.53.

[3]. Because of the interaction terms we centred (deducting the variable mean from the variable value) main independent variables to avoid multicollinearity.

[4]. The condition index is not included in tables but can be provided by the authors, upon request.

[5] DW statistic amounts to 0.014649, whereas $d_L = 1.85031$ and $d_U = 1.90982$ (n = 750, k=12, p=0.05). At the 1% significance level, $d_L=1.80085$ and $d_U=1.86022$.