GROWTH STRATEGIES AND CAPITAL STRUCTURES OF SMALL AND MEDIUM-SIZED ENTERPRISES*

Minna Martikainen[a]

Jussi Nikkinen[b]

[a]Lappeenranta University of Technology, Finland

[b]University of Vaasa, Finland

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Abstract

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JEL classification: G30; G32; G35

Keywords: capital structure, debt ratios, growth strategy, small and medium-sized enterprises

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[a] Minna Martikainen, Lappeenranta University of Technology, Department of Accounting and Finance, P.O. Box 20, FIN-53851 Lappeenranta, Finland; Tel. +358 5 621 7271; E-mail address: minna.martikainen@lut.fi

[b] Corresponding author: Jussi Nikkinen, University of Vaasa, Department of Accounting and Finance, P.O. Box 700, FIN-65101 Vaasa, Finland; Tel. +358 6 324 8541; Fax: +358 6 324 8344; E-mail address: jn@uwasa.fi

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1. Introduction

Small and medium-sized enterprises (SMEs) represent substantial proportions of Western economies. For example, Denis (2004) among others notes that although large firms have historically been job creators, the situation has reversed in the last twenty years, as the number of SMEs and jobs created by them has remarkably increased. Given the increased importance of SMEs, surprisingly few studies have focused on the entrepreneurial accounting and finance issues.[1] Exceptions include Ang (1991), Holmes and Kent (1991), Berger and Udell (1995), Eisenberg, Sundgren and Wells (1998), Ang, Cole Lin (2000), Cavalluzzo, Cavalluzzo and Wolken (2002), Cassar and Holmes (2003), and Hall, Hutchinson and Michaelas (2000, 2004).

In this study, we follow a research avenue of Holmes and Kent (1991), Hall et al. (2000, 2004) and Cassar and Holmes (2003) among others, which focuses on the capital structures in SMEs. The specific objective of our study is to examine the impact of growth strategies on capital structures. Investigating the effects of growth strategies using SME data is particularly well-motivated since, for instance, Cassar and Holmes (2003) point out that many smaller scale firms may have strong growth opportunities. Furthermore, for example, Harris and Raviv (1991) state: "This area [models which related capital structure to products and inputs] is still in its infancy and is short on implications relating capital structure to strategic variables, etc". Along these lines, Cassar and Holmes (2003) also suggest that firm strategy could be a potentially useful variable in explaining capital structure.

The capital structures of large listed firms are usually explained by using two theories of Myers (1984) and Myers and Majluf (1984), the tradeoff theory and the pecking order

[1] For example, Denis (2004) notes that there has also been a dramatic increase in the amount of capital allocated to private firms, but at the same time research on entrepreneurial finance has lagged behind this development.

theory, which the existing empirical evidence has been generally found to support (see, e.g., Harris and Raviv 1991, Rajan and Zingales 1995, Wald 1999, Korajczyk and Levy 2003, and Brounen, de Jong and Koedijk 2006). As pointed out by Ang (1991) and Hall et al. (2004), the capital structure issue for the small firm, however, may be somewhat different from their larger counterpart. According to Ang (1991) and Berger and Udell (1995), the main differences are related to sources of funds and bargaining between owners and these sources of financing, but it may be noted that there is also a pecking order for the funds. For example, a high preference is to use the funds generated within the business and as also pointed out by Hall et al. (2000), a further equity investment by owner-managers would rank ahead of borrowing.

Empirical evidence using SME data seems to reflect these differences between small and large firms. For example, Holmes and Kent (1991) compare the financial structure of small and large Australian manufacturing firms and find that because of limited ability to obtain external equity funding the financial structures of small and large firms are significantly different. Hall et al. (2000) and Cassar and Holmes (2003) examine the long- and short-term debt patters of unquoted, U.K. and Australian SMEs. These studies and Hall et al. (2004) report a positive relation between long-term debt and the asset structure of a firm. Hall et al. (2000, 2004) moreover document that long-term debt is positively related to firm size and negatively related to firm age and Cassar and Holmes (2003) find that long-term debt is negatively related to profitability. Short-term debt in turn is found to be negatively related to profitability and asset structure in all these studies. Furthermore, Hall et al. (2004) extend the previous analyses by examining the degree to which the determinants of SMEs' capital structures differ between European countries and document the country and firm-specific effects. In sum, the studies on SMEs cited above are broadly consistent with

the pecking order theory and the findings also appear to be broadly consistent across different industries, countries and business environments.[2]

In this paper, we contribute to the existing literature by examining the relation between growth strategies and capital structures. We first identify firms with the following four growth strategies: (1) new product development, (2) increasing export, (3) networking, and (4) marketing and sales promotion. We then investigate, as our primary research task, the effects of growth strategies on the long and short-term debt to total assets ratios. Motivated by the arguments presented in Ang (1991) and Cassar and Holmes (2003), we hypothesize that when non-listed SMEs implement growth strategies, the process requires external debt financing. We moreover hypothesize that the type of a growth strategy affects the maturity structure of debt. For example, production development and exporting may be expected to require long-term financing. By contrast, marketing and sales promotion in turn may take place in campaigns of limited length, for which short-term financing may be more appropriate.

We examine the relationship between growth strategies and capital structures using a random sample of 1,153 Finnish non-listed incorporated SMEs. Finland provides an interesting setting for this type of examination since it constitutes an ideal example of a competitive and innovative business environment.[3] To illustrate the importance of SMEs in Finland, they were estimated to represent 99.7 % of all Finnish business enterprises and to employ 61 % of the workforce in the private sector at the end of 2003. The comprehensive financial statement data from Statistics Finland used in our study were initially compiled by

[2] Hall et al. (2004) conclude that "the hypotheses appear to hold up reasonably well", but they also note that "the hypotheses do not explain everything in terms of SME capital structure since there are variations in the effects of the determinants on capital structure between countries".

[3] Finland has frequently been ranked as one of the world's most competitive business environments. See, for example, the Global Competitiveness Report 2005-2006 by World Economic Forum, and the World Competitiveness Yearbook 2006 by IMD.

the tax authorities in Finland. Similar type of financial statement data on Finnish small firms has previously been used, for example, by Eisenberg et al. (1998).

According to our results, networking, and marketing and sales promotion strategies are typical for younger firms, and as is increasing export for older firms. The use of growth strategies typically increases with firm age. Our results show that growth oriented firms with growth strategies have more both long-term and short-term debt than comparable firms with no growth strategies. We also find that the type of the growth strategy affects the use of long and short-term debt. Our results suggest that networking and in particular marketing and sales promotion increase the amount of short-term debt, whereas new product development and export activities seem to require more long-term financing. Consistently with Hall et al. (2000, 2004) and Cassar and Holmes (2003), a firm's capital structure is found to depend on the industry, profitability, risk, growth, asset structure, and firm size and age.

The remainder of this study is organized as follows. Section 2 presents the financial statement and growth strategy data used in the analysis. Section 3 reports the empirical findings of the effects of the growth strategies on the long and short-term debt ratios of SMEs. It also presents a user profile for each growth strategy. Section 4 concludes.

2. Financial statement data and preliminary data analysis

The financial statement data on the non-listed Finnish firms used in this study were obtained from Statistics Finland. The database contains the financial statements of Finnish firms, and is based on the business taxation register (EVR) for which the datawere compiled by the tax authorities initially for taxation purposes. We focus on corporations excluding individuals, partnerships, etc. from the sample.[4] It may be noted that the financial statements of these firms have been audited. As an additional data screening criterion, the firms are required to employ at least 3 persons and to be at least 7 years old. We include the firms from the six largest main industries according to SIC classification provided by Statistics Finland.[5] The industries are (D) manufacturing, (F) construction, (G) wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, (H) hotels and restaurants, (I) transport, storage and communication, and (K) real estate, renting and business activities. Given the above screening criteria, our random sample includes 1,153 SMEs. In the following two sections, leverage and growth strategy measures and control variables are described.

2.1. Leverage and growth strategy measures

Following Hall et al. (2000, 2004), and Cassar and Holmes (2003) among others, we measure the capital structure using separately the ratio of long-term debt to the book value of total assets (*LTD*) and the ratio of short-term debt to total assets (*STD*) in the analysis. These long-term and short-term leverage ratios are computed using the financial statements from

[4] This data screening is similar, for example, to Eisenberg et al. (1998).
[5] Finland's national standard industrial classification is based on the European Union classification of economic activities NACE 2002.

2002. Including the long-term and short-term leverage ratios separately allows an examination of the effects of growth strategies on the maturity structure of debt rather than the total debt position of sample firms.

As the source of growth strategies we use a joint survey of the Federation of Finnish Enterprises and Finnvera, Ltd., which provides information on growth strategies of sample firms. To be precise, the survey indicates whether the firm has a growth strategy and specifies its type. We identify the firms with the following four growth strategies: (1) new product development, (2) increasing export, (3) networking, and (4) marketing and sales promotion. As the next step, we use a binary variable approach to identify firms with growth strategies. Consequently, we use a dummy variable to indicate firms with growth strategies and four separate dummy variables to differentiate between the growth strategies.

We hypothesize that when non-listed SMEs implement growth strategies, the implementation usually requires external debt financing. This expectation is consistent with suggestions in Ang (1991) and Cassar and Holmes (2003). For example, Cassar and Holmes (2003) suggest that firm strategy could be a potentially useful variable in explaining capital structure. We moreover expect that the type of growth strategy affects the maturity structure of debt. For example, production development and exporting may be expected to require long-term financing. By contrast, marketing and sales promotion may take place in campaigns, for which short-term financing may be more appropriate. Since there exist several firm specific characteristics and industry effects which may affect the debt usage, several control variables are included in the analysis.

2.2. Control variables

A set of control variables is used in the multivariate analysis to take into account industry effects (see, e.g. Hall et al. 2000) and various firm characteristics (see Wald 1999, Hall et al. 2000, Cassar and Holmes 2003, and Hall et al. 2004). Following Wald (1999), Hall et al. (2000, 2004) and Cassar and Holmes (2003) asset structure can be hypothesized to be a determinant of a firm's capital structure. As in Wald (1999), we include separately the ratio of property, plant, and equipment to the book value of assets (*PP&E*) and the ratio of inventories to the assets (*INV*). Our data clearly supports this specification over the alternatives.[6] However, we also estimated the models as, for example, in Cassar and Holmes (2003), and Hall et al. (2004) to check that our primary results are not sensitive to the selected specification. As in earlier studies, we may expect that there exists a positive relation between asset structure and long-term debt (*LTD*) and a negative relation between asset structure and short-term debt (*STD*). Furthermore, following Wald (1999), we include the ratio of depreciation to total assets (*DEPR*) as an additional control variable.

We use the standard deviation of the first differences in return on assets as the risk measure (*RISK*). We use a five-year estimation period. Our choice is therefore similar to Wald (1999). As shown by Cassar and Holmes (2003), the primary results are not sensitive to the choice or exclusion of the risk measure. Based on the earlier literature such as Wald (1999) it may be expected that there exists a negative relationship between risk and long-term debt as with bankruptcy costs a larger variance in earnings implies lower leverage although, as noted by Cassar and Holmes (2003), earlier empirical results obtained using SME samples have been somewhat mixed. We *a priori* expect that the negative relationship holds true in particular in the case of long-term debt, but not necessarily in the case of short-

[6] Based on the *F*-test the equalities of the coefficients for *PP&E* and *INV* were rejected. These results are not reported but available upon request.

term debt since the higher risk especially may reduce the long-term lending capacity of a small firm.

Profitability and capital structure can be hypothesized to have a negative relationship since profitable firms with access to retained profits can use these for firm financing instead of outside sources (see, e.g., Wald 1999, Cassar and Holmes 2003, and Hall et al. 2004). In other words, there is a pecking order for the funds with higher preferences to use those generated within the business. In line with earlier studies such as those by Wald (1999) and Cassar and Holmes (2003), return on assets (*ROA*) is used as the performance measure. We also include a five-year average of sales growth (*GROWTH*) to control for the effects of realized firm growth on debt to assets ratios. Like Wald (1999), Cassar and Holmes (2003), and Hall et al. (2004) firm size and like Hall et al. (2000, 2004) firm age measures are incorporated into the analysis. We also define the firm size variable (ln(*TA*)) as the natural logarithm of the book value of total assets and the firm age variable as the natural logarithm of the number of years since the firm's foundation (ln(*AGE*)).

According to Harris and Ravid (1991), leverage ratios tend to vary across industries. Similar empirical evidence using SME data is also provided in Hall et al. (2000) examining the industry effects on capital structures. Consistent with the suggestions of these studies, we include industry dummies to control for variations across industries.

2.3. Sample statistics

Table 1 reports the descriptive statistics and preliminary data analysis. Panel A reports the means, medians, standard deviations, and minimum and maximum values for the variables used in the analysis. As can be seen from the table, the mean for the ratio of long-

term debt to the book value of total assets (*LTD*) is 15.6 % and the mean for the ratio of short-term debt to total assets (*STD*) is 41.6 %. The corresponding median values appear to be somewhat lower, 7.1 % and 37.6 %, respectively. It may be observed that these leverage ratios are in general well in line, for example, with Cassar and Holmes (2003) and Hall et al. (2004) which use the Australian and European SME samples, respectively.

Panel B separates regular firms (43.3 % of all firms) from the firms with growth strategies (56.7 % of all firms). Panel B presents the means and medians separately for both groups and *t*- and the Wilcoxon signed rank test statistics to test differences in means and medians, respectively. Several interesting observations emerge from this panel. Comparison of growth oriented and regular firms suggests that growth oriented firms are more leveraged than regular firms in terms of both long-term and short-term debt. Growth oriented firms have also less property, plant and equipment, but are larger and younger than regular firms. Furthermore, it can be observed that firms with growth strategies have actually experienced significantly higher realized growth. Interestingly, return on assets is not found to be statistically different between growth oriented and regular firms.

Panel C presents the Pearson correlation coefficients for the variables. As can be seen from Panel C, both short and long-term debt ratios are positively correlated with growth strategies and negatively correlated with *ROA*. The long-term debt ratio appears to be positively correlated with variables *PP&E*, *DEPR*, and ln(*AGE*) and negatively correlated with variables *RISK*, *INV*, and *GROWTH*. For the short-term debt ratio, the correlation coefficients with corresponding variables have opposite signs, and, as can be seen, the short and long-term debt ratios are negatively correlated. In sum, the reported statistics are very similar, for example, to those of Cassar and Holmes (2003).

(Insert Table 1 about here.)

3. Impact of growth strategies on capital structure

3.1. Effects of growth strategies on the long and short-term debt ratios

Both the standard OLS estimator (e.g. Hall et al. 2000, Cassar and Holmes 2003, and Hall et al. 2004) and the hetoroskedastic tobit estimator (Wald 1999) have previously been used to investigate the influences on capital structures. The basic structure of our multivariate analysis is similar, for example, to Wald (1999), Hall et al. (2000, 2004), and Cassar and Holmes (2003). Thus, we begin our analysis by first estimating the following OLS regression to examine the impact of growth strategies on the long-term debt ratio LTD_i :

$$\begin{aligned} LTD_i = {} & \alpha_0 + \sum_{k=1}^{5} \alpha_k SIC_i^k + \beta_0 Growth\_Strategy_i + \delta_1 RISK_i + \delta_2 PP\&E_i \\ & + \delta_3 INV_i + \delta_4 DEPR_i + \delta_5 ROA_5 + \delta_6 GROWTH_i \\ & + \delta_7 \ln(TA_i) + \delta_8 \ln(AGE_i) + e_i , \end{aligned} \tag{1}$$

where SIC_i^k is a dummy variable for a firm *i* according to the industry classification, $Growth\_Strategy_i$ is a dummy variable indicating whether the firm *i* has a growth strategy, $RISK_i$ is the standard deviation of the first differences in return on assets, $PP\&E_i$ denotes property, plant and equipment as a fraction of total assets, INV_i is the ratio of inventories to total assets, $DEPR_i$ is the ratio of depreciation of total assets, ROA_i is return on assets,

$GROWTH_i$ is a five-year average of sales growth, ln(TA_i) is the natural logarithm of the book value of total assets, and ln(AGE_i) is the natural logarithm of the number of years since the firm's founding. It can be noted that the basic set of control variables is the same as in Wald (1999).

In the model estimation, the possibility of multicollinearity is detected using the variance inflation factors and it is concluded that multicollinearity is not a problem in the current analysis (see Judge, Hill, Griffiths, Lütkepohl and Lee 1988, pp. 868-871). Based in the White test, it is concluded that the error variances are heteroskedastic. Consequently, the reported *t*-values are based on the White (1980) heteroskedasticity consistent covariance matrix.

To take into account the fact that the range of dependent variables is limited, we introduce a partly latent variable y_i and define that the long-term debt to totals assets ratio $LTD_i = y_i$, if $y_i > 0$ and $LTD_i = 0$ if $y_i \leq 0$. Following Wald (1999), we then estimate the following censored regression model:

$$\begin{aligned} y_i = {} & \alpha_0 + \sum_{k=1}^{5} \alpha_k SIC_i^k + \beta_0 Growth\_Strategy_i + \delta_1 RISK_i + \delta_2 PP\&E_i \\ & + \delta_3 INV_i + \delta_4 DEPR_i + \delta_5 ROA_5 + \delta_6 GROWTH_i \\ & + \delta_7 \ln(TA_i) + \delta_8 \ln(Firm\_Age_i) + e_i , \end{aligned} \tag{2}$$

where the explanatory variables are defined as in the case of model (1). The motivation for the use of the tobit estimator arises from the fact that the dependent variables, debt to total asset ratios are censored at zero. Since the likelihood ratio test soundly rejects the null hypothesis of homoskedastic error variances in all cases, we employ a multiplicative error specification as in Wald (1999) (see e.g. Judge et al. 1988, p. 365).

Table 2 reports the results of the OLS and tobit regressions in which long-term debt ratios of SMEs are explained by the growth strategy variables and the outlined set of control variables. As can be seen from Panel A of Table 2, after controlling for industry effects and firm characteristics the long-term debt ratio is significantly positively related to growth strategy, indicating that growth oriented firms tend to be more leveraged in terms of long-term debt. Our multivariate results reported in Table 2 are therefore consistent with the univariate results in Panel B of Table 1. Panel A of Table 2 moreover suggests that growth strategies: (1) new product development, (2) increasing export, (3) networking, and (4) marketing and sales promotion are positively significantly related to the long-term debt ratio. In particular, new product development, increasing export and networking appear to require more long-term debt.

The results regarding the control variables are consistent with earlier studies (see, e.g., Wald 1999, Hall et al. 2000, Cassar and Holmes 2003, and Hall et al. 2004). Of the control variables, *PP&E* and *INV* are positively significantly related to long-term debt, whereas the control variables *ROI* and ln(*TA*) are negatively significantly related. It may be observed that the OLS and tobit regressions produce very similar estimates.

According to the earlier literature leverage ratios of tend vary across industries (see, e.g., Harris and Ravid 1991, and Hall et al. 2000). Panel B of Table 2 reports the results of examining the effects of different industries. As can be seen from the panel, industries (F) construction, (G) wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, and (K) real estate, renting and business activities have less long-term debt than the remaining industries. Our findings seem to be well in line with Hall et al. (2000). Finally, Panel C of Table 2 reports the results of the model specification tests and heteroskedasticity estimates. As can be observed, the adjusted R^2 is 0.35 for both OLS

regressions. *F*-tests show that the regressions are statistically highly significant. For the tobit regressions, according to the likelihood ratio test, homoskedasticity of error terms is soundly rejected and consequently, following Wald (1999), an appropriate multiplicative specification is chosen. The likelihood ratio test clearly indicates that the selected heteroskedasticity specification is more appropriate than the homoskedasticity assumption.

(Insert Table 2 about here.)

As the next step, we examine the impact of growth strategies on the short-term debt ratio using similar OLS and tobit regressions. Table 2 reports the results of these regressions in which the short-term debt ratio STD_i is explained by the strategy variables and the set of control variables. Panel A of Table 3 shows that the short-term debt ratio, like the long-term debt ratio, is significantly positively related to growth strategy thereby suggesting that growth oriented firms tend to be more leveraged. Panel A also shows that the relationship between the short-term debt ratio and the growth strategies, (3) networking, and (4) marketing and sales promotion are positive and significant at the 5 % level. As can also be seen, the control variables, *INV*, *DEPR*, and *GROWTH* appear to be positively related to the amount of short-term debt. In contrast, the variables *PP&E*, *ROA*, ln(*TA*) and ln(*AGE*) are negatively significantly related to the short-term debt ratio. In the case of short-term debt ratio, the results from the OLS and tobit regressions are also similar, indicating that estimation results are robust.

Panel B of Table 3 presents variation of short-term debt across industries. Of the industries, firms in (F) construction, and (I) transport, storage and communication industries, in particular, have more short-term debt than the firms in other industries. Panel C of Table 3

presents the results of the model specification tests and heteroskedasticity estimates. The adjusted R^2 is 0.16 for all the OLS regressions, and on the basis of the *F*-test it is concluded that the variables in the regressions are jointly statistically highly significant. According to the likelihood ratio test, homoskedasticity of error terms is rejected and consequently, a consistent multiplicative specification is fitted.

(Insert Table 3 about here.)

3.2. Further analysis of growth strategies

We continue our analysis of the growth strategies by estimating user profiles first jointly for the growth oriented firms and then separately for each growth strategy. The estimations are based on the following probability model:

$$\Pr(Strategy) = \Phi(z_i), \tag{3}$$

$$z_i = \alpha_0 + \sum_{k=1}^{5} \alpha_k SIC_i^k + \beta_1 LTD_i + \beta_2 STD_i + \delta_1 RISK_i + \delta_2 PP\&E_i$$

$$+ \delta_3 INV_i + \delta_4 DEPR_i + \delta_5 ROA_5 + \delta_6 GROWTH_i$$

$$+ \delta_7 \ln(TA_i) + \delta_8 \ln(Firm\_Age_i),$$

where SIC_i^k is a dummy variable for a firm *i* according to the industry classification, LTD_i is the ratio of long-term debt to total assets, STD_i is the ratio of short-term debt to total assets, $RISK_i$ the standard deviation of the first differences in return on assets, $PP\&E_i$

denotes property, plant and equipment as a fraction of total assets, INV_i is the ratio of inventories to total assets, $DEPR_i$ is the ratio of depreciation of total assets, ROA_i is return on assets, $GROWTH_i$ is a five-year average of sales growth, $\ln(TA_i)$ is the natural logarithm of the book value of total assets, and $\ln(Firm\_Age_i)$ is the natural logarithm of the number of years since the firm's founding.

Table 4 reports the results of the probit models. As can be seen, after controlling for industry effects and firm characteristics, both the ratio of long-term debt to total assets (LTD_i) and the ratio of the short-term debt to total assets (STD_i) appear to be discriminating factors between the growth oriented and regular firms at the 5% significance level. The results also indicate that growth oriented firms have less $PP\&E_i$ but more depreciations. Furthermore, these multivariate results confirm that the growth oriented firms are both larger and younger than the regular firms. It may also be noted that the growth oriented firms have grown in the past.

Separating different strategies shows that the ratio of long-term debt to total assets (LTD_i) seems to be a discriminating factor in cases of increasing export, networking, and marketing and sales promotion strategies. The short-term debt to total assets (STD_i) is a discriminating factor for the networking, and marketing and sales promotion strategies. $PP\&E_i$ appears to be negatively related to the probability of a firm following exporting, networking and sales promotion and marketing strategies. In contrast, realized sales growth is positively related to the likelihood of the new product development strategy. As can be seen from the table, firm age increases the use of growth strategies. Furthermore, networking, and marketing and sales promotion strategies seem to be negatively related to firm age.

(Insert Table 4 about here.)

4. Conclusions

We examine a relationship between growth strategies and capital structures using the financial statements of 1,153 randomly selected Finnish non-listed incorporated small and medium-sized enterprises (SMEs). We identify the firms with the following four growth strategies: (1) new product development, (2) increasing export, (3) networking, and (4) marketing and sales promotion. Our empirical results suggest that of these strategies, the networking, and marketing and sales promotion strategies are typical for younger firms, whereas increasing export is characteristic for older firms. Furthermore, the use of growth strategies tends increase with firm age.

As our primary results, both parametric and nonparametric univariate comparisons and a multivariate statistical analysis controlling for various firm characteristics such as industry variation, asset structure, firm age and size consistently show that growth oriented firms with growth strategies have more both long-term and short-term debt than comparable firms with no growth strategies. We also find that the type of growth strategy is related to the amount of long-term and short-term debt. Networking and, in particular, marketing and sales promotion typically increase the use of short-term debt, whereas new product development and export activities seem to require more long-term financing. Finally, consistent with earlier studies, we find that a firm's capital structure depends on its industry, profitability, risk, growth, asset structure, size and age.

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Table 1. Descriptive data for growth and non-growth firms (n=1,153 firms)

This table reports the descriptive statistics and preliminary data analysis. Panel A gives the means, medians, standard deviations, and minimum and maximum values for the following variables: *LTD* is the long-term debt to total assets ratio, *STD* is the short-term debt to total assets ratio, *RISK* is the standard deviation of the first differences in return on assets, *PP&E* denotes property, plant and equipment as a fraction of total assets, *INV* is the ratio of inventories to total assets, *DEBR* is the ratio of depreciation of total assets, *ROA* is return on assets, *GROWTH* is the five-year average of sales growth, ln(*TA*) is the natural logarithm of the book value of total assets, and ln(*AGE*) is the natural logarithm of the number of years since the firm's founding. Panel B separates regular firms (43.3 % of all firms) from the growth oriented firms with growth strategies (56.7 % of all firms). It presents the means and medians separately for both groups and *t*- and the Wilcoxon signed rank test statistics, respectively. Panel C reports the Pearson correlation coefficients for the key variables.

Panel A. Summary statistics for all firms

Variable	Mean	Median	Std.dev.	Min	Max
Total Assets (€ 1,000)	1833	544	5608	11	89752
Number of Employees	19.8	9.0	44.0	3.0	955.0
Firm Age (in years)	23.0	17.0	18.1	7.0	174.0
LTD	0.156	0.071	0.195	0.000	0.976
STD	0.416	0.376	0.221	0.023	0.988
RISK	0.119	0.087	0.143	0.004	2.832
PP&E	0.377	0.341	0.258	0.000	0.982
INV	0.173	0.087	0.205	0.000	0.927
DEPR	0.064	0.048	0.057	0.000	0.402
ROA	0.115	0.113	0.237	-3.880	1.083
GROWTH	0.146	0.073	0.313	-0.537	2.960

Panel B. Differences of means and medians tests

	Means			Medians		
	Regular	Growth	*t*-value	Regular	Growth	*Z*-value
LTD	0.147	0.167	-1.79 *	0.082	0.096	-1.00
STD	0.403	0.441	-2.98 ***	0.375	0.407	-2.96 ***
RISK	0.123	0.116	0.83	0.092	0.082	1.89
PP&E	0.403	0.357	3.00 ***	0.371	0.311	3.08 ***
INV	0.154	0.188	-2.84 ***	0.077	0.101	-1.95 *
DEPR	0.065	0.063	0.54	0.048	0.048	0.41
ROA	0.128	0.106	1.55	0.117	0.108	1.36
GROWTH	0.121	0.166	-2.41 **	0.063	0.080	-3.28 ***
Ln(*TA*)	13.142	13.517	-4.99 ***	13.001	13.373	-4.72 ***
Ln(*AGE*)	2.964	2.891	1.99 *	2.890	2.773	2.10 **

Panel C. Pearson correlation coefficients for selected variables

Variable	*LTD*	*STD*	*Strategy*	*RISK*	*PP&E*	*INV*	*DEPR*	*ROA*	*GROWTH*	*lnTA*
STD	-0.146									
Strategy	0.053	0.087								
RISK	-0.059	0.126	-0.025							
PP&E	0.517	-0.319	-0.088	-0.105						
INV	-0.024	0.222	0.083	-0.108	-0.445					
DEPR	0.259	-0.064	-0.016	0.071	0.506	-0.358				
ROA	-0.186	-0.131	-0.046	-0.252	-0.101	-0.061	-0.097			
GROWTH	-0.046	0.101	0.071	0.163	-0.053	-0.071	0.007	0.043		
Ln(*TA*)	-0.007	-0.099	0.145	-0.234	0.043	0.107	-0.169	-0.060	0.013	
Ln(*AGE*)	0.028	-0.117	-0.059	-0.152	0.116	-0.002	0.040	0.003	-0.102	0.167

Table 2. Effects of growth strategies on long-term debt ratios

Panel A reports the estimation results of the OLS and heteroskedastic tobit regressions in which the long-term debt to total assets ratio is explained by a growth strategy dummy variable (*Strategy*) or the following growth strategies: (1) new product development (*Products*), (2) increasing export (*Export*), (3) *Networking*, and (4) marketing and sales promotion (*Marketing*). Control variables are as follows: *RISK* is the standard deviation of the first differences in return on assets, *PP&E* denotes property, plant and equipment as a fraction of total assets, *INV* is the ratio of inventories to total assets, *DEBR* is the ratio of depreciation of total assets, *ROA* is return on assets, *GROWTH* is a five-year average of sales growth, ln(*TA*) is the natural logarithm of the book value of total assets, and ln(*AGE*) is the natural logarithm of the number of years since the firm's founding. Panel B reports the industry effects. The industries are (D) manufacturing, (F) construction, (G) wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, (H) hotels and restaurants, (I) transport, storage and communication, and (K) real estate, renting and business activities. Panel C presents the model specification tests and heteroskedasticity estimates. *t*-values in the OLS regressions are based on the White (1980) heteroskedasticity consistent covariance matrix.

Panel A. Determinants of capital structure

	OLS	Tobit	OLS	Tobit
Strategy	0.032 ***	0.035 ***		
	(3.25)	(2.65)		
Products			0.031 *	0.046 **
			(1.73)	(2.07)
Export			0.066 ***	0.087 ***
			(2.60)	(3.03)
Networking			0.043 ***	0.039 *
			(2.72)	(1.87)
Marketing			0.022 **	0.021
			(1.97)	(1.37)
RISK	-0.012	-0.163 *	-0.018	-0.180 *
	(-0.37)	(-1.68)	(-0.51)	(-1.85)
PP&E	0.456 ***	0.634 ***	0.455 ***	0.635 ***
	(17.26)	(17.40)	(17.30)	(17.43)
INV	0.205 ***	0.372 ***	0.204 ***	0.372 ***
	(7.43)	(9.07)	(7.48)	(9.04)
DEPR	-0.138	0.062	-0.134	0.063
	(-1.07)	(0.42)	(-1.04)	(0.42)
ROA	-0.122 ***	-0.273 ***	-0.123 ***	-0.274 ***
	(-4.35)	(-6.55)	(-4.47)	(-6.58)
GROWTH	0.008	0.024	0.008	0.025
	(0.60)	(1.14)	(0.66)	(1.17)
Ln(*TA*)	-0.016 ***	-0.020 ***	-0.017 ***	-0.022 ***
	(-3.89)	(-3.87)	(-4.08)	(-4.10)
Ln(*AGE)*	-0.010	-0.001	-0.010	-0.003
	(-1.20)	(-0.13)	(-1.26)	(-0.30)

Panel B. Industry effects

	OLS	Tobit	OLS	Tobit
Intercept	0.232 ***	0.135	0.241 ***	0.155 *
	(3.85)	(1.64)	(4.01)	(1.86)
F	-0.065 ***	-0.064 ***	-0.062 ***	-0.058 ***
	(-4.46)	(-3.30)	(-4.22)	(-2.93)
G	-0.041 ***	-0.046 **	-0.034 **	-0.036 *
	(-2.59)	(-2.34)	(-2.11)	(-1.81)
H	-0.010	-0.016	-0.005	-0.007
	(-0.37)	(-0.44)	(-0.20)	(-0.20)
I	-0.023	-0.047 **	-0.022	-0.042 *
	(-1.27)	(-1.96)	(-1.19)	(-1.72)
K	-0.073 ***	-0.099 ***	-0.069 ***	-0.093 ***
	(-4.53)	(-4.54)	(-4.28)	(-4.25)

Panel C. Model specification tests and heteroskedasticity estimates

	OLS	Tobit	OLS	Tobit
F-value	46.07 ***		38.25 ***	
Adjusted R^2	0.35		0.35	
LR test		41.72 ***		41.02 ***
HET0		0.366 ***		0.376 ***
		(3.38)		(3.35)
HET1		2.028 ***		1.988 ***
		(3.51)		(3.45)
HET2		0.718 ***		0.696 ***
		(3.32)		(3.21)
HET3		-0.131 ***		-0.134 ***
		(-3.12)		(-3.17)

Table 3. Effects of growth strategies on short-term debt ratios

Panel A reports the estimation results of the OLS and heteroskedastic tobit regressions in which the short-term debt to total assets ratio is explained by a growth strategy dummy variable (*Strategy*) or the following growth strategies: (1) new product development (*Products*), (2) increasing export (*Export*), (3) *Networking*, and (4) marketing and sales promotion (*Marketing*). Control variables are as follows: *RISK* is the standard deviation of the first differences in return on assets, *PP&E* denotes property, plant and equipment as a fraction of total assets, *INV* is the ratio of inventories to total assets, *DEBR* is the ratio of depreciation of total assets, *ROA* is return on assets, *GROWTH* is the five-year average of sales growth, ln(*TA*) is the natural logarithm of the book value of total assets, and ln(*AGE*) is the natural logarithm of the number of years since the firm's founding. Panel B reports the industry effects. The industries are (D) manufacturing, (F) construction, (G) wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, (H) hotels and restaurants, (I) transport, storage and communication, and (K) real estate, renting and business activities. Panel C presents the model specification tests and heteroskedasticity estimates. *t*-values in the OLS regressions are based on the White (1980) heteroskedasticity consistent covariance matrix.

Panel A. Determinants of capital structure

	OLS	Tobit	OLS	Tobit
Strategy	0.027 **	0.028 **		
	(2.17)	(2.36)		
Products			0.004	0.005
			(0.20)	(0.27)
Export			-0.037	-0.010
			(-1.25)	(-0.35)
Networking			0.042 **	0.033 *
			(2.13)	(1.80)
Marketing			0.036 **	0.038 ***
			(2.45)	(2.72)
RISK	0.025	0.123	0.031	0.134
	(0.43)	(1.49)	(0.54)	(1.62)
PP&E	-0.261 ***	-0.272 ***	-0.259 ***	-0.270 ***
	(-8.31)	(-9.50)	(-8.27)	(-9.43)
INV	0.173 ***	0.157 ***	0.178 ***	0.160 ***
	(4.13)	(3.83)	(4.26)	(3.92)
DEPR	0.390 ***	0.396 ***	0.389 ***	0.395 ***
	(2.96)	(3.37)	(2.94)	(3.37)
ROA	-0.141 ***	-0.235 ***	-0.142 ***	-0.235 ***
	(-3.65)	(-6.35)	(-3.68)	(-6.36)
GROWTH	0.034 *	0.028	0.035 *	0.028
	(1.67)	(1.39)	(1.74)	(1.38)
Ln(*TA*)	-0.011 **	-0.014 ***	-0.010 *	-0.013 **
	(-2.08)	(-2.64)	(-1.82)	(-2.42)
Ln(*AGE)*	-0.030 ***	-0.030 ***	-0.028 ***	-0.029 ***
	(-2.87)	(-3.24)	(-2.70)	(-3.11)

Panel B. Industry effects

	OLS	Tobit	OLS	Tobit
Intercept	0.664 ***	0.712 ***	0.644 ***	0.694 ***
	(8.30)	(9.07)	(8.08)	(8.81)
F	0.037 **	0.039 **	0.030	0.035 *
	(2.02)	(2.16)	(1.62)	(1.91)
G	-0.001	-0.001	-0.010	-0.007
	(-0.07)	(-0.08)	(-0.46)	(-0.37)
H	0.015	0.001	0.010	-0.003
	(0.55)	(0.02)	(0.34)	(-0.11)
I	0.093 ***	0.086 ***	0.085 ***	0.082 ***
	(4.00)	(4.20)	(3.61)	(3.96)
K	0.011	0.008	0.006	0.005
	(0.56)	(0.45)	(0.27)	(0.30)

Panel C. Model specification tests and heteroskedasticity estimates

	OLS	Tobit	OLS	Tobit
F-value	16.77 ***		14.33 ***	
Adjusted R^2	0.16		0.16	
LR test		72.35 ***		72.35 ***
HET0		0.157 ***		0.160 ***
		(4.04)		(4.02)
HET1		2.259 ***		2.217 ***
		(5.45)		(5.34)
HET2		-0.961 ***		-0.951 ***
		(-5.79)		(-5.72)
HET3		0.040		0.036
		(-1.11)		(1.01)

Table 4. Debt to total assets ratios as discriminating factors

Table 4 reports the estimation results of a probit model in which the following growth strategies: (1) new product development (*Products*), (2) increasing export (*Export*), (3) *Networking*, and (4) marketing and sales promotion (*Marketing*). Explanatory variables are as follows: *LTD* is the long-term debt to total assets ratio, *STD* is the short-term debt to total assets ratio, *RISK* is the standard deviation of the first differences in return on assets, *PP&E* denotes property, plant and equipment as a fraction of total assets, *INV* is the ratio of inventories to total assets, *DEBR* is the ratio of depreciation of total assets, *ROA* is return on assets, *GROWTH* is the five-year average of sales growth, ln(*TA*) is the natural logarithm of the book value of total assets, and ln(*AGE*) is the natural logarithm of the number of years since the firm's founding. The industries are (D) manufacturing, (F) construction, (G) wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, (H) hotels and restaurants, (I) transport, storage and communication, and (K) real estate, renting and business activities. 'Frequency' is the proportion of growth oriented firms. Pseudo R^2 is the McKelvey and Zavoina (1975) R Square. *LRI* is the McFadden (1974) likelihood ratio index.

	Growth		(1)		(2)		(3)		(4)	
Variable	Strategy		Product		Export		Network		Market	
Intercept	-1.887	***	-2.922	***	-5.848	***	-2.476	***	-1.703	***
	(-3.56)		(-3.64)		(-5.33)		(-3.13)		(-2.69)	
F	-0.661	***	-0.853	***	-1.061	***	-0.374	**	-0.539	***
	(-5.49)		(-4.05)		(-4.21)		(-2.14)		(-3.67)	
G	0.099		0.088		-0.962	***	-0.356	*	0.409	***
	(0.77)		(0.44)		(-3.25)		(-1.66)		(2.73)	
H	-0.168		0.019		-5.965		-0.538		0.033	
	(-0.81)		(0.06)		(0.00)		(-1.50)		(0.14)	
I	-0.135		-0.433	*	-0.524		0.349	*	-0.197	
	(-0.91)		(-1.72)		(-1.63)		(1.69)		(-1.06)	
K	0.137		0.146		-0.505	*	0.161		0.248	
	(1.07)		(0.75)		(-1.85)		(0.85)		(1.61)	
LTD	0.814	***	0.595		1.359	**	1.052	***	0.558	*
	(3.28)		(1.50)		(2.54)		(2.84)		(1.85)	
STD	0.446	**	0.110		-0.490		0.656	**	0.610	***
	(2.32)		(0.34)		(-1.08)		(2.32)		(2.68)	

Table 4. continued

Variable	Growth Strategy	(1) Product	(2) Export	(3) Network	(4) Market
RISK	-0.258	-0.079	0.426	-0.021	-0.697
	(-0.81)	(-0.16)	(1.03)	(-0.05)	(-1.47)
PP&E	-0.843 ***	-0.433	-0.961 *	-0.948 ***	-0.747 ***
	(-3.68)	(-1.18)	(-1.77)	(-2.71)	(-2.78)
INV	0.069	0.375	0.597	-0.606	0.144
	(0.26)	(0.89)	(0.95)	(-1.39)	(0.47)
DEPR	1.730 **	1.199	1.642	0.566	2.063 **
	(2.01)	(0.86)	(0.77)	(0.45)	(1.98)
ROA	-0.047	-0.345	-0.194	0.348	-0.168
	(-0.25)	(-1.10)	(-0.48)	(1.18)	(-0.75)
GROWTH	0.304 **	0.398 *	0.303	0.138	0.337 **
	(2.26)	(1.90)	(1.16)	(0.67)	(2.27)
Ln(*TA*)	0.181 ***	0.158 ***	0.373 ***	0.177 ***	0.129 ***
	(5.29)	(3.04)	(5.15)	(3.37)	(3.21)
Ln(*AGE)*	-0.123 *	-0.017	0.010	-0.219 **	-0.142 *
	(-1.87)	(-0.16)	(0.07)	(-2.19)	(-1.82)
Obs.	1,153	609	554	643	844
Frequency	0.567	0.181	0.099	0.224	0.409
Pseudo R^2	0.17	0.20	0.65	0.16	0.20
LRI	0.08	0.10	0.25	0.08	0.10