UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Financing Growth: Pecking Order and Determinants of Capital Structure

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Authors:
Ellinor Johansson 880408
Johan Yutaka Lundblad 840807

Supervisor:
Gert Sandahl

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Abstract

This paper examines capital structure decisions among a large sample of Swedish high-growth firms. From a longitudinal ten-year data set of all active Swedish limited corporations with more than 20 employees, 1,412 high-growth firms were identified by taking the multidimensional nature of growth into account. Consistent with the predictions of the Pecking Order Theory, the evidence put forward by this paper shows that high-growth firms with internal funds are less likely to issue debt and equity while high-growth firms with limited debt capacity seem to be more likely to issue new equity. Debt capacity and the accessibility of internal funds therefore seem to influence the financing behavior among high-growth firms.

Key Words • Financing decisions • Capital structure • Pecking Order Theory • Debt capacity • Internal funds • Growth

1 Introduction

Why Capital Structure?

Capital structure is a term that refers to how firms choose to finance their assets on the left-hand side of the balance sheet. It is also a field of study that has been subject to a great deal of research and debates over the past decades. Theories on capital structure seek to provide a framework for understanding how financing decisions are made and how they may influence the value of a firm. The Modigliani-Miller theorem, presented in 1958, was one of the first theories that sought to explain capital structure decisions. It has since become the most fundamental theory in modern thinking on capital structure despite its shortcomings. The theorem suggests that, in a world with corporate taxes, the value of a firm increases as the firm takes on more debt (Modigliani & Miller, 1958).

However, the Modigliani-Miller theorem was criticized for not taking into account any financial distress costs and as a result the Static Trade-Off Theory was developed. First discussed by Kraus and Litzenberger (1973), the Static Trade-Off Theory focuses on the benefits and costs of issuing debt. The theory predicts that there is an optimal debt ratio that maximizes the value of a firm due to tax shields, financial distress costs, and agency costs (Jensen, 1986; Frank & Goyal, 2003).

The Modigliani-Miller theorem and the Trade-Off Theory represent the most traditional and influential approach to how capital structure is generally taught in textbooks and introductory corporate finance courses. Despite not being as acclaimed as the Trade-Off Theory, the Pecking Order Theory (Myers & Majluf, 1984), offers an interesting and alternative explanation to the Trade-Off Theory. Contrary to the optimal debt ratio as suggested by the Trade-Off Theory, the Pecking Order Theory instead suggests that firms follow a specific pecking order with regards to their financing alternatives. This specific order (or ranking) states

that internal funding is preferred over external funding and that debt is preferred over new equity issues (Myers & Majluf, 1984). The Pecking Order Theory has gained substantial popularity and support over the course of the last years and is today considered to be the only direct competitor to the Trade-Off Theory.

In recent years, a large body of empirical research has been carried out in order to test the validity of these two capital structure theories. Shyam-Sunder and Myers (1999) developed an empirical method that tests both theories and find strong support for the Pecking Order Theory. However, Frank and Goyal (2003) studied a cross-section of publicly traded US firms and could only find weak support for the Pecking Order Theory among large firms in the sample. Further, Fama and French (2005) estimated that more than half of the firms in their sample violated the Pecking Order Theory with regards to year-by-year equity decisions.

The way in which a firm's capital structure is formed not only influences a firm's ability to react to the environment which they are active in, as will later be discussed, but also has a central role on a firm's ability to survive in the long run. Capital structure has become a highly debated topic following the 2008 financial crisis as debt implies higher risk taking.

Why High-Growth Firms?

Despite their relatively small number, high-growth firms account for a disproportionate share of employment and wealth creation in an economy (Storey, 1994). According to a recent study in the US, young high-growth firms represented less than one percent of all companies but generated roughly ten percent of all new jobs (Stangler, 2010). Further, a study on Swedish entrepreneurship and economy presents similar and very convincing results. During the period 2004-2007, high-growth firms accounted on average for more than ten percent of the total growth in GDP (Falkenhall & Junkka, 2009). High-growth firms are not only instrumental in the research field of entrepreneurship and innovation, but have also become a major concern among policy makers due to their proven impact on economic growth (Henrekson & Johansson, 2008).

Appropriate financial management, as well as raising suitable funding, is central in shaping high-growth firms (Nicholls-Nixon, 2005). According to the Pecking Order Theory, financing decisions among firms are driven by adverse selection (Frank & Goyal, 2003). The theory is therefore predicted to perform best among firms that have large information asymmetries and are therefore most likely to face severe adverse selection problems. Firms that are usually considered to fit this description are small high-growth firms (Frank & Goyal, 2003).

Research Question

The purpose of this study is to examine financing decisions among Swedish high-growth firms in order to test the validity of the Pecking Order Theory. Following methods and concepts developed by Vanacker and Manigart (2010) and Delmar et al. (2003), we identify Swedish high-growth firms and study their financing operations by analyzing detailed financial information from a ten-year longitudinal data set. Internationally, this has been a well-researched topic but research regarding the Swedish environment has been limited. Lindblom et al (2010) aimed to fill part of this gap by studying the Pecking Order Theory among large Swedish firms. This study aims to fill the gap further by focusing on Swedish high-growth firms.

Previous research on financing behavior concentrates on samples of quoted firms (Fama & French, 2005; Frank & Goyal, 2003; and Shyam-Sunders & Myers, 1999). As quoted firms are suggested to have more financing options due to lower information asymmetries, financing strategies among quoted and unquoted firms are likely to differ (Berger & Udell, 1998; Harris & Raviv, 1991). This study, however, is not biased towards quoted firms, but focuses on high-growth firms that are predominately unquoted.

The lack of longitudinal studies in entrepreneurship research and the need for considering the multidimensional nature of growth are commonly discussed issues in literature (Davidsson & Wiklund, 1999; Vanacker & Manigart, 2010). By using historical data from ten years and applying methods that explicitly take the multidimensional nature of growth into account, we are able to cover a wide aspect of high-growth firms as well as survey financing behavior trends over time. Due to the time limitations of this study, a regression analysis was not conducted.

Assuming that high-growth firms follow a certain pecking order, we developed the following research question:

'Are debt capacity and the accessibility of internal funds influential factors regarding how high-growth companies choose to finance their operation?'

In its most simplistic form, the Pecking Order Theory states that there are three sources of funding available to firms - retained earnings, debt, and equity. The theory further suggests that financing decisions are driven by information asymmetries which cause firms to follow a hierarchal order rather than a target ratio in their financing operations. In the next section, we will present and discuss theory regarding the pecking order and capital structure determinants. Two hypotheses will be developed from this theory which will be used to answer the research question.

2 Literature Review and Hypotheses Development

In the ideal world, as explained by Modigliani and Miller (1958), projects with a positive net present value will always find financing for needed investments. According to this model, internal financing can therefore be substituted by external debt or external equity. This ideal world is based on several assumptions that do not apply to the real world. Imperfections faced by real financial markets put increased importance on the type of financing used as this not only affects the value of the firm but also how the firm develops (Vanacker & Manigart, 2010).

One imperfection that exists in financial markets is asymmetrical information. This imperfection arises when managers or other internal actors have more information regarding a firm than external actors do (Berger & Udell, 1998). The internal actors are therefore more apt to give a correct valuation of the firm, something that external actors only can estimate. It is partially due to these asymmetries that external funds are more costly than internal funds as external actors require higher premiums due to the insecurity they face (Kadapakkam et al., 1998). Choosing the wrong type of financing can therefore have detrimental effects on the firm, such as business failure (Michaelas et al., 1999).

Since Modigliani and Miller, other theories regarding capital structure have been developed to try to better explain how firms actually behave in light of these market imperfections. One such theory is the Pecking Order Theory which states that firms should follow the principle of least effort when deciding which means of financing to use (Myers & Majluf, 1984). Due to this, firms will prioritize internal funds as these require the least amount of work and are the least costly as asymmetrical information is not relevant. If internal funds are insufficient for the needed investment, the firm will look to external means. Here, debt should be considered before new equity as this entails fewer information asymmetries and therefore a lower premium.

As the Pecking Order Theory has become a very influential theory (Frank & Goyal, 2003), it has later been developed by researchers. Hamberg (2001), for example, developed the original three pecking order levels into eight more detailed levels including approved bank credits, loan from current main lender, and issue of convertible securities.

As earlier mentioned, we assume that high-growth firms follow a certain pecking order. In its most simplistic form, Pecking Order Theory states that firms will use internal financing over external financing and use equity as a last resort. In order to test this behavior, we choose to examine a set of variables that are proxies to the Pecking Order Theory. From these, two hypotheses will be developed.

Even though there is a considerable difference between internal and external financing, our research question handles these together. The

aim of the hypotheses developed in this section is therefore to make a clear distinction between internal and external financing. These are similar to the hypotheses presented by Vanacker and Manigart (2010). Due to the discussion presented in the introduction, the main focus will be on high-growth firms as these should be more prone to follow the Pecking Order Theory (Frank & Goyal, 2003).

Internal Financing

Profitability not only influences the availability of internal financing, but internal financing also influences profitability. As external financing tends to be more expensive than internal financing, firms that use internal financing generally have better conditions to be profitable as long as internal financing is possible (Goergen & Renneboog, 2001). Profitable firms also prefer to use retained earnings as a source of investment regardless of the level of unused debt capacity they have (Vanacker & Manigart, 2010). These firms therefore tend to use internal financing instead of external financing. This is something that is also discussed by Berger and Udell (1998) who state that, as firms become more profitable, the availability and use of internal funds will increase.

Dividend payout also influences the possibility to finance investment via internal funds. According to Jensen (1986), firms that have more growth opportunities pay lower dividends. Smith and Watts (1992) build on this and state that firms that have smaller dividend payouts experience a higher level of investment. Lower dividend investments imply that more money remains in the firm that could be used for investment, in other words the possibility to use internal funds increases.

Companies that have cash surplus avoid external sources of financing (Helwege & Liang, 1996). This may seem rather trivial and is due to the fact that external financing is generally more expensive than internal financing and firms should therefore prefer internal funds when this is possible (Goergen & Renneboog, 2001).

As discussed, companies that follow the Pecking Order Theory should prefer internal funds during financing events. However, this is contingent on the availability of internal funds which is dependent on variables such as the profitability of a firm. As high-growth firms should be more prone to follow the Pecking Order Theory (Frank & Goyal, 2003), our first hypothesis can be formulated accordingly (Vanacker & Manigart, 2010):

Hypothesis 1: *High-growth firms that have more internal funds will be less likely to raise additional debt or equity financing.*

External Financing

The amount of tangible assets that a firm has affects the availability of external funds. Firms that have more tangible assets can achieve more external financing as tangible assets decrease the *contractibility problem* (Almeida & Campello, 2007) –

tangible assets increase the value of assets that can be collected in the case of default. External financing has been shown to be more common in firms that have made significant investments in tangible assets (Vanacker & Manigart, 2010). However, this has been shown to only affect investment cash flow for financially constrained firms and not financially unconstrained firms (Almeida and Campello, 2007).

It is generally the availability of capital and not its cost that determines the level of investment that a firm can achieve (Greenwald, 1984). Due to this, firms that have internal cash flows have an advantage against firms that do not in cases where external capital is needed and limited as these firms are generally perceived as less risky (Kadapakkam et al., 1998). Firms with limited cash flows are more reliant on external financing than firms that do not have limited cash flows (Vanacker & Manigart, 2010).

Firms with a high debt level are more likely to choose external financing (Vanacker & Manigart, 2010). However, as firms become more indebted, the risk of financial distress also increases which in turn can cause the cost of debt financing to increase (Carpenter and Petersen, 2002). Here, the fact that banks are expected to focus on projects with low risk also has a role to play on the availability of debt financing for some firms (Carey et al., 1998).

Debt capacity is the point at which more debt would decrease the market value of all debt within the firm (Myers, 1977). When it comes to high growth firms, it has been shown (Lemmon & Zender, 2004) that these companies have more restrictive constraints regarding debt capacity and therefore have a lower debt capacity. Due to this, high growth companies are more likely to reach their debt capacity quicker and therefore be forced to issue equity. When taking this into account, large equity issues by high-growth companies may therefore not be in contradiction to the Pecking Order Theory (Vanacker & Manigart, 2010).

Due to that high-growth companies have lower debt capacities and generally have poor cash flows and therefore will have difficulty paying debt-related costs, high-growth companies will generally find it more difficult to achieve additional debt financing (Vanacker & Manigart, 2010). If achieving debt financing is possible, it may not be advantageous for such a group due to the cost that doing so would entail (Helwege & Liang, 1996).

As discussed, companies that follow the Pecking Order Theory should choose equity financing as a last resort. When companies have limited internal funds and limited debt capacity, equity may however be the only option. As high-growth firms should be more prone to follow the Pecking Order Theory (Frank & Goyal, 2003), our last hypothesis can be formulated accordingly (Vanacker & Manigart, 2010):

Hypothesis 2: *High-growth firms that have limited debt capacity will be likely to raise additional equity financing rather than debt financing.*

Summary

In this section, we have built the theoretical framework that we will use to analyze our findings. The variables that were discussed in this section will be used to test the two hypotheses that were formulated. For the internal hypothesis, Hypothesis 1, these variables are profitability, cash, and dividend payouts. For the debt capacity hypothesis, Hypothesis 2, these variables are tangible assets, cash flow, and debt. How these variables will be used and how the hypotheses will be tested is the topic of the next section.

3 Method

The empirical evidence presented in this study is based on detailed financial information from a large sample of Swedish business firms, covering the time period 2000 to 2009. The data was collected from the Swedish business analysis database "Retriever", provided by Retriever Sverige AB.

Every Swedish limited corporation, also known as *Aktiebolag* (abbreviated AB), has to file an annual report with financial statements to the Swedish Companies Registration Office (Bolagsverket) every year. This information is then copied, refined, and organized in databases by various firms such as "Retriever", who specialize in financial statement analysis.

Through the Retriever database, we selected the population of all active Swedish limited corporations to date (April 2011) with at least 20 employees. The threshold of 20 employees follows the method applied by Delmar et al. (2003) and is set in order to exclude micro-companies as well as maintain continuity and comparability with previous research. By applying these parameters, we arrived at a total of 20,315 active limited corporations in our selection. This result can be compared with Delmar et al. (2003) who arrived at 11,748 firms in 1996.

Since complete financial data for year 2010 was not yet available in the database, we used 2009 as the last year in our cycle, resulting in ten years of historical data (2000-2009). However, far from every firm had been active throughout the full ten-year period. Moreover, due to the limitations of the database, our selection of firms does not include historically active firms that later on have filed for bankruptcy and been removed from the records. This would therefore imply a certain survivorship bias according to Vanacker and Manigart (2010).

In order to export all the necessary data for this considerable number of firms, the data export had to be carried out in several stages and then merged together again. All data from the database was exported to MS Excel. The data export included figures from financial statements for the individual firm as well as for the consolidated entity.

Among the 20,315 selected firms, a relatively small number of firms reported financial statements in Euros (EUR). These figures were converted into Swedish kronor (SEK) by using the closing EURSEK exchange rate for the last day of the respective financial statement period.

The following parts in this section will present the different stages that were carried out in this study. We start by identifying the high-growth firms and then move on to defining the dependent and independent variables.

Identifying High-Growth Firms

Previous research in the field of organizational growth has been criticized for not taking the multidimensional nature of growth into account (Vanacker & Manigart, 2010). There are numerous ways of defining and measuring organizational growth. For example, growth can be measured as growth in sales and in total employees, in absolute and relative terms. Absolute growth measures tend to favor large firms while relative growth measures tend to favor small firms.

In this study, we adopt the growth concepts and methods developed by Delmar et al. (2003) and Vanacker and Manigart (2010) in order to define a sample of high-growth firms in our population. We use three growth concepts – sales, employees, and total assets, in absolute and relative terms. This way we arrived at a total of six growth measures (2x sales, 2x employees, 2x total assets).

For every firm and each one of the six growth measures, we calculated a moving average based on the three previous years. This resulted in seven yearly growth rankings (2009-2003) for each growth measure. If a firm was in the 99th percentile (i.e. top 203 firms) of any of the six growth measures for two consecutive years, the firm was coded as a high-growth firm. As a result, a total of 1,412 firms were selected.

The average yearly employee growth among the selected high-growth firms was 87,1% and 41,0 employees in absolute terms. The corresponding figures for the whole population were 12,4% and 3,1 respectively. Table 1 below presents a summary of the selected high-growth firms by industry, number of employees, total revenue, and share of publicly traded firms.

As shown in Table 1 below, the top three growth industries in the sample are manufacturing (14,7%); wholesale trade (10,6%); and banking, finance, and insurance (8,8%). In the findings presented by Vanacker and Manigart (2010), a sample of 2,077 high-growth firms was selected and the corresponding top growth industries were transport and communication (31,49%), building and civil engineering (23,83%), and extraction and processing of non-energy producing minerals (10,83%).

Furthermore, the table also shows that approximately 65% of the selected high-growth firms are firms with less than 200 employees, indicating that a considerable share of the firms are small and medium sized. About 91% of the selected high-growth firms are unquoted firms.

Table 1 Summary of selected high growth firms (N=1412)

Industry affiliation (SNI-code)	N	*%*
Manufacturing	207	*14,66*
Wholesale trade	150	*10,62*
Banking, finance & insurance	124	*8,78*
Construction, architecture & interior design	99	*7,01*
Real estate	82	*5,81*
Retail	74	*5,24*
IT & telecommuncation	73	*5,17*
Transportation & logistics	68	*4,82*
Business services	67	*4,75*
Healthcare	43	*3,05*
Law & business consulting	41	*2,90*
Drain, waste, electricity & water	39	*2,76*
Hospitality & restaurants	36	*2,55*
Human resources & employment agencies	35	*2,48*
Education, research & development	33	*2,34*
Food processing	31	*2,20*
Technology consulting	31	*2,20*
Media	25	*1,77*
Marketing & PR	24	*1,70*
Arts & entertainment	20	*1,42*
Car trade	20	*1,42*
Repair & installation services	12	*0,85*
Public administration	9	*0,64*
Agriculture, forestry, hunting & fishing	6	*0,42*
Travel agencies & tourism	5	*0,35*
Rental & leasing	4	*0,28*
Other consumer services	2	*0,14*
Trade- & industry associations	1	*0,07*
Hair & beauty	1	*0,07*
-	50	*3,54*
Total	**1412**	

Employment split	N	*%*
20 - 49	541	*38,31*
50 - 99	233	*16,50*
100 - 199	141	*9,99*
200 - 499	151	*10,69*
500 - 999	131	*9,28*
1 000 - 1 999	82	*5,81*
2 000 - 4 999	71	*5,03*
5 000 - 9 999	26	*1,84*
10 000 - ∞	36	*2,55*
Total	**1412**	

Revenue split	N	*%*
0 - 1 tkr	4	*0,28*
1 000 - 9 999 tkr	23	*1,63*
10 000 - 49 999 tkr	329	*23,30*
50 000 - 499 999 tkr	514	*36,40*
500 000 - ∞ tkr	542	*38,39*
Total	**1412**	

Unquoted vs quoted	N	*%*
Unquoted	1284	*90,93*
Quoted	128	*9,07*
OMX Large cap	41	*2,90*
OMX Mid cap	45	*3,19*
OMX Small cap	27	*1,91*
Other	15	*1,06*
Total	**1412**	

Dependent Variables: Financing Events

The dependent (categorical) variables were defined as three different financing events occurring on a yearly basis. The variables were constructed according to Marsh (1982), Hovakimian et al. (2001), and de Haan and Hinloopen (2003).

According to the Pecking Order Theory, there are several ways in which a project can be financed. First, a profitable firm can choose to either distribute the profits to its shareholders or to use it as a source of capital for new investments. Profits that are retained are recorded as retained earnings on the firm's balance sheet. Therefore, when retained earnings (retained earnings + 70% of the untaxed reserves) increased with more than five percent of total assets from one year to the next, we defined this as an internal financing event. The threshold value of five percent was used in order to keep the focus on relatively substantial financing events and maintain a consistency with previous studies (Vanacker & Manigart, 2010).

Second, firms may turn to external sources such as bank debt. When the long-term debt increased with more than five percent of total assets, we defined this as a debt financing event. Lastly, firms may issue new equity.

Therefore, when the shareholder's equity (shareholder's equity + unearned premium reserve) increased with more than five percent of total assets, we defined this as an equity financing event.

Note that these three financing events are not mutually exclusive. Firms may just as well issue several types of financing within the same year. Moreover, since financing events are coded on a yearly basis, a large specific financing event may consist of several smaller events that have occurred over the year.

In order to test the validity of the results from the dependent variables, we also selected a random sample from the population of equal size as the sample of high-growth firms (N=1412). We then carried out the same procedures as mentioned above in order to compare the extent of financing events among this random sample with the selected high-growth firms.

Independent Variables

The independent (continuous) variables were defined as proxies for internal financing and debt financing. We also included a number of control variables. All independent variables were lagged one year in order to avoid problems of reverse causality (Vanacker & Manigart, 2010). For example, if an internal financing event occurred in 2008, we used the financial data from 2007 when calculating the independent variables. In most cases, the independent variables were also scaled relative to the total assets of the firm in order to facilitate comparison between firms of different size.

As proxies for the amount of internal financing that is available within the business firm, we used a profitability ratio (earnings/total assets) and a cash ratio (cash/total assets). Moreover, as a restrictive dividend pay-out policy retains funding within the firm, we also included a dividend pay-out ratio (dividends/total assets).

The debt financing variables were proxies for the debt capacity of the firm. Tangible assets may serve as collateral in bank financing, thus affecting the availability of external funds (Almeida & Campello, 2007). Consequently, we used a tangible assets ratio (tangible assets/total assets) that measures the amount of tangible assets over total assets. We also used a debt ratio for leverage (long-term debt/total assets) as well as an EBITDA-to-interest coverage ratio (EBITDA/interest expense).

Furthermore, we included additional control variables that were related to the Static Trade-Off Theory which predicts that tax shields, financial distress, and agency costs should determine financing decisions (Frank & Goyal, 2003). As proxies for tax shields, we used an interest ratio (interest expense/total assets) and a depreciation ratio (depreciation/total assets). Agency costs are particularly common in settings that are characterized by considerable future growth options (Vanacker & Manigart, 2010). As a result, we used an intangible asset ratio (intangible

assets/total assets) as a proxy since firms engaged in research and development (usually recorded as investments in intangible assets) are most likely to generate future growth options (Titman & Wessels, 1988).

The Static Trade-Off Theory is considered to be the main competitor to the Pecking Order Theory (Frank & Goyal, 2005), thereby making it interesting to use this as a control variable in our pecking order context. Lastly, we used a general control variable for the firm size (natural logarithm of total assets) in order to check for general characteristics of the firm.

Summary

Following the same structure and order as the method, the next section will proceed with presenting the findings of this study and an analysis that relates directly to our two hypotheses, presented in the theory section. We will first present the dependent variables followed by the independent variables.

4. Findings and Analysis

Dependent Variables: Financing Events

The descriptive statistics for the recorded financing events are reported in Table 2a. As shown in the table, internal financing appears to be the predominant form of financing growth, representing an overall 55,83% of all financing events. This is followed by debt financing at 34,89% and equity financing at 9,28%. We can observe a very similar preference for sources of financing in each individual year throughout the whole nine-year period.

Consistent with Vanacker & Manigart (2010), these results clearly demonstrate that the most important sources for financing growth among high-growth firms are internal funds and external debt financing. In 2009, the most recent year of our study, internal funds and debt represented almost 95% of all recorded financing events.

Our findings further highlight the overall low usage of external equity financing, ranging from a mere share of about five to ten percent in the latter years. It is notable, however, that equity financing peaked at 19,61% in 2001 and then dropped to significantly lower levels during the following years.

Table 2b reports corresponding statistics for the dependent variables performed on a random sample of firms. The sample (N=1412) was selected from our population of Swedish firms with at least 20 employees. The findings show that 64,28% of all financing events in the sample were represented by internal funds, followed by debt financing at 31,62%, and new equity financing at 4,10%.

As shown in the table, these findings confirm the same preference for sources of financing as observed in our previous sample of high-growth firms, emphasizing the importance of internal funds and debt financing. In addition, these results indicate that a sample of non-high-growth firms

Table 2a Summary of financing events (high-growth firms)

	Internal financing		Debt financing		Equity financing		Number of financing events	Number of active firms in sample
	N	% of events	N	% of events	N	% of events		
2009	393	*65,17*	180	*29,85*	30	*4,98*	603	1349
2008	453	*56,91*	302	*37,94*	41	*5,15*	796	1371
2007	507	*57,03*	317	*35,66*	65	*7,31*	889	1393
2006	489	*58,28*	287	*34,21*	63	*7,51*	839	1394
2005	448	*55,79*	294	*36,61*	61	*7,60*	803	1403
2004	388	*55,75*	237	*34,05*	71	*10,20*	696	1369
2003	306	*51,34*	223	*37,42*	67	*11,24*	596	1308
2002	279	*50,73*	197	*35,82*	74	*13,45*	550	1275
2001	304	*49,27*	192	*31,12*	121	*19,61*	617	1213
Total	3567	55,83	2229	34,89	593	9,28	6389	

Note that firms may issue several types of financing within every year. Internal financing is represented by an increase of at least 5% in retained earnings and 70% of untaxed reserves; debt financing by an increase of at least 5% of long term debt; and equity financing by an increase of at least 5% in sharholder's equity and unearned premium reserve.

Table 2b Summary of financing events (random sample)*

	Internal financing		Debt financing		Equity financing		Number of financing events	Number of active firms in sample
	N	% of events	N	% of events	N	% of events		
2009	350	*65,06*	173	*32,16*	15	*2,79*	538	1331
2008	412	*63,58*	213	*32,87*	23	*3,55*	648	1287
2007	417	*63,86*	213	*32,62*	23	*3,52*	653	1239
2006	376	*64,27*	181	*30,94*	28	*4,79*	585	1188
2005	347	*65,84*	159	*30,17*	21	*3,98*	527	1150
2004	332	*67,89*	140	*28,63*	17	*3,48*	489	1069
2003	326	*64,68*	157	*31,15*	21	*4,17*	504	1007
2002	298	*63,00*	153	*32,35*	22	*4,65*	473	962
2001	234	*59,54*	132	*33,59*	27	*6,87*	393	906
Total	3092	*64,28*	1521	*31,62*	197	*4,10*	4810	

Note that firms may issue several types of financing within every year. Internal financing is represented by an increase of at least 5% in retained earnings and 70% of untaxed reserves; debt financing by an increase of at least 5% of long term debt; and equity financing by an increase of at least 5% in sharholder's equity and unearned premium reserve.

(according to our classification) exhibit a pecking order behavior regarding their financing operations, following the predictions of small high-growth firms (Frank & Goyal, 2003).

Independent Variables

The results of the independent variables are reported in a Table 3 on the following page. The variables are presented by financing event on the horizontal axis and by corresponding hypothesis on the vertical axis. We also test a set of control variables which follow the hypotheses.

According to our Hypothesis 1, high-growth firms with internal funds should be less likely to turn to external financing such as debt and equity. We used the variables profitability (earnings/total assets), dividend pay out (dividends/total assets), and cash (cash/total assets) as proxies for the availability of internal funds. The findings on these variables support Hypothesis 1. Table 3 reports that more profitable firms and firms with more cash, are more likely to use internal financing. The median (mean) profitability ratio among firms with internal financing was 7,00% (8,76%), followed by debt financing at 1,62% (-15,18%), and equity financing at 0,00% (-76,11%).

Findings on the dividend pay-out variable show that profitable firms with internal financing were more likely to pay higher dividends. Contrary to the prediction that high-growth firms should pay lower dividends (Jensen, 1986), our findings indicate that it may rather be profitability, as opposed to growth, that influences the dividend policy.

Hypothesis 2 predicts that high-growth firms with limited debt capacity should be more likely to resort to equity financing. The selected variables as proxies for debt capacity were tangible assets (tangible assets/total assets), debt ratio (long-term debt/total assets), and EBITDA-to-interest-coverage (EBITDA/interest expenses). Our findings report that high-growth firms that resort to equity financing had the lowest amount of

Table 3 Independent variables by type of financing

	Internal financing (IF)			Debt financing (DF)			Equity financing (EF)			Significance		
	median	mean	STD	median	mean	STD	median	mean	STD	IF-DF	IF-EF	DF-EF
Internal financing												
(earnings/total assets) t-1	0,0700	0,0876	3,6469	0,0162	-0,1518	6,6683	0,0000	-0,7611	12,7606	+	+++	-
(dividend pay out/total assets) t-1	0,0000	0,0154	0,0829	0,0000	0,0064	0,0394	0,0000	0,0040	0,0410	+++	+++	-
(cash/total assets) t-1	0,0531	0,1520	0,2215	0,0269	0,0899	0,1715	0,0084	0,1398	0,2609	+++	-	+++
debt capacity												
(tangible assets/total assets) t-1	0,0749	0,1853	0,2427	0,1924	0,3082	0,3141	0,0027	0,1088	0,2193	+++	+++	+++
(long-term debt/total assets) t-1	0,0012	0,1311	0,2024	0,1857	0,2554	0,2607	0,0000	0,1014	0,2092	+++	+++	+++
(EBIDTA/interest expense) t-1	9,2144	316,7159	5765,8303	3,7716	181,7841	5741,9005	0,0000	-111,2430	943,4840	-	+	-
control variables												
trade-off theory (tax shields)												
(interest expense/total assets) t-1	0,0039	0,0116	0,0493	0,0101	0,0169	0,0657	0,0000	0,0108	0,0407	+++	-	++
(depreciation/total assets) t-1	0,0061	0,0301	0,1217	0,0077	0,2122	8,1575	0,0000	0,6933	15,5747	-	++	-
trade-off theory (agency costs)												
(intangible assets/total assets) t-1	0,0000	0,0465	0,1224	0,0000	0,0569	0,1350	0,0000	0,0773	0,1819	+++	+++	+++
general characteristics												
ln(total assets) t-1	10,6542	10,7190	3,5735	11,9234	11,5789	3,9329	8,0337	6,9151	4,9077	+++	+++	+++

The independent variables are presented by category (internal financing, debt capacity, and control variables) on the left side of the table. The financing events (dependent variables) followed by the results from the significance test are presented on the horizontal axis. Where +++ indicates statistical significance at 0,01, ++ at 0,05, and + at 0,10 (using Student's T-test).

tangible assets and EBITDA-to-interest-coverage among the studied firms in the sample. These findings support Hypothesis 2. Moreover, the findings on the debt ratio variable show that firms issuing new equity were the least leveraged at a mean value of 10,14%, compared to debt financing at 25,54% and internal financing at 13,11%.

These results show that high-growth firms that resort to equity financing have debt capacity in terms of leverage but are rather constrained by limited cash flows and the lack of investments in tangible assets, thereby limiting their ability to raise external debt. Consistent with our hypotheses, and as opposed to the predictions of the Static Trade-Off Theory (Jensen, 1986; Frank & Goyal, 2003), Table 3 also reports that the most profitable high-growth firms that have considerable debt capacity are more likely to use internal financing rather than debt financing.

Lastly, we also used a set of control variables in order to check for the Static Trade-Off Theory and for general firm characteristics. We used interest (interest expense/total assets), depreciation (depreciation/total assets), and intangible assets (intangible assets/total assets) as proxies for the Static Trade-Off Theory. Moreover, we used size (natural logarithm of total assets) as a proxy for general characteristics.

The findings on the variables related to the Static Trade-Off Theory provide no direct support for the notion that profitable firms should take on more debt financing in order to shield their income from taxes. As with regards to the intangible assets variable, we find no support for the notion that firms who face considerable growth options should use debt in order reduce agency costs (Titman & Wessel, 1988; Vanacker & Manigart, 2010). According to the reported statistics on the size variable, firms that issue debt are generally larger (in terms of total assets) than firms that use internal financing and external equity.

Summary

The findings that have been presented in this section highlight the importance of using internal funds as a means to finance growth among Swedish high-growth firms. The findings further confirm that the independent variables related to the availability of internal funds and the debt capacity seem to influence the financing behavior to a large extent. The next section will conclude these results in relation to our research question.

5. Conclusion and Discussion

Capital structure has been the subject of much research in recent years and has mainly been dominated by two competing theories – the Trade-Off Theory and the Pecking Order Theory. High-growth firms are usually considered to be the most likely to demonstrate a pecking order behavior (Frank & Goyal, 2003). Assuming that this is true, our research question was formulated as follows:

'Are debt capacity and the accessibility of internal funds influential factors regarding how high-growth companies choose to finance their operation?'

The research question focuses on both internal and external financing even though there is a considerable difference between these two topics. Two supporting hypotheses, as first tested by Vanacker and Manigart (2010), were used to differentiate internal and external financing. These hypotheses were tested on a longitudinal dataset over a ten-year period where Swedish high-growth firms where identified.

According to our study, high-growth firms with internal funds proved to be less likely to issue debt and equity. Also, firms with limited debt capacity seem to be more likely to issue new equity. Due to this, both hypotheses were shown to be valid according to our study. Debt capacity and the accessibility of internal funds therefore seem to be driving factors of how high-growth companies choose to finance their operations. This is consistent with Vanacker and Manigart (2010).

The empirical findings presented in this study gives support for the assumption that high growth firms seem to follow a pecking order regarding the options they face when financing operations. Contrary to Frank and Goyal (2003), these findings therefore contribute to the existing empirical evidence that shows support for the Pecking Order Theory

Myers (2001) claims that the Pecking Order Theory is not a general but a 'conditional' theory of capital structure. The drivers behind the two major capital structure theories are agency costs, taxes, and information. However, these theories do not provide a general framework for financing strategies but are conditional on the specific context and can therefore not be tested on a homogenous group.

When studying a theory in a specific context, the conclusion should only be analyzed in terms of how it was achieved, in that specific context as it may not hold for the whole group. Therefore, our results only show what seems to be true for the specific context of this study and should only be analyzed as such. Completing the picture by conducting studies in other contexts like questionnaire-based studies, focusing on small sized firms, or using other measurements would therefore be beneficial.

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