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ABSTRACT

This paper researches the determinants of incremental financing decisions made by high growth companies. For this purpose, we use a longitudinal dataset, free of survivorship bias, covering the financing events of high growth companies for up to eight years. Results are generally consistent with the extended pecking order theory controlling for constraints imposed by debt capacity. Profitable companies have a preference for internal finance, even if they have unused debt capacity. External equity is particularly important for unprofitable companies with high debt levels, limited cash flows, high risk of failure and significant investments in intangible assets. As a result, findings suggest that high growth companies do not deliberately issue external equity, but rather are pushed towards external equity when there are no alternatives, such as retained earnings and financial debt.

KEYWORDS: Financing Decisions; Pecking order theory; Debt capacity; Growth

JEL CLASSIFICATION: G32

1. INTRODUCTION

Although few in number, high growth ventures contribute disproportionately to employment and wealth creation in an economy (Storey, 1994). This makes organizational growth a central area of research in entrepreneurship and a major policy concern. Proper financial management, including raising adequate and sufficient financing, is one of the key factors shaping high growth companies (Nicholls-Nixon, 2005). The purpose of this paper is to offer an insight into the discrete financing decisions of predominantly unquoted high growth companies. Information asymmetries are thought to be particularly severe in this setting (Frank and Goyal, 2003). We therefore decided to focus on the pecking order theory to explain the financing choices of high growth companies. The pecking order theory predicts that companies rank the financing alternatives by their sensitivity to asymmetric information, which results in the following financing hierarchy: first internal finance, second debt financing and finally outside equity is only used as a last resort (Myers, 1984).

The impact of company characteristics on financial decision-making may vary according to the research setting (Harris and Raviv, 1991). It is therefore important to test financial theories in settings where our knowledge is limited to determine the generalizability of the theories across different companies (Cassar, 2004). Although high growth companies are subject to the same market forces as any other company, studying the financing decisions of high growth companies is germane for a number of reasons. First, a recent stream in the finance and growth literature discusses the importance of external equity from private equity investors like venture capitalists and business angels in the financing of high growth ventures (Baum and Silverman, 2004; Davila et al., 2003; Carpenter and Petersen, 2002). Conversely, it is assumed that financial debt providers such as banks are incapable of adequately financing the growth of especially innovative ventures (Audretsch and Lehmann, 2002; Carpenter and Petersen, 20002; Gompers and Lerner, 2001). Most studies in entrepreneurial finance have therefore focused on private equity financing, ignoring other potentially important sources of financing such as retained earnings and debt financing (Eckhardt et al., 2006). In contrast to most contributions on the financing of high growth ventures, we do not limit ourselves to external equity financing, but empirically consider a diverse range of financing choices,

covering internally generated funds, bank financing and external equity. Second, most high growth companies have considerable outside financing needs. Internal finance is often insufficient to finance high growth (Michaelas et al., 1999; Gompers, 1995). We hence expect financial decision-makers in high growth companies to at least consider a broader range of financing alternatives compared to those in "Mom and Pop" businesses. Hence, we are able to study financing decisions in a setting where it is less likely that these decisions will be truncated to using only internal financing (Howorth, 2001).

By studying incremental financing decisions our research addresses a number of drawbacks of previous research focusing on capital structure. First, traditional capital structure research does not distinguish between internal financing and external equity financing. However, this distinction may be particularly important in our setting characterized by high informational asymmetry (de Haan and Hinloopen, 2003). For example, a company with sufficient cash and high information asymmetries should be more likely to finance investments internally and hence should be less likely to attract additional external equity finance. Second, a company's capital structure is the aggregate of its past financing decisions. Therefore, capital structure research generally masks information on the timing of the financing acquired. The characteristics of a firm change as it grows, which affects the availability and suitability of different financing options (Gompers, 1995). For example, as a company grows it may invest more in tangible assets, which can serve as collateral and make more and cheaper bank financing available. It can also become more profitable, making internally generated equity available. It is therefore important to take into account the dynamic nature of company characteristics and financing choices. Further, while most studies research financing choices of quoted companies (Fama and French, 2005; Frank and Goyal, 2003; de Haan and Hinloopen, 2003, Shyam-Sunder and Myers, 1999, Helwege and Liang, 1996), we focus on financing choices of predominantly unquoted companies. Quoted companies have, however, more financing options (Harris and Raviv, 1991) due to lower information asymmetries.

From a methodological perspective, the lack of longitudinal studies in entrepreneurship research has been described as a major weakness (Davidsson and Wiklund, 1999). Our study analyses the incremental financing decisions of companies

over a period of up to 8 years, during which all companies in our sample have grown extensively. We include start-ups, failed and merged companies, if they have grown considerably after start-up or before disappearing as independent entities. This implies that our study does not suffer from survivorship bias.

The paper starts with a discussion of the theoretical background and development of the hypotheses. Next, we discuss the data set, where we describe in detail how high growth companies are identified, how financing events are defined and how independent constructs are measured. Thereafter, we present our research findings, followed by a conclusion and avenues for further research.

2. THEORETICAL BACKGROUND AND DEVELOPMENT OF HYPOTHESES

The pecking order theory is among the most influential theoretical frameworks in the financial literature on corporate leverage (Frank and Goyal, 2003). The most common argument for a pecking order in financial decision-making is the existence of information asymmetries between company managers and investors (Myers and Majluf, 1984 and Myers, 1984)[2]. While company managers have private information about the value of assets in place and future growth options, outside investors can merely estimate these values. Faced with the risk of adverse selection, outside investors will demand a discount for the securities offered by the company (Akerlof, 1970). The more risky the security, the higher the premium will be, as risk exacerbates the effects of information asymmetry (Myers, 1984). As a result, companies prefer to finance new investments with retained earnings, which are not subject to asymmetric information problems. When internal funds are insufficient to meet the financing needs, companies will turn to outside funds. In this situation companies are expected to issue the safest securities first as these will suffer less from information asymmetries and hence be subject to lower discounts (Myers, 1984). This implies companies will start by searching for debt financing and only consider outside equity as a last resort.

[2] We acknowledge that information asymmetries do not necessarily lead to a financing hierarchy (Halov and Heider, 2004). Furthermore, other mechanisms beside informational asymmetry may cause a financing hierarchy such as transaction costs (Myers, 1984).

The pecking order framework is a theory both about capital structure and about how companies finance their projects over time, i.e. incremental financing decisions (Fama and French, 2005). Following the pecking order theory, a firm has no well-defined target debt ratio. The observed debt ratio reflects the cumulative requirement for external financing over time (Myers, 1984). In this paper the focus is on the pecking order theory as a framework to understand incremental financing decisions. Consequently, this research is in line with previous studies such as Helwege and Liang (1996), Shyam-Sunder and Myers (1999) and Frank and Goyal (2003) on the financing choices of quoted American companies.

Previous research directly testing the two main tenets of the pecking order model - i.e. (1) companies prefer to finance new investments with retained earnings and (2) external equity is only issued as a last resort if outside funds are needed - have offered inconclusive and even contradictory results. For example, Helwege and Liang (1996), studying a panel of US companies that conducted an IPO in 1983, find that the probability of obtaining outside funds is not related to a shortfall in internally generated funds, which is in contrast with predictions of the pecking order theory. However, consistent with pecking order predictions they find that firms with a cash surplus avoid outside financing. Finally, firms accessing the capital market do not follow a pecking order when choosing the type of security to offer. Shyam-Sunder and Myers (1999), however, draw a very different picture of the predictive power of the pecking order model. Based on a sample of 157 US firms that traded continuously between 1971 and 1989 they conclude that “the pecking order theory is an excellent first-order descriptor of corporate financing behavior, at least in our sample of mature corporations” (Shyam-Sunder and Myers, 1999, pp.242). Frank and Goyal (2003) show that for a more elaborate sample of publicly quoted US companies the greatest support for the pecking order theory is found among large firms. Smaller firms which are expected to be more likely to be subject to information asymmetries, do not seem to follow a pecking order. Additionally, the pecking order theory prediction that high growth companies will end up with high debt ratios due to their large financing needs is questioned (Fama and French, 2005). Barclay et al. (2006) demonstrate that high growth ventures consistently use less debt financing. These findings have led some scholar to conclude that “the pecking order

theory works well when it should not and not so well when it should" (Heider, 2003, pp. 3)

Despite contradictory empirical findings the motivation behind our choice of the pecking order as the main theoretical framework is clear-cut. Particularly, small and high growth companies are subject to significant information asymmetries (Frank and Goyal, 2003). According to the pecking order theory, exactly problems due to information asymmetries guide financial decision making (Myers, 1984). Consequently, based on theoretical grounds one would expect the pecking order theory to be particularly useful to explain financing behaviour in our sample of mostly unquoted high growth companies. We hence expect these firms to prefer internally generated funds over external funds if possible. This leads to our first hypothesis:

Hypothesis 1: High growth companies which have more internal funds will be less likely to raise additional external debt or equity financing.

Our first hypothesis is not only non-trivial in light of previous contradictory empirical evidence. The main competing framework to the pecking order theory, the static trade-off theory, predicts a different behavior. The static trade-off theory states companies will trade off the benefits of debt, especially tax and agency benefits, against the cost of debt, especially bankruptcy and agency costs of debt (Modigliani and Miller, 1963; Titman, 1984; Myers, 1977). The static trade-off theory predicts companies will make incremental financing decisions in such a way that an optimal capital structure is obtained. This optimal capital structure is obtained when the marginal benefit of an additional dollar amount of debt financing equals its marginal cost. Following the static trade-off theory we would expect companies with a lot of internal funds to rebalance their capital structure and issue additional outside debt financing, because companies with a lot of internal funds, i.e. financial slack, are less likely to fail. Financial slack buffers companies from shocks in the environment and allows them to survive during turbulent times (Sharfman et al., 1988). Further, additional outside debt financing would mitigate potential agency conflicts resulting from abundant internal funds (Jensen, 1986).

A particularly important problem for the traditional pecking order theory concerns the use of outside equity financing (Fama and French, 2005; Frank and Goyal, 2005). Significant external equity issues by high growth ventures are considered to refute the pecking order theory (Frank and Goyal, 2003). However, taking a firm's debt capacity into consideration reconciles equity issues by high growth ventures with the pecking order theory. Myers (1977) defined debt capacity as the point at which additional debt issues would reduce the total market value of a firm's debt. Lemmon and Zender (2004) are among the first to empirically examine the impact of debt capacity considerations on financing decisions in a pecking order framework. Using a sample similar to Frank and Goyal (2003), they show that the pecking order theory is a good predictor of financing behavior for a broad cross-section of firms when controlling for debt capacity. This is referred to as the extended pecking order theory (Lemmon and Zender, 2004). Furthermore, they show that high growth ventures have more restrictive debt capacity constraints and hence have a lower debt capacity. Consequently, exactly high growth companies will reach their debt capacity quickly and will be pushed towards issuing outside equity. Significant outside equity issues by high growth companies are hence not necessarily in contradiction with the pecking order theory when taking debt capacity considerations into account.

Current studies have defined debt capacity as the point at which companies reach "sufficiently high debt ratios" that curtail further debt issues (Fama and French, 2005; Chirinko and Singha, 2000; Shyam-Sunder and Myers, 1999). Fama and French (2005), interpret their finding that more than half of small, unprofitable high growth ventures issue outside equity as invalidating the extended pecking order theory. They argue that these firms start with low levels of leverage, hence they should be able to raise additional debt (Fama and French, 2005). This conclusion reflects a more limited view on debt capacity, however, in contrast with the traditional notion of debt capacity as coined by Myers (1977), that also takes into account the possibility of the company to repay the debt from operational cash flows. Banks are "cash flow lenders", implying that they emphasize firms' cash flows as the ultimate source of interest and principal repayment, rather than "asset lenders" which emphasize collateral (Carey et al., 1998).

Undoubtedly "sufficiently high debt ratios" may make it more difficult to get additional debt financing. Companies with high leverage have a higher financial risk, implying less protection for debt holders, because of the smaller equity buffer on which debt holders can rely in case of liquidation (Ooghe and Van Wymeersch, 2003). However, contrary to the narrow definition of debt capacity, even companies with low leverage may have no or very limited debt capacity. Take for example privately held biotechnology companies. These companies typically require large amounts of outside financing (Corroleur et al., 2004). Despite this European biotechnology companies exhibit very low leverage ratios (EuropaBio, 2006). However, typically no or insufficient cash flows are available (Corroleur et al., 2004). This implies that while debt levels are low these companies have no capacity to attract financial debt due to their inability to carry out debt related payments (i.e. interests and principal amount). Accumulating fixed commitments, which increase liquidity risk (i.e. a company's inability to carry out the fixed payments causing financial distress), will at a certain point reduce the total value of debt. As a result, firms with low cash flow may find that issuing additional debt is not advantageous to outside equity or even impossible and are forced to move further down the pecking order to outside equity (Helwege and Liang, 1996). Hence, we argue that debt capacity is not only determined by a firm's leverage, but also by its capacity to carry out the fixed debt related payments. High growth companies with limited debt capacity are expected to be pushed towards issuing external equity (Lemmon and Zender, 2004). This leads to our second hypothesis:

Hypothesis 2: High growth companies with limited debt capacity will be more likely to raise additional external equity financing instead of external debt financing.

3. METHOD AND DESCRIPTIVE STATISTICS

The empirical evidence of this paper is based on a database containing detailed yearly financial statement data of *all* Belgian companies from 1994 until 2004. Belgium has a bank-based financial system[3]. The most important source of external financing within firms is bank debt. Issuing public debt is an extremely rare event for Belgian companies. Furthermore, only a minority of Belgian companies are quoted on the stock exchange. The private equity market, however, is quite well-developed compared to some other Continental European countries (Reynolds et al., 2000).

All Belgian limited liability companies, irrespective of their size, have to file detailed financial statement information with the Belgian National Bank. For each year between 1997 and 2004 we select all firms that are (a) active in Flanders and Brussels (the two most developed regions in Belgium comprising the majority of economic activity) and (b) employ at least 10 people (in order to exclude micro-companies and companies founded for non-economic purposes). Both independent companies and companies which belong to a company group structure are included. Additionally, both companies starting up within the time frame of this study and firms disappearing from the database, because they failed or were taken over, are included. Therefore, there is no survivorship bias in our study, which is an important advantage compared to the majority of other finance studies. This results in a data set of 32,754 companies active over at least some period during the time frame of our study.

In what follows, we first discuss how high growth companies are identified. Second, we develop the measures of financing events. Finally, we discuss the independent variables.

[3] Other examples of so-called bank-oriented countries are Germany, Japan and France, as opposed to market-oriented countries like the UK, US and Canada. Rajan and Zingales (1995) show that the difference between the two types of financial systems is not so much present in the level of leverage, but are more likely to be reflected in the choice between public (e.g. stocks and bonds) and private financing (e.g. bank loans and venture capital financing).

3.1. Identifying high growth companies

Previous organizational growth research is often criticized because it does not take into account the multidimensional nature of growth. The classification of a company as a high growth company depends on the growth concept and growth formula used (Delmar et al., 2003). We explicitly take into account the multidimensional nature of growth. First, we use different growth concepts, such as sales, employees, total assets, cash flow and added value. The use of different concepts gives richer information and is therefore better than the use of a single indicator (Weinzimmer et al., 1998). Second, we use both absolute and relative growth measures following Davidsson and Wiklund (1999). While absolute growth measures tend to favor larger companies, relative growth measures tend to favor smaller companies. Although compound measures have been developed to tackle this problem (e.g. the Birch-index (Birch, 1987)), these measures lack a conceptual basis (Davidsson and Wiklund, 1999).

We calculated the growth of all companies in our database using five growth concepts (sales, employees, total assets, cash flow or added value) and two growth formulas (absolute versus relative). Growth in each year is measured as a moving average of the growth rate in the previous three years. From each of ten yearly rankings (two growth formulas x five growth concepts), we selected the growth champions, i.e. the first percentile of growers. In order to be selected in our sample as a high growth company, a company had to be for at least two years among the first percentile[4]. More specifically, this means that a company has to be minimum twice among the top 250 companies in Flanders and Brussels in one of ten growth dimensions. 2,077 companies were selected in this way. Only 57 of the selected companies are quoted on a stock exchange, the other high growth companies are privately held companies.

The yearly absolute growth in added value is at least €5,256,179 for added value growers, €4,067,419 for cash flow growers, €52,269,000 for total asset growers, €21,619,000 for revenue growers and 46 employees for employment growers. The cut off yearly relative growth rate lies between 317% (for revenue growers) and 2406% (for

[4] We require a company to be at least twice among the first percentile in order to exclude erratic or one-shot growth.

added value growers). These descriptive statistics clearly indicate that only top growth companies are considered. Similar growth rates have been reported by Markman and Gartner (2002) when studying the link between extraordinary growth and profitability in *Inc.* 500 high growth companies.

Some descriptive statistics on the sample of high growth companies are interesting in their own respect. In line with the results of Delmar et al. (2003) the growth concept and growth formula have a profound impact on the companies selected as high growth companies. The overlap between the different types of high growth companies is low, especially for relative growth. The highest overlap between the different samples of high growth companies is between absolute growth in added value and absolute growth in revenues, which is only 54%. The average age of the high growth companies in the sample is 22 years. However, there is a remarkable difference between absolute growers and relative growers with the average age being respectively 28 and 16 years. Although the majority (71%) of high growth companies are in existence over the entire time frame of the study, 22% of the companies are founded in 1997 or later and 7% of the companies disappear due to company failure or a takeover.

Table I shows the sector distribution of the high growth companies. It is remarkable that high growth companies are active in all sectors of the economy, with a high prevalence in the transportation and communication sector (31.49%), the building and civil engineering industry (23.83%) and in the distributive trades, hotels, catering and repairs sector (13.34%). It is noteworthy that around 80% of the high growth companies are active in industries that are generally considered low tech.

Insert Table I about here

3.2. Dependent variables: financing events

The dependent incremental financing event variables are constructed following Marsh (1982), Hovakimian et al. (2001) and de Haan and Hinloopen (2003). A first way to finance projects is with *retained earnings*. When the net increase of retained earnings within a year exceeds 5% of total assets we define this as an internal financing event. The threshold value of 5% is used to assure that the focus of the analyses is on relatively substantial financing events and guarantees consistency with previous studies. Second, firms are coded as using *financial debt* if there is a yearly net increase of outstanding financial debt which exceeds 5% of total assets. Finally, firms are coded as using *external equity financing* when there is a net increase in external equity of at least 5% of total assets. Firms may of course use different types of financing together. As a result, financing events are not mutually exclusive. Furthermore, all financing events are measured on a yearly basis. Consequently, multiple financing events in one year are coded as one large issue. This is appropriate as firms seem to actively rebalance their capital structure on average about once a year (Leary and Roberts, 2004). Finally, this approach makes that we study financing decisions conditional upon firm's financing needs, which is conventional in related studies (e.g. de Haan and Hinloopen, 2003, pp. 667).

Insert Table II about here

The descriptive statistics of the dependent discrete financing events are reported in Table II. Each year, more than half of the high growth ventures resort to internal finance or raise external financing. Over the eight year frame of our study, 92% of the ventures have at least one financing event and the median number of financing events equals 4. This suggests that being able to attract sufficient financial resources and high growth are interrelated.

Further, it is often assumed that rapidly growing ventures have insufficient internal funds to finance their growth internally (Michaelas et al., 1999; Gompers, 1995). Table II shows that financial debt is indeed the most common financing route, accounting for 45% of the financing events. Internal finance is the second most frequently used way to finance growth: 39% of the

financing events are increases in retained earnings. Finally, only 16% of the financing events relate to raising external equity financing. However, nearly 44% of the companies in our sample raise at least once outside equity financing. Consistent with Ou and Haynes (2006), who study the acquisition of external equity capital by small ventures, the descriptive statistics indicate that even for high growth companies the current emphasis on the importance of external equity finance in the literature may be somewhat overstated. Although external equity is undeniably an important source of finance, almost 85% of the financing events relate to retained earnings and financial debt.

Table II further shows the average size of the financing events (excluding the cases without a financing event). The median size of internal financing events equals 15% of total assets, while the median debt issue equals 14% of total assets. Consistent with previous research (Baeyens and Manigart, 2006; Helwege and Liang, 1997), the largest median issue size is for external equity issues with 21% of total assets. This shows that although equity is issued less often than debt, the average equity issue size is larger compared with debt issues or with the use of internal funds.

3.3. Independent variables

All independent variables are lagged one year in order to avoid problems of reverse causality. Where appropriate, independent variables are scaled by total assets in order to standardize the variables and make them comparable for companies with a different size. Furthermore, all the independent variables are calculated using book values[5]. Below we define the independent and control variables.

As proxies for the amount of *internal finance* available within the venture we use its profitability ratio, measured as earnings on total assets, the amount of cash and marketable securities on total assets and the pay-out ratio, measured as dividends on total assets. *Debt capacity* is proxied by leverage and cash flow. Leverage is operationalized as a company's debt ratio (financial debt on total assets). Furthermore, we include a variable indicating if debt is greater than total assets (negative stockholder's dummy variable). Cash flow is operationalized by using the cash flow ratio (i.e. internally generated cash

[5] We are mainly studying unquoted high growth companies. Consequently, market values are not available. Second, previous research argues that managers have book value rather than market value targets (Hovakimian et al., 2001).

flow on total assets), indicating a company's ability to support additional debt related payments.

We additionally include a number of control variables related to the static trade-off theory, which is the main competing theoretical framework to the pecking order theory (Frank and Goyal, 2005). It is interesting to include these variables in the model and see if the pecking order variables hold in a nested model including the variables proposed by the static trade-off theory (Frank and Goyal, 2003). Under the static trade-off theory tax shields, the expected cost of financial distress and agency costs are expected to determine financing decisions. We include two types of *tax shields*, debt tax shields (interests on total assets) and non-debt tax shields (depreciations on total assets). The expected cost of *financial distress* depends on the probability of trouble and the value lost if trouble comes (Myers, 1984). Our proxy for the probability of financial distress is the OJD-score, is similar to the Altman Z-statistic, but adapted to the Belgian context. A lower score indicates a higher risk of failure. Furthermore, we use asset structure operationalized as the ratio of property, plant and equipment to total assets, as a proxy for the cost of financial distress. *Agency costs* are particularly prevalent in a setting characterized by considerable future growth options. Firms generally engage in research and development to generate growth options (Titman and Wessels, 1988). Consequently, we use the ratio of intangible assets on total assets to operationalize agency costs.

Other *general control variables*, reflecting organizational size (i.e. natural logarithm of total assets), previous debt financing (i.e. dummy variable equal to 1 if the venture acquired debt financing in the previous year, zero otherwise) and previous external equity financing (i.e. dummy variable equal to 1 if the venture acquired external equity in the previous year, zero otherwise) are included in the model. Furthermore, we included year and industry dummy variables in the analysis to control for time and industry effects. Table III reports the correlations for the continuous independent and control variables. All correlations are lower than 0.50, except for the correlation between the probability of distress (OJD score) and the debt ratio. Because of multicollinearity concerns we did not include the OJD variable in the multiple regressions.

Insert Table III about here

4. EMPIRICAL RESULTS

4.1. Independent variables by issue type

Table IV shows the independent and control variables by issue type. While the average earnings on total asset ratio is positive for companies resorting to internal finance, companies issuing external debt and equity finance have on average negative earnings. Companies issuing external finance have on average lower pay-out ratios than companies resorting to internal finance. Companies issuing external finance have higher debt ratios compared to companies resorting to internal finance. Particularly noteworthy is that more than 20% of external equity issues are related to companies that have negative book value of shareholders' equity in the previous year[6]. This is a considerable group of companies which previous studies in capital structure research sometimes explicitly remove from their dataset (e.g. Heyman et al., 2007; Sogorb-Mira, 2005), leading to potentially biased results. Furthermore, external equity issuers have much lower internally generated cash flow ratios compared to debt issuers. These findings are consistent with companies issuing external equity being closer to or having reached their debt capacity.

Insert Table IV about here

Some interesting observations occur with respect to the control variables related to financial distress and intangible assets. Companies issuing external equity have a higher risk of failure compared to internal finance users and debt issuers. Furthermore, on average external equity issuers hold less tangible assets, which can serve as collateral, compared to debt issuers. Finally, companies issuing external equity finance have the highest average ratio of intangible assets on total assets.

[6] In the entire sample less than 9% of all financing events are related to companies that have negative shareholders' equity in the previous year.

4.2. Multivariate analysis

Table V presents the results of maximum likelihood multinomial logit analyses with three possible outcomes: internal finance, financial debt and external equity financing. We correct for the dependence among the outcomes with respect to the financing events for the same company. Consequently, we take into account that the observations are not independent within companies. This affects the estimated standard errors and variance-covariance matrix of the estimates (VCE). The Huber-White-Sandwich estimator of variance is used in order to obtain robust variance estimates.

Panel A of table V reports the multinomial logit analysis with *internal finance as the base outcome*. More profitable companies prefer to finance investments internally. The effect of profitability is not only statistically significant but also economically significant. The odds of issuing debt or outside equity are respectively more than 12 and 32 times lower for a one percentage-point increase in the profitability ratio. This is consistent with capital structure research on private held firms reporting a negative relationship between profitability and the debt ratio (e.g. Heyman et al., 2007; Sogorb-Mira, 2005). Companies with more cash and marketable securities are less likely to issue financial debt. These results are consistent with hypothesis 1 and offer support for the traditional pecking order theory.

Insert Table V about here

Companies using internal financing have a higher debt capacity. Companies with lower debt ratios, positive stockholders' equity and higher cash flow are more likely to resort to internal financing. For example, the predicted increase in the odds of issuing debt or equity is respectively more than 4.5 and 1.8 for a one percentage-point increase in a company's debt ratio. This finding is contrary to the predications of the static trade-off theory. One would expect companies with a lot of debt capacity to attract financial debt. This would allow profitable companies to benefit from the tax advantage of additional interest payments. Consistent with Lemmon and Zender (2004), we find evidence that profitable high growth companies with a lot of debt capacity prefer to retain their debt capacity.

Panel B of table V reports the multinomial logit analysis with *financial debt as the base outcome*. The results show that more profitable companies prefer to finance investments with debt, while more cash rich companies prefer to finance investments with external equity. The negative coefficient of the debt ratio variable indicates that companies with higher debt ratios are more likely to issue additional debt. However, high growth companies with extremely high debt ratios as proxied by the negative stockholders' equity dummy are more likely to issue external equity instead of debt financing. As an alternative specification to the reported model, which includes a dummy variable for negative stockholders' equity, we include the squared term of the debt ratio variable[7]. While the coefficients of all other variables remain stable, the squared term is negative and significant (p-value = 0.001). It indicates that in line with our hypothesis high debt levels increase the probability of issuing external equity. Furthermore, the predicted increase in odds of issuing additional debt financing compared to external equity increases by 1.26 for a one percentage-point increase in cash flow ratio. Therefore, our findings support hypothesis 2: high growth companies with high debt levels and low cash flows are more likely to attract additional external equity financing.

Looking at the control variables proposed by the static trade-off theory we find no significant impact of debt and non-debt tax shields on the decision to issue debt versus outside equity. The analyses in table V are performed without the bankruptcy risk indicator because of multicollinearity concerns. Unreported analyses confirm that in line with the static trade-off theory companies with a high risk of failure are more likely to attract external equity financing. This finding is consistent with the results from Baum and Silverman (2004), which indicate that private equity investors are investing in ventures on the edge of short term failure. Results do not confirm the importance of asset structure. Although companies with more tangible assets are more likely to issue outside funding (Panel A), the level of tangible assets does not discriminate between outside debt and equity issuers (Panel B).

[7] We use mean centered values to reduce potential multicollinearity problems as advised by Neter et al. (1996).

The results do indicate that companies with more intangible assets are more likely to fund their investment projects with external equity financing rather than with debt financing or internal equity. This last finding offers further evidence that the debt capacity of growth options may not only be lower compared to the debt capacity of assets in place, but may actually be negative (Barclay et al., 2006).

The coefficient of the size variable indicates that larger companies are less likely to attract outside financing. Finally, it is worth noting the coefficients of the previous debt and external equity financing dummies. Similar to Helwege and Liang (1996) and de Haan and Hinloopen (2003) the results show that companies previously issuing external financing are more likely to de so in the future. We additionally show that companies issuing financial debt are more likely to do so in the future, while previous issuers of external equity are more likely to attract additional external equity in the future. These results indicate the existence of a learning effect in the search for financing (e.g. de Haan and Hinloopen, 2003; Jansson, 2002).

4.3. Robustness checks

Additional analyses have been conducted to test for the robustness of the main results. We conducted separate analyses for the companies that were in the database over the total observation period and we contrasted small versus large high growth companies (median split on total assets) and absolute versus relative high growth companies. Results remained essentially unchanged. First, less profitable companies are more likely to issue outside financing and prefer to retain debt capacity. Second, companies with limited debt capacity are more likely to issue external equity.

Removing the companies with negative shareholder's equity (i.e. companies with excessive debt levels) from the analyses slightly changed the results: the squared term of the debt ratio was not significant. The finding is in line with the traditional pecking order theory, which indicates that high growth companies will end up with high debt ratios due to managers' reluctance to issue outside equity. Companies with lower cash flow ratios, however, are more likely to issue outside equity financing. These results confirm that debt capacity is not only determined by the level of debt but also by the capacity to carry additional debt-related payments. Excessive debt levels, as indicated by negative equity,

will push companies to issue external equity. This finding shows that removing companies with negative equity from the sample biases the results.

5. DISCUSSION AND CONCLUSIONS

Financial capital is one of the key resources a company requires to support its growth. This paper researches financial decision making in a high growth setting. Although previous research indicates that financial management is of paramount importance in a high growth setting, little is known about financial policy of high growth companies. Previous studies focused mainly on professional venture capital as a key financing source for high growth businesses, ignoring other frequently used alternatives. Using the pecking order theory we provide testable hypotheses of financing behavior in a high growth setting. Our results are based on a longitudinal dataset of financing decisions made by high growth companies over an eight year period. Startups and companies disappearing from our database, because of company failure or mergers and acquisitions, are included.

Our results are consistent with the extended pecking order theory, taking into account constraints due to limited debt capacity. More profitable companies prefer to finance investments internally. Companies using internal finance stockpile debt capacity. These companies do not attract debt financing, while the static trade off theory would suggest that exactly these companies should get additional debt financing in order to gain from debt tax shields and discipline imposed by fixed debt-related payments. Companies with excessive leverage and lower cash flow ratios are more likely to issue outside equity financing. It is striking that stockholders' equity is negative in more than 20% of the companies in the year previous to getting external equity. Companies issuing external equity may therefore be unable to attract more debt financing given the excessive leverage and difficulty to support additional debt-related payments. Finally, companies which invest more heavily in intangible assets are more likely to attract additional external equity.

Together these results indicate that high growth ventures do not deliberately issue additional external equity financing, but rather are pushed towards external equity when there are few alternatives. This finding is remarkably consistent with previous research focusing on financial decisions in private equity versus non-private equity backed firms in Belgium (Baeyens and Manigart, 2005). External equity is particularly important for unprofitable companies investing more heavily in intangible assets with high debt levels, limited cash flows and high risk of failure. Consequently, external equity is crucial as it allows some high growth firms to undertake investments for which no financing alternatives may be available.

Our results are important for academics. External equity financing is undeniably important for high growth companies needing financing beyond their debt capacity. However, contrary to the current focus in the literature on the importance of external equity finance for high growth companies, internal finance and debt are the most frequently used financing alternatives by the majority of high growth companies. Nevertheless, more insight is needed into how managers make financial decisions. Are managers pushed towards outside equity financing because of the economic costs associated with it (e.g. Amit et al., 1998), the fear of loosing control and independence (e.g. Manigart and Struyf, 1997) or lack of knowledge about financing (e.g. Van Auken, 2001)? Furthermore, researchers should move beyond the current focus on outside equity. Similar to the majority of other studies on company financing, we focus on the financing obtained. Therefore, we are unable to answer questions as: How does the search for financing look like? Do company managers prefer to target one or a few investors or do they target multiple potential investors? How do the initial financing decisions influence subsequent financing decisions (e.g. Baeyens and Manigart, 2006)? Our results hint there might be a learning effect in the acquisition of financial resources. Companies issuing financial debt or outside equity are more likely to issue respectively financial debt and outside equity in the future.

Our results are also important for management practice. By studying the financing behavior of high growth companies, entrepreneurs can gain a more thorough insight into financial policies related to high growth. Our results are important for financial intermediaries. We offer additional evidence that high growth companies are pushed towards external equity, only to be raised when internally generated funds are lacking and when the debt capacity is exhausted.

Finally, our results are important for policymakers. Governments are primarily focusing on programs to increase the supply of external equity financing to innovative and growing ventures. An important insight for government officials it that external equity does not seem to be the preferred way through which ventures finance high growth. Our research indicates the importance of internal finance in the financing of investment projects by high growth companies. Offering tax incentives for companies to retain earnings is hence well taken.

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TABLE I:

Distribution of sample firms by industry

TABLE I
Distribution of sample firms by industry

0	Agriculture, hunting, forestry and fishing	14	0.67%
1	Energy and water	103	4.96%
2	Extraction and processing of non-energy producing minerals and derived products; chemical industry	225	10.83%
3	Metal manufacture; mechanical and instrument engineering	87	4.19%
4	Other manufacturing industries	134	6.45%
5	Building and civil engineering	495	23.83%
6	Distributive trades, hotels, catering, repairs	277	13.34%
7	Transport and communication	654	31.49%
8	Banking and finance, insurance, business services, renting	27	1.30%
9	Other services	61	2.94%
	TOTAL	2077	100.00%

TABLE II:

Sample split according to financing types

TABLE II:
Sample split according to financing type

Number of financing events:	Internal	Financial debt	External Equity	Total	Number of firms with new issue:	Number of firms in sample:	% of firms in sample with new issue:
1997	365	487	169	1021	798	1450	55.03%
1998	400	474	181	1055	839	1562	53.71%
1999	435	543	210	1188	937	1667	56.21%
2000	457	649	223	1329	1027	1804	56.93%
2001	458	590	241	1289	1040	1874	55.50%
2002	457	515	189	1161	970	1883	51.51%
2003	494	461	172	1127	950	1869	50.83%
2004	472	337	104	913	784	1573	49.84%
Total	3538	4056	1489	9083			
Total (%)	38.95%	44.66%	16.39%	100.00%			
Issue size/Total assets (%):							
Median	14.70%	14.42%	21.20%				

TABLE III:

Correlation matrix for continuous independent and control variables

TABLE III:
Correlation matrix for continuous independent and control variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Internal finance:												
Profitability ratio$_{t-1}$	(1)	1.00										
Cash and cash equivalents$_{t-1}$	(2)	-0.055	1.00									
Pay-out ratio $_{t-1}$	(3)	0.203	0.019	1.00								
Debt capacity:												
Debt ratio $_{t-1}$	(4)	-0.364	-0.017	-0.065	1.00							
Cash flow ratio $_{t-1}$	(5)	0.161	0.102	0.030	0.119	1.00						
Control variables:												
Tax shields												
Debt tax shields $_{t-1}$	(6)	-0.055	-0.162	-0.039	0.331	-0.083	1.00					
Non-Debt tax shields $_{t-1}$	(7)	-0.138	0.028	-0.053	0.192	0.291	0.062	1.00				
Financial distress												
Probability of distress (OJD) $_{t-1}$	(8)	0.300	0.012	0.046	-0.609	0.042	-0.308	-0.027	1.00			
Cost of distress (Asset structure) $_{t-1}$	(9)	-0.082	-0.087	-0.080	0.164	0.066	0.071	0.497	-0.004	1.00		
Agency costs												
Intangible assets $_{t-1}$	(10)	-0.126	0.005	-0.033	0.068	0.015	-0.013	0.262	-0.026	-0.006	1.00	
Size $_{t-1}$	(11)	0.135	-0.369	0.117	-0.157	-0.285	0.298	-0.209	0.125	-0.140	-0.054	1.00

TABLE IV:

Variables by issue type

TABLE IV:
Variables by issue type

	Internal Finance			Financial debt			External equity		
	Median	Mean	S.D.	Median	Mean	S.D.	Median	Mean	S.D.
Internal finance:									
(EARNINGS/TOTAL ASSETS)$_{t-1}$	0.0412	0.0640	0.1463	0.0080	-0.0170	0.2164	0.0000	-0.0891	0.3142
(CASH AND EQUIVALENTS/TOTAL ASSETS) $_{t-1}$	0.0156	0.0698	0.1349	0.0143	0.0556	0.1198	0.0141	0.0767	0.1613
(DIVIDENDS/TOTAL ASSETS) $_{t-1}$	0.0000	0.0212	0.0614	0.0000	0.0111	0.0402	0.0000	0.0089	0.0332
Debt capacity:									
(FINANCIAL DEBT/TOTAL ASSETS) $_{t-1}$	0.5982	0.5532	0.3130	0.8003	0.7863	0.5664	0.7207	0.7184	0.6466
(Negative shareholders' equity) $_{t-1}$		0.0124			0.1152			0.2058	
(INTERNALLY GENERATED CASH FLOW/TOTAL ASSETS) $_{t-1}$	0.2835	0.5275	0.7604	0.2202	0.4305	0.6722	0.0871	0.2723	0.5996
Control variables:									
Tax Shields									
(INTERESTS/TOTAL ASSETS) $_{t-1}$	0.0051	0.0109	0.0147	0.0091	0.0155	0.0205	0.0046	0.0135	0.0218
(DEPRECIATIONS/TOTAL ASSETS) $_{t-1}$	0.0184	0.0411	0.0569	0.0284	0.0512	0.0667	0.0160	0.0437	0.0661
Financial distress									
(OJD-SCORE *) $_{t-1}$	1.0200	1.2190	1.5480	0.350	-0.113	6.541	0.270	-0.799	10.881
(PROPERTY, PLANT AND EQUIPMENT/TOTAL ASSETS) $_{t-1}$	0.0494	0.1369	0.1999	0.1034	0.2223	0.2728	0.0450	0.1832	0.2669
Agency costs									
(INTANGIBLE ASSETS/TOTAL ASSETS) $_{t-1}$	0.0000	0.0147	0.0582	0.0000	0.0195	0.0710	0.0000	0.0277	0.0845
Ln(TOTAL ASSETS) $_{t-1}$	10.605	10.206	2.768	9.9554	9.7008	2.8614	9.9554	9.5220	3.2184
Previous debt financing		0.2340			0.4530			0.3509	
Previous external equity financing		0.0707			0.13843			0.2928	

TABLE V:

Multinomial logit models using robust standard errors

TABLE V:
Multinomial logit models using robust standard errors*

	A. Base outcome = Internal finance				B. Base outcome = Financial debt			
	Financial debt		External equity		Internal finance		External equity	
	Coef.	Sign.+	Coef.	Sign.+	Coef.	Sign.+	Coef.	Sign.+
Internal finance:								
(EARNINGS/TOTAL ASSETS)$_{t-1}$	-2.519	***	-3.480	***	2.519	***	-0.961	***
(CASH AND EQUIVALENTS/TOTAL ASSETS)$_{t-1}$	-1.077	***	-0.060		1.077	***	1.018	***
(DIVIDENDS/TOTAL ASSETS)$_{t-1}$	0.449		0.582		-0.449		0.134	
Debt capacity:								
(FINANCIAL DEBT/TOTAL ASSETS)$_{t-1}$	1.512	***	0.630	***	-1512	***	-0.882	***
(Negative shareholders' equity)$_{t-1}$	0.865	***	2.282	***	-0.865	***	1.417	***
(INTERNALLY GENERATED CASH FLOW/TOTAL ASSETS)$_{t-1}$	-0.278	***	-0.513	***	0.278	***	-0.236	***
Control variables:								
Tax Shields								
(INTERESTS/TOTAL ASSETS)$_{t-1}$	7.616	***	7.080	**	-7616	***	-0.537	
(DEPRECIATIONS/TOTAL ASSETS)$_{t-1}$	-0.759		-2.109	*	0.759		-1.350	
Financial distress								
(OJD-SCORE)$_{t-1}$								
(PROPERTY, PLANT AND EQUIPMENT/TOTAL ASSETS)$_{t-1}$	0.889	***	0.641	***	-0.889	***	-0.248	
Agency costs								
(INTANGIBLE ASSETS/TOTAL ASSETS)$_{t-1}$	0.330		1.441	**	-0.330		1.112	***
Ln(TOTAL ASSETS)$_{t-1}$	-0.089	***	-0.087	***	0.089	***	0.002	
Previous debt financing	0.577	***	0.191	**	-0.577	***	-0.386	***
Previous external equity financing	0.832	***	1.555	***	-0.832	***	0.723	***
Number of obs.	7896							
Prob.	0.0000							
Pseudo R^2	0.1305							

* Industry and year dummies are included in the models, but are not reported.

+ Where * indicates significant at 0.1, ** significant at 0.05 and *** significant at 0.01.