



Provided by the author(s) and University College Dublin Library in accordance with publisher policies., Please cite the published version when available.

Title	Capital structure in new technology-based firms : evidence from the Irish software sector
Authors(s)	Hogan, Teresa; Hutson, Elaine
Publication date	2004
Series	Centre for Financial Markets working paper series; WP-04-19
Publisher	University College Dublin. School of Business. Centre for Financial Markets
Link to online version	<a href="http://www.ucd.ie/bankingfinance/docs/HUTSON_2004_CF.pdf">http://www.ucd.ie/bankingfinance/docs/HUTSON_2004_CF.pdf</a>
Item record/more information	<a href="http://hdl.handle.net/10197/1166">http://hdl.handle.net/10197/1166</a>

Downloaded 2018-12-18T17:24:22Z

The UCD community has made this article openly available. Please share how this access benefits you. Your story matters! (@ucd\_oa)



Some rights reserved. For more information, please see the item record link above.



**Capital Structure in new technology-based firms:  
Evidence from the Irish software sector**

Teresa Hogan  
Dublin City University Business School,  
Dublin 9, Ireland  
Email: [teresa.hogan@dcu.ie](mailto:teresa.hogan@dcu.ie)  
Phone: 353-1-700 8082

and

Elaine Hutson  
University College Dublin  
Michael Smurfit Graduate School of Business,  
Blackrock, Co. Dublin, Ireland  
Email: [elaine.hutson@ucd.ie](mailto:elaine.hutson@ucd.ie)  
Phone: 353-1-716 8828

***Key words:*** Capital structure, pecking order hypothesis, SME, NTBF.

***JEL classifications:*** G24, G28, G37.

## **Capital structure in new technology-based firms: Evidence from the Irish software sector**

### **Abstract**

Using a sample of 117 Irish software companies, we examine the capital structure of new technology-based firms. Consistent with the findings on financing for other small businesses, internal funds are the most important source of funding in new technology-based firms. However, in apparent contradiction to the pecking order hypothesis, the use of debt is rare and equity financing is the prime source of external finance. By questioning chief executive officers via survey on their perceptions and opinions on various financing issues, we are able to conclude that in many cases software firm founders prefer outside equity to debt. The dearth of debt in the capital structure of new technology-based firms cannot be wholly explained by financing constraints due to information asymmetries in the banking sector.

***Key words:*** Capital structure, pecking order hypothesis, SME, NTBF.

***JEL classifications:*** G24, G28, G37.

## 1. Introduction

It is widely agreed that technology-based small and medium-sized enterprises (SMEs) are becoming increasingly important sources of employment generation and economic growth. These so-called new technology-based firms (NTBFs)<sup>1</sup> are important conduits for translating scientific knowledge into commercial products and processes, and play a vital role in the development and diffusion of innovation. Some of the world's largest technology companies – such as Apple, Dell, Gateway, Intel and Microsoft – all began as NTBFs in the United States less than 30 years ago. Although such 'super-successful' firms are less in evidence in Europe, the European Commission (2002) notes that European NTBFs generate significant employment, productivity and economic growth. The financing of NTBFs has consequently become an important issue around the world. A central concern has been that NTBFs may experience financing constraints, especially at start-up, that could impede their ability to grow and develop. Recent interest by policymakers, however, has not been matched by academic research on financing. This is primarily because financial data on NTBFs are not widely available, and owner-managers of SMEs are often reluctant to reveal private information on the financing of their firms.

In this study we examine the financing of NTBFs using a sample of 117 privately held Irish software companies. Ireland is one of the top two producers of software products in the world.<sup>2</sup> Irish-based manufacturers produce over 40 percent of all packaged software and 60 percent of all business software sold in Europe, and Ireland is the world's largest exporter of software services, generating over €8.5 billion in export revenue in 2000 (National Informatics Directorate, 2001). This remarkable performance is largely attributable to a number of multinational companies that have made Ireland their centre for European manufacturing and distribution. Over the past three decades, a robust indigenous software industry has grown up alongside the multinationals, engaged primarily in the development of highly specialised software products for export markets. It is these indigenous NTBFs that are the focus of our

---

<sup>1</sup> NTBFs are defined by Little (1977) as independent ventures less than 25 years old that supply a product or service based on the exploitation of an invention or technological innovation.

<sup>2</sup> Ireland and the United States together accounted for more than 55 percent of OECD software exports in 2000.

study. Our survey approach allowed us to source information directly from the founders of these firms on issues such as their motives for being in business, their financial goals, their preferred sources of finance, and their perceptions of asymmetries in debt and venture capital markets.

We begin by presenting the essential features of our sample of indigenous Irish NTBFs – age, size by annual turnover and employment, and sources of finance. We show that, consistent with the pecking order hypothesis (POH) of Myers (1984) and Myers and Majluf (1984), internal funds are the most important source of finance. We also find that these NTBFs use outside equity in preference to debt. While this finding appears to contradict the predictions of the POH, which tends to hold for SMEs in general, it corroborates the findings of Oakey (1984) and Roberts (1990 and 1991) for US NTBFs, Moore (1994) for NTBFs in the UK, and more recently Hyttinen and Pajarinen (2002) for Finnish high-tech firms.

Does this near-absence of debt in the capital structure of Irish NTBFs result from financing constraints? It is well understood that bank lending to SMEs and NTBFs is associated with information asymmetries that give rise to adverse selection and moral hazard (Stiglitz and Weiss, 1981). We find that owner-managers of Irish software firms perceive information asymmetries in the banking sector but not in venture capital markets, confirming that NTBF owner-managers recognise that venture capitalists are able to overcome information asymmetry problems.

An alternate explanation for the preference for outside equity over debt in NTBFs is that it is the result of personal preference. It is well understood that the motivations and goals of SME owner-managers influence the financing decision. We argue that the key to understanding the difference in capital structure between NTBFs and SMEs in general is in owner-managers' motivations and goals. One of the strongest stylised facts from the small business literature is that the primary goal of small business owner-managers is independence and control. In our sample of indigenous Irish software firms the pursuit of innovation is the most important reason for being in business, and the main financial motivation of their owner-managers is to maximise the potential future selling value of their firm. We argue that the pursuit of

innovation, which is an expensive goal in NTBFs because of their large capital requirements, coupled with the value maximisation goal, moderates the desire for control and independence. In essence, the founders of these firms are willing to forfeit independence and control in order to obtain the finance needed to create an innovative, viable and potentially valuable businesses.

The remainder of our paper is structured as follows. In the next section, we review previous work on the capital structure of SMEs and NTBFs. In section 3, we describe our sample and survey methodology. Our results are presented and discussed in section 4. Section 5 summarises our main findings and draws together our policy conclusions.

## **2. Previous related literature**

The POH suggests that costs associated with information asymmetries between stockholders and company management have a significant impact on the firm's choice of funding. Managers are privy to 'inside' information that is not available to actual and potential investors. Investors understand this asymmetry, and they assume that managers will issue stock only when they perceive it to be overvalued. The POH predicts that in order to avoid this adverse signalling problem, firms prefer to finance projects from retained earnings. When the internal sources are exhausted, managers will opt for 'safer' securities, which Myers (1984) defines as "securities whose future value changes least when the manager's inside information is revealed to the market." (p. 584). Thus debt will be preferred to outside equity, and new equity will be issued only as a last resort. The POH has received considerable empirical support at the level of the corporation (Titman and Wessels, 1988; Shyam-Sunder and Myers, 1999), although some recent studies have found that new equity is becoming a more popular source of finance amongst listed firms (Helwege and Liang, 1996, and Frank and Goyal, 2003).

### ***The capital structure of SMEs***

Several studies have shown that the POH also holds for privately held SMEs (Cosh and Hughes, 1994, Berger and Udell, 1998, and Berggren, Olofsson and Silver, 2000).

The preference for internal finance is usually explained by the existence of supply-side constraints in debt markets due to information asymmetries (Binks and Ennew, 1994; Chittenden, Hall and Hutchinson, 1996; and Michaelas, Chittenden and Poutziouris, 1999). Information asymmetries create two problems: adverse selection and moral hazard. Adverse selection arises when banks cannot discriminate between 'good' and 'bad' projects because they are unable to assess the capabilities of SME owner-managers (Stanworth and Gray, 1991; Binks, Ennew and Reed, 1992). Unlike large firms, there is little public or independent information on SMEs, and they do not enter into contracts that are publicly visible or widely reported in the press (Berger and Udell, 1998). Financing constraints result when SMEs find it difficult to obtain bank finance on reasonable terms irrespective of the merits of their business. Banks may not want to lend at any price because firms might take on risky projects to meet the high interest expense (Stiglitz and Weiss, 1981). The asymmetric payoff structure for equity holders *vis à vis* debt holders worsens this moral hazard. The equity holder (that is, the SME owner-manager) stands to gain more than the debtholder if the firm is successful, and it consequently has an incentive to pursue risky projects. This would act against the interest of fixed-claim debtholders as the likelihood of bankruptcy increases.

The dominance of internal finance in the capital structure of SMEs can also be explained by demand-side factors. It is well established in the small business literature that owner-managers of SMEs are reluctant to relinquish independence and control (Cosh and Hughes, 1994; Chittenden, Hall and Hutchinson, 1996; Cressy and Olofsson, 1997; Jordon, Lowe and Taylor, 1998 and Poutziouris, Chittenden and Michaelas, 1998). Outside sources of finance give rise to contractual arrangements that impinge on the owner-manager's ability to act independently (Boyer and Roth, 1978; Cooley and Edwards, 1983; Hommel and Schneider, 2003). Indeed, the Bolton Committee (1971) viewed managerial independence as a defining characteristic of small business.<sup>3</sup> More recently, Le Cornu *et al* (1996) tested the relative importance of a series of SME owner-managers' objectives against their willingness to sacrifice

---

<sup>3</sup> The Bolton Committee (1971) was one of the largest investigations into small business ever conducted, comprising some 18 separate studies on small business-related issues in the UK. It was one of the first attempts to provide a universally accepted definition of small business, and is still widely referenced today.

return on investment. Consistent with Bolton (1971), the need for independence was found to be the most important non-financial objective, followed by lifestyle considerations, societal contribution and the desire to be respected. Owner-managers were found to be unwilling to give up financial reward to achieve these objectives, with the exception of independence. This supports the view that the independence motive is critical to understanding the observed capital structure of SMEs. It explains why SME owner-managers prefer to use internal rather than external finance, and to use debt rather than equity.

In summary, therefore, the POH does a reasonable job at explaining the observed capital structure of SMEs. On the supply side, information asymmetries act to raise the price of debt and reduce the quantity available. The concern of policymakers is thus understandable insofar as supply side conditions tend to induce SMEs to rely on internal finance, and this can curtail their potential for growth and employment generation. On the demand side, the desire for independence and control leads owner-managers to prefer internal rather than external finance, and to prefer debt to equity.

### *The capital structure of NTBFs*

Like corporations and SMEs, NTBFs tend to use internal sources of finance in apparent preference to outside sources (Tyebjee and Bruno, 1981; Roberts, 1990 and 1991; Lumme, Kauranen, and Autio, 1994; Moore, 1994; Bank of England, 1996; Giudici and Paleari, 2000; Dahlstrand and Cetindamar, 2000; Hyytinen and Pajarinen, 2002). When external finance is used, however, NTBFs tend to prefer equity rather than debt, particularly at start-up (Oakey, 1984; Roberts, 1990 and 1991; Moore, 1994; Brewer and Genay, 1994 and Brewer *et al*, 1997; Hyytinen and Pajarinen, 2002). This is contrary to the predictions of the POH, and it is also at odds with most of the evidence on established corporations and SMEs.

There are two supply-side explanations for why NTBFs rely on outside equity more than debt. *First*, NTBFs suffer from greater information asymmetries with banks than SMEs in general. Berger and Udell (1998) argue that the adverse selection problem is particularly serious for NTBFs because the risk that borrowers will act counter to the



interest of lenders increases with external finance, and high-technology firms tend to have long product lead times that require more funding than their low-technology counterparts. High-technology investment projects are also associated with greater information asymmetries than other SMEs because the technology is often opaque to non-technical people. Because of this, banks have greater problems in understanding and assessing high-technology firms (Oakey, 1984, Deakins and Hussain, 1993 and Bank of England, 1996). In addition, as monitoring research and development activity is particularly difficult for outsiders, there may be a greater incentive to engage in risky activities (Jordan, Lowe and Taylor, 1998). *Second*, the lack of collateral is an acute problem in NTBFs. Banks traditionally rely on loan guarantees and collateral to mitigate against adverse selection (Stiglitz and Weiss, 1981). As Myers (1977) points out, a significant proportion of value in many firms is related to assets not yet in place – the present value of ‘growth options.’ Growth options are intangible, and banks are understandably reluctant to accept them as collateral. This suggests a negative relation between a firm’s growth options and its leverage; a proposition that has considerable empirical support (Bradley, Jarrell and Kim, 1984; Smith and Watts, 1992; Barclay, Morellec and Smith, 1995, 2001; Rajan and Zingales, 1995). Brealey and Myers (2000) argue that this dependence on intangible assets explains why growth companies in the technology sector such as Hewlett Packard and Microsoft tend to finance their investments with equity rather than debt, despite being highly profitable.

On the demand side, there is evidence that NTBF owner-managers are more willing to cede control (Berggren, Olofsson and Silver, 2000) than SMEs owner-managers in general. This is an interesting finding, and it prompts further investigation of what motivates NTBF owner-managers. There is very little published research on this issue. Roberts (1991) suggests that the pursuit of innovation is an important motive. Amit, MacCrimmon and Zietsma (2001) find that the desire for innovation and the need for independence are the predominant decision variables in the venture initiation process. They also find that the pursuit of wealth is important; relative to a control group of senior non-entrepreneurs managers, NTBF entrepreneurs believe that their chances of attaining their desired levels of wealth are greater by establishing their own firm. This is supported by Audretsch (1995 and 2000) who also suggests that

wealth expectations are an important motivation. He provides a dynamic model of knowledge creation in which an individual will opt to start a business if he/she believes that the expected net present value of the venture is greater than the salary in current employment.

In summary, the POH does not perform well in explaining the observed capital structure of NTBFs. On the supply side, the information asymmetries that act to reduce the quantity and raise the price of debt are more acute than for SMEs, and this adds a further inducement to rely on equity. Private equity, in the form of venture capital or angel finance, is probably the most appropriate outside source of finance for high-technology firms because it is designed to overcome these information asymmetries. Venture capitalists tend to specialise in industries in which informational asymmetries are particularly acute (Gompers and Lerner, 2003). Most venture capitalists have an in-depth knowledge of technologies and markets in specific fields (Ruhnka and Young, 1991; Dahlstrand and Cetindamar, 2000), and are better placed to monitor the owner-managers of NTBFs. Venture capitalists are also willing to put time and capital resources into client NTBFs because, in contrast to debtholders, they participate more fully in the gains if the firms are successful.

Our survey analysis addresses these information asymmetry issues by asking our sample of NTBF owner-managers about their perceptions of supply-side constraints on debt financing. Amongst the issues we will address will be whether NTBF owner-managers perceive that banks ration their supply of debt and lend to high-technology businesses only when they have collateral to offer. We also investigate the extent to which NTBF owner-managers' perceptions of asymmetries between themselves and venture capitalists are less than those perceived to exist with banks.

On the demand side, the willingness of owner-managers to cede independence and control in pursuit of their innovation and financial goals may explain why outside equity is preferred to debt. Given the relative paucity of research on the motivations of NTBF owner-manager, our analysis directly addresses this issue by asking them about their motives for being in business and about their financial goals. This allows us to shed light on financing preferences.

### **3. Survey methodology and characteristics of respondent firms**

The software sector is sub-divided into ‘products’ and ‘services’. Software products refer to packaged software that is generally produced in large volumes for mass markets,<sup>4</sup> while software services include consulting, implementation, support services, operations management and training. We define software product companies as those that are primarily involved in the development and commercialisation of their own products. There is no comprehensive database of independent software firms in Ireland. Our sample population has therefore been compiled using a wide variety of information sources, including lists provided by the Irish Software Association and the National Informatics Directorate, lists of occupants of innovation parks, lists of participants in a national technology entrepreneurship award program, and firms cited in specialist journals. At the end of 2001 there were 257 indigenous software product SMEs in Ireland.

We based our survey design on self-administered questionnaires using the tailored design method (Dillman, 1976 and 2000). The survey was administered by mail and addressed to named CEOs or Managing Directors. A covering letter requested that the surveys be completed by the founder, or by the lead founder if the company had been founded by a team. Respondents were given the choice of completing either a paper or web version of the questionnaire. The first follow-up contact was also by mail, and the second follow-up was by telephone. The final contact was via e-mail, and it contained a link to the web version of the questionnaire. The number of valid questionnaire returns was 117, giving an impressive response rate of just under 46 percent. Response rates of 10 percent and less are commonly reported in small business mail surveys (Curran and Blackburn, 2001). The strong response rate to our survey probably reflects the high educational attainment in the sample population; 84 percent of respondents are educated to degree level, 28 percent have a master’s degree and 8 percent have a PhD.

Our survey requested details on the formation process including start-up date, and number of employees at start-up and at the time of the survey (May-June 2002). We

---

<sup>4</sup> This can be distinguished from ‘bespoke’ software, which is provided on a client-by-client basis.

also requested details of financing sources separated into internal (savings, consulting revenues and retained earnings) and external (bank debt, venture capital, private investors and government grants). Due to the well-known difficulty of getting firms to report actual financial data, we requested this information in percentage form only. Ang (1991) points out that, unlike the income of the managing director of a public company, the SME owner-manager's personal income is very much related to the income of the company. Owner-managers are unlikely to disclose financial information about their businesses, and we therefore requested turnover information in the form of bands with upper and lower limits.

Table 1 summaries the data on company age. At the date of submitting their responses, the youngest firm was 5 months old and the oldest was 27 years. The average age of all firms in our sample is just under 6 years (5 years and 10 months), while the median age is considerably lower at 4 years and 3 months. The table also reports the number of firms in 6 age categories. As seen in column [3], 59 percent of firms in the sample were less than 5 years established, and 81 percent were less than 10 years old. Twenty-two firms (almost 18 percent) were over 10 years old, and of this group, 5 were more than 15 years old.

Summary information on firm size is reported in Table 2. We use two measures of firm size: employment and sales. Panel A shows the employment numbers at start-up and at the time of the survey in January 2002. We use the European Union (EC, 1995) classification system for SME size by employment. In 2002, the sample firms employed a total of 3005 people, giving an average 26 employees per firm. At start-up 80 percent of firms were in the 'micro' employment size class, with less than 10 employees. One-quarter of these had no employees. When comparing start-up employee numbers to those of 2002, it is clear that most companies have experienced growth. The number of firms with less than 10 employees fell from 80 percent to 37 percent, and of these one-tenth had no employees. A small proportion grew substantially; 15 percent had grown to 'medium' by 2002. This is consistent with Storey's (1994) hypothesis that only a small proportion of start-ups grow to become significant players. Turnover figures for 2001 are presented in Table 2, Panel B. Most respondent firms are relatively small when size is measured by sales. Almost

one-third turned over less than €127,000, and more than half had sales less than €35,000. Twenty-nine percent of firms had a turnover of greater than €1,270,000 in 2001, and only 10 percent had a turnover of greater than €3,810,000.

Table 3 provides summary information on the sources of finance for the 96 firms in the sample that provided detailed funding information. The average figures for the full sample show a 50/50 divide between internal and external sources. A mere 4 percent of financing is sourced from banks, and the remaining outside finance (46 percent of the total financing requirement) is equity. The change in the relative importance of internal versus external finance over time is illustrated in Figure 1. External sources of finance are more important for firms in the range 2 to 10 years old, but are less in evidence for firms 10 years plus. Retained earnings increases in importance for the older firms (10 years plus), which implies that retained profits seem to replace outside finance.

It is clear that the NTBFs in our sample are primarily self-financing at start-up; 73 percent of firms less than 2 years old are financed internally.<sup>5</sup> Most of this funding is from the personal savings of the founders (43 percent of total funding), but a substantial component is provided by cash flows from consulting services (27 percent of total funding). These findings are largely consistent with prior research on capital structure in NTBFs. In the US, Roberts (1991) found that bank finance did not feature at all as a funding source for high-technology start-ups. Our findings also show that private equity support for NTBF start-ups in Ireland is comparable to that found in the US. The proportion of private outside equity for the start-ups of 23 percent (venture capital plus private investors in firms less than 2 years old) is comparable to Roberts' (1991) finding of 21 percent of total funding. However, the proportion of venture capital and other private outside investors in Irish software firms, at 39 percent of total funding, is much higher than that reported by Moore (1994) who found that in the UK, banks provided 7 percent and venture capitalists 10 percent of the funding requirements of NTBFs. The relative unimportance of bank loans even amongst the older firms is consistent with Oakey (1984), who found that bank debt as a source of ongoing funding for NTBFs was negligible.

---

<sup>5</sup> Several studies have defined 'start-up' as firms less than 2 years old; for example Cassar (2004).

## 4. Survey results

### *Founders' perceptions of information asymmetries*

Table 4 reports the founders' perceptions on a number of issues relating to information asymmetries. Panel A relates to banks and Panel B to venture capitalists. The response to the first statement reported in Panel A (row [1]), "Banks understand my business," shows strong evidence that NTBF owner-managers perceive severe information asymmetries in the market for bank finance. Fifty-eight percent of founders did not agree that banks understood their business, while in only 9 percent of cases founders believed that banks understood them. Row [2] of Panel A shows that only 18 percent of founders believed that banks are willing to provide long-term loans to their companies, while 53 percent disagreed. This is consistent with Myers' (1977) prediction that firms whose assets are dominated by intangibles (such as growth opportunities and research and development assets) would find it difficult to get bank finance. Corroborating this finding, row [3] shows that almost 78 percent of founders believed that banks lend money to companies with fixed assets and/or cash.

Short-term or at-call lending is seen as less risky from the bank's point of view than long-term loans. Row [4] of Panel A shows that 54 percent of founders believed that banks are prepared to provide overdraft facilities to their firms. This finding is similar to the Bank of England (1996), who found that over two-thirds of the lending facilities provided to NTBFs were in the form of overdrafts. Nonetheless, one-third believed that banks are unwilling to provide their firms with an overdraft.

The founders of software product companies in Ireland appear to have a more positive perception of venture capital, as shown in Panel B of Table 4. Whereas only a small minority of founders (9 percent) believed that banks understood their businesses, row [1] shows that 41 percent of founders believed that venture capitalists understood their businesses, while only 20 percent did not believe this to be the case. Row [2] of Panel B reports on the response to the statement "Venture capitalists invest in companies with cash/fixed assets." The perception is that, unlike for banks, the presence of fixed assets is not a prerequisite for venture capitalist involvement. Only a small minority of founders (18 percent) believed that venture capitalists invest in firms with fixed

assets, while the majority (78 percent) had no opinion or disagreed with the statement. We can conclude, therefore, that NTBF owner-managers do not perceive asymmetries in venture capital markets to the same extent that they perceive asymmetries in the bank-client relationship, and that venture capitalists appear to be more amenable to advancing money to firms without tangible assets. The observed capital structure as reported in Table 3 is therefore consistent with the founders' opinions on information asymmetries in debt versus external equity markets. In the next section we investigate whether capital structure is also determined by demand-side factors – by the goals, motivations and preferences of NTBF owner-managers.

### *Founders' views on ownership*

In order to obtain outside equity, owner-managers must cede some control and considerable freedom in decision-making. Independence is usually cited as the main motive for starting a business, and the main reason SMEs prefer debt to outside equity. However, outside equity finance is used by indigenous Irish software firms in preference to bank loans, and debt is largely absent from their capital structure. Is this explained by a greater willingness to cede control? Our findings relating to founders' preferences about ownership are presented in Table 5. In response to the statement "Prefer to retain a majority stakeholding (50% or more) in the business for founder(s)" (row [1]), 30 percent of founders checked 'not at all,' and 32 percent checked 'to a large extent.' While there is little difference between the percentages of founders with strong opinions either way on this issue, the proportion willing to give up a majority shareholding is higher than found in prior studies of SMEs. Poutziouris, Chittenden and Michaelas (1998), for example, found that in the UK 49 percent of founders of small private companies would not even consider issuing external equity finance. Our findings for Irish software firms lend support to the finding of Berggren, Olofsson and Silver (2000) that NTBF owner-managers are less averse to ceding control than small business owners generally.

Row [2] of Table 5 shows the response to the statement "prefer to own 1% of a £50,000,000 company than 100% of a £500,000 company". Fifty-six percent of founders indicated that they would prefer to own 1 percent of a company valued at £50,000,000 rather than owning all of a company valued at £500,000. This finding

confirms that control does not appear to be an important motivating factor for many NTBF owner-managers. It also suggests that other motivations are at work. For the same level of wealth, these software firm founders would rather own a very small part of a large company than have complete control over a much smaller business. Why is this the case? The next section, which discusses our findings on founders' motives for being in business, addresses this issue.

### *Goals and motivations of founders*

If NTBF founders are willing to cede control, what are their motivations for being in business, and what are their goals? Table 6 reports on the founders' most important motive for being in business, in descending order. It is clear that what motivates NTBF owner-managers differs from those applying to SME owner-managers. *First*, the pursuit of innovation – “Doing something new or different; introducing original ideas about products/services; being at the forefront of technological change” (row *a*) – is the primary motivating force for being in business, with 27 percent of respondents checking this option. The desire for independence, which ranks second at 15 percent, is clearly not as important to these firms as it is for SMEs in general. We suggest that because innovative ventures are usually associated with greater financial requirements than SMEs in general (Roberts, 1991; Berggren, Olofsson and Silver, 2000), the goal of independence is moderated by the desire to be innovative. It is possible that NTBF founders accept that in order to see their innovations become successful products, and to have an important role in an organisation that is at the forefront of technological change, they must be prepared to relinquish some control. The innovation motive may also explain why these software firm founders would prefer to own a small part of a large business rather than the whole of a smaller business. With a large business, their products or inventions would reach more people and their technology would have more impact than if the business remained small.

A *second* interesting finding is that “Creating a substantial amount of personal wealth” (row *d* in Table 6) was ranked equal third with the ‘personal challenge’ (row *c*) motive, each of which were cited by 12.5 percent of respondents. This supports Audretsch's (1995 and 2000) hypothesis that high-technology entrepreneurs are motivated by financial gains. The pursuit of wealth is rarely cited by SME owner-



managers as being an important motivating factor in business initiation. A *third* difference between these findings and prior findings relating to SME owner-manager motivation is that lifestyle considerations play a minor role.

The results on founders' financial objectives are reported in Table 7. "Maximising the potential selling value of your business" (row *a*) is clearly the most important financial objective, with almost half of respondents checking this option. The third most popular financial objective is "maximise the growth of your business" (row *c*). If we assume that growth eventually yields substantially increased cash flows and thus greater firm value, we can conclude that this group of respondents is also keen to maximise firm value. By the same token, 'maximisation of the selling value' also implies growth. Equity rather than debt is the most appropriate finance for companies seeking to grow. This is because their assets are largely in the form of intangible growth options that cannot be offered as collateral for bank loans. In addition, finance theory tells us that growth requires risk-taking, and equity holders participate in gains if the risks pay off. Debtholders would be right to shun highly risky firms because they do not participate in the upside but are exposed if the company performs poorly or fails. Our findings are consistent with Cressy and Olofsson (1997) who found that founders of firms seeking to grow were much less averse to ceding control than those not seeking growth.

### ***Founders' preferences on financing***

Our findings on founders' perceptions of information asymmetries showed that NTBF owner-managers perceived them in the banking relationship but not to the same extent in venture capital markets; a result that is consistent with financial constraints explaining the dearth of debt in NTBF capital structure. However, we have also shown that NTBF owner-managers' have goals and motivations that are quite different from those of SME owner-managers, and we argue that these goals are better achieved using outside equity rather than debt. NTBF founders may therefore prefer equity to debt.

Table 8 presents our findings on responses to a series of direct statements relating to founders' financing preferences. Row [1] addresses the issue of the appropriateness

of bank finance. Only 26 percent of founders indicated that a long-term loan would suit their investment needs, whereas nearly half believed that a long-term loan would not suit them at all. The limited use of debt finance is not simply the result of financing constraints, but also reflects the preferences of NTBF owner-managers. However, consistent with the constraint argument, clearly some of these firms are not able to raise a source of finance that they believe would suit their needs.

The statements in rows [2], [3] and [4] were designed to test whether financing preference follows the pecking order; each is couched in terms of the POH's predictions. As expected, the founders expressed a strong preference for using retained profits to fund investment projects; row [2] shows that over two-thirds of founders prefer to use retained earnings as much as possible. Row [3] presents the survey finding for response to the statement "prefer to use retained profits and bank loans as much as possible and raise equity only when essential." The responses to this statement are contrary to the standard POH: less than one-third of respondents agreed, and 43 percent disagreed. This is confirmed by the findings in row [4], which reports the responses to the statement "Prefer to issue external equity only as a last resort." Less than one-third of founders (29 percent) preferred to issue equity as a last resort, while over 50 percent of founders disagreed with this statement. The findings on response to the statement "prefer to use retained profits and equity as much as possible" (row [5]) are consistent with our prior findings on capital structure and goals and motivations. Forty-seven percent agreed, implying a preference for the use of retained earnings in combination with outside equity, and only 19 percent disagreed.

## **5. Summary and conclusions**

Financial constraints are commonly blamed for Europe's poor performance in nurturing high-technology business. In this paper we question whether the observed capital structure in NTBFs results from financing constraints, and propose that owner-manager preferences may also explain financing patterns. We report survey responses relating to the financing of 117 indigenous firms in the software product sector in Ireland. Consistent with the pecking order hypothesis (POH) of Myers (1984) and Myers and Majluf (1984), we find that internal sources of funding dominate, both at

start-up and on a continuing basis. In apparent contradiction to the POH, however, we provide evidence that equity rather than debt is the primary source of external financing. The split between inside and outside finance for our sample firms is close to 50/50, but the proportion of inside finance for start-up firms (those less than 2 years old) is considerably higher at 73 percent. Debt finance in the form of bank loans comprises a mere 4 percent of total financing for our sample firms, or 8 percent of outside finance. The majority of outside equity comprises participation from venture capitalists and angel investors.

Consistent with the POH, our findings confirm that founders perceive severe information asymmetries between themselves and banks. Banks are viewed as being reluctant to provide funds to software product firms, and to require fixed assets as collateral. In contrast, most sample founders agreed that venture capitalists understood their businesses. While our evidence on capital structure in NTBFs is not consistent with an important prediction of the POH – that debt will be preferred to outside equity – we argue that it does not contradict the spirit of the POH. Myers' (1984) and Myers and Majluf's (1984) hypothesis is that firms will prefer sources of finance associated with least information asymmetry. Venture capital and angel finance is designed to overcome the severe information asymmetries that high technology ventures commonly face in debt markets.

The fact that outside equity dominates debt is not simply the result of financing constraints in debt markets. We argue that the motivations and goals of NTBF founders inform the financing decision, and that their objectives are quite different from those of other SME owner-managers. We find that the desire for independence is not as important to NTBFs as it is for SMEs in general; only 15 percent of founders claimed independence as the primary motive for being in business, and the most popular response to the question of most important motivation is the pursuit of innovation. This is an important finding, confirming that NTBF founders are less averse to the loss of control than SME owner-managers generally, for whom the independence motive has consistently been found to be paramount. It also confirms that because founders of high-technology ventures usually need large quantities of start-up capital, the goal of independence may be moderated by the goal of

innovation. We also find that NTBF owner-managers would prefer to own a small proportion of a large company rather than own the whole of a much smaller business. Selling an equity stake in the business provides the necessary capital to allow the business to grow, possibly into a substantial firm. By asking the founders directly we confirm that NTBF founders actually prefer outside equity to debt. This evidence on founders' preferences shows that in general the financing outcomes of NTBFs – the dominance of internal sources, the dearth of long-term debt, and the popularity of external equity – is not simply a result of external financing constraints, but it is also the preferred outcome of decision-makers within the firm.

Our findings have significant policy implications. This study provides evidence that equity is the preferred funding choice for founders in new technology-based industries. Ireland has well-developed venture capital and informal equity markets.<sup>6</sup> In the absence of effective and efficient markets for private and venture capital, NTBFs will face severe funding restrictions. The result may be under- or sub-optimal investment, which constrains growth and may lead to firm failure. Under-investment at start-up has been linked to lower levels of growth in new technology-based firms in a number of studies (Roberts, 1991; Lumme, Kauranen, and Autio, 1994; and Moore, 1994). The European Commission (1999) concluded that, in comparison with the US, the lack of a well-developed risk capital market is the key obstacle to the development of innovative firms in Europe. The clear message to policymakers is that new technology-based industries are funded by equity and not by debt. Governments that support formal venture capital markets and informal investment markets will be facilitating increased participation in the development and commercialisation of knowledge-based, high-potential business ideas.

---

<sup>6</sup> According to the Global Entrepreneurship Monitor (GEM) (2002), Ireland's venture capital investment is on par with the world average at 0.1 percent of GDP. A more important source of finance for small business is informal equity such as angel finance, which according to the GEM is known to provide about 5 times as much funding as venture capital. Facilitating private equity investment in Ireland is the government's Business Expansion Scheme, which allows tax-free equity investment in business start-ups.

## References

- Amit, R., K.R. MacCrimmon and C. Zietsma, 2001, Does money matter?: wealth attainment as the motive for initiating growth-orientated technology ventures *Journal of Business Venturing* 16(2), 119-143.
- Ang, J. S., 1991, Small business uniqueness and the theory of financial management *Journal of Small Business Finance* 1(1), 1-13.
- Audretsch, D.B., 1995, The propensity to exit and innovation, *Review of Industrial Organization* 10(5), 589-605.
- Audretsch, D. B., 2000 Research issues relating to structure, competition and performance of small technology-based firms, *Small Business Economics* 16(1), 37-51.
- Bank of England, 1996, *The financing of technology-based small firms*, London.
- Bank of England, 2001, *Financing of technology-based small firms* (Domestic Finance Division, London).
- Barclay, M.J., E. Morellec and C.W. Smith, 1995, The determinants of corporate leverage and dividend policies, *Journal of Applied Corporate Finance* 7, 4-19.
- Barclay, M.J., E. Morellec and C.W. Smith, 2001, On the debt capacity of growth opportunities", mimeo, University of Rochester.
- Berger, A. N. and G.F. Udell, 1998, The economics of small business finance: the role of private equity and debt markets in the finance growth cycle, *Journal of Banking and Finance* 22(6-8), 613-673.
- Berggren, B., C. Olofsson and L. Silver, 2000, Control aversion and the search for external financing in Swedish SMEs, *Small Business Economics* 15(3), 233-42.
- Binks, M. and C. Ennew, 1994, The provision of finance to small businesses: Does the banking relationship constrain performance? *Journal of Small Business Finance* 4(1), 57-73.
- Binks, M., C. Ennew and G. Reed, 1992, Information asymmetries and the provision of finance to small firms, *International Small Business Journal* 11(1), 35-46.
- Bolton Committee Report, 1971, *Report of the committee of inquiry on small firms*, Cmnd. 4811, HMSO: London.
- Boyer, P. and H. Roth, 1978, The cost of equity finance for small business, *American Journal of Small Business* 2(1), 1-11.
- Bradley, M., G.A. Jarrell and E.H. Kim, 1984, On the existence of optimal capital structure: theory and evidence" *Journal of Finance* 39(3), 857-878.

Brealey, R.A. and S.C. Myers, 2000, Principles of corporate finance 6<sup>th</sup> Edition (McGraw Hill).

Brewer, E. and H. Genay, 1994, Funding small business through the SBIC program, Federal Reserve Bank of Chicago Economic Perspectives 18, 22-34.

Brewer, E., H. Genay, W.E. Jackson and P.R. Worthington, 1997, The securities issue decision: Evidence from small business investment companies, Working Paper, Federal Reserve Bank of Chicago.

Cassar, G., 2004, The financing of business start-ups, Journal of Business Venturing 19(2), 261-283.

Chittenden, F., G. Hall and P. Hutchinson, 1996, Small firm growth, access to capital markets and financial structure: Review of issues and an empirical investigation, Small Business Economics 8(1), 59-67.

Cooley, P.L. and C.E. Edwards, 1983, The financial objectives of small firms, American Journal of Small Business 8(1), 27-31.

Cosh, A. and A. Hughes, 1994, Size, financial structure and profitability: UK companies in the 1980s, in A. Hughes and D. J. Storey, eds., Finance and the small firm (Routledge, London).

Cressy, R. and C. Olofsson, 1997, The financial conditions for Swedish SMEs: survey and research agenda, Small Business Economics, 9, 179-194.

Curran, J. and R.A. Blackburn (2001) Researching the smaller enterprise (Sage, London).

Dahlstrand, A.L. and D. Cetindamar, 2000, The dynamics of innovation financing in Sweden, Venture Capital 2(3), 203-221.

Deakins, D. and G. Hussain, 1993, Overcoming the adverse selection problem: evidence and policy implications from a study of bank managers on the importance of different criteria used in making a lending decision, in Chittenden, F., M. Robertson and D. Watkins, eds., Small firms: recession and recover (Paul Chapman, London).

Dillman, D., 1976, Mail and telephone surveys (John Wiley and Sons, New York).

Dillman, D. (2000) Mail and Internet Surveys, 2<sup>nd</sup> edition (John Wiley and Sons, New York).

European Commission, 1995, The European Observatory for SMEs, prepared by the European Network for SME Research (ENSR), EIM, Zoetermeer, Netherlands

European Commission, 1999, Risk capital markets; a key to job creation in Europe: from fragmentation to integration, Report prepared by Delphine Sallard, Directorate General II, Economic and Financial Affairs, Euro Papers No. 32.

European Commission, 2002, Observatory of European SMEs: High-tech SMEs in Europe, report No. 6. Prepared for Enterprise Directorate-General by KPMG Special Services and EIM Business and Policy Research in the Netherlands in co-operation with the European Network for SME Research (ENSR), and Intomart. Luxembourg: Office for Official Publications of the European Communities.

Frank, M.Z. and V.K. Goyal, 2003, Testing the pecking order theory of capital structure, *Journal of Financial Economics* 67, 217-248.

Global Entrepreneurship Monitor (GEM), 2002, Executive Report. Joint publication of the Ewing Marion Kauffman Foundation, Babson College, and London Business School. { HYPERLINK "<http://www.gemconsortium.org>" }.

Giudici, G. and S. Paleari, 2000, The provision of finance to innovation; A survey conducted among Italian technology-based small firms” *Journal of Small Business Economics* 14(1), 37-53.

Gompers, P. and J. Lerner, 2003, Equity financing, in Z.J. Acs and D.B. Audretsch eds., *Handbook of Entrepreneurship Research* (Kluwer Academic Publishers).

Helwege, J. and N. Liang, 1996, Is there a pecking order? Evidence from a panel of IPO firms, *Journal of Financial Economics* 40, 429-458.

Hommel, U. and H. Schneider, 2003, Financing the German Mittelstand, *European Investment Bank Papers* 8(2), 53-90.

Hyytinen A. and M. Pajarinen, 2002, Financing of technology intensive small business: Some evidence from the ICT industry, *The Research Institute of the Finnish Economy Discussion paper* No. 813.

Ibbotson, R. G., J.L. Sindelar and J.R. Ritter, 1993, Initial public offerings, in: D.H. Chew, ed., *The new corporate finance: Where theory meets practice*, (New York: McGraw-Hill).

Jordan, J., J. Lowe and P. Taylor, 1998, Strategy and financial policy in UK small firms, *Journal of Business Finance and Accounting*, 25(1 & 2), 1-27

Le Cornu, M.R., R. McMahon, D.M. Forsaith and A. Stanger, 1996, The small firm financial objective function, *Journal of Small Business Management*, July, 1-14.

Little, A. D., 1977, *New technology-based firms in the United Kingdom and the Federal Republic of Germany* (Wilton House, London).

Lumme, A., I. Kauranen, and E. Autio, 1994, The growth and funding mechanism of new technology-based firms: A comparative study between the United Kingdom and

Finland” in R. Oakey, ed., *New technology-based firms in the 1990s* (Paul Chapman, London).

Michaelas, N., F. Chittenden and P. Poutziouris, 1999, Financial policy and capital structure choice in UK SMEs: empirical evidence from company panel data, *Small Business Economics* 12(2), 113-130.

Moore, B., 1994, Financial constraints to the growth and development of small high technology firms in A. Hughes and D.J. Storey eds., *Finance and the small firm* (Routledge, London).

Myers, S.C., 1977, Determinants of corporate borrowing, *Journal of Financial Economics* 5, 146-175.

Myers, S.C., 1984, The Capital Structure Puzzle, *Journal of Finance* 39(3), 575-592.

Myers, S.C. and N.S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13(2), 187-221.

National Informatics Directorate, 2001, (Formerly the National Software Directorate) Irish software industry survey 2000, National Software Directorate, Forbairt, Dublin

Norton, E. and B.H. Tenenbaum, 1993, Factors affecting the structure of venture capital deals, *Journal of Small Business Management* 30(1), 20-30.

Poutziouris, P., F. Chittenden and N. Michaelas, 1998, *The financial affairs of private companies*, (Tilney Fund Management, Liverpool).

Oakey, R. P., 1984, *High technology small firms* (Frances Pinter, London).

Rajan, R.G. and L. Zingales, 1995, What do we know about capital structure? Some evidence from international data, *Journal of Finance* 50(5), 1421-1460.

Roberts, E. B., 1990, Initial capital for new technological enterprise, *IEEE Transactions on Engineering Management*, 37(2), 81-93.

Roberts, E. B., 1991, *Entrepreneurs in high technology; lessons from MIT and beyond* (Oxford University Press).

Ruhnka, J. C., and J.E. Young, 1991, Some hypotheses about risk in venture capital investing, *Journal of Business Venturing*, 6, 115-133.

Shyam-Sunder, L. and S.C. Myers, 1999, Testing static tradeoff against pecking order models of capital structure, *Journal of Financial Economics* 51, 219-244.

Smith, C.W. and R.L Watts, 1992, The investment opportunity set and corporate financing, dividend and compensation policies, *Journal of Financial Economics* 32, 263-292.



Stanworth, J. and C. Gray, 1991, Bolton twenty years on: The small firm in the 1990s (Chapman, on behalf of the Small Business Research Trust, London).

Stiglitz, J.E. and A. Weiss, 1981, Credit rationing in markets with imperfect information, *American Economic Review* 71(3), 383-410.

Storey, D. J., 1994, *Understanding the small business sector* (Routledge, London).

Titman, S. and R. Wessels, 1988, The determinants of capital structure choice, *The Journal of Finance* 43(1), 1-19.

Tyebjee, T. T., and A.V. Bruno, 1981, Venture capital decision making: preliminary results from three empirical studies, in K. H Vesper, ed., *Frontiers of Entrepreneurship Research* (Babson College, Mass).

**Table 1** Summary statistics for age structure

<b>Panel A: average age (months)</b>			
Mean		70	
Median		51	
Minimum		5	
Maximum		324	

  

<b>Panel B: number of firms by age</b>			
	[1] Number of firms	[2] Proportion of sample (%)	[3] Proportion of sample cumulative (%)
< 1 year	2	1.7	1.7
1 – 2 years	13	11.1	12.8
2 - 3 years	29	24.8	37.6
3 - 5 years	25	21.4	59.0
5 - 10 years	26	22.2	81.2
> 10 years	22	18.8	100.0
<b>Total</b>	{ =SUM M(A BOV E) }	{ =SUM(ab ove) }	

**Notes.** These figures report the age of 117 Irish software product firms.

**Table 2 Size**

**Panel A: employment at start-up and in 2002**

Size class	Employees	Start-up		2002	
		Number	%	Number	%
Micro	0	24	21	5	4
	1 - 9	68	59	38	33
Small	10 - 49	22	19	55	48
Medium	50 - 99	1	1	11	10
	100 - 249	0	0	6	5
<b>Total</b>		{ =SUM(A BOVE) }	100	{ =SUM(a bove) }	=SU M(ab ove) }

**Panel B: turnover in 2001**

	Number	%	Cumulative %
Pre-revenue	22	19.3	19.3
< €127,000	13	11.4	30.7
€127,000 - €316,999	7	6.1	36.8
€317,000 - €634,999	22	19.3	56.1
€635,000 - €1,269,999	17	14.9	71.0
€1,270,000 - €3,809,999	22	19.3	90.3
€3,810,000 - €6,349,999	5	4.4	94.7
€6,350,000 - €12,699,999	2	1.8	96.6
€12,700,000 +	4	3.5	100.0
<b>Total</b>	{ =SUM(A	{ =SU	

**Notes.** Turnover figures were requested in Irish punts, as euro notes and coins were not introduced until 2002, but report our findings in euro only. We requested sales information in the following bands: pre-revenue, < €100,000, €100,000 – €249,000, €250,000 - €499,999, €500,000 - €999,999, €1,000,000 - € 2,999,000, €3,000,000 - €4,999,999, €5,000,000 - €9,999,999, and more than €10,000,000. Five firms did not report the month of formation, so we assumed they were founded in the middle of the reported year and assigned them a monthly value of 6. Only 2 firms fell outside Little's (1977) age limit criterion for NTBFs, but these firms were included as they met Little's other criteria.

**Table 3** Sources of finance in different age categories

Age Band (years)	Number of firms	Internal Sources of Financing %				External Sources of Financing %				
		Savings	Consulting Revenues	Retained Profits	<b>Total Internal</b>	Bank Loans	Venture Capital	Private Investors	Govt. Grants	<b>Total External</b>
1-2	12	43.0	27.0	2.5	<b>72.5</b>	0.0	13.0	10.0	4.5	<b>27.5</b>
2-3	26	12.0	8.0	8.0	<b>28.0</b>	2.0	42.0	19.0	9.0	<b>72.0</b>
3-5	20	8.0	20.0	8.5	<b>36.5</b>	5.0	33.0	18.0	7.5	<b>63.5</b>
5-10	20	9.5	28.0	18.0	<b>55.5</b>	6.5	28.0	3.0	7.0	<b>44.5</b>
10 +	18	10.0	20.0	46.0	<b>76.0</b>	5.0	11.0	5.0	3.0	<b>24.0</b>
Total	96	14.0	19.0	17.0	<b>50.0</b>	4.0	28.0	11.0	7.0	<b>50.0</b>

**Notes.** This table reports the sources of finance, in percentage form, for the 96 firms that provided financing information.

**Figure 1** Proportion of internal and external finance

{ EMBED Excel.Chart.8 \s }

**Table 4** Founders' perceptions of information asymmetries

---

	<b>Agree (%)</b>	<b>Neither agree nor disagree (%)</b>	<b>Disagree (%)</b>
<b>Panel A: banks</b>			
[1] Banks understand my business (n = 117)	9.4	32.5	58.1
[2] Banks are willing to provide a long-term loan to my company (n=115)	18.3	28.7	53
[3] Banks lend money to companies with cash/fixed assets (n = 116)	77.5	18.0	4.5
[4] Banks are willing to provide overdraft facilities to my company (n = 115)	53.9	13.0	33.0
<hr/>			
<b>Panel B: venture capitalists</b>			
[1] Venture capitalists understand my business (n=116)	41.0	31.0	19.8
[2] Venture capitalists invest in companies with cash/fixed assets (n=109)	18.3	33.9	47.7

---

**Table 5** Founders' preferences in relation to ownership

---

	<b>Not at all (%)</b>	<b>To some extent (%)</b>	<b>To a large extent (%)</b>
[1] Prefer to retain a majority stakeholding (50% or more) in the business for founder(s) (n = 115)	29.6	38.3	32.2
[2] Prefer to own 1% of a £50,000,000 company than 100% of a £500,000 company (n = 114)	26.3	17.5	56.1

---

**Table 6** Most important motive for being in business

---

		<b>Number</b>	<b>%</b>
a.	Doing something new or different; introducing original ideas about products/services; being at the forefront of technological change.	27	24.1
b.	Being my own boss, being independent.	17	15.2
c.	The challenge of doing it for myself; self-actualisation; using a wide range of talents and skills; more responsibility.	14	12.5
d.	Creating a substantial amount of personal wealth.	14	12.5
e.	Being in control, influencing outcomes; making things happen; having an impact.	11	9.4
f.	Realising my vision/ideas about how the business should evolve; determining goals and capabilities that the organisation should pursue.	10	8.9
g.	Standing out from the crowd, competing and winning on an international stage, making a name, outdoing others.	7	6.3
h.	Accommodating a better lifestyle; spending more time with family, in recreational activities; being healthy.	6	5.4
i.	Achieving financial needs and goals in a way that is directly under my own control.	3	2.7
j.	Being in a position of leadership in terms of motivating and influencing others.	2	1.8
k.	Helping others; making a contribution to your business, industry, country, creating employment.	1	0.9

---

**Notes.** This table reports the survey responses to the issue of the most important motivation for being in business (n= 115).



**Table 7** The main financial objective

---

	<b>No. of mentions</b>	<b>%</b>
1. Maximise the potential selling value of your business	50	43.5
2. Maximise the net income/profit of your business	27	23.5
3. Maximise the growth of your business	15	13.0
4. Earn a satisfactory return for my effort	11	9.6
5. Maximise sales revenue	7	6.1
6. Maximise return to shareholders	3	2.6
7. Other	2	1.7
<b>Total</b>	<b>115</b>	<b>100</b>

---

**Table 8** Founders' financing preferences

---

	<b>Not at all (%)</b>	<b>To some extent (%)</b>	<b>To a large extent (%)</b>
[1] A long-term bank loan would suit my investment needs (n=117)	47.0	27.4	25.6
[2] Prefer to use retained profits as much as possible (n = 115)	10.4	21.7	67.8
[3] Prefer to use retained profits and bank loans as much as possible and raise equity only when essential (n = 115)	29.6	27.8	42.6
[4] Prefer to issue external equity only as a last resort (n = 115)	50.4	20.9	28.7
[5] Prefer to use retained profits and equity as much as possible (n = 115)	19.1	33.9	47.0

---